



# PROCEEDINGS

OF

THE 9<sup>th</sup> INTERNATIONAL CONFERENCE ON MANAGEMENT

“People, Planet and Profit: Sustainable business and society”

Volume II

ICM  
2019

Szent István University Gödöllő, Hungary  
13-14<sup>th</sup> June 2019

Gödöllő  
2019

**Proceedings of the 9<sup>th</sup> International Conference on Management: "People, Planet and Profit: Sustainable business and society"**  
**Volume II**

**Editor:**

Dr. Dunay, Anna

**Reviewers:**

Dr. Daróczy, Miklós

Dr. Dunay, Anna

Dr. Fodor, Zita

Dr. Illés, Bálint Csaba

Dr. Lencsés, Enikő

Dr. Naár-Tóth, Zsuzsanna

Dr. Vajna-Tangl, Anita

Dr. Vinogradov, Sergey

**ISBN: 978-963-269-882-3**

**DOI: 10.17626/dBEM.ICoM.P02.2019**

**Copyright © 2019 Organizing Committee of ICoM 2019**

**Published by**

Szent István University Publishing House  
(Szent István Egyetemi Kiadó Nonprofit Kft.)  
H-2100 Gödöllő, Páter Károly utca 1.  
Hungary

## TABLE OF CONTENTS

9 <sup>th</sup> INTERNATIONAL CONFERENCE ON MANAGEMENT - CONFERENCE TOPICS / SESSIONS.....	VII
SCIENTIFIC COMMITTEE.....	IX
ORGANIZING COMMITTEE .....	X
FINAL PROGRAMME OF THE CONFERENCE .....	XI
PREFACE .....	XIV

### CONTRIBUTED PAPERS SESSIONS

<i>Tamás NÉMETH, Petronella GYURCSIK</i> Analysis of the capital structure of the Swedish SME sector between 2009 and 2017 .....	2
<i>Patrik ROVNY, Maria HAMBALKOVA</i> The evaluation of foreign trade with agricultural and food products in the Slovak Republic ...	9
<i>Małgorzata RANDAK-JEZIERSKA</i> Knowledge about mobbing among students of the Faculty of Management of Cześćochowa University of Technology .....	17
<i>Felicjan BYLOK</i> Patterns of sustainable consumption in behaviour of elderly people on the market in Poland.....	22
<i>Łucja KAPRALSKA, Marzena MAMAK -ZDANECKA</i> Universities in Poland as socially responsible entities: CSR at selected universities in Krakow .....	29
<i>Paweł KOBIS</i> Human factor in the aspect of digital information in business enterprises .....	35
<i>Monika HUDÁKOVÁ, Mária FARKAŠOVÁ</i> Evaluation of the development of price in the production of selected commodities in the Slovak Republic .....	43
<i>Anna MRAVCOVÁ, Jakub BERČÍK</i> Utilization of aroma marketing in business environment in selected global south countries.....	52
<i>Dávid KOSZTYI, Zita FODOR, Zoltán VALENTINYI</i> Special competitiveness enhances stock management model for engineering SMEs .....	59
<i>Jozef KOŠUDA, Zuzana KAPSDORFEROVÁ, Mária KADLEČÍKOVÁ</i> The quality of stakeholder's cooperation within agricultural innovation system and present barriers for innovation improvement in Slovakia .....	67
<i>Titanilla ORAVECZ, Ildikó KOVÁCS</i> Consumer behaviour towards honey products in the Central Hungary Region.....	75
<i>Tomasz LIS</i> Cooperation with clients as a source of innovation in the competitive activity of Polish enterprises.....	81

<i>Ildikó KOVÁCS, Titanilla ORAVECZ</i> Quantitative study among local beekeepers in the Central Hungary Region.....	88
<i>Emese Melinda BOGÁTH, Sándor GÁSPÁR, Etelka KEREKES</i> The influence of the conjuncture cycles and the economic crisis of 2008 to the national investment markets.....	95
<i>Eszter MARCZELL-SZILÁGYI</i> Global economy vs. multicultural challenges: Difficulties and opportunities of knowledge management practices .....	102
<i>Patrycja KOKOT-STEPIEN'</i> Selected aspects of management in the sme sector based on the 'doing business' reports: The example of Poland and Hungary .....	114
<i>Aleksandra CZARNECKA</i> Talent management as a way to build a competitive advantage of an enterprise .....	120
<i>Oksana SEROKA-STOLKA</i> The influence of stakeholders' pressure and legal requirements on environmental strategies: The case of Poland .....	126
<i>Asmaa N. JASIM, Qusay J. MOHAMMED, Mohammed A. HUSSEIN</i> The role of Management accountant in achieving job security in order to enable employees to make decisions .....	132
<i>Duc Phong NGUYEN, Anita TANGL</i> Challenges and solutions of Vietnamese universities in introduction and teaching International Financial Reporting Standards.....	142
<i>Hajnalka MADAI, Beata BITTNER, Adrian Szilárd NAGY, András NÁBRÁDI</i> Methodological approach to the practice of strategy planning in particular the internal environmental analysis.....	148
<i>Edyta KULEJ-DUDEK</i> Management of creativity of employees in small and medium-sized enterprises.....	154
<i>Tuan-anh TRAN, Miklós DARÓCZI, János ABONYI, Tamás RUPPERT</i> Optimizing resources assignment for balancing modular production line.....	162
<i>Ádám HORVÁTH, Balázs GYENGE</i> Modelling cultural consumption of movies: A theoretical analysis of consumer behavior, service process and cultural consumption models .....	169
<i>Ágnes URBÁNNÉ TREUTZ</i> Examination of place identity models .....	177
<i>Enikő LENCSE'S, Attila KOVÁCS</i> Artificial intelligence in the agricultre .....	185
<i>Zsuzsanna LEHOTA, Enikő LENCSE'S</i> Product diagnostic, information supply and trust in the Hungarian food supply chain.....	192
<i>Zsuzsanna LEHOTA, Enikő LENCSE'S</i> Consumer willingness and price premium characteristics in the Hungarian food supply chain.....	199

<i>Zsuzsanna LEHOTA, Enikő LENCSE</i> Information asymmetry, fear of conduct opportunist and role of uncertainty risk in the Hungarian food supply chain .....	204
<i>Marzena PIOTROWSKA-TRYBULL, Stanislaw SIRKO</i> Social, economic and environmental aspects of military units' presence in municipalities ..	210
<i>Beatrix TURZAI-HORÁNYI</i> Strategic thinking of the Hungarian car dealerships .....	217
<i>Anna ALBRYCHIEWICZ-SŁOCIŃSKA</i> Social and organizational determinants of intra-organizational knowledge sharing behaviors among employees from Z generation .....	224
<i>Anna ALBRYCHIEWICZ-SŁOCIŃSKA, Elżbieta ROBAK</i> Personnel management in relation to the expectations of workers from generation Z .....	231
<i>Attila KOVÁCS</i> Role of business games in higher education .....	236
<i>Waldemar JEŃDRZEJCZYK</i> Knowledge of coaching in organizations: Polish experience.....	243
<i>Katarzyna ZADROS</i> CSR: A challenge or an opportunity for management in the Economy 4.0.....	248
<i>Grzegorz CHMIELARZ</i> Role of data security policy at higher education institutions in the light of legislative changes introduced by the GDPR .....	254
<i>Andrej GÉCI</i> Impact of senses of young generation on consumer's behaviour (generation Z) .....	260
<i>Dariusz DUDEK</i> Key technologies in supply chain management .....	267
<i>Tatiana EVTEEVA, Snezhanna GUZIY, Patrik ROVNY</i> Evaluation of consumer behavior in the market of selected agricultural commodities in the Slovak Republic and the Russian Federation.....	274
<i>László KOVÁCS, Zsolt ORLOVITS</i> Inheritance of agricultural property as a possible means of generation change in Hungary.....	281
<i>Fanni Ildikó FODOR, Attila LAJOS, Zsuzsanna NAÁR-TÓTH</i> Trust, the factor affecting food consumption appearance in young intellectuals.....	286
<i>Alexandra ANDOCSOVÁ</i> Consumer behavior of selected generations on the milk market .....	293
<i>Houda ALEQEDAT</i> The influence of Hofstede's cultural dimensions in the Jordanian working environment .....	299
<i>Tibor László CSEGŐDI</i> Why is energy efficiency a significant factor for local governments and households? .....	307
<i>Aleksandra PTAK</i> Perception of running a business by the young generation of Poles .....	314

Igor <i>BORISOV</i> , Szergej <i>VINOGRADOV</i> The impact of social capital on the quality of workplace environment in the European Union.....	320
<i>Leszek CICHOBŁAZIŃSKI</i> Collective dispute resolution procedure as an integral part of industrial relation in Poland ....	329
<i>Marek PETRILÁK, Erik JANŠTO</i> Use of marketing tools in retail shops selling local and fresh products.....	335
<i>Robert KUČEBA, Izabela CHAT</i> Evaluation of factors that determine development of commercial entities in the online shopping segment.....	341
<i>Alexandra FILOVÁ, Veronika HRDÁ</i> Influence of personified management on organization of managerial work in Slovakia.....	347
<i>Gintarė KULBECKIENĖ, Nijolė LITEVKIENĖ</i> The role of strategic communication at the museum: The case of Šiauliai Museum.....	355
<i>Saadi Ahmad SHAHBAZ, Anna DUNAY</i> “One belt one road” – A situation analysis of China and Hungary.....	362
<i>Anikó KOVÁCS, András TÓTH, Anna DUNAY, Csaba Bálint ILLÉS, András BITTSÁNSZKY</i> Meat analogues as protein sources .....	370
<i>Victoria KHNOUF, Majd KHOUDARI, Ahmad JURATLI, Samir ZAIEN</i> The role of social media in the social responsibility in Syria evidence from Bank Bemo Saudi Franci.....	377
<i>Csaba SZUDA</i> Industry 4.0 challenges and opportunities and consulting answers to them .....	385
<i>Viktor SZILI, Anna DUNAY</i> Economics impacts of African swine fever on pig farming.....	390
<i>Ali ALAMMARI, Abdussalam Ashour KHALIF, Amina A. M. DAROUGI</i> Restructuring the Libyan economy with available and unexploited resources of the tourism sector .....	398
LIST OF AUTHORS .....	405

**9<sup>th</sup> INTERNATIONAL CONFERENCE ON MANAGEMENT**  
**PEOPLE, PLANET AND PROFIT: SUSTAINABLE BUSINESS AND SOCIETY**  
**9<sup>th</sup> ICoM 2019**

**Szent István University, Gödöllő,**  
**13-14<sup>th</sup> June 2019**

organized by the

**Szent István University, Gödöllő, Hungary, Faculty of Economics and Social Sciences**

in cooperation with the

**Częstochowa University of Technology, Poland, Faculty of Management**  
**Slovak University of Agriculture in Nitra, Slovakia, Faculty of Economics and Management**  
**Mendel University in Brno, Czech Republic, Faculty of Business and Economics**

This is the 9<sup>th</sup> event of the International Conference on Management (ICoM) conference series which was started in 2011 with the idea to bring together scientists, researchers, PhD students and the representatives of the business sector to exchange and share their experiences and research results about contemporary management and social issues.

Nowadays, sustainability is a key question of our life, all over the world. Sustainability is related to the natural environment, economy and society. In the recent years, sustainable economy, sustainable society and sustainable development became one of the key management objectives and the subject of multidisciplinary scientific researches.

The aim of the conference is to provide opportunity for scientists and professionals from various areas of knowledge and disciplines to meet each other, to share their experiences, research results and theoretical studies and to build and strengthen international cooperation for improving the quality of scientific research. An additional goal of the conference is build a bridge between experienced researchers with the young researchers and PhD students to start new relationships and research networks to work together the next generations.

**Conference topics / sessions:**

1. Business strategies, business management, business models
2. Management and evolution process of SMEs
3. Entrepreneurship, new venture creation, startups
4. Human resource management, leadership and corporate governance
5. Human capital, social capital and intellectual capital
6. Knowledge management and innovation management
7. New trends in marketing and supply chain management
8. Agribusiness: management, innovation and competitiveness in agriculture and food processing sector
9. Sustainability aspects of production, lean management
10. Food quality and food safety management
11. Accounting, finance and financial management
12. Regional policies and regional development management

*Special topics / sessions:*

- Human resources in the efficient operation of organizations  
***Celebrating the 70-year-old Prof. Dr. József POÓR***
- Marketing management and consumer behaviour  
***Celebrating the 70-year-old Prof. Dr. József LEHOTA***
- Society and economy – social aspects of sustainable economies



*The main sponsors of the Conference*

**Supporting organizations:**

Faculty of Economics and Social Sciences, Szent István University, Gödöllő, Hungary

Doctoral School of Management and Business Administration, Szent István  
University, Gödöllő

Agrár Management Alapítvány, Gödöllő, Hungary

**Main supporting companies:**

Lázár Equestrian Park, Domonyvölgy, Hungary

Magyarvíz Ltd, Lajosmizse, Hungary

Nyilas Vinary, Gyöngyössolymos, Hungary

Pearson Education Limited, Harlow, UK

SoReCa, Budapest, Hungary

**PATRON:**

Prof. Dr. László PALKOVICS, *Rector of Szent István University, Gödöllő, Hungary*

**SCIENTIFIC COMMITTEE****CHAIR:**

Prof. Dr. Csaba Bálint ILLÉS, *Szent István University, Gödöllő, Hungary*

**Co-Chairs:**

Prof. Dr. Felicjan BYLOK, *Częstochowa University of Technology, Poland*

Dr. h.c. Prof. Dr. Elena HORSKÁ, *Slovak University of Agriculture in Nitra, Slovakia*

Assoc. Prof. Dr. Helena CHLÁDKOVÁ, *Mendel University in Brno, Czech Republic*

**Members:**

Prof. Dr. Gyula BAKACSI, *Budapest Business School, Hungary*

Prof. Dr. Fernando BELFO, *Coimbra Business School, Portugal*

Prof. h.c. Dr. András BITTSÁNSZKY, *InDeRe Institute for Food System Research and Innovation Nonprofit Ltd., Budapest, Hungary*

Prof. Dr. Jadvyga ČIBURIENĖ, *Kaunas University of Technology, Kaunas, Lithuania*

Prof. Dr. Laura Mariana CISMAS, *West University of Timisoara, Romania*

Dr. Serene DALATI, *International Arab University, Syria*

Assoc. Prof. Dr. Miklós DARÓCZI, *Szent István University, Gödöllő, Hungary*

Assoc. Prof. Dr. Anna DUNAY, *Szent István University, Gödöllő, Hungary*

Prof. Dr. Mária FARKAS-FEKETE, *Szent István University, Gödöllő, Hungary*

Dr. Sidney Soares FILHO, *University of Fortaleza, Brasil*

Prof. Dr. Janusz GRABARA, *Częstochowa University of Technology, Poland*

Assoc. Prof. Dr. phil. Nicole HORÁKOVÁ, *University of Ostrava, Czech Republic*

Prof. h.c. Dr. Monika HUDÁKOVÁ, *Slovak University of Agriculture in Nitra, Slovakia*

Prof. Dr. Natalia IVANOVA, *National Research University, Moscow, Russia*

Prof. Dr. Dorota JELONEK, *Częstochowa University of Technology, Poland*

Assoc. Prof. Abror JURAEV, *Bukhara State University, Bukhara, Uzbekistan*

Dr. Almaz KADYRALIEV, *Kyrgyz Economic University, Kyrgyzstan*

Dr. Christian KAHL, *Almaty University of Management, Kazakhstan*

Prof. h.c. Dr. József KÁPOSZTA, *Szent István University, Gödöllő, Hungary*

Prof. Dr. Tamás KOLTAI, *Budapest University of Technology and Economics*

Prof. Dr. Sebastian KOT, *Częstochowa University of Technology, Poland*

Assoc. Prof. Dr. habil Péter KOVÁCS, *University of Szeged, Hungary*

Assoc. Prof. Dr. Ede LÁZÁR, *Sapientia Hungarian University of Transylvania*

Prof. Dr. József LEHOTA, *Szent István University, Gödöllő, Hungary*

Prof. Dr. Angelė LILEIKIENĖ, *Lithuania Business University of Applied Sciences*

Assoc. Prof. Dr. Todor MARKOVIC, *University of Novi Sad, Serbia*

Assoc. Prof. Dr. Jurgita MARTINKIENĖ, *Lithuania Business University of Applied Sciences*

Prof. Dr. Sighard NECKEL, *Universität Hamburg, Germany*

Prof. Dr. Domenico NICOLO, *Mediterranean University of Reggio Calabria, Italy*

Prof. Dr. Maria NOWICKA-SKOWRON, *Częstochowa University of Technology, Poland*

Assoc. Prof. Dr. Olena OLIYNYK-DUNN, *National University of Life and Environmental Sciences of Ukraine*

Prof. Dr. Arnold PABIAN, *Częstochowa University of Technology, Poland*

Prof. Dr. László PALKOVICS, *Szent István University, Gödöllő, Hungary*

Prof. Dr. József POÓR, *Szent István University, Gödöllő, Hungary*

Prof. Dr. József POPP, *University of Debrecen, Hungary*  
Prof. Dr. Vojko POTOČAN, *University of Maribor, Slovenia*  
Assoc. Prof. Dr. Ida RAŠOVSKÁ, *Mendel University in Brno, Czech Republic*  
Prof. Dr. Gamze SANER, *Ege University, Turkey*  
Dr. Oksana SEROKA-STOLKA, *Częstochowa University of Technology, Poland*  
Prof. Dr. Urszula SWADŹBA, *University of Silesia in Katowice, Poland*  
Prof. Dr. Ilona ŚWIĄTEK-BARYLSKA, *University of Lodz, Poland*  
Prof. Dr. Csaba SZÉKELY, *University of West Hungary, Sopron, Hungary*  
Assoc. Prof. Dr. Ferenc SZILÁGYI, *Partium Christian University, Romania*  
Prof. Dr. Iveta UBREŽIOVÁ, *Slovak University of Agriculture in Nitra, Slovakia*  
Prof. Dr. József TÓTH, *Corvinus University of Budapest*  
Assoc. Prof. Dr. Anita VAJNA-TANGL, *Szent István University, Gödöllő, Hungary*  
Prof. Dr. Mariann VERESNÉ SOMOSI, *University of Miskolc, Hungary*  
Assoc. Prof. Dr. Ivona VRDOLJAK RAGUZ, *University of Dubrovnik, Croatia*  
Dr. Benny de WAAL, *HU University of Applied Sciences, Netherlands*  
Assoc. Prof. Dr. Michel WENZ, *Northeastern Illinois University, Chicago, USA*  
Assoc. Prof. Dr. Rifat YILMAZ, *Bilecik Şeyh Edebali University, Turkey*

## ORGANIZING COMMITTEE

### **CHAIR:**

Assoc. Prof. Dr. habil Anna DUNAY, *Szent István University, Gödöllő, Hungary*

### **Co-Chairs:**

Dr. Anna SŁOCIŃSKA, *Częstochowa University of Technology*  
Dr. Sylvie FORMÁNKOVÁ, *Mendel University, Czech Republic*  
Dr. Mária HOLIENČINOVÁ, *Slovak University of Agriculture in Nitra, Slovakia*

### **Members:**

Dr. Leszek CICHOBŁAZIŃSKI, *Częstochowa University of Technology, Poland*  
Dr. Aleksandra CZARNECKA, *Częstochowa University of Technology, Poland*  
Assoc. Prof. Dr. Zita FODOR, *Szent István University, Gödöllő, Hungary*  
Assoc. Prof. Dr. Zoltán HORVÁTH, *Szent István University, Gödöllő, Hungary*  
Dr. Jana KOZÁKOVÁ, *Slovak University of Agriculture in Nitra, Slovakia*  
Dr. Enikő LENCSEŚ, *Szent István University, Gödöllő, Hungary*  
Assoc. Prof. Dr. Róbert MAGDA, *Szent István University, Gödöllő, Hungary*  
Assoc. Prof. Dr. Zsuzsanna NAÁR-TÓTH, *Szent István University, Gödöllő, Hungary*  
Assoc. Prof. Dr. László PATAKI, *Szent István University, Gödöllő, Hungary*  
Dr. Łukasz SKIBA, *Częstochowa University of Technology, Poland*  
Assoc. Prof. Dr. György UGRÓSDY, *Szent István University, Gödöllő, Hungary*

### **Local Organizing Committee:**

Bernadett ALMÁDI, *Szent István University, Gödöllő, Hungary*  
Judit FARKAS-INKRET, *Szent István University, Gödöllő, Hungary*  
Beatrix HORÁNYI, *Szent István University, Gödöllő, Hungary*  
Ádám HORVÁTH, *Szent István University, Gödöllő, Hungary*  
Dr. Zsuzsanna LEHOTA, *Szent István University, Gödöllő, Hungary*  
István PETŐ, *Szent István University, Gödöllő, Hungary*  
Emese TATÁR, *Szent István University, Gödöllő, Hungary*  
András J. TÓTH, *Szent István University, Gödöllő, Hungary*  
Assoc. Prof. Dr. Sergey VINOGRADOV, *Szent István University, Gödöllő, Hungary*

## **FINAL PROGRAMME OF THE CONFERENCE**

**1<sup>st</sup> DAY - Thursday, 13<sup>th</sup> JUNE 2019**

7.30 –9.00: REGISTRATION (*Building: SZIE Tudástranszfer Központ*)

### **9.00 – 9.30: CONFERENCE OPENING**

*Welcoming the guests*

- **Prof. Dr. Csaba Bálint ILLÉS**  
Chair of Scientific Committee, Szent István University, Hungary
- **Prof. Dr. László PALKOVICS**  
Rector of Szent István University, Hungary
- **Prof. h.c. Dr. József KÁPOSZTA**  
Dean of Faculty of Economics and Social Sciences, Szent István University
- **Representatives of three partner universities**
  - **Prof. Dr. Felicjan BYLOK**  
Vice-Dean of Faculty of Management, Czestochowa University of Technology, Poland
  - **Dr. h.c. Prof. Dr. Ing. Elena HORSKA**  
Dean of Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Slovakia
  - **Prof. Dr. Pavel ŽUFAN,**  
Dean of Faculty of Business and Economics, Mendel University in Brno, Czech Republic

*Conferring of Certificates*

### **9.30 – 12.00: PLENARY SESSION I. (Invited keynote speakers)**

**Chairs: Prof. Dr. József Tóth CSc, BCE, Budapest, Hungary**

**Assoc. Prof. Dr. Anna Dunay PhD, SZIE, Gödöllő, Hungary**

**Secretary: Dr. Anita Tangl, Gödöllő, Hungary**

9.30 – 9.55: *Elena Horská, Slovak University of Agriculture in Nitra, Slovakia*  
The Economic Efficiency of Using Aroma Marketing as a New Possibility of In-Store Communication.

9.55 – 10.20: *Gyula Bakacsi, Budapest Business School - University of Applied Sciences, Budapest, Hungary*

Cultural dynamics in social-economic transition - comparative GLOBE results of Hungary between 1995 and 2015.

10.20 – 10.45: *Agata Mesjasz-Lech, Czestochowa University of Technology, Poland*  
Sustainable entrepreneurship: Social expectations and global challenges.

10.45 – 11.10: *Károly Balaton and Mariann Veresné Somosi, University of Miskolc*  
A Knowledge-Based Approach to Social Innovation.

11.10 – 11.30: **Discussion**

**11.35 – 11.45: Photo Session**

**11.45 – 13.00: Lunch** (at the place of Registration)

**13.15 – 14.45: PLENARY SESSION II.** (Invited keynote speakers)

**Chairs:** Prof. Dr. József Tóth CSc, BCE, Budapest, Hungary  
Assoc. Prof. Dr. Anna Dunay PhD, SZIE, Gödöllő, Hungary

Secretary: Dr. Anita Tangl, Gödöllő, Hungary

13.15 – 13.40: *László Szerb, University of Pécs, Hungary*

A system dynamics approach for assessing SMEs' competitiveness - A competence based approach.

13.40 – 14.05: *Pavel Žufan, Mendel University in Brno, Czech Republic*

Quality management at higher education institutions.

14.05 – 14.30: *Tamás Koltai, Budapest University of Technology and Economics*

Non-discretionary variables in data envelopment analysis: Intuitive applications in the service sector.

14.30 – 14.45: **Discussion**

**14.45 – 15.00: Coffee break**

**15.00 – 18.15: CONTRIBUTED PAPERS SESSIONS (1-8)**

*Parallel sessions (A)*

**15.00 – 16.30: Session 1 – Knowledge and innovation management (1)**

(Room: 10, 2<sup>nd</sup> floor)

**15.00 – 16.30: Session 2 – Human resource management (1)**

(Room: 11, 2<sup>nd</sup> floor)

**15.00 – 16.30: Session 3 – Contemporary problems and new trends in HRM (1)**

*Special session in honour of the 70-year-old Prof. Dr. József Poór*

(Room: 12, 2<sup>nd</sup> floor)

**15.00 – 16.30: Session 4 – Business management (1)**

(Room: 210, 2<sup>nd</sup> floor)

**16.30 – 16.45: Coffee break**

*Parallel sessions (B)*

**16.45 – 18.15: Session 5 – Marketing management and consumer behaviour**

*Special session in honour of the 70-year-old Prof. Dr. József Lehota*

(Room: 10, 2<sup>nd</sup> floor)

**16.45 – 18.15: Session 6 – Human resource management (2)**

(Room: 11, 2<sup>nd</sup> floor)

**16.45 – 18.15: Session 7 – Contemporary problems and new trends in HRM (2)**

*Special session in honour of the 70-year-old Prof. Dr. József Poór*

(Room: 12, 2<sup>nd</sup> floor)

**16.45 – 18.15: Session 8 – Supply chain management**

(Room: 210, 2<sup>nd</sup> floor)

**18.30: Departure to the Lázár Equestrian Park from the building of Registration**

**18.45 – 23.00: Conference dinner & cultural performances at the Lázár Equestrian Park**

**23.00: Departure from the Lázár Equestrian Park to the University**

## **2<sup>nd</sup> DAY - FRIDAY, 14<sup>th</sup> JUNE, 2019**

**7.30 – 9.00: REGISTRATION** (Building: SZIE Tudástranszfer Központ)

### **SPECIAL PLENARY SESSION**

**8.30 – 09.00: Teaching and learning business with Pearson's e-learning solutions**

(Room: 10, 2<sup>nd</sup> floor)

<https://www.pearsonmylabandmastering.com/global/>

### **9.00 – 12.30: CONTRIBUTED PAPERS SESSIONS (9-19)**

#### *Parallel sessions (C)*

**9.00 – 10.30: Session 9 – Agricultural and food management (1)**

(Room: 10, 2<sup>nd</sup> floor)

**9.00 – 10.45: Session 10 – Human Capital**

(Room: 11, 2<sup>nd</sup> floor)

**9.00 – 10.30: Session 11 – Marketing and management (1)**

(Room: 12, 2<sup>nd</sup> floor)

**9.00 – 10.45: Session 12 – Entrepreneurship and SMEs**

(Room: 210, 2<sup>nd</sup> floor)

**9.00 – 10.30: Session 13 – Society and Economy: Social responsibility and Sustainability (1)**

(Room: 9, 1<sup>st</sup> floor)

**10.45 – 11.00: Coffee break**

#### *Parallel sessions (D)*

**11.00 – 12.45: Session 14 – Agricultural and food management (2)**

(Room: 10, 2<sup>nd</sup> floor)

**11.00 – 12.30: Session 15 – Finance and accounting**

(Room: 11, 2<sup>nd</sup> floor)

**11.00 – 12.30: Session 16 – Knowledge and innovation management (2)**

(Room: 12, 2<sup>nd</sup> floor)

**11.00 – 12.30: Session 17 – Business management (2)**

(Room: 210, 2<sup>nd</sup> floor)

**11.00 – 12.30: Session 18 – Society and Economy: Social responsibility and Sustainability (2)**

(Room: 9, 1<sup>st</sup> floor)

**11.00 – 12.30: Session 19 – Marketing and management (2)**

(Room: 224, 2<sup>nd</sup> floor)

### **12.45 – 13.00: SUMMARY AND CONCLUSIONS OF THE CONFERENCE**

(Room: 12, 2<sup>nd</sup> floor)

**13.00 – 14.00: Lunch** (at place of Registration)

**14.10: Departure to the Gödöllő Royal Palace from the building of Registration**

14.30 – 16.30: Visiting the Gödöllő Royal Palace

(Summer Residence of Sissi)

**16.30: Departure from the Gödöllő Royal Palace to the University**

## PREFACE

The 9<sup>th</sup> International Conference on Management (9<sup>th</sup> ICoM 2019) “People, Planet and Profit: Sustainable business and society” is organized by the Department of Business Economics and Management of the Faculty of Economics and Social Sciences of Szent István University, Gödöllő (Hungary), in cooperation with the Management Faculty of Częstochowa University of Technology (Poland), the Faculty of Economics and Management of the Slovak University of Agriculture in Nitra (Slovakia) and the Faculty of Business and Economics of the Mendel University in Brno (Czech Republic).

This is the 9<sup>th</sup> event of our international conference series which is a great result of the successful cooperation of the partner universities representing the Visegrad Countries.

The main topics of the conference are represented by the title: “People, People, Planet and Profit: Sustainable business and society”, as nowadays, sustainability is a key question of our life, all over the world.

Sustainability is related to the natural environment, economy and society. In the recent years, sustainable economy, sustainable society and sustainable development became one of the key management objectives and the subject of multidisciplinary scientific researches.

Our conference wishes to give opportunity for researchers, students and professionals of different generations to share their experiences and research results and to discuss how to put them into practice, and to build and strengthen international cooperation for improving the quality of scientific research.

The ICoM conference series became an important pillar of the management science. At the ICoM 2019, Gödöllő, Hungary, 194 registered participants represent 29 countries from four continents.

I hope that our conference will be successful and you all will enjoy your stay in Gödöllő, and meet again at the next conference in 2020.

13<sup>th</sup> June 2019, Gödöllő, Hungary

**Assoc. Prof. Dr. habil Anna Dunay, PhD**

Editor

Chair of the Organizing Committee

*Faculty of Economics and Social Sciences  
Szent István University, Gödöllő, Hungary*



## **CONTRIBUTED PAPERS**

## ANALYSIS OF THE CAPITAL STRUCTURE OF THE SWEDISH SME SECTOR BETWEEN 2009 AND 2017

*Tamás NÉMETH<sup>1</sup>, Petronella GYURCSIK<sup>2</sup>*

<sup>1</sup> *University of Sopron, Sopron, Hungary*

<sup>2</sup> *Szent István University, Gödöllő, Hungary*

*E-mail: [tamas.nemeth@xstead.com](mailto:tamas.nemeth@xstead.com)*

**Summary:** In this days, every business has to develop a successful and sustainable operational strategy in a globalized economic and social environment. All this plays an important role in the aspect of fast technological innovations and the changes of macroeconomy. The business needs financial sources to realize their strategies with this, which are chosen by conscious planning for maximum profitability. The purpose of the research is to analyze that factors, which are determining the profitability and have an effect on equity and long-term and short-term liabilities, based on the basis of the data of small and medium-sized enterprises for the period 2009-2017, NACE Revision 2 adapted to the European Union statistical classification system. When choosing this theme, we basically assumed that the creation of an optimal capital structure (through increasing profitability and efficiency) able to increase the profit, furthermore, besides the strategic/investment decisions of the examined companies, the financing decisions also have a prominent role to play in gaining a competitive edge in the global market, as they determine the success of the company and the basis for its survival. The research analyzes (with correlation analysis) the annual report of 1,000 Swedish companies between 2009 and 2017, which were continuously operating throughout the period and belonged to the SME sector. What was found in the course of the work? This will refer to analysis, discussion, or results.

**Keywords:** capital structure, profitability, business strategies, business models, financing decisions

### 1. Introduction

When making financing decisions, taking the risk-yield-liquidity relation into consideration, company leaders have to aim at developing such a capital structure that contributes the most to increasing company value. The present study looks at the relationship between yield, that is, profitability and capital structure. We seek to answer the question whether capital structure choice has an effect on the profitability of businesses, and, if yes, what the direction and the extent of this relationship is. A brief theoretical overview is followed by the empirical study of the development of capital structure and profitability, as well as their relationship, in the sample of Swedish SMEs, based on a 2009-2017 report. In addition, we analyse the development of equity, current and non-current liabilities and liquidity.

### 2. Literature review / Research Background

Earnings power analysis tries to answer the question what role a given production factor plays in producing the outcome on the effect of a predetermined size and composition of production factors, which also applies to capital as a factor taking part in production. (Illés et al., 2015)

As mentioned earlier, the relationship of capital structure and profitability is specific compared to other influencing factors; profitability can be interpreted as an independent and a

dependent variable in the system of relationship between the two factors. Firstly, the better the company's self-financing capacity, the easier it can take out loans and on more favourable terms. Secondly, debt financing can increase equity yields in case the expected return on external sources is lower than the total assets earnings power (Borszéki, 2008).

Previous studies on the relationship between profitability and capital structure usually looked at profitability as an independent variable, but the results are not consistent. On the basis of the capital structure choice theory, it can be assumed that there is a positive relationship between profitability and leverage, i.e. high profits encourage companies to take out loans in order to use the opportunity of tax saving through the taxable income reducing effect of interests. (Illés et al., 2011) From another perspective, based on the hierarchy theory, the relationship is negative since businesses prefer to use their own resources, retained profit and only turn to external resources when they have exhausted their own. Therefore, less profitable, volatile and lower cash flow businesses, in hopes of positive net present value investments, are more likely to rely on funding from external resources in their resource structure (Baloghné and Mundaca, 2015). This theory is proved by Rajan and Zingales (1995), Revoltella (1998), Hirota (1999), Krénusz (2005), Balla (2006), Szemán (2008), Katits és Szemán (2016). The same was studied by Szűcs (2015) using a sample of automotive businesses and he found that businesses with high profitability use a lower ration of debt financing in their resource structure, mostly in the form of current liabilities.

There are also examples of looking at profitability as a dependent variable, i.e. how the development of capital structure affects profitability. In his study on agribusinesses Borszéki (2008) saw improvements in total capital and equity profitability as a result of another fundraising. Berger and Bonaccorsi di Patti (2006) showed that a 1 percentage point decrease in equity ratio results in a 16 percentage point increase in the company's profitability. Herczeg (2009), who also studied the relationship of capital structure and profitability using an agribusiness sample, found that liability structure ratios have a significant effect on profitability and his calculations proved that there is a debt-to-equity ratio which can show whether a company operates efficiently or it is loss-making.

### **3. Methodology**

The 2009-2017 report data on Swedish SMEs used for capital structure analysis was provided by the Bureau van Dijk (BvD) Orbis database, which has data about more than 310 million companies from over 200 countries worldwide. The 21 national economy section data from companies as used in the TEÁOR 08 adjusted to the EU statistical categories was dealt with at the first, the highest level.

To ensure the comparability of data, out of the ~95.000 companies continuously operating as SMEs in the total examined period, 1000 businesses were selected randomly. During data retrieval public and municipal enterprises, as well as companies with consolidated accounts were excluded.

The aim of the analysis is to examine the factors determining profitability taking account of the capital structure. The relationship between factors determining capital structure and profitability indicators were established using correlational analysis which shows the existence and the strength of the relationship. The indicators needed for the analysis were produced taking into account the main items on the balance sheet.

It is a general characteristic that business profitability differs from industry to industry; therefore, it is necessary to examine capital structure, profitability, liquidity and efficiency indicators and their relationship by industry (based on NACE Revision 2). In the present study the development of different indicators is analysed for the entire sample, however, correlational analysis is only done regarding the businesses in the Wholesale and retail trade; repair of motor vehicles and motorcycles NACE Rev. 2 national economy section [G].

The changes in the capital structure in the study are investigated using leverage (external capital/equity), liabilities ratio (non-current liabilities/total liabilities), equity-share capital ratio (equity/share capital) and equity ratio (equity/total liabilities) indicators. The standard of management is shown by analysing the relationships of certain items of assets and liabilities recorded in the balance sheet for the financial year.

Our profitability analysis looks at return on equity - ROE (earnings after tax/equity), return on assets - ROA (earnings after tax/total asset), and return on sales - ROS (earnings before tax/gross sales) indicators.

Assessing the liquidity situation means comparing businesses' liquid assets and current liabilities, which helps assess whether the business will be able to fulfil its obligations. The analysis assesses the liquidity ratio (total current assets/current liabilities) and the cash ratio (total funds/current liabilities).

#### **4. Results**

From the point of view of leverage it can be stated that compared to small and medium enterprises, micro businesses have the highest equity rate. Rate of leverage for small and medium enterprises is 20-35%, whereas for micro businesses the rate is 35-45%. The database used for our analysis only highlights share capital and earnings after tax elements and deals with the other items on the balance sheet in aggregate; thus, we will not assess these items separately.

When studying profitability and efficiency, one of the most important groups on the liabilities side of the balance sheet is the amounts payable.

If we look at current and non-current liabilities, medium enterprises rely on recognised resources as current liabilities more widely than smaller businesses. For micro and small businesses the changes in the loan and supplier debt volume are not significant, they remain nearly the same every year. In the case of medium enterprises both loans and supplier debt show a substantial increase up to 2013, then, until 2017 they exhibit a considerable volatility. Years of increase in supplier liabilities may point to liquidity problems at the company. Overall, it can be said that medium enterprises have a higher rate of current liabilities: the rates are over 40% for almost the entire examined period; whereas the rates for smaller businesses are 35% or less.

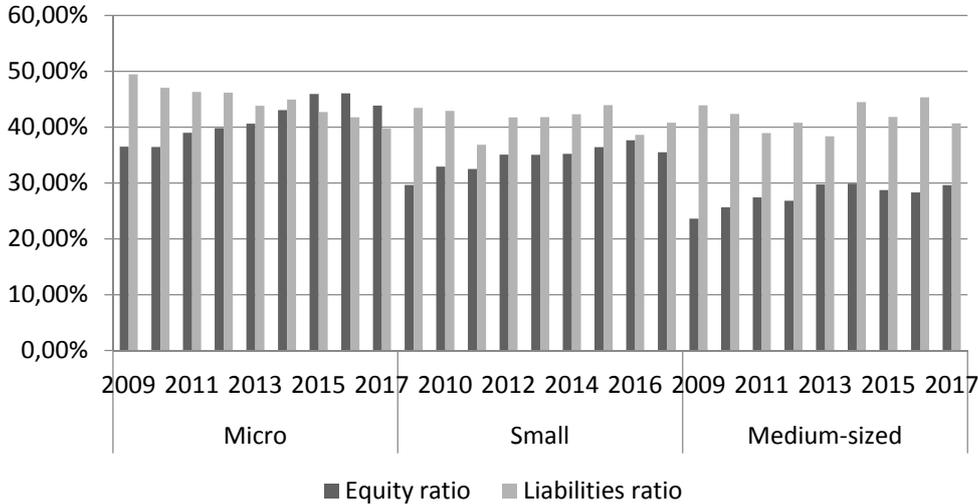
The data base used for analysis only highlighted loans and supplier debt among short-term liabilities, other current liabilities are aggregated; therefore, these are not dealt with separately.

Regarding the most important results, in the 2009-2017 period operating surplus shows a 4.53% increase for small, a 2.01% decrease for micro, and a 236.7% decrease for medium enterprises. The distribution for reference years is volatile for micro and small businesses, while there is a steady decline from 2010 to 2016 in the case of medium enterprises.

The development of the capital structure and profitability situation can also be analysed using indicators; it has to be taken into account, however, that the changes in indicators reflect on the specific micro level economic situation of companies for all businesses.

To study capital structure development, the size of items recognised as balance sheet assets and liabilities, and their relationships can be examined, where the changes in capital structure can lead to conclusions about the standard of management.

The company’s financial strength is measured by the equity ratio (Figure 1): its average rate increased from 36.5% to 43.8% for micro enterprises, from 29.7% to 35.5% for small enterprises and from 23.6% to 29.6% in the case of medium enterprises in the period 2009-2017. Increase can only be interpreted as positive when own capital comes from the company’s profit-making capabilities. With regard to effectiveness, it is also important to have as high as possible equity ratio compared to total capital, since in these cases companies are less burdened with capital expenses than in the case of using external sources.



**Figure 1: Capital structure indicators in 2009-2017**  
*Source: own compilation*

The average rate of liabilities decreased from 49.5% to 39.7% for micro, from 43.5% to 40.8% for small, and from 43.9% to 40.7% for medium enterprises.

In addition to studying capital structure, it is worth taking a look at liquidity indicators. Rate indicators determining short-term financial capacity measure creditor risks.

In the circle of micro enterprises average cash rate exceeded 1 in the entire period, save for 2010. In 2010 0.96, in 2014 and 2015 above 2 rates, moreover in 2016 and 2017 over 3 rates clearly that show companies’ available funds could cover current liabilities. Besides these instruments liquidity rate in the broad sense provides full coverage of liabilities within one year.

Among small enterprises in 2009-2013 available funds do not cover amounts payable within one year, the average rate is 0.754. In 2014-2015 the rate is above 1, then in 2016-2017 liquidity declines back to an average of 0.915. Notwithstanding this, liquidity rate in the broader sense covers emerging short-term liabilities in the entire period at an average rate of 5.649.

In the case of medium enterprises cash ratio in the entire examined period shows below 1 rates, which suggests that in this circle cash amounts cannot cover short-term obligations for the extended period of 9 years. However, even in this segment the current assets/current liabilities ratio reaches the minimum level of liability coverage, the average rate for the examined period is 2.046.

The liquidity rate of 1.6-2 confirms with general expectations, which state that the value of current assets should approximate the double of current liabilities value.

When investigating the relationship between capital structure and profitability, to ensure correct results, the variables of the correlation matrix were constructed from the average of indicators generated yearly. The magnitude and direction of the linear relationship between two given rates, and their relationship is shown by the correlational ratio, which indicates if two values are not independent of each other. The algebraic sign of the correlational ratio ( $r$ ) shows the direction, whereas its magnitude shows the strength of the correlation. The value can range between -1 and 1.

In our analysis of the calculated correlation matrix, those items are highlighted in the results which are not direct consequences of their mode of generation.

Examining the capital structure indicators depicted in Table 1 of the wholesale and retail trade; repair of motor vehicles and motorcycles [G] section, it can be said that non-current liabilities are in strong relationship with fixed assets (0.77) and current assets (0.78); moreover, current liabilities are also strongly related to current assets (0.94) and have a moderately strong relationship with fixed assets (0.66).

**Table 1: Wholesale and retail trade; repair of motor vehicles and motorcycles correlations**

	Liquidity ratio	Cash Liquidity ratio	Fixed assets	Current assets	Shareholders funds	Non-current liabilities	Current liabilities	Operating revenue	ROE	ROA	ROS	Liabilities ratio	Equity ratio	Shareholders found-Capital ratio	Leverage	Working capital	Total Capital Profitability
Liquidity ratio	1,00																
Cash Liquidity ratio	0,75	1,00															
Fixed assets	-0,06	-0,05	1,00														
Current assets	-0,04	-0,06	0,62	1,00													
Shareholders funds	0,04	-0,01	0,57	0,66	1,00												
Non-current liabilities	-0,05	-0,06	0,77	0,78	0,47	1,00											
Current liabilities	-0,08	-0,07	0,66	0,94	0,45	0,71	1,00										
Operating revenue	-0,09	-0,07	0,53	0,94	0,55	0,66	0,92	1,00									
ROE	0,03	0,02	-0,69	-0,47	0,03	-0,55	-0,69	-0,43	1,00								
ROA	0,00	0,05	-0,08	-0,10	0,08	-0,14	-0,14	-0,06	0,21	1,00							
ROS	0,02	0,01	0,27	-0,02	0,26	0,01	-0,03	-0,03	0,03	0,16	1,00						
Liabilities ratio	0,11	0,04	0,17	-0,04	0,00	0,17	-0,06	-0,09	-0,02	-0,25	0,09	1,00					
Equity ratio	0,43	0,37	-0,08	-0,18	0,12	-0,20	-0,24	-0,21	0,14	0,29	0,12	-0,27	1,00				
Shareholders found-Capital ratio	0,17	0,03	0,08	0,31	0,43	0,03	0,24	0,37	0,04	0,22	0,06	-0,12	0,27	1,00			
Leverage	-0,03	-0,03	0,69	0,48	-0,03	0,55	0,70	0,44	-1,00	-0,19	-0,03	0,02	-0,15	-0,04	1,00		
Working capital	-0,05	-0,08	0,63	0,93	0,53	0,72	0,93	0,83	-0,61	-0,14	-0,02	-0,04	-0,21	0,24	0,62	1,00	
Total Capital Profitability	-0,02	0,04	-0,10	-0,12	0,05	-0,15	-0,16	-0,07	0,21	0,99	0,14	-0,23	0,25	0,21	-0,19	-0,16	1,00

Source: own compilation

Turnover has a strong positive relationship with stocks (0.94) and short-term liabilities (0.92), and shares a moderately strong relationship with fixed assets (0.53), equity (0.55) as well as long-term liabilities (0.66). The strongest relationship can be observed in the correlation between turnover and stocks, which in the case of turnover growth can be explained by the faster reaction times than for current and fixed assets. Operating capital also shares a strong positive relationship with turnover (0.83), and current liabilities (0.93), as well as current assets (0.93).

Debt-to-equity ratio has a strong negative relationship with return on equity (ROE) (-0.99), and a moderately strong positive relationship with fixed assets (0.69), non-current liabilities (0.55), and current liabilities (0.70). No correlation (-0.08) was found between liquidity and turnover indicators in the examined sample. Among profitability indicators there is a strong positive relationship between return on total capital and return on assets (ROA) (0.99).

The analysis of indicators and the results of the correlation matrix statistically prove that there is a relationship between capital structure and profitability indicators characterising company management. Return on equity showed a moderately strong negative relationship with fixed assets (-0.69), and current liabilities (-0.69) as well as long-term liabilities (-0.55). Return on sales shows a weak positive relationship with fixed assets (0.27) and equity (0.26).

## **Conclusion**

To make the appropriate decisions, company leaders need to be well-informed about their enterprise. This way they can develop a capital structure that affects company profitability and operational efficiency positively.

Based on correlational analysis, the relationship between capital structure choice and profitability indicators describing company management can be justified.

Leverage shows a negative relationship with the return on equity indicator. The growth of external capital rate is linked with a decrease in earnings after tax since the reducing effect of interest rate payable is reflected in the value of taxed earnings.

In connection with the liability structure rate of businesses by SME sector size it can be stated that the bigger the enterprise, the higher the annual increase of equity within total capital.

The analysis of the components of the results has shown that company profitability is mainly determined by the operational (business) activity. In this result category in the examined period companies have remained profit-making, albeit at differing degrees.

Using correlational analysis we have established the existence and strength of the relationship between determining factors of the capital structure and indicators describing it. It is worth mentioning that there is a strong correlation between turnover and stocks, which entails the existence of a positive relationship with fixed costs. Also, the positive relationship between turnover and operating capital suggests a link between the chosen financing strategy and the magnitude of turnover.

Among the resources available to companies, the role of external capital is still considerable, and as it has been justified that businesses operating on less external capital have better profitability conditions than those with a higher rate of liabilities, it can be claimed that liability structure rates have a significant effect on profitability.

## References

1. Balla A. (2006), Tőkeszerkezeti döntések- empirikus elemzés a magyar feldolgozóipari vállalatokról 1992-2001 között. In: *Közgazdasági Szemle*, 53 (július- augusztus) pp. 681-700.
2. Balogné Balla A., Mundaca, G. (2015), Az exporttevékenység tőkeszerkezeti döntésre gyakorolt hatása: empirikus vizsgálat a magyar feldolgozóipari vállalatok esetében. In: Bélyácz I. (szerk.): *A vállalati növekedés tapasztalatai az 1993-2012 közötti időszakban*. Akadémia Kiadó pp. 132-181.
3. Berger A., Bonaccorsi di Patti, E. (2006), Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry. In: *Journal of Banking & Finance*, 30:(4), pp. 1065-1102.
4. Borszéki É. (2008), A jövedelmezőség és a tőkeszerkezet összefüggései a vállalkozásoknál. In: *Bulletin of the Szent István University, Special Issue Part II*. Gödöllő, pp. 391-401.
5. Herczeg A. (2009), A tőkeszerkezet és a jövedelmezőség kapcsolat mezőgazdasági vállalkozásokban. In: *Gazdálkodás*, 53:(6), pp. 570-476.
6. Hirota, S. (1999), Are Corporate Financing Decisions Different in Japan? An Empirical Study on Capital Structure. In: *Journal of the Japanese and International Economies*, 13:(3), pp. 201-229.
7. Illés B. Cs., Hustiné Béres K., Dunay A., Pataki L. (2011), Impacts of tax systems on the competitiveness of small and medium enterprise in CEE countries. In: *Institute for Export Management Vienna University of Economics and Business*, pp. 145-156
8. Illés B. Cs., Hurta H., Dunay A. (2015), Efficiency and Profitability Along the Lifecycle Stages of Small Enterprises In: *International Journal of Management and Enterprise Development* 14:(1), pp. 56-69.
9. Katits E., Szemán J. (2017), A magyar vállalati szektor tőkeszerkezetének elemzése 1993-2014 között a TOP 5000 adatbázis alapján. In: *Pénzügy- számvitel- statisztika füzetek II. 2016*. Miskolci Egyetemi Kiadó. pp. 65-80.
10. Krénusz Á. (2005), Bevezetés a tőkeszerkezet meghatározó tényezőinek elméletébe és gyakorlatába. In: *Hitelintézeti Szemle*. 4:(2), pp. 15-35.
11. Rajan, R. G., Zingales, L. (1995), What Do We Know about Capital Structure? Some Evidence from international Data. In: *Journal of Finance*, 50:(5), pp. 1421-1460.
12. Revoltella, D. (1998), Financing Enterprises in the Czech Republic: the importance of firm specific variables. Gennaio: University of Ancona
13. Szemán J. (2008), A magyar vállalati szektor tőkeszerkezetének elemzése 1992-2003 között. Ph.D. értekezés, ME Vállalkozáselmélet és gyakorlat Doktori Iskola
14. Szücs G. (2015), A magyarországi járműgyártás jövedelmezőségének és forrásszerkezetének statisztikai elemzése. In: *Közgazdász Kutatók és Doktoranduszok II. Téli Konferenciája Tanulmánykötet*. pp. 295-305.

## THE EVALUATION OF FOREIGN TRADE WITH AGRICULTURAL AND FOOD PRODUCTS IN THE SLOVAK REPUBLIC

*Patrik ROVNY<sup>1</sup>, Maria HAMBALKOVA<sup>2</sup>*

*<sup>1,2</sup> Slovak University of Agriculture, Nitra, Slovakia*

*E-mail: patrik.rovny@gmail.com*

### **Summary:**

**Purpose:** The article analyses trends in territorial and commodity structure of the Slovak foreign agrarian trade. The aim of this paper is to analyze development of trade and competitiveness of agricultural commodities groups.

**Design/methodology/approach:** The article analyses trade in period from the year 2004 to 2017 (period after EU accession). There is possibility to use different indicators by examining competitiveness of chosen agricultural products groups. To analyse an average growth rate of export and import within individual time series was used the geometric mean.

To identify comparative advantages are used: RCA index (Revealed comparative advantage index) and Grubel-Lloyd index (GLI index).

**Findings:** The Slovak agricultural trade is developing very dynamically over time. Agricultural exports increased more than doubled - from Euro 844.21 million in 2004 to more than Euro 2 854.77 million in 2017; imports also grew significantly from Euro 1 267.57 million to more than Euro 4 292.92 million in the same period. Negative trend is seen in the development of trade balance. The most important agricultural export aggregations are following: HS01 (Live animals), HS04 (Dairy produce; birds' eggs; natural honey), HS10 (Cereals), HS17 (Sugars and sugar confectionery) HS18 (Cocoa and cocoa preparations ) and HS12 (Oil seeds and oleaginous fruits). Comparative advantages are achieved in case of aggregations: HS01 (Live animals), HS04 (Dairy produce; birds' eggs; natural honey), HS10 (Cereals), HS11 (Products of the milling industry; malt; starches; inulin; wheat gluten), HS12 (Oil seeds and oleaginous fruits), HS17 (Sugars and sugar confectionery) and HS18 (Cocoa and cocoa preparations).

**Keywords:** foreign trade, agricultural products, export, import, comparative advantage

### **1. Introduction**

The article analyses trends in territorial and commodity structure of the Slovak foreign agrarian trade. The aim of this paper is to analyze development of trade and competitiveness of agricultural commodities groups. Foreign trade (FT) is among the decisive factors affecting economic growth of individual countries, as well as of the whole world economy. Foreign trade has an effect on the creation of internal economic balance (transformational function), and has a share in the international division of labor with the resulting effect of saving national labor and resources (growth function). Agricultural trade is an important part of the global merchandise trade. Despite of its low share in global trade value, it plays an important role in global human society development.

## **2. Literature review / Research Background**

The last 20 years affected agricultural sector in many European countries including the members of the Visegrad Group. The volume of their agricultural production was significantly reduced, but the volume and value of their trade activities had been constantly growing (Bielik et al., 2010).

Agrarian trade of the Czech Republic and Slovakia has undergone very significant changes in the period since the break-up of Czechoslovakia up to the present, which have influenced its commodity and territorial structure. The process of dividing the state, building a new business structure and the EU accession influenced the current form of Czech and Slovak agricultural trade and also particularly the competitiveness of Czech and Slovak agricultural and foodstuff products in relation to the EU market and also in relation to the world market. The process of transformation of agricultural production and trade in both countries has also affected their relationships. For this reason, the primary objective of this paper is to highlight the changes that have occurred in relation to the Czech and Slovak agricultural trade performance development - and in particular the changes in the mutual export and import operations are analysed. During the period 1994-2010, agricultural exports from the Czech Republic to Slovakia became considerably more dynamic than those in the opposite direction. Czech agricultural and foodstuff products have gradually established themselves and have gained comparative advantages over Slovak agrarian production. As a result of this development, a gradual increase of the negative balance of Slovak agricultural trade has occurred in relation to the Czech Republic. Since the Slovak agrarian sector has in recent years significantly decreased its own production capacity, in the future a continuation of the current trend can be expected. (Bielik et al. 2013)

The Slovak foreign agri-food trade has had an unsuitable development during the last years. The decreasing negative balance is presenting a threat in connection with the competitive commodities, which we can produce in the domestic agrarian market (Récky – Hambáľková 2014).

## **3. Methodology**

The aim of the article is to analyse trends in territorial and commodity structure of the Slovak foreign agrarian trade and to identify changes which have occurred during the last decade. The main emphasis has been put on the period after accession to the EU. Primarily such changes are identified, that occurred in relation to the EU-Member States and to third countries.

The article is based on data of the Eurostat. Analysed time series covers the period 2004 – 2014, focused on territorial and commodity structure of the Slovak agricultural trade. The surveyed period was chosen due to the fact, that the Slovak Republic was not an EU-Member State early 2014 and has joined the EU on 1st May. An analysis of the commodity structure is based on the international tariff nomenclature for the classification of product HS2. This system enables to classify commodity structures of the agricultural trade into 24 aggregations (Table 1).

**Table 1: Commodity structure of the Slovak agricultural trade**

HS	Commodity
01	Live animals
02	Meat and edible meat offal
03	Fish and crustaceans, molluscs and other aquatic invertebrates.
04	Dairy produce; birds' eggs; natural honey
05	Products of animal origin, not elsewhere specified or included
06	Live trees and other plants
07	Edible vegetables and certain roots and tubers
08	Edible fruit and nuts
09	Coffee, tea, maté and spices
10	Cereals
11	Products of the milling industry; malt; starches; inulin; wheat gluten
12	Oil seeds and oleaginous fruits
13	Lac; gums, resins and other vegetable saps and extracts
14	Vegetable plaiting materials
15	Animal or vegetable fats and oils and their cleavage products
16	Preparations of meat, of fish or of crustaceans and others.
17	Sugars and sugar confectionery
18	Cocoa and cocoa preparations
19	Preparations of cereals
20	Preparations of vegetables and fruit
21	Miscellaneous edible preparations
22	Beverages, spirits and vinegar
23	Residues and waste from the food industries, animal fodder
24	Tobacco and manufactured tobacco substitutes

Source: Eurostat, 2018

To analyse an average growth rate within individual time series, the geometric mean of individual chain indices is used to sum the development trend for the whole surveyed period. Based on their averaging through the geometric mean, we can get the an average growth/decline in export or import value for the whole surveyed period. An advantage of the geometric mean is the fact that it considers both positive and negative increments. The calculation of the geometrical mean (%):

$$G = \sqrt[n]{x_1 x_2 \dots x_n}$$

The article evaluates also comparative advantages of the Slovak agricultural trade. To identify comparative advantages, the RCA1 and Grubel Loyd Index (GLI) is used (Lafay, 1992).

The revealed comparative advantage is an index used in international economics for calculating the relative advantage or disadvantage of a certain country in a certain class of goods or services as evidenced by trade flows. It is based on the Ricardian comparative advantage concept.

It most commonly refers to an index introduced by Balassa (1965):

$$RCA = \ln ((X_{ij} / X_{it}) / (X_{nj} / X_{nt}))$$

where X represents exports, i is a country, j is a commodity (or industry), t is a set of commodities (or industries) and n is a set of countries. RCA measures a country's exports of a commodity (or industry) relative to its total exports and to the corresponding exports of a set of countries.

A comparative advantage is “revealed”, if  $RCA > 0$ . If  $RCA$  is less than unity, the country is said to have a comparative disadvantage in the commodity / industry.

An alternative  $RCA$  index is computed in order to make reference to the “own” country trade performance only. This type of measurement of a country’s  $RCA$  recognizes the possibility of simultaneous exports and imports within a particular commodity / industry. The Grubel–Lloyd index measures intra-industry trade of a particular product. It was introduced by Herb Grubel and Peter Lloyd in 1971:

$$GLI = ((X_{ij} + M_{ij}) - |X_{ij} - M_{ij}|) / (X_{ij} + M_{ij})$$

Values are from 0 to 1

If  $GLI = 1$ , there is only intra-industry trade, no inter-industry trade. Conversely, if  $GLI = 0$ , there is no intra-industry trade, only inter-industry trade.

#### 4. Results and discussion

Summarizing the development of the agricultural trade after the accession of the Slovak Republic to the EU, a positive and also negative trends can be seen. Agricultural exports increased more than doubled - from Euro 844.21 million in 2004 to more than Euro 2 854.77 million in 2017; imports also grew significantly from Euro 1 267.57 million to more than Euro 4 292.92 million in the same period. From the table 1 we can see, that the total turnover increased by 5 032.92 million Euro. Although the value of the Slovak agricultural trade grows very quickly, it is worth noting that agricultural trade represents only a marginal share of the total trade of the Slovak Republic.

**Table 2: Development of the main trade indicators in the period 2004-2017 (in million Euro)**

	2004	2005	2006	2007	2008	2009	2010
Export	844,21	1 214,66	1 497,96	1 800,43	1 970,94	1 945,07	2 175,13
Import	1 267,57	1 756,26	1 928,59	2 464,95	2 852,78	2 839,45	3 165,52
Trade Balance	- 423,36	- 541,60	- 430,64	- 664,52	- 881,84	- 894,38	- 990,38
Trade Turnover	2 111,78	2 970,92	3 426,55	4 265,37	4 823,72	4 784,51	5 340,65
	2012	2013	2014	2015	2016	2017	Index 2017/2004
Export	3 607,01	3 219,88	2 738,45	2 805,02	2 830,40	2 854,77	3,38
Import	4 016,73	3 946,36	3 835,94	3 895,79	4 154,25	4 292,92	3,39
Trade Balance	- 409,72	- 726,47	- 1 097,49	- 1 090,77	- 1 323,84	- 1 438,15	3,40
Trade Turnover	7 623,74	7 166,24	6 574,38	6 700,81	6 984,65	7 147,70	3,38

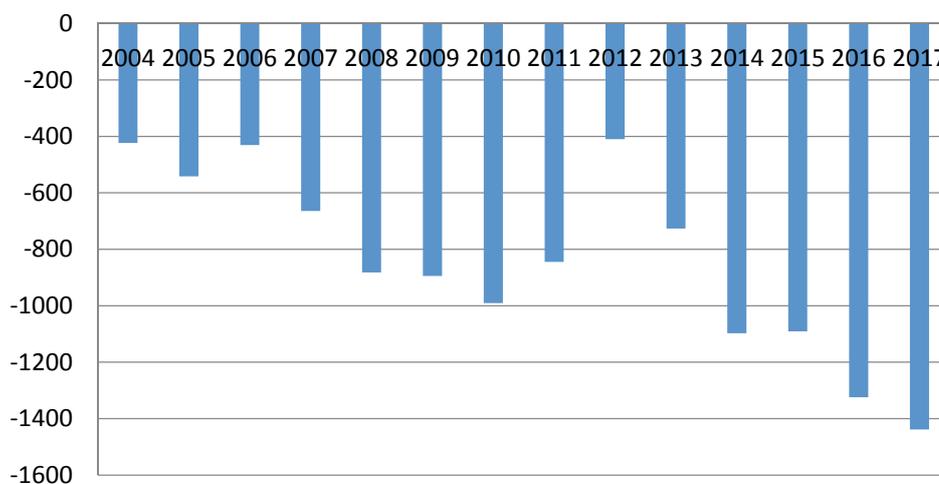
Source: Eurostat and own calculations, 2018

Higher dynamics in agricultural trade is mainly due to higher growth in prices of agricultural and food products, and by changing structure of the Slovak agricultural export with a higher proportion of semi-processed and finalized products.

Negative trend is seen in the development of trade balance. From Figure 1 we can see that in all analysed years the Slovak republic reached negative value. The development of the trade balance is represented in Figure 1. The value of the turnover is increasing every year (except the year 2014) and it increased by index 3.38.

The average annual growth rate of agricultural exports reached the level about 11.06 %, while the average annual growth rate of agricultural imports stood at 10.43 %. It is worth to stress that the share of negative balance in the total value of foreign trade turnover is

partly reducing – from the maximum of about 18.56% (in 2004) to 16.50% at the year 2017.



**Figure 1: Development of the trade balance in the period 2004-2017 (in million Euro)**

*Source: Eurostat and own calculations 2018*

The territorial structure of the Slovak agricultural trade is many years almost same. Most of exports and imports are realized with the EU 28 countries. The share of the EU as the most important partner is currently about 97 %. This fact also means strong Slovakian dependence on the European Union; in 2005, this share reached already 96 %. Slovakia is mostly trading with the countries as Czech Republic, Poland, Hungary and Germany.

#### ***Trends in commodity structure of the Slovak agricultural foreign trade***

The commodity structure of the Slovak agricultural trade has been developing very dynamically in recent years. The most important agricultural export aggregations are following: HS01 (Live animals), HS04 (Dairy produce; birds' eggs; natural honey), HS10 (Cereals), HS17 (Sugars and sugar confectionery) HS18 (Cocoa and cocoa preparations ) and HS12 (Oil seeds and oleaginous fruits). On other side the most important agricultural import aggregations are: HS02 (Meat and edible meat offal), HS04 (Dairy produce; birds' eggs; natural honey), HS08 (Edible fruit and nuts), HS22 (Beverages, spirits and vinegar) and HS21 (Miscellaneous edible preparations).

**Table 3: Commodity structure of the Slovak agricultural exports in the period 2004-2017 (in million Euro)**

Year	Export				Average annual growth
	2004	2008	2012	2017	
HS01	45,42	93,13	205,33	211,53	1,14
HS02	41,46	85,35	170,25	82,07	1,11
HS03	3,86	4,97	4,15	5,66	1,37
HS04	117,07	296,86	271,20	292,18	1,10
HS05	4,67	12,00	10,25	17,75	1,18
HS06	5,56	5,36	11,35	14,94	1,10
HS07	17,62	46,88	41,92	35,81	1,09
HS08	37,26	75,52	67,14	80,57	1,09
HS09	3,87	69,51	193,94	156,08	1,46
HS10	40,07	161,65	305,06	340,80	1,24
HS11	55,68	137,40	146,19	120,22	1,08
HS12	59,39	156,37	519,80	210,88	1,17
HS13	0,25	0,84	0,92	1,48	1,24
HS14	0,06	0,24	0,35	0,01	1,03
HS15	48,93	47,29	330,00	69,27	1,13
HS16	4,04	43,57	59,79	102,42	1,52
HS17	81,78	161,22	542,49	231,21	1,13
HS18	87,70	134,64	156,62	233,18	1,09
HS19	47,83	84,94	97,52	132,53	1,09
HS20	13,63	42,27	52,88	71,14	1,16
HS21	40,27	108,06	124,10	197,56	1,15
HS22	47,32	150,07	191,49	154,51	1,13
HS23	20,86	51,21	99,65	86,66	1,14
HS24	19,59	1,59	4,63	6,32	1,57
<b>Total</b>	<b>844,21</b>	<b>1970,94</b>	<b>3607,01</b>	<b>2854,77</b>	<b>1,11</b>

Source: Eurostat and own calculations, 2018

**Table 4: Commodity structure of the Slovak agricultural import in the period 2005-2017 (in million Euro)**

Year	Import				Average annual growth
	2004	2008	2012	2017	
HS01	25,89	58,46	119,27	90,57	1,14
HS02	88,82	263,16	401,01	485,96	1,16
HS03	20,18	28,29	38,05	53,74	1,10
HS04	62,97	217,20	279,33	392,59	1,18
HS05	9,09	18,95	25,30	29,51	1,11
HS06	23,58	37,14	60,39	67,30	1,09
HS07	56,21	148,16	172,70	228,23	1,12
HS08	128,71	225,20	231,12	311,99	1,07
HS09	25,89	98,01	198,18	161,59	1,18
HS10	25,91	139,87	133,33	85,83	1,16
HS11	6,12	33,44	43,23	48,14	1,22
HS12	32,81	47,76	165,26	96,53	1,14
HS13	4,93	7,02	8,77	16,71	1,11
HS14	0,70	1,01	0,53	0,96	1,11
HS15	62,05	164,80	371,27	159,61	1,11
HS16	35,59	117,33	156,61	217,12	1,17
HS17	47,15	123,28	278,38	99,25	1,09
HS18	85,98	141,79	183,48	286,65	1,11
HS19	85,11	173,23	226,89	272,99	1,10
HS20	63,73	126,47	143,31	165,05	1,08
HS21	102,76	192,69	229,54	306,14	1,09
HS22	91,16	270,68	266,26	370,21	1,13
HS23	102,73	148,57	170,39	187,81	1,05
HS24	79,50	70,28	114,11	158,44	1,20
<b>Total</b>	<b>1267,57</b>	<b>2852,78</b>	<b>4016,73</b>	<b>4292,92</b>	<b>1,10</b>

Source: Eurostat and own calculations, 2018

The Slovak Republic has a positive trade balance in relation to commodity aggregations HS01, HS10, HS11, HS12 and HS17. Other commodity aggregations reached negative value of trade balance.

### ***Trends in competitiveness of the Slovak agricultural foreign trade***

Competitiveness of the Slovak agricultural export has been developed in long-term horizon. We used following indicators for the competitiveness evaluation: RCA and, GLI indexes. Comparative advantages are achieved in case of aggregations: HS01 (Live animals), HS04 (Dairy produce; birds' eggs; natural honey), HS10 (Cereals), HS11 (Products of the milling industry; malt; starches; inulin; wheat gluten), HS12 (Oil seeds and oleaginous fruits), HS17 (Sugars and sugar confectionery) and HS18 (Cocoa and cocoa preparations).

**Table 5: Competitiveness of the Slovak agricultural foreign trade**

Average annual value of Indicators	RCA	GLI
HS01	1,11	0,63
HS02	-0,76	0,52
HS03	-1,41	0,32
HS04	0,38	0,89
HS05	-0,21	0,74
HS06	-1,37	0,32
HS07	-1,12	0,39
HS08	-0,86	0,47
HS09	-0,25	0,74
HS10	1,22	0,59
HS11	1,75	0,40
HS12	1,21	0,59
HS13	-2,10	0,17
HS14	-1,76	0,36
HS15	-0,23	0,74
HS16	-0,71	0,54
HS17	0,92	0,71
HS18	0,26	0,93
HS19	-0,44	0,64
HS20	-0,79	0,50
HS21	-0,26	0,72
HS22	-0,38	0,67
HS23	-0,58	0,59
HS24	-2,80	0,11

Source: Eurostat and own calculations, 2018

## **5. Conclusion**

Based on findings concerning the trends in commodity and territorial structure of the Slovak agricultural trade, following conclusions can be stated. The Slovak agricultural trade is developing very dynamically over time. Agricultural exports increased more than doubled - from Euro 844.21 million in 2004 to more than Euro 2 854.77 million in 2017; imports also grew significantly from Euro 1 267.57 million to more than Euro 4 292.92 million in the same period. Negative trend is seen in the development of trade balance. The most important agricultural export aggregations are following: HS01 (Live animals), HS04 (Dairy produce; birds' eggs; natural honey), HS10 (Cereals), HS17 (Sugars and sugar confectionery) HS18 (Cocoa and cocoa preparations ) and HS12 (Oil seeds and oleaginous fruits). Comparative advantages are achieved in case of aggregations: HS01 (Live animals), HS04 (Dairy produce; birds' eggs; natural honey), HS10 (Cereals), HS11 (Products of the milling industry; malt; starches; inulin; wheat gluten), HS12 (Oil seeds

and oleaginous fruits), HS17 (Sugars and sugar confectionery) and HS18 (Cocoa and cocoa preparations).)

## References

1. Balassa, B. (1965), Trade Liberalization and Revealed Comparative Advantage, Manchester School of Economic and Social Studies, 33, 99-123
2. Bielik P. et al. (2010), Economics, Social Policy and citizen-ship in the EU evidence of V4 countries and perspectives for Ukraine. SPU, Nitra; ISBN 978-80-552-0448-2.
3. Bielik P., Smutka L., Svatoš M., Hupková D. (2013), Czech and Slovak agricultural foreign trade - two decades after the dissolution. Agric. Econ. Czech, 59: 441-453.
4. Greenaway, D. and C. Milner (1993), Trade and Industrial Policy in Developing Countries:
5. A Manual of Policy Analysis, The Macmillan Press, esp. Part IV Evaluating Comparative Advantage, 181-208.
6. Lafay, G. (1992), "The Measurement of Revealed Comparative Advantages", in M.G. Dagenais and P.A. Muet eds., International Trade Modeling, Chapman & Hill, London.
7. Récky, R., Hambáľková, M (2014), Marketingové prístupy k výrobe, spracovaniu a odbytu olejnin v SR (Marketing approaches to production, processing and sale of oilseeds in Slovakia). 1. edition. Nitra : Slovenská poľnohospodárska univerzita, 137 p. ISBN 978-80-552-1169-5
8. Smutka L., Belová A. (2011), Vývoj a štruktúra agrárneho zahraničného obchodu zemí Visegrádskej skupiny v posledných dvadsi rokoch. (Development and Structure of Agrarian Foreign Trade of Visegrad Group in last Twenty Years.) Powerprint, Praha; ISBN 978-80-87415-28-3.
9. Valder, A., Smutka, L., Hes, A. (2011), Vnitřní a vnější faktory formující český trh s potravinami . Praha: Powerprint, 124s. ISBN 978-80-87415-27-6.

## KNOWLEDGE ABOUT MOBBING AMONG STUDENTS OF THE FACULTY OF MANAGEMENT OF CZĘSTOCHOWA UNIVERSITY OF TECHNOLOGY

*Małgorzata RANDAK-JEZIERSKA*

*Częstochowa University of Technology, Częstochowa, Poland*

*E-mail: gosiarandak@wp.pl*

**Summary:** Mobbing represents a dysfunction of interpersonal relations and one of the pathologies in human resource management in organizations. The aim of the paper was to evaluate the level of knowledge about mobbing among university students of management sciences, i.e. future managers of organizations. The research method was a questionnaire interview conducted with the use of the auditorium questionnaire. The results obtained may be used by universities to adapt curricula concerning pathologies in human resource management to market needs.

**Keywords:** knowledge, mobbing, student

### 1. Introduction

Mobbing can be viewed as a dysfunction of interpersonal relations and one of the pathologies in human resource management in organizations. The phenomenon of mobbing is a serious social problem. A survey conducted by the Centre for Social Opinion Research (CBOS) in 2014 showed that almost 19% of employees had been harassed by their supervisors or other employees in the 5 years preceding the survey, and, according to 5% of them, this type of acts was frequent. These results were confirmed one year later in a survey on mobbing in Polish companies conducted by Sedlak & Sedlak on a sample of 1005 employees from all over Poland (as cited in: Portal Branżowy HR Polska 2019). 4.88% of respondents experienced workplace mobbing at least once a week and about 15% of respondents experienced this problem not more often than once a month. This type of behaviour was not found only in less than 5% of the employees surveyed. 88% of respondents experiencing workplace mobbing during the 6 months preceding the survey reported behaviours reducing their sense of professional usefulness, 83% stated that they were isolated and eliminated from the team, and 71% of respondents described cases of threatening and harassment. At the same time, 75% of the respondents declared that the organizations employing them did not take any measures to prevent mobbing, or the employees did not hear about such initiatives. Bad treatment was most often complained about by rank-and-file employees. Women were more likely to be affected by such behaviour than men (cf. Kara et al., 2018, pp. 1453-1467; Góralewska-Słońska, 2019, pp.156-173).

The aim of the paper was to evaluate the level of knowledge about mobbing among university students of management sciences, i.e. future managers of organizations. Their knowledge about mobbing determines the future attitudes of the organization towards this phenomenon, the choice of the reactions to mobbing, development of corporate anti-mobbing policies, preparation and implementation of anti-mobbing procedures, supporting victims and modification of the undesirable behaviour of the perpetrators of mobbing.

## 2. Mobbing – theoretical background

Mobbing is defined as persistent moral harassment, and psychological terror in the workplace (Sidor – Rządowska, 2003; Kokot 2011; Szewczyk, 2012).

Definitions emphasize the aspect of deliberate harm to the employee (by ridiculing, intimidation, humiliation, harassing, destruction of authority, discrediting his or her quality of work, isolation, depriving of access to information, etc.) by one or more people in order to subordinate the employee or make them leave work (cf. Popp, 2017, pp.1-7). The consequences of this type of behaviour are serious for both the employee and for the entire organisation. The employee who is the victim of mobbing may experience underestimated self-esteem, guilt, shame, sense of harm and helplessness, anxiety; depressive states, loss of physical and mental integrity, post-traumatic stress disorder, suicidal thoughts, addictions, etc. (cf. João, Portelada, 2016, p.11; Tatar, Yuksel, 2019, pp. 57-62). These symptoms destabilize the professional activity of the employee and even lead them to give up the profession. Furthermore, the effects of mobbing on the organization include: employee absenteeism, high staff turnover, insufficient professional usefulness of the employee, which translates into low productivity and efficiency, loss of good corporate image and customer trust. Obviously, all these effects translate into concrete financial losses for companies (Kokot, 2011; Hirigoyen 2012).

In Poland, the legal definition of mobbing was defined in the Labour Code with the Act of 14 November 2003, which came into force on 1 January 2004<sup>1</sup>.

The definition emphasized (Roguska-Kikoła, Piwowska-Reszka, 2014, pp. 17-18):

1. Subject and object levels (actions concern or are directed against the employee).
2. Temporal level (emphasis on persistence and long duration of harassment or intimidation).
3. Outcome level (the employee underestimates his or her professional usefulness).
4. Aim level (the aim of the perpetrator is to humiliate, ridicule, isolate or eliminate the employee from the team).

There is a problem with the duration of these behaviours so that they can be considered as mobbing. In the literature, the time frame defined by H. Leymann functioned for a long time. According to this researcher, mobbing occurs when the actions aimed against the employee appear at least once a week for at least 6 months. Currently, many researchers are of the opinion that this period of time cannot be a criterion for the diagnosis of mobbing, because each employee has a different threshold of resistance to stress (cf. Warszewska-Makuch, 2019, pp. 249-257). It is stressed, however, that the individual actions of the mobber are insufficient for their behaviour to be considered as mobbing. Mobbing is an extended process in which specific actions against victims are taken in a regular and cyclical manner (Kokot, 2011, pp. 16-17; Hirigoyen, 2012). Furthermore, according to the Labour Code, the time needed to classify behaviour as mobbing cannot be predicted and determined in advance. The time of intimidation or harassment of an employee as defined by the Labour Code should be considered individually. The important factor is the long duration and persistence of the mobber's actions, leading the victim to an underestimation of professional usefulness, isolation from the team or elimination from work (Szewczyk, 2012; Roguska-Kikoła, Piwowska-Reszka, 2014, pp. 19-20).

---

<sup>1</sup> Journal of Laws No. 213, Pos. 2081.

A mobber can be an employer or a co-worker. According to the Labour Code, in certain cases, even a key customer or a member of the employer's family may be a mobber. However, regardless of who the mobber is actually, the employer always takes the legal responsibility for workplace mobbing. This happens even in cases when the employer did not know about the occurrence of this problem in the organization, because as an employer, he or she is obliged to ensure a safe working environment, develop the rules of social coexistence in the workplace and actively prevent the occurrence of undesirable phenomena in the organization. The mobbing victim may also assert his claims for mobbing (e.g. indemnity for medical costs) in a civil lawsuit against the actual mobber who has been proven to be the perpetrator (Roguska-Kikoła, Piwowarska-Reszka, 2014, pp. 43-44).

### **3. Research methodology**

The research on the knowledge of mobbing was conducted at the Faculty of Management of the Częstochowa University of Technology among first-year students of undergraduate studies in the field of Finance and Accounting.

The study covered 72 students. The group of respondents was comprised of 56 women and 16 men. The majority of women in the research group proves that the faculty is heavily feminized. The age of the respondents ranged from 18 to 23 years.

The research method was a questionnaire interview conducted with the use of the auditorium questionnaire. The questionnaire contained nine questions, one closed-ended (filtering) and eight open-ended questions.

### **4. Discussion**

The majority of the university students surveyed were familiar with the concept of mobbing, were able to define it correctly, were able to enumerate the most common actions pointing to mobbing, were able to list the effects of mobbing on an employee and indicate who can become a mobber in an organization. 42.8% of the men surveyed and 24.5% of the women could not enumerate the factors facilitating mobbing in the workplace. The same percentage of respondents did not mention the effects of mobbing on organizations. Among the responses of the men surveyed who mentioned the effects of mobbing on organizations, the first place was taken by the negative image of the organization in the environment combined with the loss of social trust. The women surveyed mentioned the worsening of the team's functioning in the first place and the loss of the company's good image in the second. The most challenging question was concerned the understanding of the term persistence in relation to mobbing. 78.6% of men and 49% of women failed to answer this question. Furthermore, most men did not know that under the Labour Code, the responsibility for mobbing lies with the employer.

The results showed that the level of students' knowledge of mobbing is quite high, especially in the case of women. Nowadays, in the era of easy access to information, the respondents may at any time supplement this knowledge depending on their needs. However, this does not change the fact that sensitizing students to pathologies that may occur between people in the organization plays an extremely important role in the process of preparing them for the profession of manager. Realization what mobbing is, what its effects are, what makes it easier to occur in an organization, what provisions on mobbing have been introduced into the Labour Code and who is responsible for mobbing under the Labour Code equips students with

a specific tool helpful in the future jobs to identify the first signals of inappropriate behaviour and take adequate measures.

According to WHO recommendations, programmes to prevent mobbing in organizations should include the following activities (Kokot, 2011, pp. 57-80):

1. Primary prevention (ensuring safe working conditions; supporting cooperation; creating a good organizational climate; promoting fair play; educating in constructive problem-solving).
2. Secondary prevention (improvement of social competences of employees, such as assertiveness; ability to communicate, coping with stress, resolving conflicts, developing empathy, teamwork, introduce changes).
3. Tertiary prevention including psychological, legal and institutional support.

Researching the level of students' knowledge of mobbing, drawing their attention to the importance of the problem, helping them develop knowledge and relevant skills is therefore included in the categories of preventive actions reducing the probability of occurrence of undesirable phenomena in the future among their subordinate employee teams.

## 5. Conclusion

It is worth attracting the attention of the university students (future managers in organization) in the educational process to the following elements related to the dynamics of processes occurring in the group:

1. Sensitization to various types of disturbances in employee relations.
2. Developing skills for analysis of mental stress in the workplace.
3. Providing knowledge and skills related to the recognition and prevention of adverse events in the organization.
4. Recognition of techniques of social effect.
5. Developing communication skills, including familiarizing with the barriers from the standpoint of the sender and recipient of the message, practising "Me" communication.
6. Learning assertiveness.
7. Development of abilities of coping with stress.
8. Managing conflicts in the organization.
9. Change management.
10. Developing self-management skills and time management that determines the ability to manage people.
11. Self-motivation and motivating others.
12. Orientation towards self-development and development of the team, etc.

An employee-friendly work environment in which the employee, in accordance with their own values and those of other people, can develop their skills and achieve their goals represents the capital not only of an individual but also of the entire organization.

## References

1. CBOS (2014), *Komunikat z badań. Szykany w miejscu pracy*, Warszawa, No. 109.
2. Góralewska-Słońska A. (2019), *Experiencing mobbing at workplace facing psychological gender and occupational burnout*, "Management - Poland", 23:(1), pp.156-173. DOI: 10.2478/manment-2019-0009

3. Hirigoyen M.-F. (2012), *Molestowanie moralne. Perwersyjna przemoc w życiu codziennym*, Wydawnictwo W drodze, Poznań.
4. João A. L. da Silva, Portelada A. F. S. (2016), *Mobbing and Its Impact on Interpersonal Relationships at the Workplace*, "Journal of Interpersonal Violence", No. 8, pp. 1-16. DOI: 10.1177/0886260516662850
5. Kara D., Kim H., Uysal M. (2018), *The effect of manager mobbing behaviour on female employees' quality of life*, "Current Issues in Tourism", 21 (13), pp. 1453-1467. DOI: 10.1080/13683500.2015.1078298
6. Kokot A. (2011), *Mobbing. Zagrożenie życia zawodowego pracownika*, Wydawnictwo Kujawsko-Pomorskiej Szkoły Wyższej w Bydgoszczy, Bydgoszcz.
7. Popp J. (2017), *Social Intelligence and the Explanation of Workplace Abuse*, "Journal of Workplace Rights, SAGA Open", 7:(2), pp. 1-7. DOI: 10.1177/2158244017715076
8. Portal Branżowy HR Polska, *Mobbing w polskich firmach*, <https://hrpolska.pl/hr/czytelnia/mobbing-w-polskich-firmach> (access: 22.06.2019).
9. Roguska-Kikoła A., Piwowarska-Reszka M. (2014), *Mobbing i dyskryminacja w stosunkach pracy. Zagadnienia praktyczne*, Difin, Warszawa.
10. Sidor - Rządkowska M. (2003), *Mobbing – zagrożenie dla firmy i pracowników*, „Zarządzanie Zasobami Ludzkimi”, No. 2, pp. 77-85.
11. Szewczyk H. (2012), *Mobbing w stosunkach pracy. Zagadnienia prawne*, Wydawnictwo Naukowe Scholar, Warszawa.
12. Tatar Z. B., Yuksel S. (2019), *Mobbing at Workplace - Psychological Trauma and Documentation of Psychiatric Symptoms*, "Noropsikiyatri Arsivi - Archives of Neuropsychiatry", 56:(1), pp. 57-62. DOI: 10.29399/npa.22924
13. The Act of 14 November 2003 (Journal of Laws No. 213, Pos. 2081).
14. Warszewska-Makuch, M. (2019), *Radzenie sobie ze stresem wywołanym mobbingiem w miejscu pracy. Przegląd parasolowy*, „Medycyna Pracy”, 70:(2), pp. 249-257. DOI: 10.13075/mp.5893.00758

## PATTERNS OF SUSTAINABLE CONSUMPTION IN BEHAVIOUR OF ELDERLY PEOPLE ON THE MARKET IN POLAND

*Felicjan BYLOK*

*Czestochowa University of Technology, Faculty of Management, Czestochowa, Poland*

*E-mail: byl.f.s@zim.pcz.pl*

**Summary:** In discussions on sustainable development, significant topics relate to sustainable consumption which refers to the utilization of products in such a way as to fulfil the basic needs and contribute towards better standards of living with the simultaneous minimization of the use of natural resources and toxic materials.

**Aim:** The search for the answers to the following questions: To what extent do the patterns of sustainable consumption occur in consumer behaviour among elderly people in Poland and what barriers emerge in their implementation?

**Methodology:** The method of critical analysis of literary sources and a standardized questionnaire conducted with the CATI technique was applied in the research.

**Findings:** The empirical research reveals a relatively high level of declaratory consumer behaviour characteristic of sustainable consumption. The potential spread of the patterns of sustainable consumption is certified by the declarations of older consumers that draw attention to the ecological origins of products, while also express readiness to change their purchasing habits in favour of more environmentally friendly items.

**Research limitations:** The research results acquired with regard to their declarative nature constitute the basis of the limited conclusions. The research related to the declarations of respondents which do not always match the actual behaviour in the area of sustainable consumption. With relation to this fact, it is worth undertaking qualitative research with the aim of becoming familiar with the actual behaviour of consumers in the area of sustainable development.

**Practical implications:** The herein paper provides information in terms of the magnitude of the potential of demand for ecological products among elderly people for enterprises that offer such products on the market.

**Social implications:** The paper indicates potential changes in the approach of consumers with relation to the choice of products and forms of consumption on the market and improvement of the quality of their lives.

**Keywords:** consumer, consumer behaviour, sustainable consumption, ecological consumption, elderly people

### 1. Introduction

In the introduction, please describe the main objectives of the research, the importance of the researched field, your reason for choosing the specific field, its interconnection with current economic developments, the added value of the researched topic and its uniqueness should also be mentioned in this section. In deliberations on sustainable development issues associated with alternative ways of consumption with regard to consumerism come up, whose aim is to restrict the threats to the natural and social environments. One of these issues is the aspect of sustainable development, whose reference point is acknowledged to be the values connected with responsibility and justice, which are the bases of shared responsibility of consumers for the social and environmental effects of consumption.

An increasing number of people perceive the effects of over-consumption in terms of the natural environment – the increase in post-consumption waste, growth in use of energy, depletion of afforested areas, growth in production of consumer and social goods, among others, the atomization of social life, excessive individualism, development of addictions (e.g. shopaholism). It is assumed that some of the consumers that are conscious of the damage that over-consumption exerts on the natural and social environments are changing their consumption habits in the direction of adjusting towards the patterns of sustainable consumption. The aim of the herein paper is to search for the answers to the following questions: To what extent do the patterns of sustainable consumption occur in consumer behaviour among elderly people in Poland and what barriers emerge in their implementation? With the aim of finding answers to these questions, a method of critical analysis of literary sources and a standardized questionnaire was applied in the research with inductive reasoning.

## **2. Sustainable consumption**

Sustainable consumption is a significant part of sustainable development. Its idea was expanded upon in the documents of Agenda 21 (containing specific recommendations for the realization of sustainable consumption), while subsequently the Summit on Sustainable Development in Johannesburg. This contains a set of rational purchasing decisions aimed at achieving balance by the consumer, as well as the realization of the aims of sustainable development, namely, the principles of justice within a generation and between generations (Kryk, 2011). In 1994, sustainable consumption was first defined in the United National Environment Program (UNEP) as “the use of services and related products which respond to basic needs and bring a better quality of life, while minimizing the use of natural resources and toxic materials as well as emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations” (Liu, 2017, p.1). There is a similar definition of sustainable consumption by B. Mroza (2013), for whom there is a moderate and economical utilization of natural resources and ecological responsibility with regard to the future generations. The approach to research on sustainable consumption was developed in the 21<sup>st</sup> century. Some researchers focus on the analysis of the factors determining sustainable consumption, particularly with relation to the impact of the individual behaviour of consumers on the quality of the natural environment (Liu et al., 2012; Şener and Hazer, 2008; Wang et al., 2014; Young et al., 2010). Some researchers perceive sustainable consumption as a form of anti-consumption (Black, 2010), while others identify its practices with a green lifestyle (Gilg, Barr and Ford, 2005).

When analysing the concepts of sustainable consumption it is possible to distinguish three ways of perception: as an alternative way of life, as ecological consumption and as a holistic notion (Dabrowska et al., 2015). The first approach assumes the departure from the hitherto way of consumption focused on the fulfilment of secondary needs. The most significant assumptions of this approach may be distinguished as follows: life in small self-sufficient communities in order to restrict the environmental costs of transport to a minimum; restricting the fulfilment of needs to the minimum required for life; taking action against what leads to the degradation of the natural environment. In the second approach, it is assumed that the most important aim should be that of ecological consumption. The key to its realization is the growth of rational and conscious ecological attitudes and behaviour based on profound values (Ottman, 2003). As noted by R. Harrison, R. Newholm and D. Shaw (2005) during the course of acquiring goods, an ecological consumer not only looks at himself, but first and foremost at the world around him. In turn, the holistic approach assumes that the consumer takes account

of the social effects while making decisions to acquire a specific product (including human rights, e.g. fair wages for the employees hired), while also inter-generational and economic effects.

The approaches to sustainable consumption presented have a common denominator that strives to limit the degradation of the natural environment by over-consumption. In order for consumption not to cause damage in an ecological dimension, the principles of sustainable development should be respected.

The implementation of the concepts of sustainable consumption requires determination and a multitude of changes that refer to, among others, establishing the proportion between current and future consumption, while also the optimization of satisfaction with consumption with the simultaneous preservation of the appropriate level of quality and usefulness of the natural resources and natural environment, more or less equal distribution of consumption between all types of people, establishing the appropriate proportion between tangible consumption and the fulfilment of intangible needs (Kielczewski, 2007).

### **3. Methodology**

The problematic issues of sustainable consumption are being increasingly undertaken in research in terms of the directions of changes in the sphere of consumption. One of these undertakings was that of research on the patterns of sustainable consumption of elderly people within the framework of the research project entitled the “*Competences of consumers as a stimulant of innovative behaviour and sustainable consumption*”. The research was conducted on 239 senior citizens aged 60 or more in Poland who possessed consumer competences in the sphere of sustainable consumption with the use of a standard questionnaire conducted with the CATI technique during the course of face-to-face interviews in the homes of the respondents.

### **4. Results and discussion**

One of the significant issues facilitating the definition of the scope of occurrence of sustainable consumption among the elderly is the perception of its essence. Research indicates that the respondents identified the notion with purchasing products that are necessary (21%), purchasing in moderation, which is appropriate to the financial possibilities (21%), while also well-thought out purchases (17%). A relatively large group of elderly people were aware of what this entails (38%). Hence, the elderly first and foremost refer to this notion in terms of the process of purchasing. A significant stage of this process is that of taking purchasing decisions. Consumers at this stage draw attention to the ecological issues associated with care for the natural environment to a varying extent. The analysis of the data presented in Table 1 indicates that the analysed respondents most frequently pay attention to the composition of the product, the locality of the product and the price of the product when making purchasing decisions. They relatively seldom take account of the suitability of the packaging for recycling and information on labels.

**Table 1: Impact of factors on purchasing decisions associated with sustainable consumption in percentage form**

Type of behaviour	Frequency			
	Always	Often	Seldom	Never
Composition of product,	70	21	6	3
Content of preservatives	27	36	26	12
Size of packaging	45	21	26	9
Susceptibility of packaging to recycling	21	23	31	26
Information on labels	21	26	27	26
Price of products	62	28	9	1
Country of origin of product (particularly fruit, stimulants, cocoa)	40	33	17	9
Locality of product	72	23	4	1
Fair Trade logo	50	26	18	6

Source: self-analysis

A significant indicator of pro-ecological behaviour is to check the chemical composition of the cleaning agents with regard to their damaging effect on the environment. Research shows that this is always checked by 30% of elderly people, often checked by 26% of senior citizens, seldom checked by 25%, whereas never checked by 19% of elderly people. To conclude, the pattern of consumption that is characteristic of sustainable consumption in the process of purchasing products among elderly people is to pay attention to the composition of the product in terms of the scope of damage to the natural environment.

A further stage in the process of consumer behaviour is the utilization of products. In the area of sustainable consumption, the utilization of goods is to a large extent associated with the pro-ecological approach, which encompasses, among other things, the consumption of ecological goods (primarily food), preference in terms of the consumption of goods that “create” small quantities of post-consumption waste, limitation of the use of energy and water and the minimization of post-consumption waste. In the case of the elderly people analysed, the pro-ecological attitudes are associated with the use of products of an ecological origin, in which the majority of those analysed indicated this behaviour (81%), whereas 14% of respondents indicated the consumption of ecological products as being indifferent. A detailed analysis of the forms of pro-ecological behaviour (Table 2) illustrates that most frequently elderly people declare the segregation of rubbish, going to shops with a multi-use bag, giving away unnecessary items to other people, while also not disposing of the purchased food into a bin despite being of full value and possible to consume. Similar results were acquired in research on the degree of occurrence of pro-ecological behaviour in Poland, which reveal that most frequently people declare the avoidance of purchasing products that are detrimental to the environment (72%), as well as the segregation of household waste, in which 74% of Polish people claim that they segregate household waste (CBOS (2011)).

**Table 2. Frequency of pro-ecological behaviour in percentage form**

Type of behaviour	Frequency		
	Never	Seldom	Often
Disposing of purchased food into litter bin despite being of whole value and possible to consume	85	13	2
Segregation of rubbish (separating glass, plastic, paper from the rest)	8	13	79
Utilizing running water during course of washing dishes	27	44	30
Keeping household goods and audio-visual goods on standby – failure to switch off the power	19	30	51
Going to a shop with a multi-use bag (ecological bag)	11	14	75
Refusing to accept the purchased items in a single-use plastic bag	37	41	22
Giving away unnecessary items to other people (e.g. clothing, books)	5	28	68
Printing or utilizing the reverse side of sheets of paper	28	39	33
Choosing to drive a car despite the fact that there is an easier or faster route by public transport	44	33	23
Subsidizing organizations/actions of NGOs dealing with pro-ecological activity or being a member	65	28	7
Participating in local actions of a pro-ecological nature (of type of Earth Day, cleaning a forest or close environs)	62	33	4

*Source: self-analysis together with team*

One of the assumptions of sustainable consumption is the propagation of restrictions in the sphere of the overuse of the mediums of energy and water. Self-analysis reveals that the majority of elderly people do not pay attention to the limitation of the use of electric power (55%). A mere 18 % of those analysed indicated that they do so frequently or very frequently. One of the possibilities of saving electric power is to switch off the power for household goods and audio-visual equipment. Such behaviour is only characteristic of 19% of elderly people. There is a slightly better situation in the case of the use of water, whereby they pay attention to the necessity of limiting the use of water often or very often (26%), whereas 46% of those analysed declare a lack of action in terms of its restriction. One of the possible actions taken in order to reduce the use of water is the restriction of the use of running water during the course of washing dishes. Such behaviour is characteristic of a mere 27% of respondents. In the case of the use of gas, 42% declare a lack of restrictions in the use of this resource, while 32% indicated they limit their use of gas often or very often. By way of conclusion, at the stage of purchasing, the patterns of consumption that are characteristic of sustainable consumption are the segregation of post-consumption waste (separation of glass, plastic and paper from other items) and abstaining from single-use plastic bags in favour of multi-use bags for shopping (ecological bags).

The final stage of consumer behaviour is the disposal of or wastage of consumer goods. A significant problem for contemporary consumption stimulated by the ideology of consumerism is the wastage of the consumer goods that are suitable for use. This primarily relates to food products that have not lost their features of taste, nor has their best before date expired. Self-analysis has shown that the majority of elderly people do not throw away food products (85%). If they decide to dispose of food, this first and foremost refers to fruit and vegetables, while bread, grain products and smoked meat to a lesser extent. Different results were acquired in research by Millward/Brown SMG/KRC2, in which 30% of those analysed admitted to disposing of non-consumed food, of which as many as 70% of people had done so within the past month (Federacja Polskich Banków Żywności, 2012)

The area that is significant for sustainable consumption is that of the social environment. One of the actions undertaken by consumers identifying with sustainability may become the propagation of the consumption of local produce connected with the local culture. Consumers who are focused on pro-local products search for products that are embedded in the local traditions and are rooted in the local culture that have an impact on the development of local trade, which in turn has an impact on the growth of local entrepreneurship. Self-analysis indicates that the local factor in choosing a product is important for 95% of elderly people. An important motive in this case is that of consumer ethnocentrism, which reflects the conviction that the moral obligation of a consumer is to purchase local products (Wątroba, 2006). To conclude, a further pattern of sustainable consumption that is characteristic of elderly people is the acquisition of local products. This is associated with the conservative attitudes connected with the attachment to the products that are associated with positive emotions.

One of the forms of sustainable consumption is that of shared consumption, which involves the shared use of products and services by at least two participants that relate to the property of some of those people who are motivated by the intricate set of convictions and inclinations of consumers with regard to this form of consumption (Małecka, Mitreğa, 2015). Research indicates that in the majority of cases, elderly people are not interested in this form of consumption (68%). A mere 32% of respondents acknowledged shared consumption to be important, whereas only 5% deemed it to be very important in their lives. Different research results were acquired by Wardak and Zalegi (2013, p.23), which indicate that among the various forms of collaborative consumption, Polish people declare the desire to share products in their possession, namely lending people from the neighbourhood various items such as tools and renting flats or rooms peer-to-peer in their own flats, while also the potential redistribution of used products that have utilization value, namely, swapping clothing, books, films or other items.

The further development of sustainable consumption among elderly people is conditioned by a change in the level of awareness in favour of greater care for the natural environment, as well as greater knowledge relating to patterns associated with this form of consumption. The self-evaluation of the scope of knowledge associated with patterns characteristic of this form of consumption indicates that a slight majority of senior citizens have a positive evaluation of knowledge in terms of their familiarity with the aforesaid subject (58%). A total of 42 % of respondents had a negative evaluation of their knowledge in this area.

## **5. Conclusion**

Propagating the idea of sustainable consumption is extraordinarily important for ecological reasons, as in the contemporary world the prevalent imperative of economic growth based on over-consumption stimulated by the pursuit and consumer aspirations have an impact on the reduction of the non-renewable resources of the natural environment. In order to counteract the over-exploitation of the natural resources and the degradation of the environment by means of the production of post-consumption waste, taking action in favour of halting over-consumption is becoming necessary via the propagation of the patterns of sustainable consumption. Research on elderly people reveals that they are only subject to chosen patterns of sustainable consumption which are beneficial for them. A significant barrier to further growth in this form of consumption is the limited knowledge relating to its patterns and low level of ecological awareness.

Despite the fact that elderly people pay attention to ecological aspects in terms of consumer behaviour to a restricted extent, there is great potential in this sphere. It is possible to state that the awareness of CSR for the natural environment among senior citizens as consumers shall become widespread and have an impact on the acquisition and use of goods that are friendly to the natural environment. The research results acquired with regard to their declarative nature constitute the basis of the limited conclusions. The research related to the declarations of respondents which do not always match the actual behaviour in the area of sustainable consumption. With relation to this fact, it is worth undertaking qualitative research with the aim of becoming familiar with the actual behaviour of consumers in the area of sustainable development.

## References

1. Black, I. (2010), Sustainability through anti-consumption. *Journal of Consumer Behaviour*, 9:(6), pp. 403–411.
2. Centrum Badań Opinii Społecznej (2011), Zachowania proekologiczne Polaków, Komunikat z badań, Warszawa
3. Dąbrowska A., Bylok F., Janoś-Kresło M., Kielczewski D., Ozimek I. (2015), *Kompetencje konsumentów – innowacyjne zachowania, zrównoważona konsumpcja*, Wyd. PWE, Warszawa
4. Gilg, A., Barr, S., & Ford, N. (2005), Green consumption or sustainable lifestyles? Identifying the sustainable consumer. *Futures*, 37:(6), pp. 481–504.
5. Harrison R., Newholm T., Shaw D. (2005), Pressure groups, campaigns and consumers, In: R. Harrison, T. Newholm, D. Shaw (eds) *The Ethical Consumer*, SAGE, London
6. Kielczewski D. (2007), *Struktura pojęcia konsumpcji zrównoważonej*, „*Ekonomia i Środowisko*”, 2:(32), pp. 46-47.
7. Kryk B. (2011), *Konsumpcja zrównoważona a proekologiczne style życia*, „*Studia i Materiały Polskiego Stowarzyszenia Zarządzania Wiedzą*”, nr 51, pp. 206-218.
8. Liu X., Wang C., Shishime T., Fujitsuka T. (2012), Sustainable consumption: green purchasing behaviours of urban residents in China. *Sustainable Development* 20: 293–308.
9. Liu, Y., Qu, Y., Lei, Z. and Jia, H. (2017), Understanding the Evolution of Sustainable Consumption Research. *Sustainable Development*, 25:(5), pp. 414-430., DOI: 10.1002/sd.1671
10. Małecka A., Mitręga M. (2015), *Konsumpcja kolaboratywna - wyzwania pomiarowe i menedżerskie w kontekście tzw. ride sharing*, „*Zeszyty Naukowe Uniwersytetu Szczecińskiego. Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania*”, nr. 39, T. 2 Zarządzanie, pp. 139-150.
11. Marnowanie żywności w Polsce i Europie (2012), Federacja Polskich Banków Żywności, Warszawa
12. Mróz B. (2013), *Konsument w globalnej gospodarce. Trzy perspektywy*, Oficyna Wydawnicza Szkoła Główna Handlowa w Warszawie, Warszawa
13. Ottman J. A. (2003), *Green Marketing: Challenges and Opportunities for the New Marketing Age*. NTC Business Books, Lincolnwood
14. Şener A, Hazer O. (2008), Values and sustainable consumption behaviour of women: a Turkish sample. *Sustainable Development*, 16:, pp.291-300.
15. Wang P., Liu Q., Qi Y. (2014), Factors influencing sustainable consumption behaviours: a survey of the rural residents in China. *Journal of Cleaner Production*, 63:, pp. 152–165.
16. Wardak P., Zalega T. (2013), *Konsumpcja kolaboratywna jako nowy trend konsumencki*, „*Studia i Materiały*”, 16:, pp. 7-32.
17. Wątroba W. (2006), *Społeczeństwo konsumpcyjne w dobie globalizacji*, Wyd. Akademii Ekonomicznej im. O. Langego we Wrocławiu, Wrocław
18. Young W., Hwang K., McDonald S., Oates C. J. (2010), Sustainable consumption: green consumer behaviour when purchasing products. *Sustainable Development*, 18:, pp. 20-31. <http://dx.doi.org/10.1002/sd.394>

## UNIVERSITIES IN POLAND AS SOCIALLY RESPONSIBLE ENTITIES: CSR AT SELECTED UNIVERSITIES IN KRAKOW

*Łucja KAPRALSKA<sup>1</sup>, Marzena MAMAK -ZDANECKA<sup>2</sup>*  
*<sup>1,2</sup> Academy of Science and Technology, Krakow (AGH), Poland*  
*E-mail: mamak@agh.edu.pl*

### **Summary:**

**Purpose:** In November 2017, 23 universities in Poland signed the Declaration of Social Responsibility of the University. The aim of the article is to present the three pillars on which this strategy is based: principles of Corporate Social Responsibility in their contemporary wording; the specificity of CSR in relation to the university and the social practice of harmonizing educational, scientific and social activities with the business mission and intersectoral cooperation and the foundation of CSR activities.

**Approach:** The assumed goal will be achieved on the base of a case study of selected university which will demonstrate practices implemented to fulfil CRS principles.

**Research limitation and findings:** CSR projects implemented by universities assume diverse forms of activities which limits the possibility of comparing them.

**Practical implications:** The academic dimension of CSR is linked to the contemporary perception of the university which equally emphasizes the marketization and implementation of research results, and education and research activities as well.

**Social implications:** As the main mission of the university as the subjects of social life is to educate the future elites of business, administration and education, it is necessary to develop students' competences such as ethics, prosocial and civic attitudes to become the norm in their further social, professional and business activities.

**Keywords:** CSR, socially responsible university, ethics and work culture, education, stakeholders, sustainable development and innovation

### **1. Introduction**

Corporate social responsibility is a concept well-known since the end of the 19th century but it used to be called differently; some even say that the models for such attitudes could be found in the antiquity (Tylec 2016, p. 514). Nowadays, it has acquired a new meaning and the name of CSR: *Corporate Social Responsibility*. The importance of this concept in modern business philosophy is associated with the fact that on the one hand, businesses or social entities care for their images, and on the other, there are conscious consumers interested not only in the quality of the goods and services they purchase but also their provider's attitude toward their employees, the natural environment, their communication with their local environment groups, and their ethical (or non-ethical) business conduct (Koszembar-Wilk, 2007, p. 140).

We find a similar perception of the CSR phenomenon in the English-language literature on the subject where forms of corporate social commitment include: responsibility in relation to the local community and the natural environment. Mentioned are sharing financial and material resources, and intangible assets, with the local community (*community-giving*), employee volunteering (*employee involvement*), development of enterprise and creation of employment opportunities, particularly for the groups of social exclusion (*entrepreneurship*

*and employability*) and attention to the impact on the environment, and thus on the local community, made by investments (Møller, Erdal, 2003, pp. 5-58). At the same time, from the beginning of the 21st century, the idea of university social responsibility (USR) appears, referring to the above assumptions. Its implementation at Polish universities is the subject of this work. The study uses a case study - a qualitative research strategy, the aim of which is to provide a comprehensive description and understanding of the interested case researchers together with the surrounding context. In addition, the university's websites were analyzed in search of documents and content related to CSR.

## **2. Research Background**

CSR can be defined as an attitude for *"companies at the stage of strategy building to voluntarily consider social interests and environmental protection, and the relations with various stakeholder groups. Being responsible does not only mean that they meet any formal or legal requirements but also increase investments in human resources, environmental protection and relations with the company's environment, i.e. voluntary involvement. Social responsibility is a process within which companies manage their relations with various stakeholders who can have a true influence on successful business"* (<https://www.parp.gov.pl/csr>, access:30-05-2019)

For a dozen years or so, the idea of Corporate Social Responsibility has been widely promoted in Poland and its implementation has been monitored. Responsible Business in Poland reports have been published since 2001. The most recent one, "Responsible Business in Poland 2018. Good practices," report number 17, defines the areas of CSR in Poland as follows:

- social commitment and development of the local community;
- fair labour practices (e.g. health care, recognition of the need to combine various social roles);
- care for the natural environment;
- consumer issues;
- corporate governance (ethics and compliance – the procedures aimed at preventing legal risks);
- human rights (including diversity management, supporting women in business);
- fair operating practices (education, business guidelines) (Górska et al., 2018, pp. 25-207).

<http://odpowiedzialnybiznes.pl/aktualno%C5%9Bci/coraz-wieksza-skala-dzialan-csr-w-polsce-premiera-16-raportu-odpowiedzialny-biznes-w-polsce-dobre-praktyki/> (access: 1-06-2019).

It is worth adding that CSR activities in Poland are supported by the highest level public administration. In 2009, a Corporate Social Responsibility Team was established to act as an auxiliary body to the Prime Minister. Currently, since 2018, the Team has been authorised by the Ministry of Investment and Development, serving as a dialogue platform for various groups interested in raising the ethical standards for business activity in Poland.

## **3. Universities – their Missions and Social Responsibilities**

Universities are at the top level of the education system. Since the 19th century, three tasks have been given to universities: conducting research, teaching and, as a result, serving the society. Those three elements of their mission are subject to the ethos of academic institutions

Nowadays, more than ever before, universities are associated with their social environment, especially with the economy and job market. Universities, now called higher education institutions, have ceased to pursue perfect science or be the "ivory towers;" they have become a part of the economy, the local community and are often the "catalysts of local development" (Purchla, 2012, p. 6). Society requires the university to produce graduates with multiple competencies, who can understand the ever-changing world and who are also equipped with some practical and useful skills, including innovation, creativity, and great enterprise (Szostek, 2015, p. 6).

The university can be perceived in three ways from that new perspective: research can be conceived as "production" of knowledge within the framework of industry-specific paradigms; teaching can be seen as market "production of educational services for a specific market segment; social service can be understood as reproduction of systems of values, culture, and civic attitudes important for certain societies" (Sulejewicz, 2008, p. 50). The reach of social and business environment groups at universities (referred to as "stakeholders") has increased (Piotrowska-Piątek, 2016, p. 85). That makes them acquire, on top of their traditional university duties and functions, some new functions (or some old but newly-defined functions). That is why the idea of social responsibility (USR = University Social Responsibility) is being implemented at universities.

#### **4. The Declaration of University Social Responsibility**

On November 16, 2017, at the conference entitled "Social Responsibility of Science – Challenges for the Academic and Business Environments," 23 universities signed the Declaration of University Social Responsibility. That 12-item document refers to the traditional roles assigned to the university, and to some new ones related to the activities of universities in the constantly changing socio-economic life of our country, including the role of creating new elites and cooperating with business. The document's content relates to the four main areas of activities of higher education institutions: firstly, it refers to the university as an educational institution and a place to nurture academic values (objectivism, conscientiousness and others. Moreover, the need to shape social and civic attitudes of future elites was emphasized; those will foster community-building, creativity, openness, communication, social responsiveness and work culture (items 1, 2, 3). Another area concerns university's activities; subsequent items (4, 5 and 6) are related to the implementation of programs, projects and research important for the development of social responsibility and for solving substantial social problems, also for the introduction of CSR programs into education. The third area (items 7-10) concerns university's work: transparency of its activities, corporate governance; university management covering good practices and the principles of social responsibility, and care for the natural environment reflected in the activities of its employers. The fourth area (items 11 and 12) concerns cooperation with the university's stakeholders (partnership with business and other numerous groups) who should consider the principles of social responsibility.

[https://humanum.pl/wp-content/uploads/2018/10/deklaracja\\_spolecznej\\_odpowiedzialnosci.jpg](https://humanum.pl/wp-content/uploads/2018/10/deklaracja_spolecznej_odpowiedzialnosci.jpg)  
(access: 3- 06-2019)

The declaration also draws attention to the role of Polish universities in implementing the principles of sustainable development. Sustainable development is both an idea and a legally settled principle. Sustainable development in the educational sphere delineates relations on the axis of the market, power and knowledge (Sulejewicz, 2008, p. 50); in the economic sphere - it translates into a positive balance of generated benefits, not only for the present but

also for future generations; in the social sphere - results in the protection of human rights and the formation of relations between all stakeholders in accordance with social norms, including local ones.

As indicated above, 23 universities signed the declaration. It is an open document which can be joined (e.g. AGH joined the list of signatories later) or quit.

## **5. The Practise of Implementing the Idea of the Declaration of University Social Responsibility in Krakow**

The academic environment of Krakow is created by over 20 higher education institutions, both public and non-public. Only three of them - University of Economics, University of Agriculture and AGH University of Science and Technology have signed the Declaration of Corporate Social Responsibility. Universities, the signatories of the Declaration, should serve as a model for upgrading the quality of research and education, solving socio-economic problems and building relations with governmental organizations and NGOs. From this point important are two dimensions of university activity: From this point of view, the two dimensions of the university's activities seem particularly important - the relational dimension, which refers to the network of contacts between groups of stakeholders, thus the university's areas of work: care for academic values and relations with stakeholders (Declaration 1-3, 8, 10-11). The second is the distribution dimension, that is, the sharing of knowledge, intellectual resources with the surrounding of developing cooperation with national and foreign universities, promoting and disseminating achievements and solving important social problems. (Deklaracja pkt. 4-7,9, 12). The whole study on the scope of commitment to socially responsible activities exhibited by the seventeen Cracow universities (public and non-public) was organized around the public records of their activity; the documents and reports published on their websites. The review of documents on the website of the University of Agriculture did not answer the question what activities the university undertook as part of the implementation of the USR idea. The Academy of Economics in Krakow, in turn, implements the principles of the USR orientating its activities to spheres such as the community, work culture, locality, ecology and business, as presented in Table 1.

**Table 1: The Principles of University Social Responsibility of the Academy of Economics in Krakow**

<b>Area</b>	<b>Good Practices</b>
Community	shaping attitudes of integrity and responsibility, integration of students with the university environment, promotion of health and physical culture
Work Culture	Improving communication and sharing knowledge; Counteracting discrimination and indifference; Improving the conditions and style of work
Localism	Building a culture of sharing and cooperation; Support for local organizations, intellectual, physical and cultural development
Ecology	Developing awareness and educational activities; Monitoring and reducing environmental impact; Implementation of pro-ecological projects in the environment
Bussines	Active evolution of the idea of sustainable development, Dissemination of knowledge and skills; Sensitivity to social responsibility of other entities

Source: own elaboration based on <https://e-uczelnia.uek.krakow.pl/course/view.php?id=7527> (access: 15-06-2019).

In addition, to implement USR activities in the academic environment UEK appointed a coordinator and Social Responsibility Team. As it results from the presented data, UEK takes actions in the relational and distribution dimension.

The university which fulfils its obligations to the Declaration most fully is AGH. Being a signatory of the Declaration of University Social Responsibility, AGH is the only university which published a social report. Selected good practices provided in the Declaration and implemented by AGH will be presented as attributed to four main areas of the document (Table 1).

**Table 2: Selected good practices followed by AGH in University's field of work**

<i>The Declaration of University Social Responsibility - Selected good practices followed by AGH</i>
<p>University's field of work (items 1-3 of the Declaration) related to preserving the academic values:</p> <p>Good practice: in 2017, AGH joined the cooperation network of <i>United Nations Global Compact</i>, by accepting the 10 principles of UN Global Compact (in the areas of human rights, labour standards, environmental protection and anti-corruption).</p>
<p>University's field of work (items 4-6 of the Declaration) related to completing programs and implementation projects and to carrying research:</p> <p>Good practice: AGH follows its mission of education on the axis of knowledge, passion and bonding (principle 1, 2 of UN Global Compact).</p>
<p>University's field of work (items 7-10 of the Declaration) refers to the organization of the university's work by organising the principles of inter-university, national and international cooperation for the sake of university's mission, and for the promotion and dissemination of academic achievements:</p> <p>Good practice in terms of CSR economy and innovation: AGH acquires financial resources for research and teaching and for international cooperation (statutory subsidy, NCBiR = the National Centre for Research and Development, NCN = the National Science Centre, structural funds, contracts with industry representatives). Technology Transfer Centre (Centrum Transferu Technologii) is a formal instrument for implementing innovation at AGH.</p> <p>Good practice as part of the environmental aspect of CSR: AGH educates students under the agreements on joint education provided to the citizens of Ukraine, Vietnam, Belarus Mongolia, Angola and Albania (582 students in 2016/2017). It also follows the principles of safe practices for the environment (principles 7, 8 and 9 of UN Global Compact).</p> <p>Good practice as part of the social aspect of CSR: AGH builds relationships with all of the stakeholder groups: associations, foundations and unions (principle 3, 4, 5, 6, 10 of UN Global Compact).</p>
<p>University's field of work (items 11-12 of the Declaration) related to cooperation with stakeholders in the process of teaching and conducting scientific research, and leveraging knowledge in an ethical and responsible way.</p> <p>Good practice: the stakeholders remaining in open relations with the university in the context of CSR are defined as internal (students at all levels of education, academic and teaching staff members, administration employees, faculty authorities, student organizations, research clubs, internal organizational units) and external (e.g. candidates for studies, graduates, entrepreneurs and employers, government and local government bodies, national and foreign universities, the Ministry of Science and Higher Education, the media).</p>

*Source: own elaboration based on: Kulczycka J, Pędziwiatr E., Caplicka A., Bielecka A., Kućmierz P. (2017), Raport Społeczny Akademii Górniczo-Hutniczej im. Stanisława Staszica w Krakowie, pp. 19, <https://www.agh.edu.pl/uczelnia/dokumenty/csr-raport-spoleczny-agh/> (access: 10-06-2018).*

## 6. Conclusion

The idea of social responsibility in the form presented by the Declaration is not popular among Krakow's universities, since only three of them signed it. Of these two, AGH and UEK undertake diverse activities in the field of USR. Creation of the idea and implementation of university social responsibility should be more emphasized and easily recognisable, as modelled on AGH or polish and foreign universities. As a tool for strategic relationship management, a university's expression of its commitment to activities for sustainable development and socioeconomic policies would also strengthen that university's position on

the education market. A collection of good practices exercised by other universities (e.g. AGH) would most probably help provide the conditions for implementing social responsibility and prevent the commodification of science and education or distorted competition between universities. Continuous interest in the issues of university social responsibility in the aspect of research, study and solutions is therefore most advisable.

## References

1. Górska Marzena et al. (2018), *Odpowiedzialny biznes w Polsce . Dobre praktyki. Raport*, Forum Odpowiedzialnego Biznesu, Warszawa
2. Koszembar-Wilk M. (2007), *Spoleczna odpowiedzialność przedsiębiorstw – hipoteka społeczna?* In: Mucha J. (ed.), *Kultura i gospodarka. Ku antropologii życia gospodarczego w Polsce*, Śląskie Wydawnictwo Naukowe, Tychy
3. Kulczycka J, Pędziwiatr E., Caplicka A., Bielecka A., Kućmierz P. (2017), *Raport Społeczny Akademii Górniczo-Hutniczej im. Stanisława Staszica w Krakowie*, pp. 19, <https://www.agh.edu.pl/uczelnia/dokumenty/csr-raport-spoleczny-agh/> (access: 10-06-2018)
4. Møller K., Erdal T. (2003), *Corporate responsibility towards society: a local perspective*, European Foundation for Improvement of Living and Working Conditions, Dublin
5. Piotrowska-Piątek A. (2016), *Analiza interesariuszy zewnętrznych szkół wyższych – Identyfikacja i ocena ich znaczenia przez szkoły wyższe* In: „Zarządzanie Publiczne”, no 2(36), pp. 85 – 93.
6. Purchla J. (2012), *Miasto i uniwersytet wobec wyzwań*, w: „Nierówności Społeczne a Wzrost Gospodarczy”, no. 24, pp. 7-15.
7. Sulejewicz A. (2008), *Paradoks społecznej odpowiedzialności biznesu szkoły wyższej* In: Leja K. (ed.), *Spoleczna odpowiedzialność uczelni*, Wydawnictwo Politechniki Gdańskiej, Gdańsk, pp. 47-56.
8. Szostek A. (2015), *Pogram rozwoju szkolnictwa wyższego do 2020 r. Część II. Misja społeczna uniwersytetu w XXI wieku*, Fundacja Rektorów Polskich, Warszawa
9. <https://www.parp.gov.pl/csr/> (access: 30-05-2019)
10. Tylec A. (2016), *Spoleczna odpowiedzialność biznesu w zarządzaniu przedsiębiorstwami w Polsce – synteza badań*, In: „ZESZYTY NAUKOWE POLITECHNIKI ŚLĄSKIEJ Seria: ORGANIZACJA I ZARZĄDZANIE”, 97(1964), pp. 513-528.
11. <http://odpowiedzialnybiznes.pl/aktualno%C5%9Bci/coraz-wieksza-skala-dzialan-csr-w-polsce-premiera-16-raportu-odpowiedzialny-biznes-w-polsce-dobre-praktyki/> (access: 01-06-2019)
12. [https://humanum.pl/wp-content/uploads/2018/10/deklaracja\\_spolecznej\\_odpowiedzialnosci.jpg](https://humanum.pl/wp-content/uploads/2018/10/deklaracja_spolecznej_odpowiedzialnosci.jpg) (access: 03-06-2019)
13. <https://e-uczelnia.uek.krakow.pl/course/view.php?id=7527> (access: 15-06-2019)

## HUMAN FACTOR IN THE ASPECT OF DIGITAL INFORMATION IN BUSINESS ENTERPRISES

**Paweł KOBIS**

*Częstochowa University of Technology, Częstochowa, Poland*

*E-mail: pawel.kobis@wz.pcz.pl*

### **Summary:**

**Purpose:** The paper concerns the issues of information security in contemporary enterprises. This is currently one of the main issues discussed both in the area of scientific research and popular science and industry studies. Information security is analysed at different levels of economic entities operations. This concerns both technical area (computer hardware, software) as well as man's activity area, as an entity responsible for particular information management. Developing an efficient, considering all elements of potential risk, system of information security management requires constant improvement of the existing information management base both on the side of technical protection measures as well as constant process of employee training in the aspect of proper behaviours concerning acquiring, processing and archiving information. While analysing the literature on the subject one can observe that the key factor that influences information security is so called human factor. Particular behaviours of employees, their competencies, are of key importance for ensuring security of information resources.

In the present paper the author has also described contemporary functioning solutions in the area of computer aided information management. Both traditional solutions based on stationary IT infrastructure of enterprises as well as solutions that function in the cloud computing model have been described here. The author indicates advantages and disadvantages of particular solutions in the aspect of information security. While describing informatic solutions a particular stress has been put on the role and actions of man in the scope of IT base maintenance, which currently is the main environment for information resources processing.

In the empirical part the author has made an attempt to distinguish a set of factors that decide about information security from the perspective of using computer equipment and which have a direct impact on protection of digital information resources. A separate group of factors has been distinguished for employees that use a traditional IT base and a separate one for the employees making use of cloud computing solution. Then, the acquired sets of results have been subjected to a comparative analysis.

**Design/methodology/approach:** The research was conducted among the employees of economic entities, who are responsible for information security management. Purposeful selection was applied in the form of a survey questionnaire that made use of CAWI technique.

**Findings:** As a result of the conducted research differences have been demonstrated in the approach to information security in the process of computer equipment use depending on the applied model of information processing.

**Practical implications:** Identifying a set of factors that have a direct influence on protection of digital information resources may support processes of developing and implementing particular trainings for enterprise employees so as to reduce the risk of loss and unauthorised access to information resources of an economic entity.

**Keywords:** competencies, enterprise, information, IT system, security

## **1. Introduction**

Presently one can distinguish two groups of factors that constitute a risk of information security breach: technical factors (software, hardware ones) and human-related factors (resulting from employee behaviours). The risk associated with the first group of factors is directly related to IT infrastructure of an enterprise and the IT model applied in the information management process. This concerns the types and quality of security measures. Processes that are aimed at maximum elimination of such a risk are relatively simple to execute. They require developing and implementing adequate devices and applications followed by their systematic updating and improvement.

The risk associated with the second group of factors depends on the attitudes of persons who utilise technical resources for information management and behaviours of employees themselves. The situation here is much more complex. Employee behaviours are difficult to predict. Presently, the human factor poses the greatest challenge in the area of information security management and people are considered to be the weakest link in the security system (Huang, Rau & Salvendy, 2007; Schneier, 2011 cited Parsons, McCormac, Butavicius & Ferguson, 2010, p. 1).

In the present paper its author describes presently functioning IT models that support information management and the human factor as a variable that has an impact on the risk of security breach. Additionally, legal aspects in the area of data and information protection have been characterised in brief. Also, original research concerning particular components that have an impact on behaviours of employees in the process of information management has been presented in the paper.

## **2. Models of IT systems functioning in enterprises**

The level of information security in enterprises is to a large extent conditioned by the manner in which IT resources are organised in them, which are presently a “natural environment” for information management.

In the general grasp, presently, two models of organising IT resources are functioning. The first of them is so called traditional model of IT (Information Technology) developed in the 1990s of the past century. All the equipment and software indispensable to manage information resources are located within the premises of economic entities. There are IT departments functioning in enterprises, which employ specialists who operate IT systems. All data, information is stored on local servers and in databases. Workstations and mobile devices access databases through the local network (LAN). The second model is based on making available hardware and software resources via the Internet. Only end devices are functioning in the local network of an enterprise, namely, personal computers, mobile devices. All of them connected to the global network can access data and information resources. The whole hardware and software infrastructure as well as data and information are stored in the IT environment of the service provider. In the subscription model the service provider makes resources available to organisations that need them. This model is called cloud computing. There are various types of cloud computing (Kobis, 2013, pp. 215–217):

- with regard to service portfolio: colocation, IaaS (Infrastructure as a Service), PaaS (Platform as a Service), SaaS (Software as a Service);
- with regard to resource organisation: public cloud, private cloud, hybrid cloud.

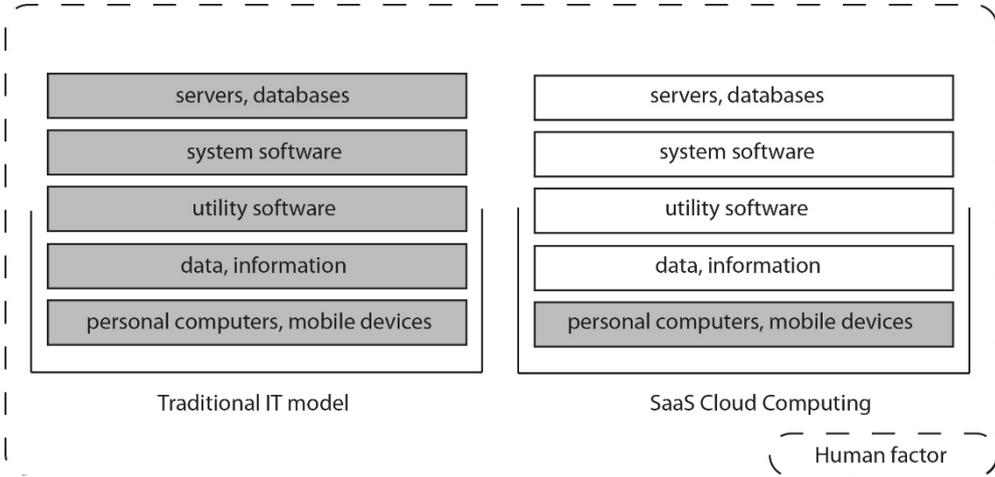
In reality, most of the enterprises that are functioning on the economic market are using mixed models, being a hybrid of the traditional model and cloud computing model.

Significant differences occur between the distinguished IT models in the processes associated with information protection. They are also dependent on the type of utilised cloud. In the present paper all the author’s considerations are referred to the SaaS model of the public cloud. An analysis of the remaining models exceeds the scope of the present paper.

The traditional IT model based on own IT back office requires enterprises to incur largest expenditures in the scope of security measures. This results from the number of devices, databases, applications, which can become potential targets of attacks. Security has to comprise IT department that includes servers, technical devices, databases, system software, utility software as well as data and information stored outside databases. Additionally, security concerns also particular personal computers and (if used) mobile devices.

Information management in the SaaS model of cloud computing on the assumption that an economic entity makes use of all its capacities, imposes on an entrepreneur a necessity to secure only end equipment: personal computers and mobile devices. The remaining infrastructure together with information resources is located in the service provider’s environment, whose responsibility is to ensure their maximum protection.

Figure 1 includes a comparison of the same resources stored in two distinct IT models. The grey colour shows the areas that are a direct responsibility of entrepreneurs. Symbolically, both models have been covered with the area called “human factor” so as to stress its impact on both models of IT services utilisation.



**Figure 1: Areas whose security has to be ensured by an enterprise in the traditional IT model and in the SaaS model of cloud computing**

*Source: own elaboration*

**3. Human factor**

Most of the actions undertaken by enterprises in the scope of information security concerns technical issues. They are aimed at utilised software or IT hardware. Attempts are made to limit the risk of information resources loss through implementation of various technologies. However, the technology itself cannot guarantee secure working environment, human aspects

of information security need to be considered as well (Sohrabi Safa, Von Solms, & Furnell, 2016, p. 70). Human factors are defined as roles and effects of human activity in a particular system, introducing strong and weak points as well as uncertainty (Wang, 2008, p. 75). Threats related to the human factor are primarily driven by the following aspects (Evans, He, Maglaras & Janicke, 2019, p. 87; Henshel, Cains, Hoffman & Kelley, 2015, p. 1119–1121; Huang, Patrick Rau, Salvendy, Gao & Zhou, 2011, p. 870–883; Denning, 2002, p. 154, 155, 249, 250; Kobis & Kisiołek, 2018, p. 46; Colwill, 2009, p. 6):

- Lack of proper training in the scope of information protection;
- Sociotechnical actions performed by hackers on enterprise employees;
- Direct head-hunting of employees by the competition;
- Deliberate „taking out” of information by employees (various motives of actions);
- Factors such as: tiredness, concentration loss, curiosity, carelessness, indifference, stress, etc.;
- Lack of motivation for performed work.

Eliminating all the factors being the result of the abovementioned aspects is exceptionally difficult. The more difficult, the more employees an enterprise has. Each person behaves differently and in a different way perceives elements of their actions and behaviour pertaining to ensuring information security.

A key action in each enterprise should be specific, cyclical training for the Staff. This should cover such areas as (Metalidou at al., 2014, p. 425):

- Importance of information security;
- Understanding the levels of information security for own organisation;
- Determining individual responsibilities for each group of employees.

Other actions that indirectly influence the human factor include: developing an incentive scheme for employees (see Son, 2011) and ensuring decent social and wage conditions.

The human factor is presently the biggest challenge for economic entities. According to the report by KPMG (KPMG.PL, 2019, p. 5) as many as 63% of the surveyed considers it to be a problem for ensuring proper security.

#### **4. Legal aspects in ensuring information security**

Protection of information resources in enterprises can be classified in two areas:

- personal data protection, which concerns protection from the perspective of stakeholders, clients, cooperating entities;
- protection of enterprise’s intellectual property, which concerns Intangible assets created by an entity and all obtained patents.

In the first case in Poland, similarly to the whole of the European Union, the primary document is adopted on 24 May 2016 by the European Parliament and the Council, effective since 25 May 2018 General Data Protection Regulation (EU, 2019). This document obliges all the enterprises to ensure all possible technical and non-technical means so as to protect information that in any way identifies individuals and economic entities.

Data and information that concerns intellectual property, manufacturing processes, trademarks, technical studies, etc. may be subject to protection under a submitted patent. This is temporary protection that grants an exclusive utilisation of an invention in a commercial use in the territory of a given country or countries by a competent national, regional or

international authority. According to Kłosowski et al. (2017, pp 45-46), this is a key resource of an organisation, which constitutes a foundation of conducting economic activity and in many cases is difficult to assess and value. This resource shall be subject to a particular protection. In a majority of cases it is covered by trade secret and this data can only be accessed by defined groups of employees with assigned level of availability. Information of this type is particularly desired by the competition and what follows becomes the most frequent target of hackers. Desired information is acquired by the competition using so called human factor through actions in so called sociotechnical scope on the employees of a given economic entity. Employees, who are unaware of the consequences of their actions due to unsatisfactory experience, lack of proper training or because of the committed mistakes, involuntarily cause that information falls into unauthorised hands. Patent protection in such cases ensures the owner to claim their rights, however, it needs to be pointed out that such protection usually works only within a particular territory (except for corporations, which possess financial capabilities and purpose to protect a patent worldwide). Moreover, loss of this type information does not have to be used directly to copy services or products; it may become an inspiration to create a similar product, which is not covered by the patent protection. In both cases financial losses incurred by an economic entity might be serious. A distinct group of information constitute secrets processed by a particular group of organisations, which concern for instance state's security. However, this is a characteristic type of information that is the subject matter of the present paper.

## **5. Research in information security**

The research was conducted in the period from January to March 2019 on the total sample of 140 economic entities that generally belonged to the SME sector in Poland. A purposeful selection (arbitrary, non-random) was used to distinguish the investigated group. A subjective selection of enterprises was driven by the specificity of conducted research. The author selected 70 enterprises that utilise exclusively the traditional IT model and 70 enterprises that comprehensively or partially utilise in their operations solutions based on cloud computing model. The research was conducted with the use of a survey questionnaire placed on the website (CAWI method - Computer-Assisted Web Interview). Questions were directed at persons who in the investigated enterprises deal with information protection or are directly responsible for data protection. The research refers directly to information management by enterprise employees and concerns purely the human factor and its influence on the security of processed intangible assets that belong to economic entities. Although a majority of factors are of sociological and psychological background, yet, they result directly from the area of human resources management both in the aspect of motivation, existent risk and training. The results have been presented in Table 1. The factors considered in the research had been acquired based on the subject literature analysis (Alavi, Islam, Jahankhani & Al-Nemrat, 2013; Sapronov, 2019). Ten occurring factors had been distinguished.

**Table 1: Question: What human-related factors related to information management in your opinion have influence on information security?**

NO	What human-related factors related to information management in your opinion have influence on information security	Traditional IT model	Cloud computing
1	lack of proper training	84%	97%
2	lack of experience	64%	76%
3	carelessness	44%	40%
4	curiosity	69%	81%
5	negligence	34%	26%
6	indifference	20%	13%
7	fatigue, tiredness	16%	9%
8	stress at work	60%	41%
9	no motivation for the performer work	31%	34%
10	head-hunted employees	31%	37%

Source: own elaboration

According to the respondents the greatest impact on mistakes committed while processing information has lack of proper trainings for employees. This was indicated by both the users of the traditional IT model as well as cloud computing. Considering the fact that techniques and technologies used by the employees of enterprises as well as types of threats are changing dynamically at present, it should be concluded that the frequency of organised trainings should be adjusted to this status quo. A training in the area of information processing and security that is conducted today may prove to a large extent obsolete a year later. Therefore, there is a need for systematic improvement of staff's qualifications in this scope. The second factor that in the opinion of respondents has an impact on security is curiosity. This manifests most frequently while opening email attachments or clicking links on apparently safe, trusted websites. Employees want to see an attachment or link activate a malicious code that infects computers. This method is most frequently used to transfer threats such as ransomware, which encrypts data and information in the IT system (Metacompliance Ltd, 2019). Another factor indicated by the respondents is lack of experience. It was selected by as many as 64% and 76% of the surveyed. This factor can, in a sense, be associated with lack of trainings. However, it is also related to tacit knowledge, which is acquired in the course of work on a given position. In the fourth place came stress at work. The question did not specify whether it was stress caused by work itself on a given position or temporary one, related to acting at a given moment. Considering the fact that acting in the state of stress may also cause acting in a hurry, this factor can actually contribute to violating the principles of security policy at an enterprise. The least important factor in this research turned out to be fatigue and tiredness of employees.

The conducted research has also shown that the importance of particular factors in the aspect of information security is practically independent of the utilised IT model. The respondents from both models, despite percentage differences in their indications, maintained a similar hierarchy.

## 6. Conclusion

Information security in economic entities is nowadays one of the primary areas of information system management. While a significant number of enterprises concentrate exclusively on software and hardware security measures, it turns out that protecting information against so called human factor requires equally serious involvement. Man, as a supervisor and at the same time user of an information system makes independent decisions on the manner of security measures protection and the behaviour towards the processes of information resources management.

The conducted theoretical considerations and the research that describes employee-related factors in the scope of information resources security have confirmed the necessity to constantly improve awareness of the staff in the scope of information security as well as the need for cyclical trainings in this area. It can be also concluded that the human factor is independent of techniques and technologies applied in an economic entity. Human errors are the same, regardless of the structure of the information management system. They can possibly produce various results depending on the applied technical security measures.

## References

1. Alavi R., Islam S., Jahankhani H., Al-Nemrat A. (2013), *Analyzing Human Factors for an Effective Information Security Management System*, "International Journal of Secure Software Engineering", 1:(4), pp. 50-74, <https://doi.org/10.4018/jsse.2013010104>
2. Colwill C. (2009), *Human factors in information security: The insider threat-Who can you trust these days?*, "Information Security Technical Report", 4:(14), pp. 186-196, <https://doi.org/10.1016/j.istr.2010.04.004>
3. Denning D. E. R. (2002), *Wojna informacyjna i bezpieczeństwo informacji*. Wydawnictwa Naukowo-Techniczne, Warszawa.
4. EU. (2019), *General Data Protection Regulation (GDPR) – Final text neatly arranged*, General Data Protection Regulation (GDPR) website: <https://gdpr-info.eu/> (access: 06-06-2019)
5. Evans M., He Y., Maglaras L., Janicke, H. (2019), *HEART-IS: A novel technique for evaluating human error-related information security incidents*, "Computers & Security", 1:(80), pp. 74–89, <https://doi.org/10.1016/j.cose.2018.09.002>
6. Henshel D., Cains M. G., Hoffman B., Kelley T. (2015), *Trust as a Human Factor in Holistic Cyber Security Risk Assessment*, "Procedia Manufacturing", 1:(3), pp. 1117–1124, <https://doi.org/10.1016/j.promfg.2015.07.186>
7. Huang D. L., Patrick Rau P. L., Salvendy G., Gao F., Zhou J. (2011), *Factors affecting perception of information security and their impacts on IT adoption and security practices*, "International Journal of Human-Computer Studies", 12:(69), pp. 870–883, <https://doi.org/10.1016/j.ijhcs.2011.07.007>
8. Huang D. L., Rau, P. L. P., Salvendy G. (2007), *A Survey of Factors Influencing People's Perception of Information Security*, In: Jacko J. A. (ed.), *Human-Computer Interaction. HCI Applications and Services*, pp. 906–915, Springer, Berlin.
9. Kłosowski G., Paździor A., Rzemieniak M. (2017), *Zarządzanie aktywami niematerialnymi w systemach produkcyjnych*, "Przegląd Organizacji", 7:, pp. 44–50.
10. Kobis P. (2013), *Istota cloud computing oraz szanse i zagrożenia związane z wykorzystaniem chmury obliczeniowej*. In: Kiełtyka L. (ed.), *Technologie informacyjne w funkcjonowaniu organizacji*, pp. 213–222, Stowarzyszenie Wyższej Użyteczności "Dom Organizatora, Toruń.
11. Kobis P., Kisiołek A. (2018), *Zarządzanie bezpieczeństwem danych w przedsiębiorstwach MSP z uwzględnieniem czynnika ludzkiego – wyniki badań*, "Przegląd Organizacji", 8:, pp. 44–52.
12. KPMG, (2019), *Raport: Barometr cyberbezpieczeństwa. W obronie przed cyberatakami*, <https://assets.kpmg/content/dam/kpmg/pl/pdf/2019/04/pl-Raport-KPMG-Barometr-Cyberbezpieczenstwa-W-obronie-przed-cyberatakami.pdf>, (access: 08-06-2019)

13. Metacompliance Ltd. (2019), *Dangers of Ransomware*, <https://www.metacompliance.com/blog/dangers-of-ransomware/> (access: 23-05-2019).
14. Metalidou E., Marinagi C., Trivellas P., Eberhagen N., Skourlas C., Giannakopoulos G. (2014), *The Human Factor of Information Security: Unintentional Damage Perspective*, "Procedia - Social and Behavioral Sciences", August, 147:, pp. 424–428, <https://doi.org/10.1016/j.sbspro.2014.07.133>
15. Parsons K., McCormac A., Butavicius M., & Ferguson L. (2010), *Human Factors and Information Security: Individual, Culture and Security Environment*, (No DSTO-TR-2484), Downloaded from Defence Science and Technology Organisation Edinburgh (Australia), Command Control Communications and Intelligence Div, website: <https://apps.dtic.mil/docs/citations/ADA535944> (access: 23-05-2019)
16. Sapronov K. (2019), *Czynnik ludzki a bezpieczeństwo informatyczne*. [https://www.securelist.pl/threats/5480,czynnik\\_ludzki\\_a\\_bezpieczenstwo\\_informatyczne.html](https://www.securelist.pl/threats/5480,czynnik_ludzki_a_bezpieczenstwo_informatyczne.html) (access: 04-05-2019).
17. Schneier B. (2011). *Secrets and Lies: Digital Security in a Networked World*, John Wiley & Sons, Hoboken, New Jersey, United States of America.
18. Sohrabi Safa N., Von Solms R., Furnell S. (2016), *Information security policy compliance model in organizations*, "Computers & Security", 56:, pp. 70–82. <https://doi.org/10.1016/j.cose.2015.10.006>
19. Son J. Y. (2011), *Out of fear or desire? Toward a better understanding of employees' motivation to follow IS security policies*, "Information & Management", 7: (48), pp. 296–302, <https://doi.org/10.1016/j.im.2011.07.002>
20. Wang Y. (2008), *On Cognitive Properties of Human Factors and Error Models in Engineering and Socialization*, "International Journal of Cognitive Informatics and Natural Intelligence", 2:(4), pp. 70–84, <https://doi.org/10.4018/jcini.2008100106>

## EVALUATION OF THE DEVELOPMENT OF PRICE IN THE PRODUCTION OF SELECTED COMMODITIES IN THE SLOVAK REPUBLIC

*Monika HUDÁKOVÁ<sup>1</sup>, Mária FARKAŠOVÁ<sup>2</sup>*  
*<sup>1, 2</sup> Slovak University of Agriculture, Nitra, Slovakia*  
*E-mail: monika.hudakova@uniag.sk*

### **Summary:**

**Purpose:** Food spending is the most important component of household consumption expenditure. In 2017, annual food expenditure in the Slovak Republic amounted to 784 Euros. The largest amount is for meat and it is on average 212 Euros per year. Agricultural commodity prices are constantly changing, depending on production and consumption. Very unstable food prices, extreme price increases and collapses are undesirable. Consumer food prices are still too high and consequently product substitution and poor consumption patterns occur. The aim of the paper is to evaluate the mutual price relations between the purchase, sale and consumer price of selected commodities, namely pork and beef in Slovakia and their impact on food consumption on the Slovak market in 2010-2017. It evaluates the factors that may affect the current development of selected commodity prices, identifies risks and proposes measures to eliminate them.

**Design/methodology/approach:** The source of input data for the evaluation of price development at individual stages of the food vertical were the price databases of the Statistical Office of the SR (purchase, consumer prices), the Ministry of Agriculture and Rural Development of the Slovak Republic, the National Agricultural and Food Centre of the Research Institute of Agriculture and Food Economics Bratislava. Logical methods (analysis and synthesis; induction and deduction; concretization, comparison) were used to achieve the relevant statistical result.

**Findings:** Analysis of the price evolution in the food vertical implies the prices of inputs to agriculture, agricultural products, food products and consumer food prices based on price scissors, and for selected products based on price quotations, the highest price increase in the period under review was seen in consumer food prices, while prices of food producers grew the slowest. Since 2010, price scissors have been closed at all stages of the food vertical, in addition to the price of food processing prices to their consumer prices.

**Research limitations:** In recent years, the Slovak Republic has lost its self-sufficiency in decisive food groups, especially in animal production, but also in vegetable and fruit growing. This is evidenced by the share of domestic consumption in domestic production and by the development of foreign trade in agro-commodities.

**Practical implications:** The results obtained during the evaluation period (2010-2017) can help identify the risks associated with food security and the application of the general risk management principles for its maintenance. The situation in the pork and beef market is influenced by the situation in other EU countries.

**Social implications:** Slovakia seeks to promote a level playing field and instruments of the Common Agricultural Policy and to equalize the level of direct payments within the EU-28, but so far it has failed to do so.

**Keywords:** price development, consumer prices, food vertical, commodities of animal production

## **1. Introduction**

The aim of the paper is to evaluate the mutual price relations between the purchase, sale and consumer price of selected commodities, namely pork and beef in Slovakia and their impact on food consumption on the Slovak market in 2010-2017. It evaluates the factors that may affect the current development of selected commodity prices.

## **2. Literature review**

In Slovakia there is income and property differentiation. However, the comparison of the Slovak population's pension rate shows that the average monthly wage in Slovakia is among the lowest in Europe. Income differentiation also affects overall food consumption. The high proportion of food expenditure limits households to decide on the volume, quality and structure of food consumed. The fundamentally different income levels of Slovak households and price developments do not allow for faster changes in the expenditure structure of the population compared to other European countries. The price levels of food as well as selected food groups vary considerably between EU Member States. (Křížová, 2018)

Food spending is the most important component of household consumption expenditure. In 2017, annual food expenditure in the Slovak Republic amounted to 784 Euros. The largest amount is for meat and it is on average 212 Euros per year. Agricultural commodity prices are constantly changing, depending on production and consumption. Very unstable food prices, extreme price increases and collapses are undesirable. Consumer food prices are still too high and consequently product substitution and poor consumption patterns occur.

Agricultural commodity prices are constantly changing, depending on production and consumption. Economists distinguish predictable price variability and unpredictable variability manifested in the form of price shocks caused by changes in production and / or consumption. (Brodová, 2013)

Very unstable food prices, extreme increases and price collapse are undesirable for two reasons. Firstly, it is clear that unstable food prices have a significant impact on well-being, especially for low-income groups. Secondly, fluctuations in food prices generally evoke hostile reactions between producers and consumers, which affect the proper functioning of markets. (Timmer, 2012)

## **3. Methodology**

The selected methodology depends on the substantive focus of Post-oriented analysis of mutual relations between the purchase price, sales and consumer price of pork loin, shoulder and back beef without bones in the period 2010-2017. The source of input data for the evaluation of price development at individual stages of the food vertical were the price databases of the Statistical Office of the SR (purchase, consumer prices), the Ministry of Agriculture and Rural Development of the Slovak Republic, the National Agricultural and Food Centre of the Research Institute of Agriculture and Food Economics Bratislava (own analyzes, databases, research tasks and situational and prospective reports) and PPA SR. Logical methods (analysis and synthesis; induction and deduction; concretization, comparison) were used to achieve the relevant statistical result. Part of the analysis is a

comparison of the development of meat consumption and purchase prices of slaughter animals in Slovakia in 2010-2017. In formulating the results, we used statistical methods with the support of computer technology that we implemented in MS Excel.

#### 4. Results

In 2017, annual food and non-alcoholic expenditure in Slovakia reached an average of € 864 per person, of which 784€ was food expenditure. Food and soft drinks accounts were one fifth of Slovak consumer spending, because we spend an average of 3 856€ per year on consumer goods. Of the food itself, the largest amount goes for meat, an average of 212 per year (27.04% of food expenditure). Followed by milk, cheese and eggs worth 146€.

Meat consumption is, on the one hand, an indicator of the standard of living and at the same time changing views on the extent to which meat and its products stimulate or impair human health. The most popular is pork, whose per capita consumption per year in the reference period (2010-2017) oscillated around 32 kg. In the analysed period, the trend of meat consumption per inhabitant of the SR is fluctuating. Consumption per capita was the highest in 2017 (62.1 kg.inhabitant<sup>-1</sup>) and lowest in 2014 (47.2 kg.inhabitant<sup>-1</sup>) (Table 1).

**Table 1: Meat consumption pre inhabitant of the SR (kg.year-1)**

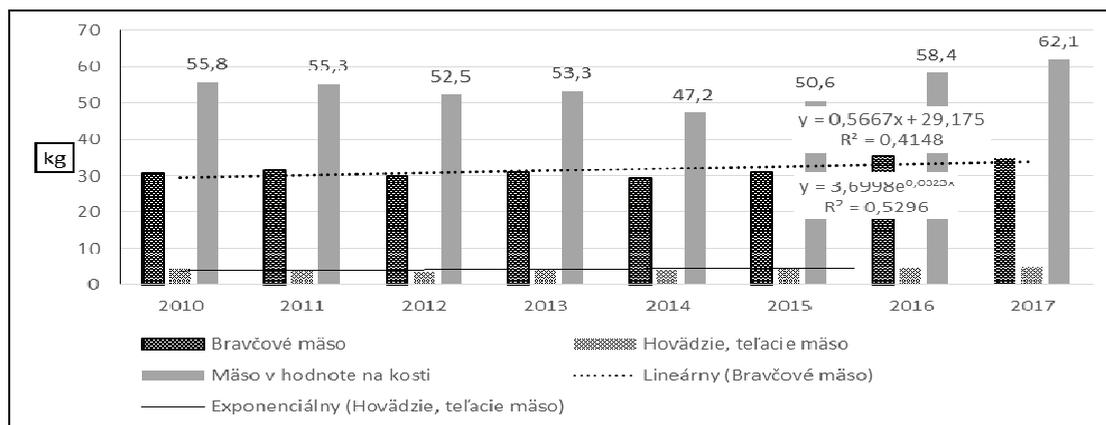
Commodity	Years							
	2010	2011	2012	2013	2014	2015	2016	2017
Meat in bone value	55.8	55.3	52.5	53.3	47.2	50.6	58.4	62.1
Pork	30.8	31.6	30.0	30.9	29.5	30.9	35.4	34.7
Beaf, veal	4.3	3.8	3.6	4.4	4.2	4.3	4.8	5.0
Poultry	19.0	19.9	17.7	16.9	14.5	14.1	16.9	20.5

Source: <http://www.vuepp.sk/dokumenty/zelena/zelena2018.pdf> and author's computations

The development of consumption of both beef and pork in the analysed period 2010-2017 followed the trend of total meat consumption (Fig. 1). The calculations show that in 2020 the consumption of pork should reach 35.412 kg.inhabitant<sup>-1</sup> and beef 5.28 kg.inhabitant<sup>-1</sup>.

Pork meat currently produced is rated as a high-quality raw material of high biological value because it contains all the necessary substances for human nutrition of all ages.

Slovakia was in the past self-sufficient in the production of pork, even a significant part of it exported outside the Slovak Republic. Today the situation is different and we produce less than 40% for our own needs. Pork production has also been declining since the EU accession to 2009. The situation improved in 2012 and 2013, when under the influence of higher prices of slaughter pigs and MPRV SR support the breeding of pigs became an interesting industry and the numbers started to increase slowly. In 2014, Russia imposed an embargo on food imports from the European Union. There was excess of pigs in the EU, the price dropped rapidly and this situation pushed breeders in the worst situation. 2016 was a critical year for pig breeders, as average purchase prices fell significantly and developed unevenly. 2017 was considerably better than the previous three years in terms of the price of pigs. Finally, there was no loss, but the piece was cut off from the losses from previous periods. Funds from Brussels have also helped - supplemented by state budget funding as a substitute for low prices at the time of the embargo against Russia.



Bravčové mäso = Pork; Mäso v hodnote na kosti = Meat in bone value; Exponenciálny (Hovädzie, teľacie mäso) = Exponential (Beef, Veal); Hovädzie, teľacie mäso = Beef, Veal; Lineárny (Bravčové mäso) = Linear (Pork)

**Figure 1: Annual meat consumption per capita in SR (kg)**

Source: <http://www.vuepp.sk/dokumenty/zelena/zelena2018.pdf> and author's computations

If this situation persists in the next period and fixed conditions are established, it is expected a gradual though moderate increase in total number of pigs, including sows. Slovakia struggled with the lack of slaughter capacities and therefore high quality slaughter pigs were exported abroad. The processor and the shop were working with standard tools, but only the breeders had the greatest business risk associated with trading this commodity.

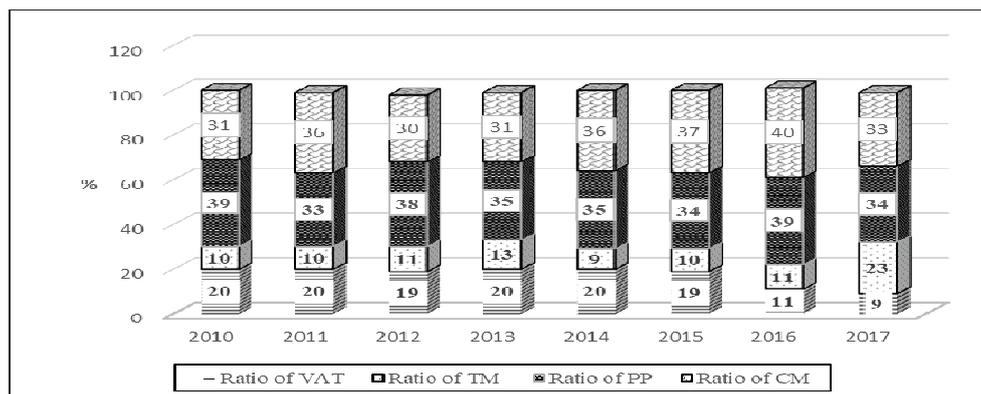
The development of the purchase price of pork meat for the production of 1 kg of pork with bone, sales and consumer prices of pork with bone without VAT showed a sinusoidal trend in the period under review (Table 2). In 2011 and 2012, the purchase prices and prices of pork processors increased year on year, but their growth was not balanced. The unbalanced dynamics of price growth was reflected in year-on-year changes in the purchase price share in pork processing prices. From 2015 until 2017, the development of the purchase price and the sales price had an upward trend compared to the consumer price without VAT, which had an uneven trend.

**Table 2: Types of prices in the vertical pork loin with bone (€ .kg-1)**

Indicator	Years							
	2010	2011	2012	2013	2014	2015	2016	2017
Purchase price	1.58	1.46	1.73	1.65	1.56	1.43	1.47	1.62
Sales price	2.85	3.05	3.09	3.10	3.19	2.97	3.00	3.19
Consumer price without VAT								
Consumer price with VAT	3.24	3.50	3.69	3.73	3.61	3.39	3.07	4.27
Trade margin	4.05	4.37	4.58	4.69	4.51	4.19	3.78	4.72
Processing margin	0.39	0.45	0.50	0.63	0.42	0.42	0.07	1.08
	1.27	1.59	1.36	1.45	1.63	1.54	1.53	1.57

Source: [http://www.vuepp.sk/dokumenty/komodity/2017/Jatocneosipane17\\_18.pdf](http://www.vuepp.sk/dokumenty/komodity/2017/Jatocneosipane17_18.pdf) and author's computations

Overall, the average purchase price of pig meat for slaughter increased by 0.04€ (2.5%) in the period analysed, while the sale price of pork by 0.34€ (11.93%) and consumer prices excluding VAT increased by 1.0 € (31.79%).



**Figure 2: Structure of consumer price of pork with bone in SR from 2010 to 2017**

Source: author's computations, TM – trade margin, CM – consumer margin, PP – purchase price

The disparity between the purchase price of pork and the consumer price of pork with bone was of varying character year-on-year (Fig. 2). Overall, the price of primary producer on consumer price fell from 39.01% (2010) to 34.32% (2017).

The trade margin of pork with bone was growing year-on-year in the period under review and increased from 9.62% (2010) to 22.88% (2017), with the exception of 2014 to 2016, when it fell. The processing margin in 2010 to 2017 was growing, except for 2012, when the year-on-year decline was 6.68% compared to the previous year.

Prices of pigs for slaughter in the monitored classes of meatiness in 2017 were significantly above the level of 2016. Sales prices of pork loin without bone during the year 2017 responded to the increase in prices of slaughter pigs and showed a difference between the maximum and minimum price of 0.35€ .kg<sup>-1</sup>. Contrary to the development of sales prices, consumer prices of all types of meat increased in 2017 compared to 2016. The difference between the maximum and the minimum consumer price for the shoulder was 0.34€ .kg<sup>-1</sup>.

The development of the purchase price of pig carcass needed for the production of 1 kg of bone-free pork shoulder, sales and consumer price with VAT was mutually symmetric in the period under review and had a volatile character (Table 3).

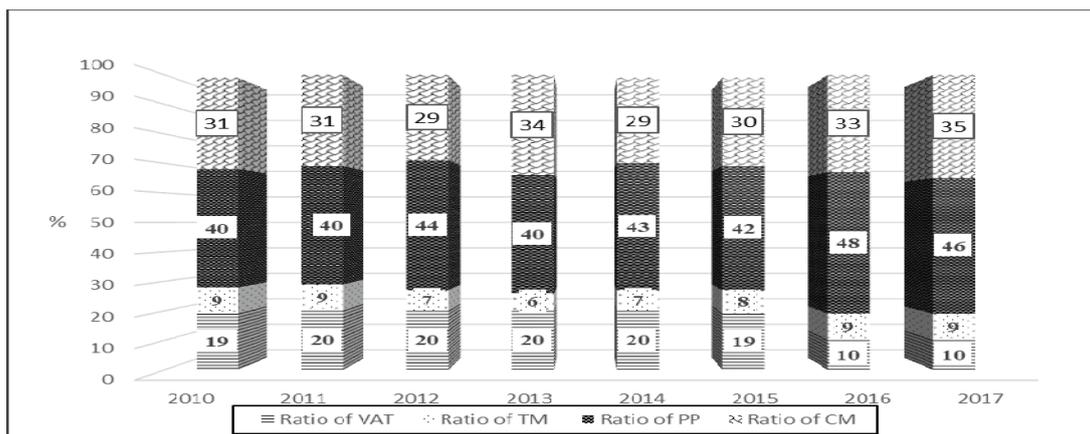
**Table 3: Types of prices in the vertical pork shoulder boneless (€ .kg-1)**

Indicator	Years							
	2010	2011	2012	2013	2014	2015	2016	2017
Purchase price	1.44	1.52	1.76	1.68	1.77	1.58	1.59	1.69
Sales price	2.54	2.71	2.95	3.09	2.96	2.69	2.70	2.99
Consumer price without VAT	2.86	3.04	3.22	3.34	3.25	3.00	3.00	3.31
Consumer price with VAT	3.57	3.80	4.03	4.17	4.06	3.74	3.33	3.68
Trade margin	0.32	0.33	0.27	0.25	0.29	0.31	0.30	0.32
Processing margin	1.10	1.19	1.19	1.41	1.19	1.11	1.11	1.30

Source: [http://www.vuepp.sk/dokumenty/komodity/2017/Jatocneosipane17\\_18.pdf](http://www.vuepp.sk/dokumenty/komodity/2017/Jatocneosipane17_18.pdf) and author's computations

The average price of pig carcass needed to produce 1 kg of boneless pork shoulder increased by 0.25€ (17.36%) in the period under review, sales prices increased by 0.45€ (17.72%) and consumer prices without VAT increased by 0.45€ (15.73%).

The disparity between the purchase price of pig carcass and the consumer price of boneless pork shoulder decreased year on year (except in 2013), suggesting that the share of the primary producer's price in the consumer price has a growing trend (Figure 3).



**Figure 3: Structure of consumer price of pork shoulder without bone in SR from 2010 to 2017**  
 Source: author's computations, TM – trade margin, CM – consumer margin, PP – purchase price

The trade margin of boneless pork shoulder was uneven during the period under review. Its values ranged from 6% (year 2013) to 9% (year 2016). Processing margin stagnated in the period under review, except for 2013. The unbalanced dynamics of price growth resulted in year-on-year changes in the purchase price share in the sales price of pork shoulder.

Beef consumption in the reference period of 2010 to 2017 reached an average of 4.3 kg.inhabitant<sup>-1</sup>, but its value should be much higher. The liquidation of cattle breeding and food imports from abroad makes Slovakia a non-self-sustaining country. The development of cattle has a downward trend in Slovakia. Significant slump in the number of animals was between 2014 and 2015. In 2015, it decreased by approximately 8 thousand pieces (1.7%). In the case of cattle breeding, as opposed to pig farming, the production and reproduction process is longer, and this is also passed on to the cost and ultimately to the efficiency of the entire breeding process. The steady decline in stocks also affects the development of domestic beef production. Meat production, but mainly the purchasing power of the population, is reflected in meat consumption.

Development of the purchase price of slaughtered beef needed to produce 1 kg of beef back boneless, sales and consumer prices for beef boneless back was in the period under asymmetric. Sales prices for bovine hindquarters for 2017 show a difference between the maximum and the minimum price of 0.12€ per kilogram. In comparison with 2016, the monthly prices of bovine hind without bone were higher. Consumer prices of individual types of beef cuts in Slovakia, following the development of sales prices in 2017, recorded a slight increase. The prices of back without bones showed a relatively stable course. The difference between the maximum and the minimum price was 0.17€ per kilogram. In 2017, the purchase prices of beef increased by 24.24% compared to 2014 (Table 4).

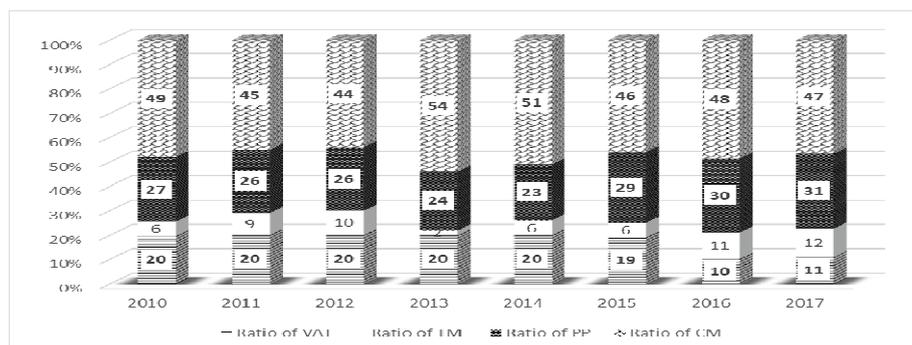
Sales and consumer price without VAT followed the development of the purchase price, while the average purchase prices of beef in the reference period from 2010 to 2017 increased by 0.57€ (by 29.50%), sales prices increased by 0.83€ (by 15.17%) and consumer prices without VAT increased by 1.36€ (23.17%).

The disparity between the purchase price and the consumer price of bovine meat without bones increased year on year, indicating that the share of the primary producer's price in the consumer price of meat is falling.

**Table 4: Types of prices in the vertical back beef without bones € .kg-1**

Indicator	Years							
	2010	2011	2012	2013	2014	2015	2016	2017
Purchase price	1.93	2.00	2.19	2.09	1.98	2.46	2.43	2.50
Sales price	5.47	5.52	5.83	6.74	6.31	6.36	6.32	6.30
Consumer price without VAT	5.87	6.24	6.68	6.90	6.80	6.84	7.21	7.23
Consumer price with VAT	7.30	7.78	8.34	8.68	8.50	8.56	8.04	8.09
Trade margin	0.40	0.72	0.85	0.16	0.49	0.48	0.89	0.93
Processing margin	3.54	3.52	3.64	4.65	4.33	3.90	3.81	3.80
Disparity	3.94	4.24	4.49	4.81	4.82	4.38	4.78	4.73

Source: [http://www.vuepp.sk/dokumenty/komodity/2017/Jatocnydobytok17\\_18.pdf](http://www.vuepp.sk/dokumenty/komodity/2017/Jatocnydobytok17_18.pdf) and author's computations



**Figure 4: Structure of consumer price of bovine beef without bone in Slovakia from 2010 to 2017**

Source: author's computations, TM – trade margin, CM – consumer margin, PP – purchase price

Trade margin values range from 1.8% (2013) to 11.5% (2017). Processing margin values ranged from 43.6% (2012) to 53.6% (2013).

## 5. Discussion

In the period 2010-2017 in the case of selected species, the proportion of primary producers in the total consumer price developed asymmetrically and its values ranged from 47.75% (in 2016, pork shoulder without bone) to 34.32% (in year 2017 pork loin). The trade margin was growing in the range of 6.0% (pork shoulder without bone) in 2013 to 22.88% (pork loin) in 2017. The processing margin in the period under review was volatile. It achieved the highest value in 2016 for pork loin and the lowest value in 2014 for pork loin without bone. Price developments in the meat sales vertical were asymmetric. The increase (decrease) in the purchase price of meat was not directly reflected in the processing and consumer prices.

The pigmeat sector can be ranked among the sectors with the strongest competition within the EU common market. The massive eradication of pigs due to the outbreak of African swine fever in China and the consequent demand from China for pigmeat from the EU are causing the prices of pork to grow at a record level. The increase in pork prices has a major impact on the pricing of both cuts and meat products, and therefore the current rising costs of raw material price increases are unsustainable for manufacturers and must therefore be reflected in consumer prices. Other factors such as the increase in energy prices, the increase in labor costs, the increase in night work and weekends are also influencing pricing. At present, prices of meat and meat products have increased by 8 to 10% at producer level. Imports from abroad are preferable to pricing, as there are different support mechanisms in other member states that absent in our country.

The situation in the beef sector is similar. In Slovakia, the case with Polish meat resonates. The best-quality beef is provided by the meat breeds of cattle. Two thirds of slaughtered animals are exported, so most quality beef is exported outside Slovakia. The main export market is Turkey. The situation in the supply of quality beef can only be changed by changing cattle breeding and especially in meat processing. The issue of slaughterhouses must also be resolved. The cattle breeding in Slovakia was also affected by the personnel crisis.

Food trafficking has been marked by unfair practices. Suppliers faced regular pressure from sellers to lower prices. Producers were forced to go for cheaper raw materials and the consumer paid for it. Abuse of a stronger position in the business relationship had a negative impact on agriculture, food industry and threatens Slovakia's food sovereignty and self-sufficiency. In 2019, the European Parliament approved the Modernization Directive on Unfair Commercial Practices in the Internal Market, which severely affects the dual quality of both food and non-food products. Dual quality food has been a serious problem for third-country consumers in the EU. When testing and assessing food, EU Member States will act in a consistent manner on the basis of an agreed methodology. The law streamlines the control process and tightens sanctions. Both customers and suppliers can solve their business problems with the ministry. In particular, the mediation mechanism should be used to overcome so-called annoyance crises.

At present, great attention is paid to cattle breeding, meat processing and meat supply. Today's life is marked by a healthy lifestyle. Fresh Slovak meat is promoted. Changing the current state is not easy and is the result of economic conditions. Trying to consume more quality meat, create more jobs and achieve a better managed country can lead to the current situation changing.

## **6. Conclusion**

Analysis of the price evolution in the food vertical implies the prices of inputs to agriculture, agricultural products, food products and consumer food prices based on price scissors, and for selected products based on price quotations, the highest price increase in the period under review was seen in consumer food prices, while prices of food producers grew the slowest. Since 2010, price scissors have been closed at all stages of the food vertical, in addition to the price of food processing prices to their consumer prices.

In recent years, the Slovak Republic has lost its self-sufficiency in decisive food groups, especially in animal production, but also in vegetable and fruit growing. This is evidenced by the share of domestic consumption in domestic production and by the development of foreign trade in agro-commodities.

The results obtained during the evaluation period (2010-2017) can help identify the risks associated with food security and the application of the general risk management principles for its maintenance. The situation in the pork and beef market is influenced by the situation in other EU countries.

Slovakia seeks to promote a level playing field and instruments of the Common Agricultural Policy and to equalize the level of direct payments within the EU-28, but so far it has failed to do so.

## References

1. Brodová, M. (2013), *Cenový vývoj vo vertikále výroby a spotreby živočíšnych komodít v rokoch 2008-2012*. In.: "Ekonomika poľnohospodárstva", ročník XIII, 3/2013. Bratislava, VUEPP, 2013, ISSN:1338-6336, <https://docplayer.net/21770494-Cenovy-vyvoj-vo-vertikale-vyroby-a-spotreby-zivocisnych-komodit-v-rokoch-2008-2012.html>
2. Krížová, S. (2018), *Spotreba potravín vo vzťahu k príjmom a výdavkom domácností SR*. In: "Ekonomika poľnohospodárstva", ročník XVIII., č. 2., ISSN:1338-6336 [http://www.vuepp.sk/EP2018/2/4\\_Krizova\\_Spotreba\\_potravin.pdf](http://www.vuepp.sk/EP2018/2/4_Krizova_Spotreba_potravin.pdf)
3. Timmer, C. P. (2012), *Behavioral dimensions of food security*. "PNAS". July 31, 109:(31), <http://www.pnas.org/content/109/31/12315.full.pdf>
4. <http://www.vuepp.sk/dokumenty/zelena/zelena2018.pdf>
5. [http://www.vuepp.sk/dokumenty/komodity/2017/Jatocnydobytok17\\_18.pdf](http://www.vuepp.sk/dokumenty/komodity/2017/Jatocnydobytok17_18.pdf)
6. [http://www.vuepp.sk/dokumenty/komodity/2017/Jatocneosipane17\\_18.pdf](http://www.vuepp.sk/dokumenty/komodity/2017/Jatocneosipane17_18.pdf)
7. [https://ekonomickydennik.sk/kolko-eur-rocne-minu-slovaci-na-potravinu-porovnali-jednotlive-kraje-aj-dochodcov-s-pracujucimi/?utm\\_source=self&utm\\_medium=podtext&utm\\_campaign=podtext](https://ekonomickydennik.sk/kolko-eur-rocne-minu-slovaci-na-potravinu-porovnali-jednotlive-kraje-aj-dochodcov-s-pracujucimi/?utm_source=self&utm_medium=podtext&utm_campaign=podtext)
8. [https://slovak.statistics.sk/wps/portal/ext/themes/macroeconomic/prices/metadata/!ut/p/z1/jY\\_LDoIwEEW\\_hS\\_otOVRliNKqalliwXsxrAyJlouwN8vwbXI7G5yys0d4klH\\_Ni\\_h2v\\_Gh5jf5vy2ceXvK4YpqHMTvaYgzpITNQ6ZgCUtDNgEiU2G4ogSrubAKyk3YcUwoj4NX4msQgTDSC0jEBh4WxqOafk63z4cQjr\\_AXAL9e3xM\\_I0gf\\_Or4AGmNq3TQgGzZt4FRC6RzIAyfPu3Oug0FhEHwAaR0uvw!!/dz/d5/L2dJQSEvUUt3QS80TmxFL1o2X1E3SThCQjFBMDg1NzAwSU5TVTAwVIMwVEkz/](https://slovak.statistics.sk/wps/portal/ext/themes/macroeconomic/prices/metadata/!ut/p/z1/jY_LDoIwEEW_hS_otOVRliNKqalliwXsxrAyJlouwN8vwbXI7G5yys0d4klH_Ni_h2v_Gh5jf5vy2ceXvK4YpqHMTvaYgzpITNQ6ZgCUtDNgEiU2G4ogSrubAKyk3YcUwoj4NX4msQgTDSC0jEBh4WxqOafk63z4cQjr_AXAL9e3xM_I0gf_Or4AGmNq3TQgGzZt4FRC6RzIAyfPu3Oug0FhEHwAaR0uvw!!/dz/d5/L2dJQSEvUUt3QS80TmxFL1o2X1E3SThCQjFBMDg1NzAwSU5TVTAwVIMwVEkz/)

## UTILIZATION OF AROMA MARKETING IN BUSINESS ENVIRONMENT IN SELECTED GLOBAL SOUTH COUNTRIES

*Anna MRAVCOVÁ<sup>1</sup>, Jakub BERČÍK<sup>2</sup>*

*<sup>1, 2</sup> Slovak University of Agriculture, Nitra, Slovakia*

*E-mail: mravcova.anna@gmail.com*

**Summary:** The aim of this paper is to present the utilization of aroma marketing in business environment of selected global South countries placed in Africa. Today, there are tendencies to vanish the differences among individual countries and develop nations on the equal level. Although, the African countries are known as countries with weaker economies and many problems, also there people want to gain living standards comparable to those in developed parts of the world. They have conditions that are more difficult but there are also big companies promoting their products using various modern tools and are fighting for the consumers. Therefore, this paper pays attention to the importance and utilization of aroma marketing in South Africa and Kenya where people also have their needs and desires, and they are daily attacked with many advertisements supporting the growth of consumption. This paper is based on the qualitative research and theoretical analysis of the selected topic. We map, describe and identify the importance of aroma marketing in the current world generally, and then we examine, analyse and determine the place of this issue in the business environment of selected countries. This paper has mainly the theoretical implication and shows whether and how the aroma marketing tools are used in selected countries to influence consumers' decision-making during the shopping.

**Keywords:** aroma marketing, business environment, global South and global North countries, Kenya, neuromarketing, South Africa

### 1. Introduction

If we want to understand what guide consumers' steps and behavior during the shopping, we need to use not only traditional research methods and tools (like consumer surveys, focus groups, etc.) but also new neuromarketing tools because the majority of people's thoughts are in the subconscious mind and consumers do not mostly choose products rationally. However, neuromarketing uses neuroscience – brain research – to reveal subconscious consumer decision-making processes. Therefore, neuromarketers study human brain – its biometric responses, as well as human behavior – to understand how consumers feel, think and act (NMSBA n.d.). So, neuromarketing is used to measure buyer's preferences and this knowledge help marketers create more effectively marketing campaigns, and designe products and services focused more on the brain's response (Neuroscience marketing 2019).

Aromas plays here still more important role. Under the forming of new neuroscience branch known as aroma marketing (or scent marketing), many new challenges are hidden. It is still not fully discovered field. However, it can play an important role in support shopping as the smell has an advantage over other senses, because it immediately stimulates human emotions. By using the aromas, it is possible to comprise the connection with customers at a deeper emotional level, which will bring them a memorable experience. In the world overfilled with promotions, traditional marketing tools are still less effective, and the current trend is the

communication simultaneously oriented on several human senses, which is represented by this modern phenomenon – aroma marketing (see also Berčík et al., 2018). On the other side, neuromarketing methods are covered by pessimistic views of many researchers as the methods and the tools are quite expensive. That is why it is used not so widely up to know despite its potential. In addition, these methods are common mainly in the global North countries. However, also people in global South want to gain the same living standard as those in developed ones. They have also their needs and desires, and they are daily attacked with number of advertisements supporting the growth of consumption in every area. Also, in these countries there are big companies promoting intensively their products to the people with utilization of various modern methods and are actively fighting for the consumers – not excluding the African countries. Therefore, this paper will pay attention to the utilization and place of aroma marketing tools in South Africa and Kenya as global South countries, however belonging among the stronger ones in that group.

## **2. Literature review / Research Background**

As aroma marketing is part of neuromarketing, it is important to explain it shortly too. Neuromarketing is the application of neuroscience to the marketing. It is known as consumer neuroscience, which refers to the measurement of physiological and neural signals to gain insight into customers' motivations, preferences, and decisions, which can help inform creative advertising, product development, pricing, and other marketing areas (HBR, 2019). We can say that neuromarketing is the formal study of the brain's responses to advertising and branding, and the adjustment of those messages based on feedback to determine better responses (Marketing-Schools.org, 2012). By this, marketers learn why consumers make the decisions they do, and what parts of the brain are motivating them to do so. Neuromarketing can be very useful. About 95 % of thoughts occurred in the unconscious mind cannot be measured by traditional research methods (Marketing-Schools.org, 2012). And neuromarketing includes the direct use of brain imaging, scanning, or other brain activity measurement technologies to measure the response to specific product, pack, advertisement, or other marketing elements (Neuroscience marketing, 2019).

Using neuromarketing, the marketer can rethink the used strategies and create smarter marketing that will increase the effectiveness of his efforts. Consumers are subconsciously defining what they want, how much they will pay, and even what promotional activities appeal to them every day. The key to getting results is to understand this (Dube, 2017).

### **2.1. The Tools of Neuromarketing**

We recognize several most common methods in neuromarketing. There are two primary tools used for scanning the brain – fMRI (functional magnetic resonance imaging) and EEG (electroencephalogram). The first uses strong magnetic fields to monitor changes in blood flow across the brain and it is administered while the person lies inside the machine that takes continuous measurements. The second reads brain-cell activity using sensors placed on the subject's scalp. It can monitor changes in activity over fractions of a second. However, it is weak in pinpointing exactly where the activity occurs. FMRI can go deep into the brain but it is big, expensive, and it monitors activity only several seconds, which may miss some reactions (HBR 2019). Tools measuring the physiological proxies for brain activity tend to be more affordable and easier to use. Eye tracker can measure attention (via the eyes' fixation points) and arousal (via pupil dilation), facial-expression coding (reading the muscles in the face) can measure emotional responses, and heart rate, respiration rate, and skin conductivity measure arousal (HBR 2019). These tools are very effective too but also quite expensive, so they are not used very commonly, mainly in global South countries.

## ***2.2. Aroma marketing and its raising importance in the current business world***

Business environment constantly requires the changes that support the growth of sales and customer happiness. Smell is the only sense directly connected with our limbic system, which controls memory and emotions. We react emotionally to some aroma even before we can identify it. This has a subconscious effect on customer's behavior and spending patterns. Scents in space have the strongest impact on enhancing consumer behavior (Spectrio, 2019). It is known that nearly 75% of the feelings, which are experienced during the day, are regulated by aromas. On average, human can recognize up to 10 000 aromas, and 65% of the aromas which human already felt in the past are kept in the brain for up to one year (Erenkol, 2015). In today's business environment represented by hard competition, creating memorable experience and emotional connections with consumers it is important to gain customers. Smell is the most powerful of all the senses. Aromas can attract new customers, increase sales, heighten value perception, expand brand recognition, and customer satisfaction (Air/Aroma, 2019).

However, the smell perception is subjective, and it is involving many other factors, such as individual preferences, the most important is to find those aromas that will reach as many potential consumers as possible (Virkkunen, 2015).

Aroma marketing becomes an essential part of marketing communication (Sikela, 2015) as it strongly influences customer behavior through reasonably selected aromas (Berčík et al., 2018, p. 590). Paluchová et al. (2016) stated, that the pleasant smell released into the air keeps the buyer longer in the sales area, positively affects his desire for the product or service, and increases customer's willingness to pay more money.

From economic point of view, we must note that aroma marketing and the devices for the aromatization are expensive. However, in global scale it can be generally noted that the use of biometric and neuroimaging methods is constantly growing. The reason is also the fact that in many mainly global North countries these methods are being taught so intensively that they are considered as a common standard (Berčík et al., 2017, p. 736). In global North countries, the investment in this research is generally higher than in global South countries.

Aroma marketing is more than just diffusing a nice aroma in a space. It is the way of creating the company's brand identity, marketing message, target audience, and creating an aroma that strengthens these values. When smell is combined with other marketing signs, it can establish a continual connection with consumers (Air/Aroma, 2019). Smell is quite a primitive sense, but it plays significant role in influencing our emotions and decisions.

## **3. Methodology**

This paper is based on the qualitative research and theoretical analysis of the utilization of aroma marketing in business environment in South Africa and Kenya – as selected global South countries. In order to achieve the goal comprehensively we use various research methods. At first, the purpose of the paper is to point the modern marketing phenomenon – aroma marketing as a part of neuromarketing. Then, we map, describe and identify the place and importance of aroma marketing in the current world generally, after this we examine, analyse and determine the place of this issue in the business environment of selected countries. Our research shall bring us closer the situation in examined area and allow us to make own conclusions.

## 4. Results and discussion

Aroma marketing is growing trend in advertising. It is becoming more important and successful as companies start to realize that human smell play an important role in forming people's mood, thoughts, and behavior. It offers approaches and results different from traditional strategies. Although it has not been fully discovered yet it has big impact for those who decided to use it (AromaTech 2019). There is enough evidence that aromas can help positively influence consumer behavior in business, and there are many ways how to use it, so we have an assumption that it is expanding also in global South countries. Therefore, in our paper, we examined whether the selected African countries – South Africa and Kenya – use aroma marketing tools in their business environment and in what extent. From the point of economic view, we can say that although both are the global South countries, they do not represent the poorest African countries; vice versa, they belong to the wealthiest ones.

During our research, we have found out that both countries are using aroma marketing tools in their business environment. Although, we have to say that South Africa is the one, which is the most active in this field within the whole continent. There is number of companies, which are supporting this business as they see it very perspective. The most popular and most active are agencies: ScentAir, SOH scent marketing, Scentology, Scent Solutions, BrandScents, SAAFFI, DMX.

In Kenya, the using of aroma marketing tools is not so common. We have recognized as the most important two agencies there: Scent for Africa (operating in Kenya and Tanzania) and Pleasant Air (operating in many African countries).

### 4.1. South Africa

ScentAir Technologies settled in Johannesburg was founded in 2000. We can say that it is the leading provider of aroma marketing solutions for brands and retailers there. It enables businesses to create in-store experience by engaging memory and emotions through scent delivery systems. Their scent machines can be customised to cover also the challenging environments and brands. Their scent delivery systems use dry-air technology that releases aroma without sprays, aerosols and heated oils (ScentAir n.d.). They use three systems: ScentWave – ideal for any business environment. It uses dry-air technology; ScentDirect – features advanced diffusion technology that converts liquid fragrance into a dry, invisible mist and releases it directly into the space; ScentStream – for creating long-lasting environment aroma in the large space. ScentAir offers range of technologies and solutions that can assist businesses to aromatize the smallest spaces up to the largest ones (stadiums, etc.). Today, this company is a part of AllSense Group, which is a multinational organisation. Its main product line is providing environmental scent services to leading brands, hotels and retailers. AllSense Group operates in Australia, New Zealand, Singapore, Malaysia, and South Africa (Allsense n.d.).

BrandScents is company founded in 2005, so it also belongs among the pioneers in this field in South Africa. It works directly with brand owners to design and blend brand aromas, and to implement and install the required hardware to diffuse the aroma. Their aim is to fit physical foundations without being invasive to the structure and fit to the marketing budget without causing stress. Their scent technologies diffuse aromas through the HVAC (heating, ventilation, and air conditioning) or ducting systems in the business. This system is especially

for aromatizing large spaces and it can be installed alongside the central ventilation system. On the other side, Plug and Play units are used for smaller spaces (BrandScents n. d.). Another company is Scent Solutions which delivers cutting-edge scent systems. It provides aroma signature scents for combatting malodours, and a range of aromas with germ-killing properties. They declare, that their expertise and experience enable them to create perfectly scented environment for their clients and their customers (Scent Solutions 2016). Their scent systems operate using sub-micron diffusion technology ensuring effective, longest lasting, and safe fragrance diffusion. Their systems are for scenting both private and public areas. They use mainly free-standing, HVAC (aircon and modular (wall-mount) units). Free-standing Scent Systems are most common and effective in aromatizing both small and larger spaces. They are portable and can be placed on the ground, on the surface, or can be wall mounted. Their HVAC Scent Systems are connected into the central aircon ducting. These systems are effective in large areas. Modular (wall-mount) units are for areas where free-standing or HVAC aircon units are not suitable (Scent Solutions, 2016).

Scentology is another important South Africa aroma marketing company. It has broad range of aromas and selection of scent delivery systems to find scent solution for various businesses. They use several tools, mainly: Aicron unit – this out of sight system diffuses liquid aromas into a dry vapour before it is integrated into the existing air conditioning or ventilation system. This system can be modified for any size of space. Other diffusion systems are available too – Scentology’s stand-alone diffusion system, which is a small, quiet and efficient system that can be wall mounted, attached to aircon systems or stand alone; Small area battery operated systems are also available; and also Reed diffusers, room fragrance sprays, and oil burners for smaller spaces (Scentology 2016).

Another important company is SOH Scent Marketing that claims it uses the power of scent to help businesses create a brand presence and increase it in the eyes of their customers. This company uses cutting-edge technology to create scenting solutions in aesthetics and diffusion. They promise creating a sense of prestige for the business’s office or store. Their technology, modern designs and wide range of aromas create scenting solutions for various brands and spaces. They offer diffusing systems for every space. They provide systems with programmable and innovative cold air micro-mist diffusion systems with timer and back up battery built in HVAC adaptor. Their systems have modern look, can be wall mounted or stand-alone. They have three sizes of the units according to the size of the space (from 350 to 5000m<sup>3</sup>) and provide full service for businesses (SOH Scent Marketing 2018).

DMX is another company. It states that it is a global leader in audio and visual branding and experiential marketing. They create engaging customer environments, motivate staff and build brands. They want to create extraordinary experience through aromatizing, music, messaging, and digital signage in the businesses, and help them develop the aroma marketing and branding strategy that captures the essence of their brand (DMX 2018). As they provide many services, they do not specify what systems they use in aromatizing. It is based on the further consultancy.

The last examined agency is SAAFFI. This South Africa Association of the Flavour and Fragrance Industry was formed to unite local companies across common non-competitive industry issues, freeing up individual organisations to raise their business. This group has grown up to over 50 companies, all active participants in the Association (SAAFFI n.d.). It provides many helpful tools in our field and provides a membership to similar companies interested in aroma marketing.

## **4.2. Kenya**

In Kenya there are just few companies in this field up to now. We have examined two. Both are operating in more African countries besides Kenya. One – which we see as the most important – is the Pleasant Air (operating also in South Africa). Its goal is to help businesses improve their environment to leave notable impression on customers. It declares aromatizing of any industry. It is transforming spaces with using aromas to create an atmosphere of inspiration and comfort. The most popular is their Aroma Streamer 850. They are mostly oriented on the banks, hotels, offices, car showrooms, transport, medical environment, fitness and various events. They identify their aromas as multicultural, emotional, dynamic, surprising, invigorating, electrifying, pleasurable, etc. Their systems can aromatize both private and public areas. They work using the sub-micron diffusion technology, which ensures effective, long lasting and safe aromas diffusion, offering free-standing, wall mounted, and HVAC models (Pleasant Air n.d.).

The second company is Scents for Africa operating in Kenya and Tanzania. They aromatize mainly hotels but also offices, medical centers, retails, fitness centers, spas, restaurants, entertainments, veterinary clinics. They offer expert aroma marketing service which includes survey of the area, strategical selection of the right aroma, supplying relevant quality equipment, and ensuring that the selected area is perfectly scented throughout the service period. They supply HVAC systems, free-standing systems and wall mounting diffuser systems. They provide different sizes from 0–5000 m<sup>3</sup> depending on the area. They are actively expanding their scent marketing services by employing distributors through the whole Africa (Scents for Africa 2019).

## **5. Conclusion**

According to our research we can say that the most active and very common the aroma marketing started to be long time ago in South Africa. There are many aroma marketing companies, all using sophisticated methods, covering all industries, and all types of spaces. We were not able to explore all these companies operating in this country. On the other side, it was quite difficult to find some of these companies in Kenya. We have not found any which operates exclusively in this country. Internationally we have found two important professional companies in this field. However, in the end we can say that the examined companies in both countries are operating highly professional and providing all modern tools of this new phenomenon for the business environment, although the possibility for choosing among this type of services and products is much higher in South Africa, which offer also domestic professionals, operating directly and exclusively in this country.

As the biggest limitation in this examined issue we see the fact that the tools for aroma marketing are quite expensive and, for example, in Kenya we can see that it is not so popular, therefore the companies are not operating there in such a wide extent like in South Africa. On the other hand, besides the fact that the economy of South Africa is not so different in comparison with the Kenyan's one, there are huge differences among the popularity of this phenomenon in our selected countries.

However, we assume that providing and using of these new methods and tools in the business environment is going to raise in a near future as it has huge perspective and potential for marketers to rise number of customers, and the applying of aroma marketing does not necessary need to use also other very expansive tools of neuromarketing such as, for example,

fMRI or EEG. This field of neuroscience is still in its beginnings. It is going to grow in its importance and, as we can see, this is going to happen also in the countries of global South, not excluding the African ones.

### **Acknowledgement**

*This paper has been supported by the research grant APVV-17-0564 "The Use of Consumer Neuroscience and Innovative Research Solutions in Aromachology and its Application in Production, Business and Services".*

### **References**

1. Air/Aroma. (2019), *Scent Marketing*, <https://www.air-aroma.com/scent-marketing> (access: 13-06-2019).
2. AllSense, <https://allsense.co.za/> (access 18-06-2019)
3. AromaTech. (2019), *AromaTech Scent Diffusers & 100% Pure Essential Oils & Aroma Oils For Home & Business*, <https://aromatechscent.com/> (access 22-06-2019).
4. Berčík, J. et al. (2017), *Innovative Research Tools for Retail and Services*, In: Managerial Trends in the Development of Enterprises in Globalization Era, pp. 734 – 741, SUA, Nitra
5. Berčík, J. et al. (2018), *Aroma Marketing – a Modern Marketing Phenomenon*, In: International Scientific Days, pp. 586 – 598, Wolters Kluwer, Prague, DOI <https://doi.org/10.15414/isd2018.s2-3.02>
6. BrandScents, <https://brandscents.co.za/> (access 19-06-2019).
7. DMX (2018), *Create a more powerful customer experience*, <https://www.dmx.co.za/> (access 20-06-2019)
8. Dube, E. (2017), *Neuromarketing 101: That is Neuromarketing and How are Companies Using It*, <https://www.impactbnd.com/blog/neuromarketing> (access: 10-06-2019)
9. Erenkol, D. A. (2015), *Sensory marketing*, "Journal of Administrative Sciences and Policy Studies", 1:(3), pp. 1-26.
10. HBR (2019), *Neuromarketing: What you need to know*, <https://hbr.org/2019/01/neuromarketing-what-you-need-to-know> (access: 10-06-2019)
11. Marketing-Schools.org. (2012), *Neuromarketing*, <https://www.marketing-schools.org/types-of-marketing/neuromarketing.html> (access: 07-06-2019)
12. Neuroscience marketing. (2019), *What is neuromarketing?* <https://www.neurosciencemarketing.com/blog/articles/what-is-neuromarketing.htm> (access: 05-06-2019)
13. NMSBA. *What is neuromarketing*, <https://www.nmsba.com/neuromarketing/what-is-neuromarketing> (access: 04-06-2019).
14. Paluchová, J. et al. (2016), *The atmosphere and its impact on consumer behavior in food stores*, In: *The agri-food value chain: challenges for natural resources management and society*, SUA, Nitra, pp. 804 – 811, DOI: <http://dx.doi.org/10.15414/isd2016.s10.05>
15. *Pleasant Air*, <http://www.pleasantair.co.ke/> (access 19-06-2019)
16. SAFFI, <https://saaffi.co.za/> (access 18-06-2019)
17. Scent Solutions (2016), *Scent marketing for your business*, <https://www.scentsolutions.co.za/> (access 20-06-2019)
18. Scents for Africa (2019), *About Us*, <https://scentsforafrica.com/> (access (20-06-2019)
19. *ScentAir*, <https://www.scentair.co.za/> (access 18-06-2019)
20. Scentology (2016), *Scent branding for your business*, <https://www.scentology.co.za/> (20-06-2019)
21. Sikela, H. (2015), *Vôňa ako súčasť identity firmy*, In: *Instoreslovakia*, 2:(13), pp. 14-15.
22. SOH Scent Marketing (2018), *Your message, your brand, loud and clear*. <https://www.sohgroup.co.za/> (access 19-06-2019)
23. Spectrio (2019), *Engage Your Customers*, <https://www.spectrio.com> (access: 05-06-2019).
24. Virkunen, I. (2015), *Consumers' opinions on scent marketing usage in retail environment*, <http://www.doria.fi/handle/10024/103784> (access: 03-01-2016)

## SPECIAL COMPETITIVENESS ENHANCES STOCK MANAGEMENT MODEL FOR ENGINEERING SMES

*Dávid KOSZTYI<sup>1</sup>, Zita FODOR<sup>2</sup>, Zoltán VALENTINYI<sup>3</sup>*

*<sup>1, 2, 3</sup> Szent István University, Gödöllő, Hungary*

*E-mail: kosztyi1@gmail.com*

### **Summary:**

**Purpose:** Similarly, to the rest of the European Union, domestic SMEs make a significant contribution to the production of gross domestic product and play an even greater role in employment. However, their productivity and economic efficiency are still lagging behind in comparison with SMEs in more developed European countries, and in comparison, with domestic large companies, so every opportunity must be taken to enhance their competitiveness.

One of the key factors of competitiveness is the economical operation of logistics processes: in particular, optimizing inventory management, offers opportunities for a significant increase in cost efficiency. However, in the case of SMEs, the weaker bargaining power, the low capital supply and the frequent cash flow problems, especially for foreign suppliers, require special stock optimization solutions.

**Design/methodology/approach:** In our article, we present a stock management model developed for small and medium-sized enterprise engaged in domestic industrial production. We prove that with the help of the iteration model we have created, more cost-effective raw material stocking can be realized in case of the examined belt manufacturing company than applying EOQ model with price breaks, which is usually used in similar cases.

**Findings:** The presented model can also be an effective alternative to the weak bargaining position, supplier-type, industrial-producing SMEs, based on current data, but with the inclusion of demand forecasting methods, the accuracy of the model can be further enhanced.

**Keywords:** SMEs, stock management, competitiveness, stock management model

### **1. Introduction**

In the globalizing world of the last decade, small and medium-sized enterprises (SMEs) have become increasingly important players in the economic development of an advanced market economy and emerging regions. More and more authors share the view (see, for example, Koh et al., 2017; Saxena, 2012) that small and medium-sized enterprises make a major contribution to the economic development and employment levels of individual countries and regions.

It has now become very clear that the productivity and efficiency of the SME sector play a significant role in the development of any national economy (Nanjundan, 1994). There is a widespread view in international literature that competitiveness can be increased through the use of appropriate stock management methods, most notably through optimization and minimization of stock levels (Sprague and Wacker, 1996).

## **2. Literature review / Research Background**

Since Harris (1913) published an economical order quantity model (EOQ) more than a hundred years ago, which is still the starting point for stock management models, many researchers have developed and presented models that have been developed with different aspects and methods, that use more realistic assumptions than the basic model.

For example, models adjusted to the stock-level demand-driven rate have appeared (see, for example, Gupta and Vrat, 1986, Baker and Urban, 1988), as it has been observed that products exposed to large quantities of customers' eyes increase demand and inventory demand (Levin et al., 1972).

Many researchers have analyzed different inventory management methods and their impact on competitiveness: these researches can be very helpful in the operational operation of businesses. Maria and Jones (2003) argue that using appropriate inventory management methods provides a higher customer service level at relatively lower costs. At the same time, they pointed out that this does not work without tight control of inventory management: that is, different inventory management systems only produce the expected results if the necessary calculations and interventions are performed every day. According to Palmer and Dean (2000), every business has to find the most appropriate inventory management method. Katehakis et al. (2016) has developed a stock management model for SMEs that focuses specifically on solving cash flow problems. Narayanapillai (2014) examined the factors that make inventory management more efficient and competitive for small and medium-sized enterprises in the machine industry.

Several authors also deal with the relationship between inventory management methods and competitiveness in large companies (see, for example, Natarajan, 1991). Rabinovitch, Martin and Philip (2003) consider turnaround times as the main measure of inventory management efficiency. According to Ng, Partington and Sculli (1993), long lead times and uneven demand require higher inventory levels and vice versa. In addition, it has also been shown that the role and importance of each item in the production process is also a very important factor in determining the optimal inventory levels.

According to Gill, Biger and Mathur (2010), a small amount of frequent ordering for SMEs is the most appropriate strategy to take advantage of low inventory levels. The benefits of buying in large quantities cannot be enjoyed because they are rarely in need of material, which can already lead to a significant discount.

In his research, Koumanakos (2008) tested the hypothesis that efficient inventory management leads to an improvement in the company's financial performance. The results showed that the higher the stock level in the production processes, the lower the rate of return. Koh, Deirbag, Bayraktar, Tatoglou and Zaim (2007) have conducted more comprehensive studies on the effectiveness and competitiveness of the supply chain management methods applied by Turkish SMEs. Research has confirmed that some supply chain management methods, such as strategic cooperation, lean operation, outsourcing, and multi-vendor systems have a direct positive and significant impact on the performance of SMEs.

### 3. Methodology

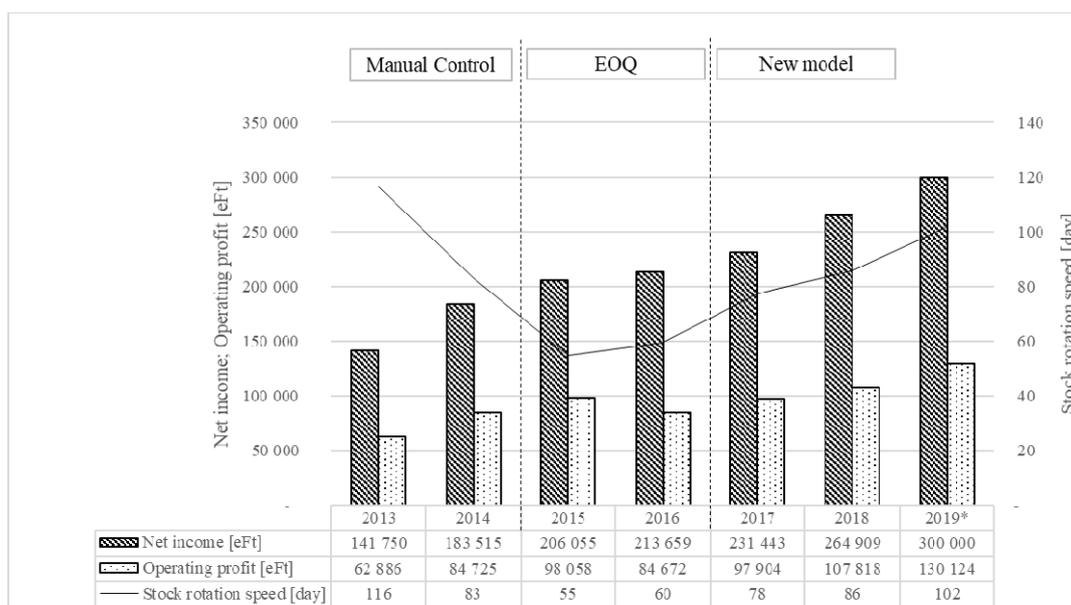
The "Phantom Belt Company" - hereinafter referred to as "PBC" main profile is the production of straps and conveyor belts related to various materials handling, mainly for order. In addition to these products, the production of aftermarket wear parts for agricultural machinery (eg Massey Ferguson D28250931 cutting tape) has become increasingly important.

The investigated PBC started its operation in the early 1990s and has since undergone significant development, but the main problems characteristic of Hungarian SMEs has not been successfully solved. Capital shortages, low production efficiency and the resulting cash flow problems are the ones most affected at the moment. Basically, the company's competitive advantage is its customer service speed and the quality of its products. Knowing the problems of the domestic SME sector and the market needs of PBC, we can say that maintaining the right mix and quantity of the inventory is a huge challenge and is essential to staying on the market.

In the life of the company three main sections can be distinguished from stock management. The first phase was from its foundation to 2015. Stock management was the responsibility of the production manager. Initially, due to the small size of the company, no inventory management system was used.

The development of the new model was justified by the question of determining the optimal stock rotation speed. The specific niche market strategy will only be successful, if there are necessary raw materials to meet customer needs.

With the EOQ model (2015-2016), PBC liquidity improved (stock rotation speed accelerated to 55 days from the previous 116 days). But customer satisfaction was slower, higher cost, or not at all, so sales indicators deteriorated (Figure 1). Based on the company's strategy and resources, the goal was to determine the optimal - and not the lowest - inventory turnover rate.



**Figure 1: Changes in PBC sales and stock rotation rates during the period under review**

Source: own editing

As the data in Table 1 shows, PBC's stock rotation speed increase (resulting in a decline in inventories) achieved with the EOQ model did not represent a competitive advantage on the market. Sales growth began to decline from 2015, with only 3.69% growth in 2016. Operating profit also declined significantly in 2016 (-7.96%) compared to 2015 operating profit. While there was a general increase in the market. With the introduction of the new model, the stock turnover rate declined to 86 days in 2018, but sales closed by 14.46% compared to 2017. The 2019 estimates also predict further growth at a slower stock rotation rate. From the aggregated data it can be concluded that increasing the stock turnover rate in the investigated company is not profitable in the long run as it entails a loss of market.

**Table 1: PBC Net Revenue, Operating Profit, Stock Rotation Rate and Changes to Revenue Based on the Method Used**

YEAR	2013	2014	2015	2016	2017	2018	2019*
Net income [tHUF]	141 750	183 515	206 055	213 659	231 443	264 909	300 000
Net income change (2014=100%)	-	-	12,28%	16,43%	26,12%	44,35%	63,47%
Operating profit [tHUF]	62 886	84 725	98 058	84 672	97 904	107 818	130 124
Operating profit ch. (2014=100%)	-	-	15,74%	-0,06%	15,55%	27,26%	53,58%
Stock rotation speed [day]	116	83	55	60	78	86	102
Stock rot. speed ch. (2014=100%)	-	-	-34,14%	-28,25%	-6,68%	3,29%	22,58%
Methods	"Manual control"		EOQ		New model		

Source: own editing

#### 4. Results

In order to determine the optimal stock rotation rate, the PBC's strategic goals had to be examined as a first step. The management of PBC has set the goal of maximizing customer service and achieving an annual revenue increase of 10-15%, maintaining high quality products and increasing production efficiency, and achieving the lowest cost of raw materials - considering scarce resources. Therefore, the optimum stock rotation speed for the business is where the business meets customer needs at the lowest possible unit cost.

The minimum order quantity (hereinafter referred to as MOQ), often defined by suppliers, poses a significant problem for SMEs, including the investigated company, as it often happens that MOQ even exceeds the enterprise's total annual requirement for the given raw material. The main variable of the model is the examined period ( $t_m$ ), because the model is of an iterative nature, so it examines the necessary raw materials and the development of related costs for different time periods.

The operation of the new model begins with the listing of the entire stocked base materials, grouped by supplier. Here's a look at how the model works:

- (1) Determination of the examined period ( $t_m$ ). This can be any time-span - in the study, we used monthly detail. Monthly detail means 12 runs in the model.
- (2) Definition of  $\sum Q_{psiM}$ .  $\sum Q_{psiM}$  means the total of the raw material needs for one year - by supplier; by product. The model relies on base year data.
- (3) Calculating  $Q_{psiM}$ . As explained above, the MOQ is a major challenge for the Hungarian SME sector.  $Q_{psiM}$  – assuming uniform use –, corrects the required amount of raw material projected to the specified  $t_m$  for the MOQ, specified by the supplier.

(4) Raw material cost calculation grouped by supplier, with MOQ adjusted need. Taking into account the effect of any discounts.

$$\sum_{1}^{Prod.} (Q_{psiM} * P_{psi} * (1 - d_{QpsiM}))$$

(5) Calculation of transport costs.  $Q_{psiM}$  is expressed in kg and then summed up by supplier and calculated on fare.

$$\left( \sum_{1}^{Prod.} (Q_{psiM} * W_{psi}) \right) * S_{tariff}$$

(6) Summary of costs calculated by supplier. As a result of this step, we get D.

$$D = \sum_{1}^S \left[ t_m \left( \sum_{1}^{Prod.} (Q_{psiM} * P_{psi} * (1 - d_{QpsiM})) \right) + \left( \sum_{1}^{Prod.} (Q_{psiM} * W_{psi}) \right) * S_{tariff} \right]$$

(7) Comparing the value of D to the available own resources. If  $C_{own}$  is greater than the calculated D,  $CF_n$  is the sum of D and the cost of capital. If it is smaller, then the sum of D, the cost of capital and the missing resource cost.

$$\left\{ \begin{array}{l} C_c \rightarrow D - C_{own} > 0 \rightarrow (D * WACC) + \left( (D - C_{own}) * \left( 1 + \frac{r}{100} \right) \right) \\ D - C_{own} < 0 \rightarrow D * WACC \end{array} \right\}$$

(8)  $CF_n$  calculation. Cash flow is determined by the sum of D and  $C_c$ . An important parameter in the model is the risk factor of  $C_c$ . This multiplier is proportional to the duration of the deposit ( $t_m$ ), and corrects the amount of the withdrawal for the larger period.

$$CF_n = D + C_c$$

(9) Calculation of Unit Cost. The resulting  $CF_n$  is divided by the quantity needed for that period and not by the amount increased by the MOQ. Emphasizing the impact of MOQ on unit costs for a given period. Since the quantities necessary strategic point of view, the relevant period under investigation and not the weak bargaining position against the relevant supplier.

$$\frac{CF_n}{\sum Q_t} = Cost_{unit}$$

(10) Determining the optimal  $t_m$ . The optimal  $t_m$  is given by the run where the unit cost is the lowest.

#### Nominations

$D$  = sum material expenses (per given time)

$S$ . (supplier);  $n$  (number of suppliers)

Prod. (product);  $k$  (number of products)

$t_m$  = investigated period (in the formula one month, averaged monthly usage;  $Q_{psiM}$ )

$Q_{psiM}$  = MOQ-corrected material need for the period ( $s$ : supplier;  $i$ : product  $i$ )

$P_{psi}$  = price level, unit price

$d_{QpsiM}$  = discount rate for order unit

$W_{psi}$  = weight of a product

$S_{tariff}$  = supplier rates for that weight and distance

$CF_n$  = CashFlow need for a year

$C_c$  = capital cost (capital with a risk factor)

WACC = The weighted average cost of capital of the company (warehousing and storage expenses-with)

**Table 2: Results of PBC analysis (data in tHUF)**

$t_m$ (1)	material cost (4)	shipping cost (5)	D (6)	$C_c$ (7)	$CF_n$ (8)	Unit cost (9)
1.	35 958	317	36 275	5 342	41 617	21,897
2.	36 297	317	36 613	9 830	46 443	12,218
3.	38 882	326	39 208	15 566	54 774	9,607
4.	40 061	326	40 386	21 022	61 409	8,078
5.	43 916	354	44 270	28 812	73 082	7,691
6.	48 461	384	48 845	38 139	86 984	7,628
7.	53 322	401	53 724	48 867	102 591	7,711
8.	57 953	429	58 382	60 521	118 903	7,820
9.	61 766	439	62 205	72 257	134 462	7,861
10.	67 471	493	67 964	87 541	155 505	8,182
11.	69 252	526	69 778	98 377	168 156	8,043
12.	74 334	579	74 913	114 954	189 867	8,325

Parameters used for analysis:

WACC: 12%; Interest Rate: 5%; Available source: 30 000tHUF; Investigated time distances: 1-12month (iteration by months)

Source: own editing



**Figure 2: The results of the study (tHUF/kg)**

Source: own editing

The results obtained are shown in the figure above (Table 2; Figure 2). The effect of MOQ on the company under investigation is clearly visible. Unit costs, under the conditions tested, reach a minimum of 6 months. This is the most optimal competitiveness aspect. This means a 183-day stock rotation speed with a clear unit cost of 3.765HUF/kg.

Compared to the EOQ model (though using these parameters), a 36-day inventory rotation rate is obtained at a unit cost of 4.057HUF/kg by aggregating product level data. The following table (Table 3) are shown in the consolidated EOQ costs - the new model structure analysis - complete with an annual value of the new model is the result of optimal runtime.

**Table 3: Comparison of New Model and EOQ Results (tHUF)**

Method	Material cost	Shipping cost	D	Capital cost	$CF_n$	Unit cost
EOQ	57 620	2 946	60 566	35 605	96 171	4,057
New model	76 065	665	76 730	41 405	118 136	3,765
Difference	18 445	- 2 281	16 164	5 800	21 965	- 0,292

Source: own editing

The difference between the new model and the unit cost of the EOQ is 292HUF/kg (7.2%). We can see that overall the cash flow demand of the new model is higher than that of the EOQ model, but the new model is more optimal by splitting costs. The company needs to

commit more resources to lower unit costs, but it will pay off with the impact of higher operating profit and better customer service (Figure 2).

## 5. Discussion

According to Palmer and Dean (2000), every business has to find the most appropriate inventory management method, the model presented above helps businesses find the optimum tailored to their business goals. However, like Maria's and Jones's (2003) findings, strong control must be introduced so that higher customer service levels can be achieved and maintained. According to Gill, Biger and Mathur (2010), SMEs cannot take advantage of the larger order, but the disadvantages of small orders are immediately recognized if they do not order the quantities that are appropriate for MOQ.

## 6. Conclusion

In the globalizing world of the last decade, small and medium-sized enterprises have become increasingly important players in the economic development of the developed market economy and emerging regions - especially in Hungary, where 60% of the employed work in the SME sector. Thus, it is especially important to improve and optimize the efficiency of these companies.

The above model helps domestic SMEs to determine the optimal stock rotation speed required to achieve their goals, fully tailored to the company. The EOQ model is a good choice if you are likely to estimate product-level sales, or if the minimum order size is not very high compared to your business base requirement. In other cases, the company may lose a market through savings in stocks, thus risking the future of the company with short-term cost savings. Otherwise, the business is threatened by overcapacity, which may pose serious problems during a temporary recession. This dilemma is solved by the model above, which in the easiest way optimizes the management of inventory management from available information.

## References

1. Katehakis, Melamed, and Shi (2016), Cash-Flow Based Dynamic Inventory Management. *Production and Operations Management*, 25:(9), pp. 1558-1575.
2. Koh, S. C. L., Demirbag, M., Bayraktar, E., Tatoglu, E., & Zaim, S. (2007). The impact of supply chain management practices on performance of SMEs. *Industrial Management & Data Systems*, 107:(1), 103-124.
3. Saxena, V.D. (2012). Internationalization of SMEs in India: Opportunities and challenges. *South Asian Journal of Marketing and Management Research*, 12:(9), 219-228.
4. Narayanapillai (2014) Factors Discriminating Inventory Management Performance: An Exploratory Study of Indian Machine Tool SMEs. *Journal of Industrial Engineering and Management*, 7(3): 605-621 – Online ISSN: 2013-0953 – Print ISSN: 2013-8423
5. Sprague, L.G., & Wacker, J.G. (1996). Macroeconomic Analyses of Inventories: Learning from Practice. *International Journal of Production Economics*, 45, 231-237.
6. Harris, F. W. (1913), How many parts to make at once. *Factory, The Magazine of Management*, 10:(2), pp. 135-136., 152. (Reprinted in *Operations Research*, 38:(6), pp. 947-950., 1990)
7. Baker, R. C., Urban, T. L. (1988), A deterministic inventory system with inventorydependent demand rate. *Journal of the Operational Research Society*, 39:(9), pp. 823–831.
8. Gupta, R., Vrat, P., 1986. Inventory model with multi-items under constraint systems for stock dependent consumption rate. *Operations Research*, 24:(1), pp. 41–42.

9. Levin, R. I., McLaughlin, C. P., Lamone, R. P., Kattas, J. F. (1972), *Productions/Operations Management: Contemporary Policy for Managing Operating Systems*. McGraw Hill, New York
10. Mandal, B. N., Phaujdar, S. (1989), An inventory model for deteriorating items and stock-dependent consumption rate. *Journal of the Operational Research Society*, 40:(5), pp. 483–488.
11. Gill, A., Biger, N., Mathur, N. (2010), The relationship between working capital management and profitability evidence from the United States. *Business and Economic Journal*, July 31, pp. 1-9.
12. Koumanakos, D. P. (2008). The effect of IM on firm performance. *International journal of productivity and performance management*, 57:(5), pp. 335-369.
13. Maria, X.L., & Jones, J.T. (2003). Quality Initiatives and Business Growth in Australian Manufacturing SMEs: An Exploratory Investigation. *School of Commerce Research Paper Series*, 03-3.
14. Ng, S. O. E., Partington, E. C., Sculli, D. (1993). A Computer System for Inventory Management of Lighting Products: A Case Study. *Computers in Industry*, 22:, pp. 71-79. [http://dx.doi.org/10.1016/0166-3615\(93\)90082-C](http://dx.doi.org/10.1016/0166-3615(93)90082-C)
15. Nanjundan, S. (1994). Recent Developments in Small Scale Industry in Selected Countries and Lessons for India. National Council of Applied Economic Research and Friedrich-NaumannStiftung, New Delhi
16. Palmer, A., & Dean, H. (2000). How SMS Freed 40% Capacity and Slashed Throughput Times. *Manufacturing Computer Solutions*, 6:(11), pp. 127-134.

## THE QUALITY OF STAKEHOLDER'S COOPERATION WITHIN AGRICULTURAL INNOVATION SYSTEM AND PRESENT BARRIERS FOR INNOVATION IMPROVEMENT IN SLOVAKIA

*Jozef KOŠUDA<sup>1</sup>, Zuzana KAPSDORFEROVÁ<sup>2</sup>, Mária KADLEČÍKOVÁ<sup>3</sup>*

*<sup>1, 2, 3</sup> Slovak University of Agriculture, Faculty of Economics and Management, Nitra, Slovakia  
E-mail: maria.kadlecikova@uniag.sk*

**Summary:** The primary objective of submitted article is to evaluate the quality of cooperation links among the actors of agricultural knowledge and innovation system within Slovakia. In frame of the research was conducted a questionnaire survey within farms and teleconference interviews to organisations providing agricultural extension services. The survey results were processed by statistical methods. We have investigated how farms evaluate collaboration with consultancy firms /advisors, how often farmers use professional advisory services, the number of contracts per year with them, the quality assessment of the advisory services provided in each production field, assessing the effectiveness of the funds spent on expert advices, and evaluating cooperation links with others agricultural innovation and knowledge system stakeholders. Another major objective of the survey was to obtain information about the main barriers which slow down development of agricultural innovation systems. We have defined 16 barriers (obstacles) and farmers picked up ones, which represent the most negative impact on development of innovation in agricultural sector. Farmers had the opportunity to assess the strength of the barrier on the scale from 1-5. Micro and small farms were the most represented group in survey. In the terms of production structure, the crop and livestock production sector dominates.

**Keywords:** agricultural extension, agricultural innovation system, cooperation, innovation barriers, quality

### 1. Introduction

In the agricultural knowledge and information system, the people and institutions are interconnected with common objectives to learn (knowledge gathering), to transfer knowledge and experience, to generate new technologies with intention to disseminate them in agriculture together with progressive information. This system is operational only if it is integrating farmers, researchers, teachers, lecturers and other stakeholders who are acting in the agricultural secondary schools, universities, research hubs, public agencies and voluntary organizations, respectively they do work as consultants in the private sector, as well as in the supporting services, inputs providers, traders or middlemen.

Nowadays persists numerous problems linked to the effective interactions among the institutional actors, which are caused by the various factors, is stemming from the incomplete information about the extension services and the low penetration of the technological innovations into agriculture.

The objective of the submitted scientific article is the evaluation of cooperation's quality among participants of the agricultural extension service and also to define barriers of insufficient implementation of innovations to the agricultural in the Slovak Republic's circumstances.

## **2. Review of the Current Status of Studied Topic**

Anderson, Feder (2004) define agricultural extension as the scientific subject focused on the transfer of information, demonstration of innovations, teaching about new methods of economy, as well as on providing professional advices with intention to resolve problems of the agricultural holdings. (Davis 2009) moves definition of agricultural extension more close to market and to value chain, defining extension as the complex group of organizations, which supports people involved into the agricultural production and who are interconnected with market and other market stakeholders, who are obtaining information, skills and technologies. According of (Kadlečíkova et al. 2011) the agricultural extension after the World Food Summit on Nutrition in 2008, became one of the four essential pillars (education, investment, research, extension), which can in substantial way help to resolve the challenges of the world food security. In these relations the agricultural extension is rarely analysed by the Slovak authors. The one of the reasons is stemming from the fact that extension initialization is not yet completed in a domestic circumstances.

Kania (2015) deals with resolution of the differences between agricultural innovation system (AKIS, AIS) and the network for education and innovation, which is based on the knowledge conceptualization. In the innovation system, the knowledge is considered as the resource, which has to be transferred, while it puts emphasize on the processes which are required for ensuring that the knowledge will be useful for the other network's members. Rajčáková and Švecová (2010) claim, that the innovation systems 'elements' are the companies based upon the knowledge approaches, such as clusters, or industrial parks, educational and research institutions cooperating with business environment following the transfer of new knowledge and technologies to the business environment. According of Leeuwis and Van den Ban (2004) the innovation platforms in general do not exist individually. It is important to create connections among them. Their interactions have to be coordinated. Sabadka (2009) defines innovation systems as the set of institutions influencing innovation processes, involving economic, social, political, organizational and institutional elements, which in reasonable way impacts the innovation's penetrations to the agriculture. Andersen (2007) to this is adding comment; "that critical view on the majority of agricultural innovation systems reveals three key players - farmer, researcher and agricultural consultant". In general, the researcher is responsible for development of new knowledge, technologies and innovations". The works of the above cited authors became the starting points at the elaboration of this scientific article, as well as for the formulation of its Discussion and Conclusions' segments.

## **3. Methodological Approaches**

The most important source for the primary data had been questionnaire survey which was carried out in 2018. In addition to this in the same year have been realized interviews. Questionnaire was distributed by electronic form and by post to the selected respondents, registered in the list of agricultural entities acting in the primary production. The data obtained both from the questionnaire survey and interviews have been processed by table calculator Microsoft office 2010 and by statistical software SPSS 25.0 in the Windows environment.

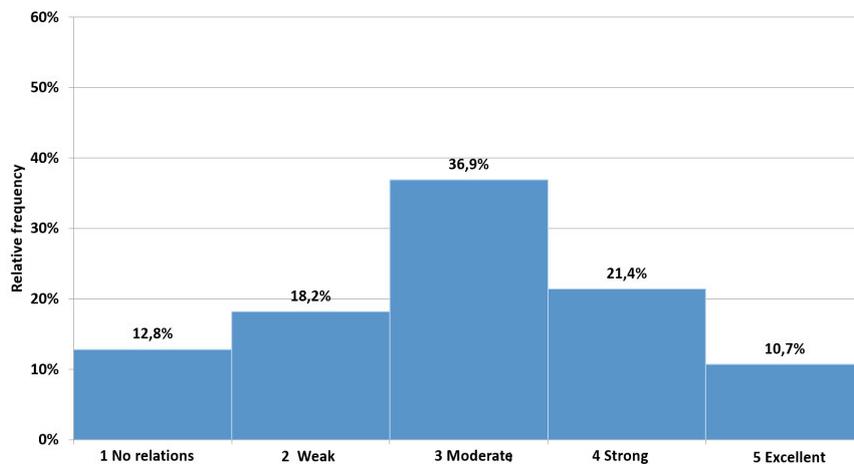
With regard of the company scale according of the employees number, in the surveyed group are domineering micro and small companies. According of the acreage of agricultural land, the majority of the entities is doing their business on the land with acreage to 500 hectares. From the production structure of view are prevailing crop and animal productions with organic production as well.

## 4. Results

### 4.1. Evaluation of Cooperation among Agricultural Entities and other Stakeholders

The results which are reached by the agricultural entities, at the up-grading of their productivity are influenced in the great deal by the quality of relations and working interactions with educational, as well as research institutions, or with various associations, chambers and unions, to which they are connected through membership relations. The quality of working relations with the above mentioned institutions have been expressed by the respondents on the scale from 1 – no relations to 5 – excellent relations.

The first group of organizations (Figure 1) is represented by the agricultural entities dealing with primary production (direct competition).



**Figure 1: The quality of cooperation relations among entities dealing with agricultural primary production**

*Source: Own results*

The one third of the companies indicated (32.1%), that they do have strong, or very strong relations among each other, while more as one third of entities (36.9%) has moderate relations among themselves. In total even 69% of entities claim that they have intensive cooperation, among each other's. This is considered as positive result, since through active cooperation among companies can be more easily transferred new knowledge and experiences. This kind of cooperation can consequently significantly support the introduction of new technologies into the agricultural production.

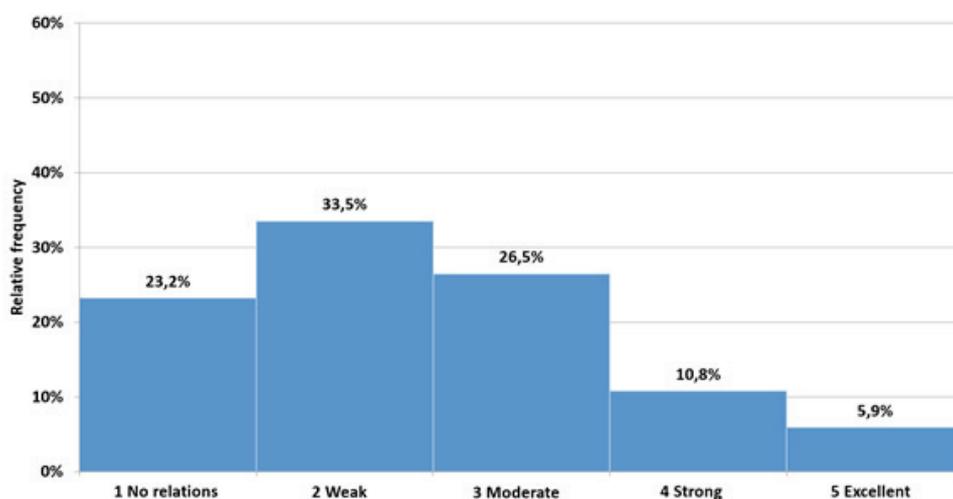
32.1% agricultural entities have strong and even very strong relations with organizations providing inputs. The largest category is represented with moderate relations (36.9%). The weakest relations had been selected by 18.2% agricultural entities. The achieved results are rather surprising as in total only 56% of farms have strong cooperation with inputs companies. On the other side, the objective of agro-ecological agriculture is to minimize the inputs and to use for agricultural production sources which had been produced in the farm.

Analogically, as low is considered cooperation of the agricultural enterprises with associations, unions and chambers. Only 53.3% indicated active collaboration with these non-governmental organizations. Almost one third of companies (31.0%) have weak cooperation and 15.8% declared that there are no relations. Obviously, somewhere here we can find the reasons of less effective results at the obtaining of projects and involvement into the various

programmes provided by the EU. Furthermore, this can cause less favourable financial relations at the sale of primary products to the processing factories.

Very strong relations with processing companies have 32.3% farms and only 22% strong relations. In contrary 22.6% of them indicated the weak relations and even very low, or any relations have been indicated by 23.1% farms from our research group. The obtained results are confirming the fact that with processing companies collaborate first of all, larger companies, while small companies are directly processing and consequently sell their products to the costumers (in total 45.7%).

The most, 33.5% of agricultural companies indicated that their relations with agricultural companies (Figure 2) are subtle. 26.5% of companies has moderate or strong relations and very strong relations are indicated only by the 16.7% enterprises. Surprisingly, almost the one quarter (23.2%) of agricultural companies has not developed high quality relations with organizations of extension services. Practically, this means that more as half of the farms involved into our research group is not utilizing private extension services. This result is consequence of twofold problems. In the first case, it is clear that the agricultural extension service is not sufficiently developed in Slovak Republic, while in the second case there is a low interest from the side of agricultural entities about this kind of services. Obviously, these two issues are interconnected and without the improvement of existing extension services provision, or without introduction of larger financial state support for the agricultural entities dealing with primary production, the more effective interconnection between the two above mentioned problems will be not achieved.



**Figure 2: The quality of connections with private agricultural extension Services**

*Source: own results*

Strong relations and very strong relations to the public organizations presented only 5.5% agricultural entities. Moderate relations indicated 22.2% entities. Weak relations have been declared by 28.9% of entities and no relations had been stated by 43.3. Once more, from this result stems that agricultural entities are lagging behind of the cooperation with state governance and there is the urgent need for development of more intensive relations with these organs and institutions. Obvious consequence is the limited information about opportunities, which could be provided by the public governance.

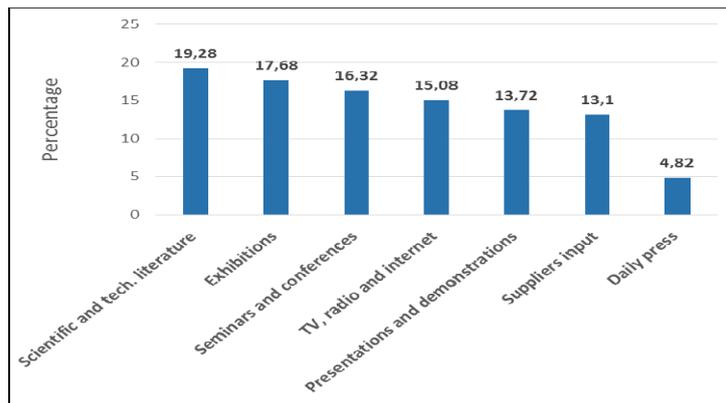
Similarly, at the lower level are established the relations of agricultural entities with private research institutions. Only 4.5% of them stated that they do have strong or very strong relations and 10.1% has very strong relations. 21.9% entities declared that their relations are weak. Even 63.5% of entities indicated that they did not established yet good relations with private research institutions. These results confirm that knowledge transfer to the agricultural production is aiming non-satisfactory level and this situation has to be changed as soon as possible.

Very strong relations with universities declared only 1.1% agricultural entities and only 3.8% respondents marked their relations as strong. Moderate relations present 12.5% entities. The largest group of entities stated that they did not develop relations with universities and weak contacts have been declared by 27.7% of them. From the above results stems that it is important to re-focus on the establishment of good relations with agricultural primary production and to search together with them joint projects and programmes, in order to improve interrelations. However, it is needless to say, that the representatives of the agricultural holdings have to be more active in seeking the opportunities provided by universities in order to find solutions on their most challenging issues. The applications/orders for providing tailored research submitted by agricultural holdings to the research institutions are so far do not exists.

The quality of relations, connections and networking with actors of agricultural innovation systems is important for the exchange of knowledge and transfer of experience. From the presented results is stemming out conclusion that in frame of the surveyed group, competitive environment of the agricultural entities, is exists at least in one third of them. Achieved results are evoking the conclusion that in the agricultural primary companies is missing networking with the most important organizations and institutions, from the point of view of their development and continuous implementation of new research results, technologies, knowledge and information to their own business environment.

#### ***4.2. The Innovations in Agriculture and Barriers at their Implementation***

According of the carried out research, the companies are obtaining information about innovations from the scientific and technical literature, this is representing 19.28% responses. The previous activity is followed by the exhibitions which represent 17.68% entities. 16.32% entities indicated that seminars and conferences are the essential sources of information about innovations followed by electronic mass media tools such as TV, broadcast, and internet with selected 15.08% (Figure 3). Presentations and practical demonstrations represent 13.72% answers and the inputs providers are giving information about innovations, only in the case of 13.1% entities. From this point of view the daily news is presented by 4.2% information, from which are receiving enterprises the news about innovations.



**Figure 3: The sources of information about innovations**

*Source: own results*

Our aim by working with questionnaire survey was also to obtain attitudes of the farmers on the innovations and to indicate that what kind of innovations are the most required by Slovak farmers. The results unambiguously confirm that in the field of innovations is prevailing agricultural machinery and automatization. Frequently are applied information technologies, robotization, GPS, also drones etc. Innovations are utilized also in the crop production, e.g. with implementation of agro-ecological approaches, regenerative agriculture, conservative technologies etc. The significant number of answers related also field of seeds quality, the environment protection, agro-tourism and bio-gas stations.

The capability of their own farms to apply progressive knowledge was considered by managers as highly positive, 28% indicated strong very capability, while 48% enterprises see their capacity to apply progressive knowledge as moderate.

Another question in survey related to indication of the most significant barriers for the implementation of innovation systems in agriculture. In this case have been defined 16 barriers (obstacles). The managers of the agricultural companies could indicate the impact of the certain barrier by value in the scale from 1- any barrier to 5 very strong barriers.

The largest barriers for the implementation of the innovation systems according of managers are linked to the costs, as well as to the limited availability of financial resources. Serious obstacles are represented by repayment of the credit to the financial institutions, recent legislation and the taxation system. Significant group of obstacles is connected to the absence of qualified employees, both on the side of producers, as well as the users of new technologies. Insufficient is also the state and private support to the agricultural science and research. It is noted limited collaboration between farmers and researchers. Insufficient is also protection of ownership rights. Furthermore, the great challenge is capacity to deal with organizational and technological changes. Into consideration have been taken the difficulties related to the control of the investment costs, ignorance of the clients about the new products and processes. In general, there is the lack of information about the producers and markets, missing technological opportunities, as well as the significant risk connected to the implementation of new technologies.

## 5. Discussion

The results of our research are in conjunction with conclusions of Agbama (2000) and Kadlečíková et al. (2014), who stated that the institutionalization of agricultural extension is not completed and this fact has negative impact on more harmonized cooperation among the individual actors of the overall system and consequently on the higher performance of agricultural and food production.

From the research stems out that quality of the relations and linkages among agricultural consultants and institutions of public and private research hubs is very subtle, even does not exist. This trend is confirmed with number of the studies, which proved the declining quality of the working relationships among agricultural extension system and research institutions (e.g. Kania a kol. 2014, EU SCAR 2013). The key challenge is, that private extension service hubs could not afford themselves to perform the tasks connected directly to the research, respectively to buy the research results from research institutions, or universities. As the consequence, consultants are providing standard, potentially non-actual information for farmers (Labarthe and Laurent, 2013). With this is lost the important factor of innovation potential and the overall well-being's enhancement in agricultural sector and in countryside. Consequence is that the agricultural producers are not raising demand towards of the domestic knowledge and innovation; there is the continuous knowledge gap which is created among agricultural entities and scientific and research institutions.

In the field of the most serious barriers for improvement of agricultural innovation according of our research was also confirmed the outcome of work Fáziková (2010) and Mariš (2010), that the most frequent obstacles for innovations in agricultural companies are as follows: high costs and absence of the financial resources on procurement of innovative technologies from inputs providers.

## 6. Conclusions

The quality of the relations, linkage and working connections among agricultural companies with other actors of agricultural innovation systems is the most significant factor in the knowledge exchange and the transfer of technologies. In the innovation system, the information is the source for transfer, while the network is emphasizing the processes which are indispensable for the effective utilization of knowledge in frame of given actors network in agricultural and knowledge system. Stemming from this conclusion we can state that agricultural and innovation system is not flexible and it is less functional in case those agricultural companies which have limited linkages on the extension service agencies, research institutions and universities.

In order to strengthen agricultural sector, has immense importance the enhancement of the agricultural extension system's quality, which will support the networking among the users of agricultural extension system on one side, and among the research institutions, universities and self-governance organizations, on the other side, including of the state organs and institutions.

### ***Acknowledgement***

*Article was supported by project VEGA art.1.0808/18: Social Responsibility and Innovation Approaches at the Mitigation of Food losses with Attention to the Friendly Treatment of Environment.*

## References

1. Agbamu J. U. (2000), *Agricultural research – extension linkage systems: an international perspective*. Agricultural Research and Extension Network Paper, No. 106a, London:ODI
2. Andersen P. (2007), *Agricultural technology dissemination structures and farmer's knowledge seeking strategies*. Proceedings of the Annual conference of the Norwegian Association for Development Research (NFU), CMI, Bergen, November 5-7
3. Anderson J. R., Feder G. (2004), *Agricultural extension: Good intentions and hard realities*. World bank research observer Volume 19, Issue 1
4. Davis E. K. (2009), *The important role of Extension systems in Agriculture and climate change: An agenda for negotiation in Copenhagen for food, agriculture and the environment* [online] 2009 [http://www.ifpri.org/sites/default/files/publications/focus16\\_11.pdf](http://www.ifpri.org/sites/default/files/publications/focus16_11.pdf)
5. EU SCAR (2013), *Agricultural knowledge and innovation systems towards 2020 - an orientation paper on linking innovation and research*. SCAR-collaborative working group AKIS-2.204
6. Fazikova M., Maris M (2010), *Znalostn8 ekonomika a poľnohospodárstvo v nitrianskom kraji*. Dostupné na: <http://www3.ekf.tuke.sk/konfera2010/zbornik/files/prispevky/FazikovaMaria.pdf>
7. Kadlečíková M. (ed) (2012), *Stav a perspektívy poľnohospodárskeho poradenstva v Slovenskej republike*. In: Actaeconomica et informatica.roč.13, momoriande č. (2012), s.15-20.ISSN 1335-2571.
8. Kadlečíková M. (ed) (2014), *Stav a perspektívy poľnohospodárskeho poradenstva v Slovenskej republike*. In: Súčasné globálne. Národné a poločenské trendy vo vývoji agrárneho manažmentu. Zborník vedeckých príspevkov. Nitra, Vzdatel'stvo SPU, 92 s. ISBN 978-80-552-1245-6
9. Kania J. (ed) (2014), *Advisory services in agricultural system of knowledge and information in Poland*. In: Proceedings of the 11<sup>th</sup> European IFSA symposium, Berlin, Germany, pp. 123-133.
10. Kania J. (2015), *Systemy wiedzy rolniczej I informacji w europejskiej biogospodarce/ Agricultural knowledge and information systems in european bioeconomy*. Economic and Regional Studies, vol.8, no.2, pp. 5-11.
11. Labarthe P., Laurent C. (2013), *Privatization of agricultural extension services in the EU: towards a lack of knowledge for small-scale farms ?* Food policy 38, pp. 240-252
12. Leeewis C, Van den Ban A.(2004) *Communication for rural innovation :Rethinking agricultural extension*. Blackwell Science. Oxford
13. Rajčáková E, Švecová A (2010), *Inovácie = nový fenomén rozvoja regiónov*. Dostupné na: [http://geografia.science.upjs.sk/images/geographia\\_cassoviensis/articles/GC-2010-4-2/29Rajc\\_svecova.pdf](http://geografia.science.upjs.sk/images/geographia_cassoviensis/articles/GC-2010-4-2/29Rajc_svecova.pdf)
14. Sabadka D. (2009), *Inovačné systémy a ich podpora*. Technická Univerzita Košice. Dostupné na <http://www.sjf.tuke.sk/transferinovacii/pages/archiv/transfer13-2009/pdf/032-034.pdf>

## CONSUMER BEHAVIOUR TOWARDS HONEY PRODUCTS IN THE CENTRAL HUNGARY REGION

*Titanilla ORAVECZ<sup>1</sup>, Ildikó KOVÁCS<sup>2</sup>*

*<sup>1,2</sup> Budapest Business School - University of Applied Sciences, Budapest, Hungary  
E-mail: oravecz.titanilla@uni-bge.hu*

**Summary:** Honey products have been developing from health supplements field to other fields like sweetener or cosmetics. In consumer's perspective, the quality of honey products will be the key success factor where Hungarian beekeepers face challenges for preparing and maintaining as well as preserving honey products. There are numerous explanations when it comes to exploring the factors that influence consumers to consume honey products.

**Purpose:** This paper aims to explore the factors influencing the consumer's decision to purchase honey products.

**Methodology:** The research data were collected through quantitative research (questionnaire survey), which was carried out in 2015–2016 on a sample containing 1584 honey consumers between 18-92 years in Central Hungary Region. The data collection was performed by paper questionnaires (PAPI). The sample was representative for sex, age group and education in the Central Hungary Region. For achieving the results, data were processed and analysed by descriptive statistics, chi-square test of independence and cluster analysis.

**Findings:** The findings of the study describe the main characteristics of honey consumption habits, the decision making process, and the attitudes towards honey products. Furthermore, the study identifies the main factors influencing honey consumption with principal component analysis.

**Keywords:** consumer preferences, honey consumption, purchasing behaviour, quantitative study

### 1. Introduction

The main objectives of the research were to explore the main characteristics of honey consumption habits and the decision making process when buying honey products. The reason for choosing honey consumption as a research topic is to support the Hungarian Beekeepers Association and beekeeper enterprises with information on consumer decision making.

### 2. Literature review / Research Background

The Council Directive of the European Union related to honey (EU, 2001) defines honey as „the natural sweet substance produced by honey bees from the nectar of plants or from secretions of living parts of plants, which the bees collect, transform by combining with specific substances of their own, deposit, dehydrate, store and leave in the honey comb to ripen and mature.” The Directive also gives an exact definition of the types of honey products that can be sold under the given names and rules for labelling, presentation and information on origin (EU, 2015). FAO (2016) “Local Marketing of Honey” study described the honey market as a fragmented market, where the imported and local producer honey compete.

In Hungary, fresh, local honey is often (although not always) more highly valued than imported honey, and many beekeepers sell their product directly to consumers. The EU is one

of the most viable honey producers in the globe, producing mixed flower honey in the highest volume. The number of consumers following a healthy lifestyle has increased significantly in recent years, while the role of quality in the selection of products has also increased (Töröcsik, 2007), which is also reflected in conscious eating habits (Szakály, 2011). The image of consumers about honey has clearly improved. The interest in apiculture products has grown dynamically in the recent years (Lászlóffy, 2014).

The consumption of honey is also increasing (Árváné et al., 2004) and the range of beekeeping products is expanding year by year, with more and more high-quality honey made from special nectar. Experts predict a further increase in domestic honey demand, beside supply expansion. It is explained by the increasing awareness of consumers (Feldman, 2018). As acacia honey became a certified Hungarian speciality, it is associated with a high quality (Györffy et al., 2014). In Hungary, the acacia honey is the variety of honey with the largest production and consumption (Árváné, 2011).

Although there are huge differences in quality between honey products, consumers find it difficult to differentiate between the products (Árváné, 2010, Czipa, 2010). Ethical product characteristics, such as the origin of the product, are also in the focus of food consumption decisions (Kovács et al., 2016). In Hungary, the domestically produced honey is suitable for an effective and successful marketing strategy (Lehota, 2001; Töröcsik, 2011). Since honey types differ from one country to another and in different regions in the same country due to floral origin, soil composition, season, environmental factors, treatment of beekeepers and other factors, quality criteria differ from one honey variety to another (Da Costa Leite et al., 2000; El-Metwally, 2015).

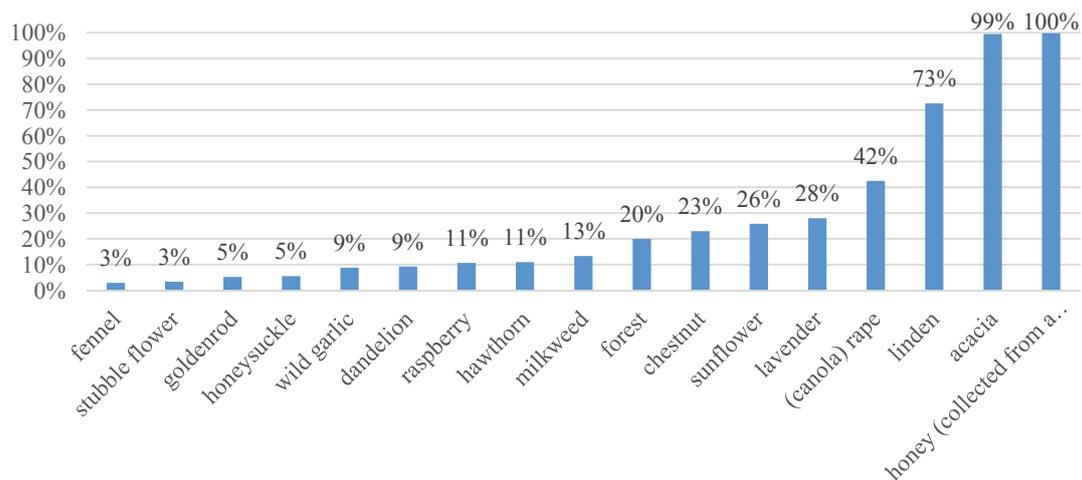
Authentication of honey by its natural physicochemical properties, and other attributes is important to protect genuine unique quality honeys from fraud products and to create consumer trust (Ali et al., 2018). The research of Arvanitoyannis and Krystallis (2006) identifies four main dimensions of honey-purchasing motivation: medical benefits of honey consumption, dietary quality, ethical character of honey and fitting to food consumption.

### **3. Methodology**

In the survey consumer behaviour, consumer habits, product attributes were investigated, that determine purchase. Furthermore, the study explores the judgement of honey quality and other honey products. The survey was conducted between August 2015 and September 2016 on more than 100 spots with simple random sampling by personal interview. The sample is representative for the Central Hungarian statistical region in terms of sex, age group and highest level of education, based on the 2016 national micro-census data (HCSO, 2017). In the analysis, answers of 1584 respondents are described.

### **4. Results**

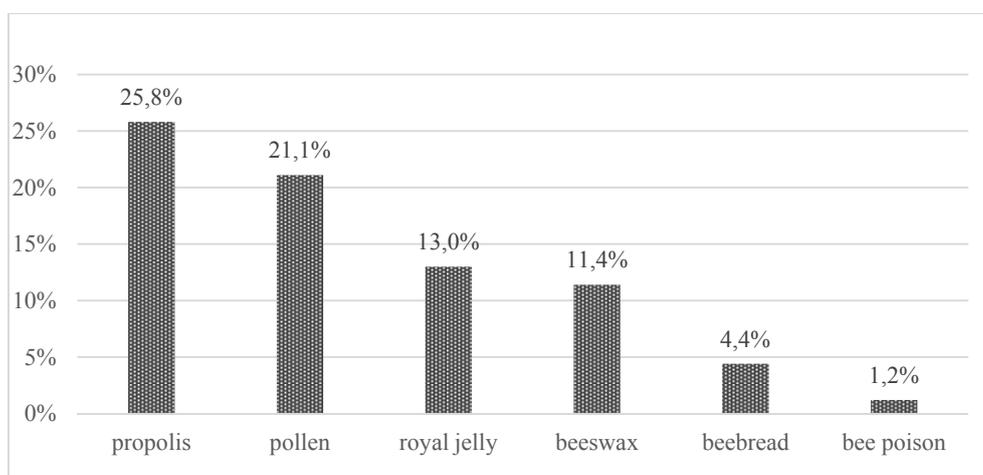
The respondents know 4-5 varieties of honeys, and they consume 1-2 varieties of honey on average, typically mixed floral and acacia honey. The awareness of the different varieties of honey is the following: mixed flower honey (99.8%), acacia (99.5%) stands out from the others, the popularity of linden honey (72.5%) is the third highest, but rape (42.5), lavender (28.0%), sunflower (25.8%) are also known by more than a quarter of consumers (Figure 1).



**Figure 1: Awareness of honey varieties (%)**

Source: own survey, 2016

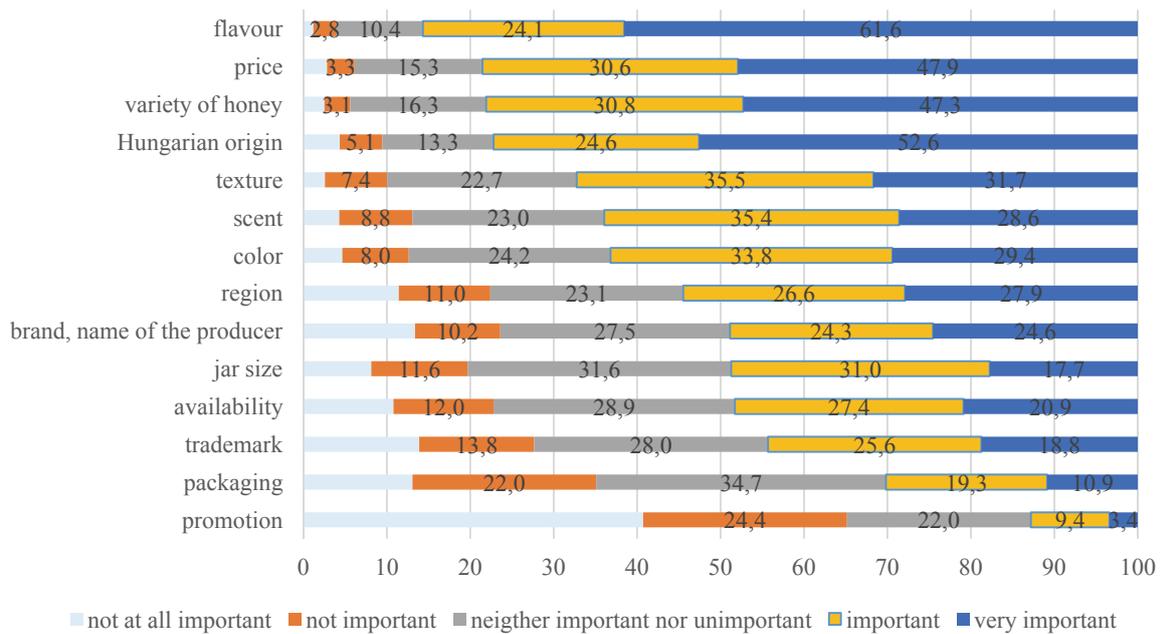
For apiculture products, propolis is the most common (25.8%), followed by pollen (21.1%), beeswax (13.0%) and royal jelly (11.4%). The use of beebread (4.4%) and bee poison (1.2%) is negligible (Figure 2.). Honey consumption ( $p = 0.000$  and Cramer's  $V = 0.196$ ) and frequency ( $p = 0.000$  and Cramer's  $V = 0.239$ ) can be attributed to the consumption of propolis, but the relationship with other hive products can also be detected. The more often someone consumes honey in large volumes, the more likely it is to use other bee products outside the honey.



**Figure 2: Consumed apiculture products (%)**

Source: own survey, 2016

11.3% of consumers eat honey daily, 15.9% several times a week, 16.2% once a week, 33.2% once or twice a month, 17.7% once or twice a year, 5.6% are consuming honey only in case of illness.



**Figure 3: The importance of honey characteristics (%)**  
 Source: own survey, 2016

The volume of consumption per month on average is less than 0.3 kg (59.1%), 0.4-0.5 kg (24.9%), between 0.6 and 1.0 kg (12.2%), more than 1 kg (3.8%). Honey is typically consumed: in tea (86.9%), as an ingredient of honey cake (57.8%), on bread (49.1%) or as an ingredient of gingerbread (48.0%). Honey is a popular ingredient in beverages. Respondents are happy to sweeten their coffee, tea, lemonade or cocktails with honey and that is frequently used in alcoholic beverages like honey brandy as well. Based on the ranking of product qualities that determine the purchase of honey (Figure 3), it can be stated that the factors influencing the purchase primarily include price, origin and quality. The packaging was considered indifferent by the respondents (KMO 0.809, Bartlett's Test of Sphericity Approx. Chi-Square 5202.3 df 91, sig 0.000) (Table 1).

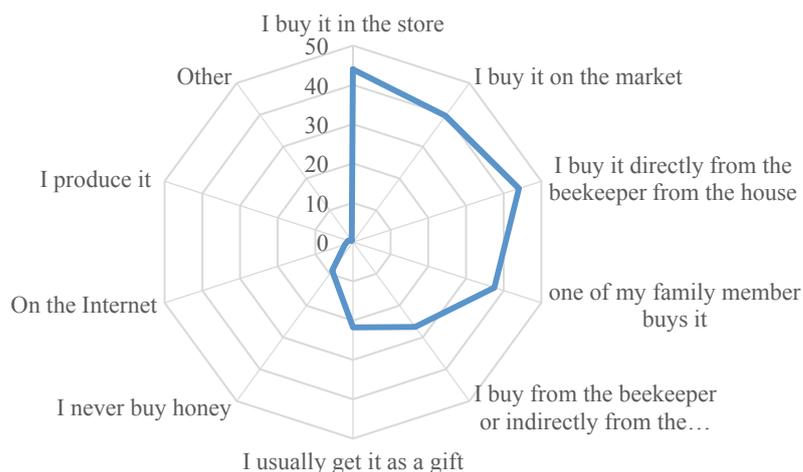
**Table 1: Honey characteristic factors**

	Component			
	sensory product features	origin	promotion	other features
color	<b>0.789</b>	0.109	0.204	-0.032
scent	<b>0.773</b>	0.121	0.232	-0.046
texture	<b>0.696</b>	0.159	0.098	0.115
flavour	<b>0.668</b>	0.125	-0.262	0.253
variety of honey	<b>0.476</b>	0.370	-0.261	0.302
origin, region	0.125	<b>0.772</b>	0.199	0.060
Hungarian origin	0.108	<b>0.752</b>	-0.140	0.069
trademark	0.109	<b>0.627</b>	0.345	0.153
brand, producer	0.185	<b>0.618</b>	0.148	0.025
promotion	0.003	0.087	<b>0.781</b>	0.141
package	0.203	0.233	<b>0.659</b>	0.082
pack	0.143	-0.034	0.350	<b>0.751</b>
price	-0.012	0.086	-0.136	<b>0.706</b>
availability	0.131	0.181	0.275	<b>0.600</b>

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Total Variance Explained: 58.071

Source: own survey, 2016

In the judgement of honey quality and safety, consumers reported important in purchasing decisions the "Hungarian product" trademark 51.0%, producer honey glass 38.3%, honey country of origin label 37.5%, and only 29.2% of the respondents do not know these unit packaging types. The various certification marks provide a guarantee for consumers to ensure that they have the best product features. As we asked the respondents, if honey scandals influenced their honey consumption, more, than 40% of the respondents reported that they would buy just from safe retailer or producer, 14% is looking for signs of quality assurance and more than 4% consume less honey as a result of honey scandals in recent years. (Figure 4)



**Figure 4: Place of purchase**  
Source: own survey, 2016

The importance of consuming high quality honey is clear, but consumers would purchase more honey products if those would be less expensive (65.5%), more information would be available on honey (60.0%), the food safety would be extended (50.3%) and the products would be more accessible (36.0%).

## 5. Conclusion

Based on the result of the survey, acacia and mixed floral honey has the highest awareness. The respondent were aware of 4-5 varieties on average and 2-3 varieties are consumed. Consumers judge the quality of Hungarian honey higher than that of the imported honey. Producers honey is more preferred than honey, which is sold in retail. As a conclusion, the main factors influencing the purchase are the origin, price and quality. In the decision making process, the trust is highly important, and in most of the cases consumers trust less honey sold in retail, while they prefer to purchase it directly form beekeepers or on the producers market. This study uses a regional sample, which is a clear limitation. This consumer research is considered to be a pilot survey. Due to this limitation, further studies can be conducted on national and international level by increasing sample size and adding questions regarding the consumers' perception of honey and its health issues.

## References

1. Ali M.S., Quader M. F. B., Islam M. A., Ahmed S., Siddiqua A., Akter T. (2018), Qualitative evaluation of honey available in Bangladeshi markets, *International Journal of Natural and Social Sciences*, 5 (4), pp. 20-27.
2. Arvanitoyannis J., Krystallis A. (2006), An empirical examination of the determinants of honey consumption in Romania, *International Journal of Food Science and Technology*, 41 (10), pp. 1164–1176.
3. Árváné Ványi, G. (2011), A mézpiac marketing szempontú elemzése különös tekintettel a fogyasztói és vásárlói magatartásra, Doktori (PhD) Értekezés, Debreceni Egyetem, Agrár- és Gazdálkodástudományok Centruma, Gazdálkodástudományi és Vidékfejlesztési Kar, Gazdálkodástudományi Intézet, Ihrig Károly Gazdálkodás- és Szervezéstudományok Doktori Iskola, Debrecen.
4. Árváné Ványi G., Kárpáti L., Popovics L., Vladimir J. (2004), A magyarországi méztermelés és marketing stratégiája, *Gazdálkodás* 48 (2), pp. 39-50.
5. Árváné Ványi G., Csapó Zs., Kárpáti L. (2010), Mézfogyasztói szokások és a mézminőség fogyasztói megítélése az Észak-Alföldi régióban, In, Csépe Andrea (ed.), „Új Marketing Világrend”. Egyesület a Marketing Oktatásért és kutatásért (EMOK) XVI. országos konferencia, Tanulmánykötet, Budapesti Kommunikációs és Üzleti Főiskola Marketing Intézete Budapest, pp. 193-212.
6. Czipa, N. (2010), Különböző eredetű mézek összehasonlító vizsgálata és a gyártmánykialakítás hatása a minőségre. Debrecen.
7. Da Costa Leite, L.C. Trugo, L.S.M. Costa, L.M.C. Quinteiro, O.M. Barth, V.M.L. Dutra (2000), Determination of oligosaccharides in Brazilian honeys of different botanical origin, *Food Chem.*, 70 pp. 93-98.
8. EU (2001), Council directive 2001/110/EC of 20 December 2001 relating to honey.
9. EU (2015), EU labelling rules for honey. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3A121124a> (access: 20 February 2015)
10. EL-Metwally, A.A.E., (2015), Factors Affecting the Physical and Chemical Characteristics of Egyptian Beehoney, Ph. D. Thesis, Fac. Agric. Cairo Univ., pp. 320.
11. FAO (2016), Beekeeping and sustainable livelihoods, <http://ftp.fao.org/docrep/fao/012/i0842e/i0842e16.pdf> (access: 25. March 2019)
12. Feldman Zs. (2018), 31. Nemzetközi Mézvásár és Méhésztalálkozó. Megnyitó beszéd. Jászberény. 2018.08.04.
13. Győrffy B., Mészáros L., Glattfelder B. (2014), Az akácméz bekerült a magyar értéktárba! *Méhész Újság*, 1 (5), pp. 23.
14. HCSO (2017), Mikrocenzus 2016. Budapest. p. 5-22. <http://www.ksh.hu/mikrocenzus2016/> (access: 21 December 2017)
15. Kovács I., Lehota J., Komáromi N. (2016), Analysis of the characteristics of the sustainable food consumption in Hungary, Emok XXII. Országos Konferencia, Debrecen.
16. Lászlóffy Zs. (2014), Mézpiaci információk. *Méhész Újság*, 1 (6), pp. 26-27.
17. Lehota J. (2001), Élelmiszer-gazdasági marketing. Műszaki Könyvkiadó. Budapest.
18. Szakály Z. (2011), Táplálkozásmarketing. Mezőgazda Kiadó. Budapest. pp. 11-24.
19. Töröcsik M. (2007), A tudatos fogyasztást és az egészséget preferáló új fogyasztói trendcsoport a LOHAS csoport megjelenése Magyarországon, *Élelmiszer, Táplálkozás és Marketing* 4 (2), pp. 41-45.
20. Töröcsik M. (2011), Fogyasztói magatartás. Insight, trendek, vásárlók. Akadémiai Kiadó, Budapest

## COOPERATION WITH CLIENTS AS A SOURCE OF INNOVATION IN THE COMPETITIVE ACTIVITY OF POLISH ENTERPRISES

*Tomasz LIS*

*Czestochowa University of Technology, Faculty of Management, Czestochowa, Poland*

*E-mail: tomasz.lis@wz.pcz.pl*

**Summary:** Enterprises are currently operating under conditions of large and complicated competition. It results directly from the pace of changes taking place in the markets. Globalization and ICT development have caused, that the client seeking a supplier is not usually limited to those enterprises operating in his nearest physical environment. In such circumstances, it is particularly important from the point of view of enterprises, to have a good reputation among clients resulting, among other things, from the fact of being an innovative entity. Both issues: positive image and being innovative, are closely related. The client as the recipient of the offer and the entity seeking information and knowledge, and at the same time possessing information and knowledge is a very attractive potential entity of cooperation. He has the knowledge and information necessary to develop the innovative solutions expected by the market. The key is the ability to identify, establish and conduct effective cooperation with clients that are particularly important in this matter.

**Purpose:** The purpose of the paper is to present the analysis and results of research on the approach to the issue of innovation and cooperation on the company-customer line expressed by entrepreneurs and customers in Poland.

**Design/methodology/approach:** For the purpose of the article the authors conducted a survey among 357 respondents. For the research, non-random sampling method – convenient sampling was chosen.

**Findings:** The possible areas, conditions and expectations of cooperation will be identified.

**Keywords:** cooperation, clients, innovation, knowledge

### 1. Introduction

Cooperation with clients is currently, according to the author, one of the most important success factors. This view is also expressed by many authors in the field of management. (Mohelska, Sokolova, 2018, p. 2227; Kwiecień, 2017, pp. 203-204) It is connected, among others, with measurable benefits delivered to the enterprise by clients using its offer. However, the range of benefits resulting from cooperation is much broader. It should include knowledge about: activities undertaken by competitors, expectations and requirements of customers, upcoming market changes. The information and knowledge necessary in the process of actions undertaken, aimed at introducing innovative solutions, should also be added to the above mentioned, in terms of product range, customer service and business management.

Undoubtedly, the key factor affecting the benefits of working with clients is the level of cooperation. It can be considered by the level of trust, attachment, and finally loyalty (Paparoidamis, Trinh Tran, Leonidou, 2019, pp. 57-59). The man can be satisfied with the product he purchased, but not necessarily from the course of contact. It will give financial benefits, but nothing else. This publication is about the level of cooperation and satisfaction that comes with it, which allows the company to gain market knowledge in addition to

financial benefits. It is this knowledge, in the author's opinion, that is the key factor of competitiveness in times of uncertainty and dynamic changes.

The subject of this article is particularly the aspect of cooperation that allows identifying needs, developing and implementing innovative solutions. At the same time it is considered in the context of competitive activity.

The article will present and analyze the results of surveys conducted among clients, employers and employees regarding the approach to issues of cooperation on the company-client line, with particular emphasis on benefits of introducing innovative solutions and their impact on the competitive position. The study, which was carried out in 2018, covered 357 1<sup>st</sup> and 2<sup>nd</sup> degree, full-time and part-time students, working (at different levels of the organizational structure) and non-working, of the Faculty of Management at the Czestochowa University of Technology. This choice was dictated by the fact that they are people, who are already or will be responsible for business management issues, additionally being clients of enterprises. Results of the study and interviews with employees, clients and employers will also be presented.

## **2. Competitive position and innovative activity resulting from cooperation with clients**

As Kowalik rightly points out, innovative activity carried out in every aspect of company's functioning: product, technological, management methods, allows it to develop. Thus, it increases chances of obtaining the competitive advantage. (Kowalik, 2016, p. 170). Kotler wrote about the importance of innovation in competitive activity "innovation is today the key to competitive strategy and its basis" (Kotler, 2004, p. 34). The enterprise wishing to cooperate normally in conditions of high volatility, uncertainty and globalization must constantly look for sources of innovation (Ptak, 2017, p. 899). It must seek individuals with appropriate knowledge regarding primarily market expectations, as well as information necessary for the effectiveness of innovation. (Eisenhardt et al., 2018, pp. 73-75) They must be characterized by the unique use and comprehensibility of features in the area of competition. Customers are the natural source of information and knowledge. It is the client who is the element that the organizations 'struggle to gain and satisfaction' for expectations and preferences of which they adapt their activities. It can therefore be defined as the primary source of innovation.

Among the features of the modern customer one mentions (Krzepicka, 2016, p. 212): independence, searching, gathering and analyzing information, highlighting own individuality, engaging in active market processes sharing information with others - especially with the use of IT elements. Each of the above features predisposes him to being the source of innovation. Innovations are commonly associated with the introduction of the product, process, management methods characterized by novelty (uniqueness) or significant variability (being improved). (Kumar, Zaheer, 2019, pp. 691-693) In this respect, they are introduced to satisfy the changing (to a significant extent) customer needs and expectations, which is obviously influenced by technological development.

As mentioned above, benefits that the enterprise can achieve through cooperation with customers depend to a large extent on the level of relationships (loyalty). At the same time, it should be emphasized that associating loyalty only in the context of repeatability of purchases is incorrect and does not reflect the level of complexity of this concept. It is connected with the individual's psyche, its behavior, approach, motives. (Kovac et al., 2018, pp. 121-124) Among behaviors attesting to customer loyalty, one mentions (Kucharska, 2017, p. 261):

dissemination of positive information about the supplier and recommending, not succumbing to actions undertaken by competitors, passing advice and guidance to the organization, tolerating minor problems generated during the daily functioning of the supplier.

One of the most important factors of innovation is discovery. This applies initially to the need - expressed among customers, later to technical and technological aspects of manufacturing, and finally to optimal ways of promoting. Clients satisfied with cooperation with the company, allow the company to identify, develop and implement innovations in the direct way - providing advice and tips. They also increase the company's impact on the market, among others by maximizing effects of innovation - dissemination of positive information.

As rightly noted in the literature, the innovative potential of the enterprise as the individual is limited. This is due to the limited resources available, in particular knowledge. In order to overcome these limitations, enterprises establish cooperation with others, eg business organizations, research units. The networks created in this way have a better chance of identifying needs, as well as their physical implementation and effective launch. (Salvato, Vassolo, 2018, pp. 1728-1730)

According to the author, the structure based on clients can not be missing from such networks. They do not have the same knowledge and skills as enterprises or research institutes. However, this situation changes when they cooperate with each other. Having the same interests, the right knowledge and fond of challenges, customers organize themselves into groups. The Internet is widely used for this purpose. In addition, they undoubtedly have the greatest knowledge of the needs and the greatest impact on other potential customers.

Cooperation clients-enterprises on the principle of co-creating the assortment offer is referred to in the literature as presumption. This idea came from the view that the modern client has become so demanding that convincing him to buy finished products becomes more and more difficult. The negative side of such relationships related to the partial loss of the organization's control over the final product is compensated by maintaining clients and acquiring new ones. (Xie, Gronhaug, 2017, pp. 158-160) And this is currently the basic determinant of market success (Śliwińska, 2018, pp. 105-108).

One of the most important presumption problems is keeping contacts with clients and involving them in the functioning of the company. As the research has shown, it results from the fact that the large group of them, despite possessing relevant information and knowledge, will share them not with the company, but with other clients. Taking into account the degree of involvement of prosumers in shaping the organization's offer, it is divided into three groups. The basis of the first activity is the spread of information about satisfaction with cooperation. Representatives of the second one are actively involved in actions organized by enterprises. The third group is the most useful for the development and implementation of innovations. Its members propose proposals and actively participate in the development of innovations. (Baruk, Iwanicka, 2015, pp. 43-44)

### **3. Research methods**

The research methods: traditional survey (PAPI) and individual in-depth interviews (IDI) were used. The survey, which was carried out in 2018, covered 357 full-time and part-time students of the Faculty of Management at the Częstochowa University of Technology. The survey required personal contact with respondents. Subjects of the study can be divided on the

basis of employment. Among the respondents, 144 people declared having a job, while 213 stated that they were currently unemployed. The group of employed persons included owners of enterprises and employees employed in various departments and on various positions. The selection of students acquiring knowledge in the field of management made by the author was dictated primarily by the desire to learn the opinions of people whose professional life is or will be related to issues connected to management. This allows to gain knowledge about the current and future approach (work). This group is a good research area, due to the fact that all respondents are clients in their daily lives. Therefore, they know what they expect from suppliers, what they offer and what they can offer them, as well as what would be a motivating factor for undertaking cooperation resulting in, among others, innovation. Individual interviews were conducted among employers, employees and, above all, clients with whom the author of the publication had personal contact during his daily life. The analysis of the results will be carried out in a logical order resulting from the layout of the publication. In order to verify the obtained answers, research carried out by other authors was used.

#### **4. Results of empirical research**

One of the basic research problems in the publication devoted to cooperation of the company with clients, aimed at identifying needs and developing and introducing innovations is to examine the approach to this issue expressed by employers, employees and clients. In this respect, three groups of complementary questions can be identified in the study. The first one consists of those regarding the assessment of the suitability of knowledge and information possessed by clients. They concerned the issue of the impact on the introduction of innovation in the assortment offer, customer service and organization management. According to 90.97% of the surveyed employees and 90.61% of those not working, information and knowledge of customers have or may affect the innovation in the assortment offer. Respectively: 80.56% of employed and 94.37% of non-working people see a positive impact on customer service, and 71.53% of employed and 79.81% of those who do not generally work on management.

Another group of questions was logically related to the real interest of enterprises in acquiring knowledge and information from clients. The option to mark individual answers was only for employed persons. According to 63.89% of respondents in the places of their work when introducing innovations in the assortment offer and customer service, they cooperate with clients. This is not done in the opinion of 21.53% of people. As regards management innovations, 38.19% of respondents confirmed their cooperation, and 33.33% did not. According to the interviews conducted by the author, it should be noted that the percentage of positive responses concerns primarily information and knowledge obtained in an irregular way. The regularity of cooperation between clients and the company is currently much less frequent.

The last group of questions analyzed in this part of the publication concerned the clients' interest in transferring knowledge and information to enterprises. In this respect, the research sample should be treated in a uniform manner, without any division into working and non-working people. With regard to: assortment offer, 74.79% of respondents expressed interest, 73.39% customer service, and 61.90% management. Obtained answers clearly indicate that clients' are interested in cooperation with enterprises.

The achieved distribution of answers is not directly confirmed in comparison with the results of research conducted by A. I. Baruk and A. Iwanicka. The authors said that only 17.5% of

clients are willing to contact producers, giving advice on how they can improve their goods / services. 55.5% of the respondents were of the opposite opinion. However, as many as 27% of respondents did not want to give a definite answer to this question.(Baruk, Iwanicka 2015, p. 46) This may indicate the lack of understanding of its essence, or uncertainty in declaring YES or NO. This in turn, according to the author of this publication, indicates the transmission of information to the enterprise made sporadically or even unconsciously for the client. Owners and managers of the companies with whom the author had conversations pointed the lack of regularity of cooperation as well as large resistance to obtaining information from clients.

Establishing cooperation with clients aimed at introducing innovations requires to take motivating actions. In the conducted survey, customers stated that the most encouraging factors for cooperation are: discounts on purchases from the supplier - 37.82%. The next item was the cash equivalent - 28.01%. What is interesting in the third position, respondents indicated satisfaction that their willingness to cooperate and information are appreciated by and in the enterprise - 26.89%. The percentage distribution of responses is presented in Figure 1.

The issue of building positive relationships with clients, relating to motivation was included in the research carried out by J. Petrykowska. The author stated that for this purpose companies use: a consistent customer service system - 59.1% of the surveyed, customer database 52.8%, employee training 51.4%, additional benefits for customers (gifts, awards) 34.9%. (Petrykowska, 2013, p. 12)



**Figure 1: Motivating factors for establishing cooperation with the company**

Involving customers in innovation has one more positive dimension for the company. In addition to adapting the offer to actual needs, it is their activation as promoters of the company. Satisfied with cooperation, knowing that he is appreciated and respected, he will spread positive information about the company. This is important due to the tendency to share information about the course of cooperation with other clients indicated in the research (including the ones presented in this paper). The impact of information from customers is much greater than the impact of the supplier. The author's research on the willingness to share information about the course of cooperation with other potential clients (positive / negative) was positively answered by 82.35% of respondents.

## 5. Conclusion

Innovations are one of the basic factors of business success in a dynamically changing economy. In order to develop and implement them, they establish cooperation with other units. The goal is to increase the potential of available resources. At the same time, it seems that clients should be one of the most important participants in the cooperation. They are the

final recipients of the offer. It is their requirements and expectations that force enterprises to undertake innovative activities.

Customers have primary knowledge about current and upcoming market expectations. Thanks to IT they have the opportunity to focus in a group and cooperate in order to solve problems, to develop ideas that meet their requirements. Clients individually and in groups have therefore very important knowledge for the organization. Its acquisition and use greatly increases the chances of success of innovative activities.

What is important, customers who are involved in the company's activities, tighten cooperation. They become suppliers of knowledge and information, and also spread positive information about the organization. Taking into account their tendency and technical possibilities of sharing information and a big influence on purchasing decisions of other clients, it should be stated that tightening cooperation is a strategic activity for the organization.

## References

1. Baruk A. I., Iwanicka A. (2015), Prosumpcja jako trend konsumencki w opiniach potencjalnych prosumentów, *Zeszyty Naukowe Uniwersytetu Szczecińskiego, Problemy Zarządzania, Finansów i Marketingu*, vol. 41, T. 1
2. Eisenhardt M., Ziemba E., Mullins R. (2018), Comparative analysis of barriers to knowledge sharing for polish and uk consumers, *Polish Journal of Management Studies*, 18:(2), DOI: 10.17512/pjms.2018.18.2.06
3. Kotler P. (2004), *Marketing lateralny*, PWE, Warszawa
4. Kovac I., Novak I., Brezovic D. (2018), Customer perception and attitude of loyalty programs in Croatia, *InterEULawEast: Journal for International & European Law, Economics & Market Integrations*, Vol. 5 Issue 1, <https://doi.org/10.22598/iele.2018.5.1.6>
5. Kowalik J. (2016), Ekonomiczne uwarunkowania innowacyjności przedsiębiorstw w UE, analiza przestrzenno-czasowa, *Zeszyty Naukowe Politechniki Śląskiej, Organizacja i Zarządzanie*, z. 97
6. Krzepicka A. (2016), Współczesny konsument - konsument digitalny, *Studia Ekonomiczne, Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach* nr 255
7. Kucharska B. (2017), Lojalność klienta - wyzwanie dla przedsiębiorstw handlu detalicznego, *Handel Wewnętrzny*, vol 5(370)
8. Kumar P., Zaheer A. (2019), EGO-network stability and innovation in alliances, *Academy of Management Journal*, 62:(3), <https://doi.org/10.5465/amj.2016.0819>
9. Kwiecień A. (2017), Znaczenie relacji dla kształtowania wartości i sukcesu przedsiębiorstwa, *Zarządzanie i Finanse, Journal of Management and Finance*, vol. 15(2)
10. Mohelska H., Sokolova M. (2018), Management approaches for industry 4.0 – the organizational culture perspective, *Technological and Economic Development of Economy*, vol. 24, issue 6, <https://doi.org/10.3846/tede.2018.6397>
11. Papatouridou N. G., Tranh Tran H. T., Leonidou C. N. (2019), Building Customer Loyalty in Intercultural Service Encounters: The Role of Service Employees' Cultural Intelligence, *Journal of International Marketing*, Vol. 27(2), <https://doi.org/10.1177/1069031X19837950>
12. Petrykowska J. (2013), Kształtowanie relacji z klientami jako podstawa budowania lojalności, [w:] *Kształtowanie lojalności konsumenckiej*, (red) A. Wiśniewska, Wyższa Szkoła Promocji, Warszawa
13. Ptak A. (2017), Innovation Management in the Polish SMEs Sector, *Managerial Trends in the Development of Enterprises in Globalization Era* (red.) KOSICIAROVA Ingrida, KADEKOVA Zdenka, 7th International Conference on Management "Managerial Trends in the Development of Enterprises in Globalization Era" (ICoM 2017), Nitra

14. Salvato C., Vassolo R. (2018), The sources of dynamism in dynamic capabilities, *Strategic Management Journal* (John Wiley & Sons, Inc.), 39:(6), <https://doi.org/10.1002/smj.2703>
15. Śliwińska I. (2018), Shaping customer relationships as a crucial aspect of an organisation's strategy, *Organization & Management Quarterly*, 42:(2), <http://dx.doi.org/10.29119/1899-6116.2018.42.8>
16. Xie Ch., Gronhaug K. (2017), The impact of consumption situations and culture differences on decision making in food prosumption, *Nordic Journal of Business*. Autumn, 66:(3)

## QUANITATIVE STUDY AMONG LOCAL BEEKEEPERS IN THE CENTRAL HUNGARY REGION

*Ildikó KOVÁCS<sup>1</sup>, Titanilla ORAVECZ<sup>2</sup>*

*<sup>1,2</sup> Budapest Business School - University of Applied Sciences, Budapest, Hungary*

*E-mail: kovacs.ildiko@uni-bge.hu*

**Summary:** As the international food system has become increasingly complex, Hungarian consumers' interest in the origin and quality of food products has increased. In Hungary, consumption of honey has increased in recent years. Furthermore, the trend of consumer preference for healthy and local food is predicted to be even higher in upcoming years. Besides its sweet and distinctive flavour, honey can provide various human health benefits. These qualities make it a valuable product compared to other sweeteners. According to our research, honey consumption in Hungary has increased in recent years and is predicted to continue to increase.

**Purpose:** The purpose of the quantitative study among local beekeepers is to describe the evaluation of competitiveness and the possibilities of boosting the competitiveness of local Hungarian honey products. The findings of the survey also describe the possibilities of local sales and examine consumer perception of Hungarian honey products.

**Methodology:** The methodology of the study includes responses to a standardized questionnaire by the honey producers themselves. Interviews were conducted face to face at any location where the honey was offered for sale. The data collection of the survey was carried out from 2019 February to 2019 April. More than 200 producers answered the questionnaire. These producers sell honey directly to customers in the Central Hungary Region. For data preparation and analysis, we used the SPSS Statistics 24.0 program.

**Findings:** The findings of the research can be used by the Hungarian beekeepers, and by the Hungarian Beekeepers Association (OMME) to apply the results in the development of strategies in honey marketing.

**Keywords:** honey products, honey quality, quantitative study, direct sales

### 1. Introduction

Honey consumption has increased in the recent years in Hungary, and according to the consumption trends of preferring healthy, safe and local food, it is predicted to further increase higher in upcoming years. Hungarian honey and other honey products have positive image and consumer perception. The study explores the evaluation of competitiveness and the marketing models of local Hungarian honey products in the Central Hungary region. The study is based on the results of a quantitative survey among local beekeepers.

Since there is strong consumer interest in honey in Hungary, the Hungarian beekeeping industry could be supported by various actions. First, consumers could be supplied with information in order to be able to differentiate between Hungarian honey and imported products. Often, imported honey is of lower quality than Hungarian honey. Second, consumers could be educated about the health benefits of consuming honey products.

Supporting the beekeeping industry could increase its societal significance over time. Not only does the industry supply the population with healthy and high-quality nutritional

products, it contributes to the retention of populace in the countryside. Besides the economic benefits of apiculture, pollination by bees plays an important role in maintaining ecological balance.

## **2. Literature review / Research Background**

In the EU, 620,000 beekeepers produce honey as a professional activity or hobby (European Parliament, 2018). There are important functions of this sector as pollination of plants (Sároszpataki, 2005; Lampeitl, 2006; Márton, 2001), production of honey and other apiculture products (Árváné, 2011) and apitourism (Kovács, 2017). Beekeeping is also environmentally important by preserving ecological balance and biodiversity (European Parliament, 2018). EU beekeepers face a number of challenges to maintain their hives and honey production. Increasing costs, competition from cheap imports from developing countries, destruction of bee colonies, diseases and pests put considerable pressure on the sector (Hungarian Beekeeping National Program Evaluation Committee, 2016).

The natural qualities of Hungary and the know-how of domestic producers are all guarantees for consumers to purchase high quality and safe honey. Food quality is of significant importance for human health and well-being (Lehota, 2017). Hungary is historically one of the largest honey producing countries; more than 80% of the honey produced is exported to foreign markets, the most important export product is acacia honey and honey harvested from different flowers (Feldman, 2018). 12% of the total EU honey production is Hungarian honey. In the world honey trade there is a 5% share of Hungarian honey (European Parliament, 2018).

Between 2007 and 2017, the number of beekeepers increased by 47% and the number of bee colonies increased by 30.5% (Hungarian Beekeepers Association (OMME), 2019). In Hungary, more than 20,000 families belong to the beekeeping sector. Beekeeping is a key factor for national development and biodiversity conservation (Márton, 2001; Hungarian Beekeeping National Program Evaluation Committee, 2016; European Parliament, 2018). Due to various social and economic impacts, the Hungarian beekeeping sector has undergone significant changes over the past decades, with small and medium-sized beekeeper enterprises making significant improvements in both quality honey production and capacity expansion (Hungarian Beekeeping National Program Evaluation Committee, 2016). According to the data of Hungarian Beekeeping National Program (2010-2013), in 2010 80% of the honey produced in Hungary was procured by wholesale traders, 1% by industrial users (confectionery, gingerbread), 1% by retailers, shops and 17% of the honey were sold directly to consumers by the beekeepers on the market or from the house. In 2017, the share of direct sales by beekeepers increased to almost 30% according to Hungarian Beekeepers Association (2019) data.

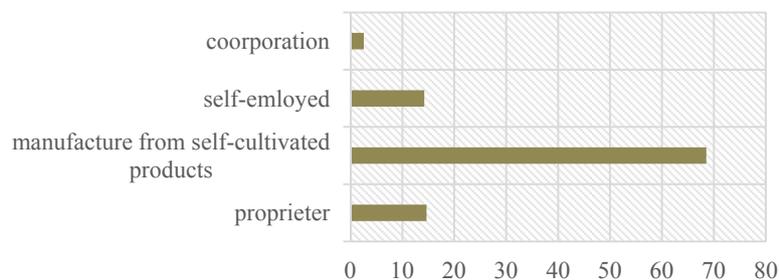
There is limited information available on the situation of the Hungarian beekeeping sector, especially regarding the background of honey production and other beekeeping activities generating other income (Nagy, 2007; Varga et al. 2009). In this study, we target to explore this sector and to make relevant conclusions that would be beneficial for the beekeepers.

### 3. Methodology

The data collection was conducted by a PAPI interview between February and April 2019 (n=232). The respondents of the survey were beekeepers with beehives kept in Central Hungary region and most of their products are put on the market in the same region with direct sales to the costumers. The selection method was simple random and snowball sampling. Queries were always conducted at the point of sale: at the producer's place, on the market, in a shop, at events, fairs and festivals. The composition of the sample is the following: 30-49 years (45.7%), over 50 (43.6%); men (81.9%), women (18.1%); 69% have professional qualifications, 31% do not. The number of years spent in beekeeping: 17.7% for 0-5 years, 33.2% for 6-10 years, 26.3% for 11-20 years, 13.8% for 21-30 years, and 9.1% for more than 31 years. The frequency of the respondents keep fewer than 50 beehives (44.8%), 27.2% keep 50-99 beehives and 13.4% have 100 or over beehives. The proportion of so-called professional beekeepers (with over 150 beehives) is relatively low in the sample (14.7%). Based on the Hungarian Beekeepers Association (2019) statistics, a total of 32.5% of the 1.2 million hives were registered as professional beekeepers in Hungary in 2019.

### 4. Results

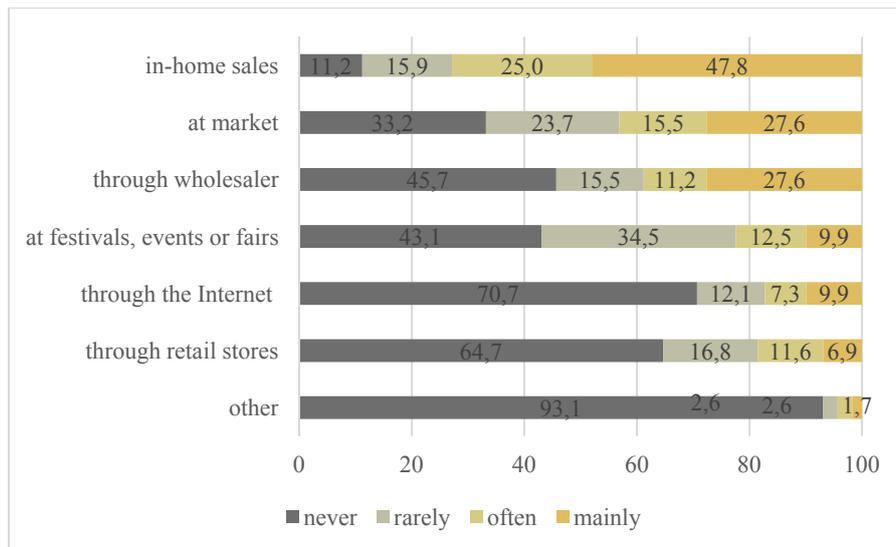
The majority of the beekeepers participating in the study (68.5%) are characterized by the form of manufacture from self-cultivated products, 14.7% are proprietors, 14.2% are self-employed and a small percentage (2.6%) are in the form of a corporation (Figure 1). In line with all these results, 67.7% of the respondents are beekeepers as a secondary activity, while 32.3% are doing it as a full-time job.



**Figure 1: Form of employment (%)**

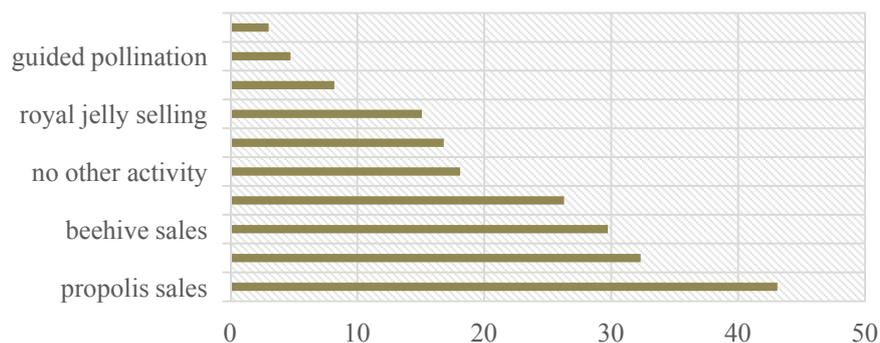
*Source: own survey, 2019*

The most frequented sales channel is direct sales. Beekeepers typically use at least two sales channels, one of the channels is usually direct sales. Most of the respondents, 88.8%, sell their products directly, 47.8% reported this as the most frequented channel. We were interested in the frequency of using different sales channels, the proportion of home sales (47.8%) and selling on market (27.6%) was high among the mostly used channels. The proportion of Internet sales and retail stores is extremely low, 70.7% of the respondents do not appear on the Internet or in the retail shops at all (64.7%). The distribution of the frequencies of the different sales channels are shown in Figure 2.



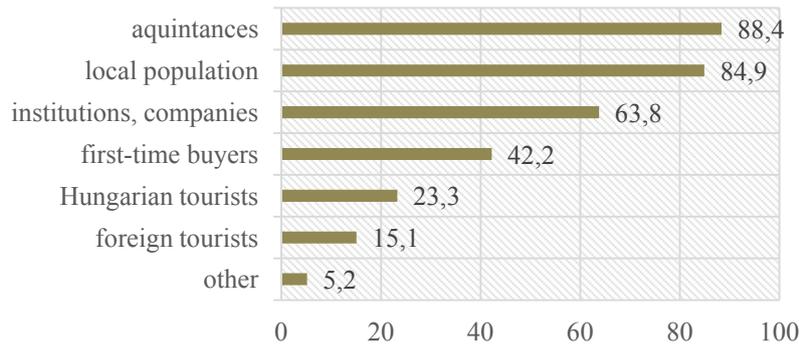
**Figure 2: Honey sales channels (%)**  
 Source: own survey, 2019

As we examined the other apiarian activities, only 18.1% of the respondents do not report other activity. The different activities of the respondents are visualised in Figure 3. The proportion of propolis selling is the highest among the secondary activities (43.1%); while around the third of the beekeepers sell beeswax and beehive. The less frequented activities are guided pollination and beeswarm selling, which are under 5%. Those who only produce honey are typically beginner beekeepers with several years of beekeeping experience (6–20), more activities are typical. While the beekeepers with more experience (21 years and over), again have less activities. Those with a vocational qualification are active in many areas, as compared to those without qualifications, due to the fact that the performance of certain activities are subject to authorisation. Producers aged 30 and 64 are significantly more active than before or after.



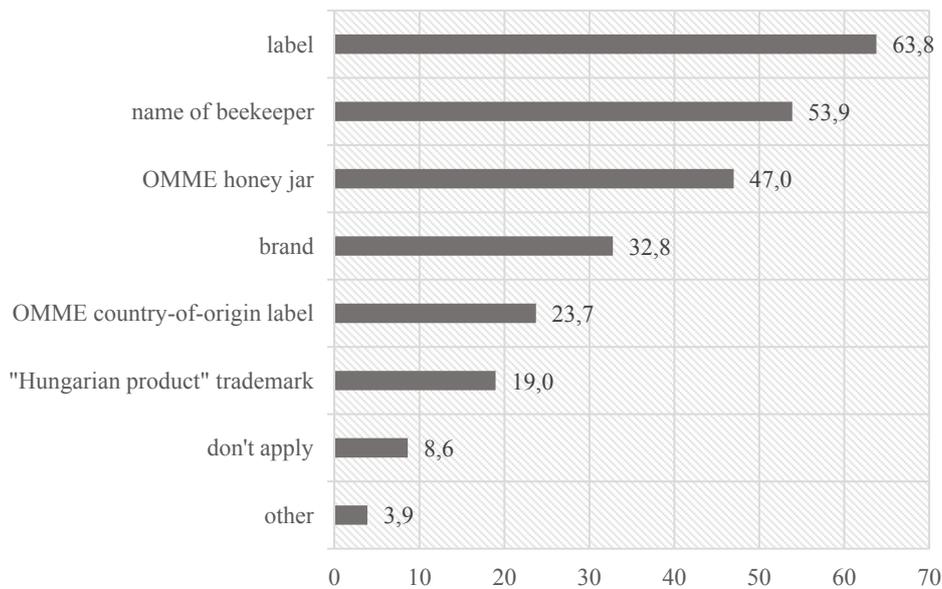
**Figure 3: Apiarian activities (%)**  
 Source: own survey, 2019

The respondents of the survey reported that, their consumers are mostly acquaintances and local population. The less frequent categories are the foreign and Hungarian tourists (Figure 4).



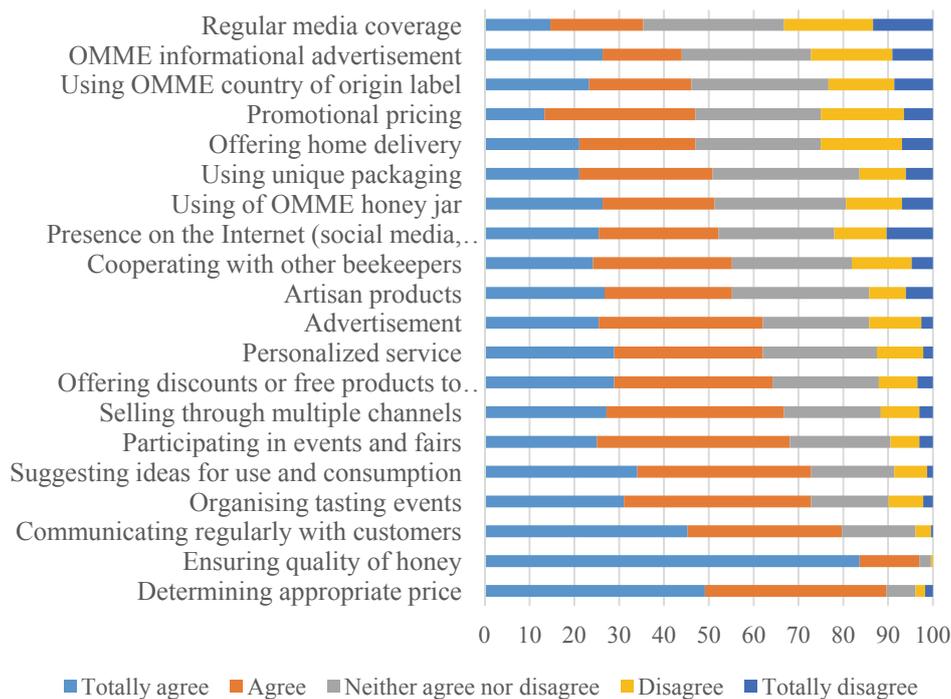
**Figure 4: Consumers (%)**  
 Source: own survey, 2019

In the survey the respondents had to choose the differentiating factors they use. The most frequented answer was the label usage, the name of the beekeeper on the honey jar, and the special OMME honey jar. Less, than 10 percent of the respondents reported that they do not apply any of the differentiating factors listed in the survey (Figure 5).



**Figure 5: Applying unique packaging (%)**  
 Source: own survey, 2019

Most of the respondents agreed with the importance of the determination of appropriate price (89.6%), ensuring quality of honey (83.6%) and communicating regularly with costumers (79.8%). While the regular media coverage (35.4%), OMME marketing activity (44.0%) and OMME safety tape (46.1%) were only important for the minority of the beekeepers (see Figure 6).



**Figure 6: The importance of the factors (%)**

Source: own survey, 2019

## 5. Discussion

In the course of the study, we explored the importance and role of businesses operating in the beekeeping sector, which has recently become a focus of attention. We believe that research can be considered as a niche in several areas, and we have achieved new scientific results by achieving our research objectives. The main limitation of this study is the regional sample of producers. Due to the limitations, we are planning to conduct further studies on a national representative sample, and to extend the questionnaire regarding the beekeeper' actual economic position and their developing opportunities.

The topic also includes further research possibilities, and the examination of the situation of domestic beekeeping companies may provide an opportunity to compare the data of the beekeeping companies of the neighboring countries. Comparative analysis would primarily concern Slovakia, Poland and the Czech Republic.

## 6. Conclusion

In Hungary, consumption of honey has increased in recent years. Furthermore, the trend of consumer preference for healthy and local food is predicted to be even higher in upcoming years. The most frequented sales channels are in-home and at market and sales through the Internet and through retail are the less frequented channels. Other main apiculture activities are propolis, beeswax, beehive sales. The main consumers of the surveyed respondents are acquaintances and local population. Differentiating honey products beekeepers reported professional knowledge and hygiene as the most important factors in competitiveness. Labelling, the name of the beekeeper and OMME honey jar are reported to be a differentiator factor as well.

## References

1. Árváné, V. G. (2011), A mézpiac marketing szempontú elemzése különös tekintettel a fogyasztói és vásárlói magatartásra. Doktori (PhD) Értekezés. Debreceni Egyetem, Agrár- és Gazdálkodástudományok Centruma, Gazdálkodástudományi és Vidékfejlesztési Kar, Gazdálkodástudományi Intézet. Ihrig Károly Gazdálkodás- és Szervezéstudományok Doktori Iskola. Debrecen.
2. European Parliament (2018), P8\_TA-PROV(2018)0057. *Az EU méhészeti ágazata előtt álló kilátások és kihívások. Az Európai Parlament 2018. március 1-jei állásfoglalása az EU méhészeti ágazata előtt álló kilátásokról és kihívásokról* [2017/2115(IMI)]. In: *Méhészet* 66 (5) pp. 22-29.
3. Kovács, D. (2017), *Méhészkönyv. Eladjuk vagy értékesítjük?* Bácska Kft. Baja.
4. Lampeitl, F. (2006), *Bienen halten: Eine Einführung in die Imkerei*. Verlag Eugen Ulmer, Stuttgart.
5. Lehota, J. (2017): *Az élelmiszer-gazdasági marketing*. p. 22-30. Globális trendek és ellentrendek az élelmiszerfogyasztásban. pp. 81-91. In: Szakály, Z. (Szerk.), *Élelmiszer-marketing*. Akadémiai Kiadó. Budapest.
6. Feldman Zs. (2018), *31. Nemzetközi Mézvásár és Méhésztalálkozó*. Megnyitó beszéd. Jászberény. 2018.08.04.
7. Hungarian Beekeepers Association (2019), *Betekintés az országos éves adatbázisba*. Belső információk. Budapest. 2019.01.10.
8. Hungarian Beekeeping National Program (2010-2013), *A vidékfejlesztési miniszter 47/2010. (XII. 31.) VM rendelete a Magyar Méhészeti Nemzeti Program alapján a 2010–2013 közötti végrehajtási időszakokban a központi költségvetés, valamint az Európai Mezőgazdasági Garancia Alap társfinanszírozásában megvalósuló támogatások igénybevételének szabályairól*. In: *Magyar Közlöny* 2010. (202) pp. 32204- 32237.
9. Hungarian Beekeeping National Program Evaluation Committee (2016), *A Magyar Méhészeti Nemzeti Program 2016-2019*. Jóváhagyta: dr. Feldman Zsolt, agrárgazdaságért felelős helyettes államtitkár. Budapest. p. 1-24.
10. Márton, A. (2001), *Méhészet*. Mestergazda könyvek. Mezőgazdasági Szaktudás Kiadó. Budapest. pp. 5-106.
11. Nagy, I. (2007), *A méhészeti termelés technológiai, gazdasági, társadalmi összefüggéseinek vizsgálata*. Doktori (PhD) Értekezés. Nyugat-magyarországi Egyetem, Mezőgazdaság- és Élelmiszertudományi Kar. Az állati termék-előállítás biológiai, technológiai, ökológiai, takarmányozási és ökonómia kérdései Doktori Iskola. Mosonmagyaróvár.
12. Sárospataki, M. (2005): *A méhészet biológiai alapjai*. Egyetemi Jegyzet. Szent István Egyetem, Gödöllői Területi Iroda, Nyomda és Könyvesbolt. Gödöllő. pp. 1-42.
13. Varga, H., Nagy, I., Salamon, L. (2009), *A magyar méhészet helyzete és jövőképe az Európai Unióban*. In: Kacz, K., Kalmárné, H. E., Teschner, G. (Szerk) (2009), *Mezőgazdaság és a vidék jövőképe*. Konferencia kiadvány II. kötet. pp. 305-312.

## THE INFLUENCE OF THE CONJUNCTURE CYCLES AND THE ECONOMIC CRISIS OF 2008 TO THE NATIONAL INVESTMENT MARKETS

*Emese Melinda BOGÁTH<sup>1</sup>, Sándor GÁSPÁR<sup>2</sup>, Etelka KERÉKES<sup>3</sup>*

*Szent István University, Gödöllő, Hungary*

*E-mail: bogathe@gmail.com*

### **Summary:**

**Purpose:** Economists have already noticed long ago that the economic crises occur in relatively regular time intervals. These crises which occur regularly in cycles and horify countries are same only apparently. It is true that they have influence maiming the economic life, however, their cause effects and runoffs are different. Economic cycles are not independent, those influence, can intensify and weaken the influence of each other. Severe crises can occur if the turning point of a Juglar and a Kondratieff cycle meet or if a sinking period of a Kondratieff cycle and a secular trend meet. The world economic crisis beginning in 2008 fits into the Kondratieff cycle which lasted for 40 to 60 years.

**Methodology:** In the research I examine and show the conformation of the Hungarian and Austrian investment market between 2005 and 2017. I chose this twelve years because it covers three important periods: before the economic crisis (2005-2007); period of economic crisis (2008-2012); after the economic crisis (2013-2017)

The experts identify the economic recession of 2008 with the credit crisis, namely the credit borrowig and lending. The reasons of the crises are composite, due to several unlucky constellations the problem became global. According to several people the root cause is the greed of gain and the too loose monetary politics and regulation system.

**Findings:** Monitoring the effects and the consequences of the crisis it could be stated that it considerably remade the cash and capital market, and their regulation, risk valuation consequently new products appeared throughout on the market. The crisis had an important selective effect, too. Many of the companies having instable economic background became bankrupt thus it could be stated that those which survived and adjusted to the changed economic milieu have safer economic operation. The crisis did not only shaken the business sphere but it had great influence on the privale sphere, households, too.

**Keywords:** economic cycle, investment market, world crisis

### **1. Introduction**

The economic crises appear in relatively regular intervals and every of them suit to an economic cycle. The world economic crisis starting in 2008 fits into the Kondratieff cycle (Kondratieff 1980, p. 241-269) the length of which 40-60 years:

- Cycle 1 from the end of the 1780s to 1844-51
- Cycle 2 from 1844-51 to 1890-96
- Cycle 3 from 1890-96 to 1914-20 the ascending line

The economic cycles are not independent of one another, they influence each other, they may reinforce or relieve each other's impact. According to György Kövér (1980, p. 127-136) a significantly serious crisis may develop if the turning points of a Juglar and a Kondratieff cycle meet or if a declining Kondratieff phase and a secular trend coincide.

## 2. Literature review

The global financial crisis of 2007-2010, which according to estimates left several quintillions of dollars of loss around the world, was not caused by a war or a major recession but the shadow banking system in the United States. It was the 'animal spirit' of the investment banks, hedge funds and banks of the supermarkets as well as the elegant mathematical models based on irrelevant premises and not really understood by most financial manager (Végh, 2013). Deregulation in the United States took great impetus as early as the presidency of Ronald Reagan and peaked with respect to the financial sector in measures like the abolition of the Glass-Steagall act adopted in 1933. (Andor, 2009) This act was the reform of the Franklin D. Roosevelt administration in response to the wave of bank failures following to the great world economic crisis of 1929. Also, in its introduction, the concentration of economic power in the 20th century and the concerns relating to its effect on political power played a role. (Stiglitz, 2005) According to the analysis of Miklós Losoncz (2008, p. 248-264) the first phase of the crisis cycle started as early as the first years of the 2000s as the result of the decrease of interest rates all around in the world. The crisis itself actually became manifest in March 2007 when bad news from the mortgage market became worse and then collapse occurred in August 2007. (Király, Nagy, Szabó 2008, p. 573-621) By September 2008 the average American property price fell by more than 20 per cent as compared to their peak in mid-2006 as the result of which the mortgage debts exceeded the value of the properties. (Economist, 2008) The American government took under control the two largest mortgage lenders Fannie Mae and Freddie Mac. By the end of the year the economic crisis spread all over the world and naturally, had an impact on investments as well. (Borszéki, 2009) But perhaps it did not cripple it as much as the households (Csiszárík 2011a, p. 203-207; 2011b, p. 208-212; 2012, p. 52-60)

Bello Walden (2008, p. 61-69) wrote that one of the causes of the collapse of the financial system was the exceedingly liberal attitude. The extremely lax regulation did not derive from the inability of the government to regulate the market but rather from the laissez-faire approach. According to the governing neoliberal thinking the markets are self-regulatory. This attitude prevented the government from taking effective measures. György Soros (2008) thinks the same. According to him the fundamentalism to leave the markets alone is based on a fatal misunderstanding as the markets are not able to adjust themselves and do not tend to balance.

According to Ferenc Kondorosi (2009, p. 82) we can find over production behind the crisis, which can be seen as the lack of demand screened earlier by speculative money. The majority of this money was destroyed as the result of the crisis. Others believe that the cause of the global crisis was greed and the giant desire for gain. (Bánfy, Kürthy, Bánfy 2011, p. 191-208; Losoncz, Nagy 2010, p.69-83; Györffy, 2009)

Many people put the question: could we predict the crisis? To think it over, the question is justified considering the fact that it did not happen first time and probably not the last time and also if we think about the cyclical nature of economy. István Magas (2009, p. 355-356) was also looking for an answer to this question. According to him the answer is no. True models generating cycles exist but it is impossible to forecast the future aggregated performance of the American economy, the extent of growth and decline and the accurate realization of the phases in time. Mostly we had indicative observations of statistics. However, neither the actual future length of the trends nor the extent of deviations could not be calculated with a standard formula.

The economic world crisis of 2008 naturally influenced the investment field also, however, has not stricken it such an extent as the households.

As after-effect a real regulatory price flow started particularly on the level of the European Union, the signs of which arose first in the year of 2010. Despite the fact that the investment sector was not responsible for the outburst of the crisis, the most important changes figured in this field. We still cannot know what consequences will arise due to these modifications at a long term will they help the development of the investment market or not.

The role of the regulation authorities will grow and these regulations will be realized more and more on the level of the European Union.

### **3. Methodology**

In order to eliminate such moral problems a plan was prepared to develop a comprehensive integrated regulatory reform to cover all fields of the economic and financial activities on the level of the European Union in contrast with the earlier national level regulations.

The regulation is based on four pillars:

- transparency
- responsibility
- supervision
- prevention and management of crises

The lack of transparency was explained for a long time with the complexity, far reaching many-foldedness of financial activities. However, the crisis showed that all financial actors must be subject to the appropriate regulation and supervision. The adaptation or confirmation of the earlier regulations became necessary. Several objectives were launched to achieve it. According to the directive on alternative investment fund managers the commission ensured that potential risks threatening financial stability were monitored on the basis of uniform rules. The investment fund managers were able to enter the EU market only in compliance with the comprehensive system of requirements.

With respect to the derivative and short selling transactions the European Commission proposed the introduction of standard contracts on derivatives with clearing via a central counter party thus mitigating the possible risk of insolvency. In addition information relating to European transactions must be reported to trade repositories thus ensuring transparency.

According to the directive on markets in financial instruments (MiFID) the Commission proposed an even more transparent trade in the area of financial instrument thus ensuring the trade of various instrument within Europe.

In order to maintain the trust of consumers and investors in the financial system the responsibility of financial service providers were tightened. On the one hand to prevent corrupt practices on the markets and on the other hand, to develop the culture of risk taking on the level company management. The filling of the gaps of the legal regulations was another important step just like making the applied directives effective with respect to the over the counter derivative instruments and those used in multilateral trade.

On company management level the long term financial interests of the enterprise were to given priority. It ensured a larger scope of competence and independence for the risk managers. The emphasis on the role of shareholders, auditors and financial supervisors were also important steps towards new responsible operation.

The world crisis threw light on the shortcomings in coordination between the national supervisory bodies. In order to get rid of them a proposal was prepared on the development of a supervisory system on the level of the union.

The European Supervisory Framework entering into force at the beginning of 2011 comprised the European System Risk Body, which ensured that macro-economic risks were recognized in time and properly handled. EBA (European Banking Authority), EIOPA (European Insurance and Occupational Pensions Authority) and ESMA (European Securities and Markets Authority along with the European supervisory authorities of the sectors developed the 'Single Rulebook'.

The Commission wishes to raise the supervision of the operation of the credit rating agencies to European level too and foresees their registration in the framework of ESMA. It granted exclusive supervisory competence for the authority over the rating agencies. Issuers of structured financial instruments must ensure access to information to all interested credit rating agencies.

But the most important aim was to prevent another collapse of the economy like it happened in 2008. It required the appropriate early warning method in the financial system. Its most significant measure was the development of a more effective liquidity system in accordance with the Capital Requirements Directive (CRD).

The purpose of the accounting standards is to help bring decisions by the users and better reflect the aimed objectives.

The establishment of liquidation funds provides help in avoiding burdening the tax payers with the costs of liquidation. These funds dispose of the sufficient capital to grant cover in case an average size bank fails. Thus insolvency cannot affect the stability of the financial system.

In the aftermath of the crisis MiFID II (2014/65/EU) was adopted on 15 May 2014. The new directive dealt with the markets of financial instruments. It appropriately regulates the trade on markets in financial instruments, ensures new legal framework and puts more emphasis on the protection of investors.

The main objective of the directive is to ensure the regulated trade of financial products on international level. It also supports and ensures greater transparency mainly relating to the prices of the financial instruments, controls and restricts the speculative possibilities of the commodity exchange. It also foresees to give timely responses to the challenges staged by new technologies and the protection of the investors.

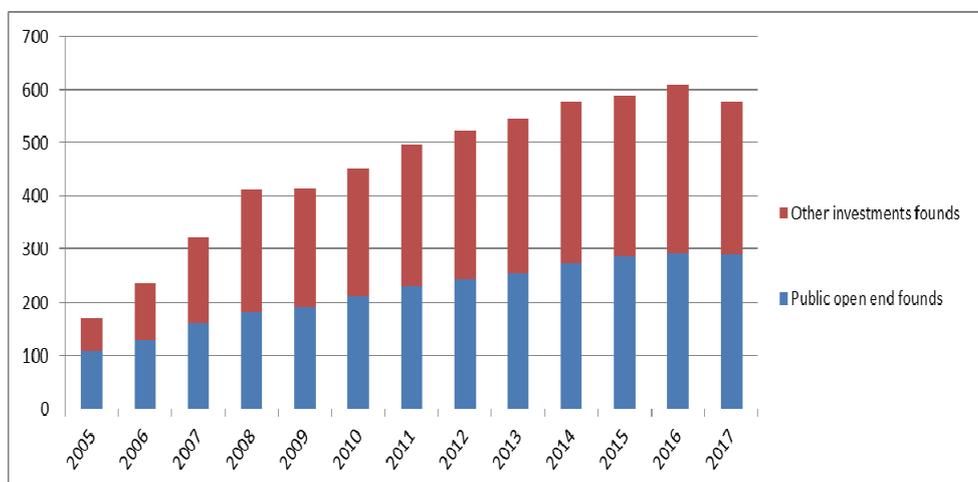
The governments were obliged to harmonize the Union's decisions and directives adopted in 2014 with their national legislation. The implementation of the regulations on the markets in financial instruments, the malpractices of the markets and the protection of investors was carried out by 3 July 2016 and they took effect as of 3 January 2017.

## 4. Results

The Hungarian investment market is characterized mainly by cautiousness, especially in the private sector. We do not dare to risk, afraid of the new so a lot of people are not bold enough to invest in new things.

What counts as risky and what does not? Generally we consider as risky investments those the value of which can change suddenly and considerably. The smaller is the risk of the product, the lower produce can be expected, however, with the greater risk, the extent of the produce which can be realized grows, too. Naturally, the margin of each person differs above which one considers the investment product as risky. There are persons who bear badly the risk thus rather give up higher produce, but there are ones also who put every effort in reaching the possible highest profit.

The below figure shows the quantity of the managed stock. As you will see the quantity increases relevantly and steadily with two exceptions. One is the year of 2009 when although the quantity did increase but hardly surpassed the level of 2008. The other year is 2017 when notable decrease could be experienced. The cause of the first 'disruption' is known. It was the economic downturn of 2008 which forcefully brought to a halt several sectors of the economy and especially in the sphere of investments. 2008 could boast with 412 funds but 2009 could add one fund to the palette only, which could be called infinitesimal as compared to the increasing trends of the years preceding 2008. We could also observe the change of proportion of the public open end and that of other investment funds. In 2005 the public open end funds were the evident winners but in 2008 the rate turned to the opposite to the benefit of other funds. The trend can be observed up to 2017 when the volume of public open end funds exceeded. True, the difference was 1 fund only.



**Figure 1: Changes in the quantity of the domestic managed stock**

*Source: BAMOSZ, own editing*

The changes in the value of the assets managed between 2005 and 2017 also have interest in store. From 2005 we can see dynamic growth, the increase of the value of the assets amount to nearly 70% in the first two years. Then the recession of 2008 arrived and the stock shrank by 20%. The subsequent years did not bring a breakthrough until the end of 2012. Although some growth trend can be observed but each of them was followed by another slump. This figure clearly shows the three periods mentioned earlier: the pre-crisis period, the crisis itself and the subsequent years. As soon as the critical period 'ended' in 2012 the asset value of the stock surpassed the threshold of HUF 4.617 billion and the coming years brought further

growth. With respect to its composition the investors clearly preferred the public open end funds where they deposited most of their savings. What was its cause? It is important that this type of fund is turned into cash very easily, which means that the distributor may sell it on any day when the markets are open and even they can even return the investment fund at the rate of the value apportioned to a share in the fund. This possibility means exit strategy and safety for many investors as I have observed that the majority of the domestic investors is very risk avoiding. They may take the risk promising higher yields but when bad comes to worse they are eager to get rid of them.

We are far behind our neighbour with respect to the managed asset too since the Austrian managed asset is nine times more than the Hungarian. The effect of the recession can be seen also in the volume of the managed asset. This figure also demonstrates this period. Such a significant difference can not be experienced in the studies of the domestic data. What is it caused by? In my opinion the difference is caused by the composition of the funds preferred by the Austrians. The European fund management market is far from uniform, each of the countries have a specific investment fund market. Within the investment funds the bond funds represent a larger, often 40% or more share of the Austrian, Norwegian and the Romanian markets and equities are in majority in the Swedish, Slovak, Norwegian and the British markets while the mixed funds are preferred by the Austrians, the Belgians, the Czechs and the Slovaks. Money market funds are hard to find in Germany or Austria and they are scarce in the Slovak and the Czech markets too.

## 5. Conclusion

According to the written above we can see that investment desire slowly returned and new opportunities opened up in the investment market. The quantity and asset value of the funds experienced explosive growth, the only question is how long it can last.

## Refereces

1. Andor L. (2008), *Függöny, avagy egy korszak vége*, Napi Gazdaság, XVIII. Évf. 249. December 29.
2. Andor L. (2009), *Pénzügyi válság, gazdasági modellváltás, globális átrendeződés*, DEMOSZ Magyarország, Budapest
3. Bánfy T., Kürthy G., Bánfy A. (2003), *Szabályozás a pénzügyi válság(Ok) után (között):Kényszer És Lehetőség*, Pénzügyi Szemle, 2011/2.
4. Bello W. (2008), *Bevezetés a wall street összeomlásába*, Eszmélet, 80. szám
5. Borszéki É. (2009): *Haladó pénzügytan*, Szent István Egyetem - Oktatási Segédanyag, Gödöllő
6. Csiszárík Á. (2011a), *A gazdasági válság hatásainak vizsgálata életkor szerint egy primer kutatás eredményeinek tükrében*, Erdei Ferenc VI. Tudományos Konferencia, Kecskemét, 2011. Augusztus 25., Kecskeméti Főiskola, Kertészeti Főiskolai Kar
7. Csiszárík Á. (2011b), *A gazdasági válság hatásai az iskolai végzettség alapján képzett csoportokban egy kvantitatív kutatás eredményeinek tükrében*, Erdei Ferenc VI. Tudományos Konferencia, Kecskemét, 2011. Augusztus 25., Kecskeméti Főiskola, Kertészeti Főiskolai Kar
8. Csiszárík Á. (2012), *A gazdasági válság hatására kialakult recesszió érzékelése egy kérdőíves kutatás eredményeinek tükrében*, Humánpolitikai Szemle, 2012. Március
9. Economist (2008), *A helping hands to homeowners*, Economist, október 23. [HTTPS://WWW.ECONOMIST.COM/FINANCE-AND-ECONOMICS/2008/10/23/A-HELPING-HAND-TO-HOMEOWNERS](https://www.economist.com/finance-and-economics/2008/10/23/a-helping-hand-to-homeowners), Letöltve 2019. január 29.
10. Györffy D. (2009), *Szép újvilág amerikában*, Pénzügyi Szemle Közpénzügyek – A gazdasági világválság és a magyar nemzetgazdaság, 2009/2-3. 326.

11. Király J., Nagy M., Szabó E. V. (2008), *Egy különleges eseménysorozat elemzése – a másodrendű jelzáloghitel-piaci válság és (hazai) következményei*, Közgazdasági Szemle, 7-8. szám
12. Kondorosi F. (2008), *A gazdasági válság hatása a nemzetközi kapcsolatokra és az államok politikájára*, Pénzügyi Szemle, 2009/2.
13. Kondratieff, N. D., Oprain D. I. (1980), *A konjunktúra nagy ciklusai*, Politikai Gazdaságtan Füzetek, 66. Sz. Mke Budapest.
14. Kondratieff, N. D. (1926), *Die langen Wellen der Konjunktur*, Archiv Für Sozialwissenschaft und Sozialpolitik, Vol. LXVI
15. Kondratieff, N. D. (1980), *A gazdasági fejlődés hosszú hullámai*, Történelmi Szemle, 23. Évf. 2. sz.
16. Kövér Gy. (1980), *A kondratiev-ciklus. szakasz vagy hullám*, Egyetemi Szemle, No. 3.
17. Kuznets S. (1981), *Struktúra és növekedés a modern gazdaságban*, Kjk
18. Losoncz M., Nagy Gy. (2010), *A bankok reagálása a globális pénzügyi válságra-nemzetközi tapasztalatok*. Pénzügyi Szemle, 2010/1.
19. Losoncz M. (2008), *Az amerikai hitelválság és világgazdasági következményei*. Pénzügyi Szemle, LIII. Évf. 2. Szám
20. Magas I. (2009), *Ciklikusság és válságok az amerikai gazdaságban, 1929-2008* Pénzügyi Szemle – Közpénzügyek – A Gazdasági Világválság És A Magyar Nemzetgazdaság, 2009/2-3.
21. Soros G. (2008), *The new paradigm for fianacial markets. the credit crisis of 2008 and what it means*, Public Affairs, New York
22. Stiglitz J. E. (2005), *A viharos kilencvenes évek*, Napvilág Kiadó, Budapest
23. Szabó Zs. (2008), *Szalay-Berzeviczy: A világ összeomlik, mi pedig nagy bajban vagyunk*, [https://hvg.hu/gazdasag/20081027\\_szalayberzeviczy\\_bet\\_elnok\\_interju](https://hvg.hu/gazdasag/20081027_szalayberzeviczy_bet_elnok_interju), letöltve 2018. december 13.
24. Végh K. (2013), *A 2007-ben kirobbant pénzügyi válság hatásainak értékelése a befektetési alapoknál Magyarországon*, Ph.D. Értekezés, Gödöllő, pp 120.

## GLOBAL ECONOMY VS. MULTICULTURAL CHALLENGES: DIFFICULTIES AND OPPORTUNITIES OF KNOWLEDGE MANAGEMENT PRACTICES

*Eszter MARCZELL-SZILÁGYI*

*Szent István University, Gödöllő, Hungary*

*Email: mszilagyi.eszter@gmail.com*

**Summary:** While benefits of international knowledge-transfer projects are quite obvious both in the field of (a) university-studies and also of (b) factual business work within the circumstances of the globalised word-economy (Peterson 2014, p. 2-4), still some basic conditions are missing in the international relations — especially in the field of university studies and of the fresh-graduates' labour-market. This paper wishes to explain the most significant types of these difficulties and outlines the structure of the most important types of possible practices and institutional improvements that could serve as solutions for these complex and strongly interrelated problems.

**Purpose:** This study wishes to examine several knowledge-transfer practises in the fields of business life and education. The most important focus of the research is the effectiveness of knowledge-transfer: does it show a promising or at least a reasonable level? If not, what are the main problems that act as barriers against real learning- and knowledge-transfer processes? Are there ways, methods, or viewpoints by which this effectivity can be increased?

**Methodology:** The primary research of the study is based on interview-analysis. The types of interviews applied were both personal interviews and focus-group interviews. All the interviewees asked are students in international business study-programmes. They come from various places of the world and currently they learn in Budapest, Hungary – both in BA and in MA business-study programmes. Even though my interview-analysis cannot be regarded as representative, I think I can propose some questions about the effectivity of knowledge-transfer in higher education and in the labour-market of the freshly graduated business students within the Hungarian conditions — based on the results of this study, some further researches can be started to compare the conditions found in Hungary with the ones in other parts of the World. The focus of my interview-research was the efficiency of teaching (of knowledge-transfer) in the international BA- and MA- business programmes in Hungary and the experiences of the students who try to be involved in the Hungarian labour market (which is — for them — a foreign working environment).

**Findings:** The results of the research show that neither the higher education nor the labour-market of the new graduated international university students show such a high level of efficiency in international knowledge-transfer which could guarantee the proper and favourable utilisation of the rich opportunities of transferring the differentiated knowledge-contents and problem-solving approaches originated from different cultures, different countries.

**Keywords:** knowledge-transfer, international relations, education system, labour-market, knowledge-management,

## 1. Introduction (Increasing internationalisation in global markets and in social trends)

Within the circumstances of the globalised world-economy at the beginning of the 21<sup>st</sup> century, the practise of international knowledge-transfer is getting more and more extensive. (Baker 2019, p. 1-7) This process should be welcomed and promoted every way, as (Willemse 2012, p. 1-5.):

- a) The globalised markets need *extended cooperation on the supply-side*: the strong development of the globalised companies, the evolution of the international systems of commerce and the increasing activity of the international unions and alliances all show good examples for the expanding importance of integrated view and initiations for coordination.
- b) The increasing number of *global challenges and problems* also show the immediate need for collective thinking, problem-solving and coordinated actions. Problems, like Global Climate Change, Poverty, Food and Water security, etc. can be moved towards real ways of solutions only by aligned actions.
- c) Both the previous two points show, that *professional scientific collaboration* is also a field that should be dramatically extended in the very close future. This also points out the global need for learning together and learning from each other on the level of persons, teams and larger units.
- d) *Diversity* itself, i.e. the variegation of ideas, the heterogeneity of thoughts and viewpoints has always promised great opportunities for the creation of brand-new types of solutions and ideas which can make life better. This theory itself is also able to prove the importance of extended knowledge-transfer.

A high number of persons and entities from business-, social-, and political life fortunately recognise the increasing need of international coordination (demanded – among others – the processes above), so our age can witness the extension of different types of synergies in many areas such as (Bencsik 2009, p. 34-58):

- a) in *business life*: (besides the global companies and international commercial alliances mentioned above) a high number of forums offer the opportunity for the discussion of the emerging problems and also opportunities for planning and trying new ways of collaboration. In the supply side of the labour market we can experience that the need towards employees to work abroad for even a longer time is not an extraordinary wish anymore: flexibility and mobility shows high trends of increase all over the world (not only in those places where the open-minded attitudes have always had strong positions).
- b) in the field of *science and research*: the work of international research institutions, the high level of motility in the labour-market of scientists and the increasing number of international research projects clearly show that scientific life has always had a pioneer role in breaking barriers to make scientific and research cooperation free and independent.
- c) in *education*: Even though trends of internationalisation can be observed at all levels of education, higher education shows the most remarkable increase — BA and MA courses all around the world show quick growth in offering more and more international study programmes for students from every part of the world — and the demand side of the market (the students) definitely answer to these extending opportunities of supply: higher and higher rate of students plan to gain their BA- and / or MA-degrees in foreign universities or simply to take part in student-exchange programmes promoted by ERASMUS and other international entities.

This study wishes to examine the practises of coordination in the fields of business life and education. The most important focus of the research is the effectiveness of knowledge-

transfer: does it show a promising or at least a reasonable level? If not, what are the main problems that act as barriers against real learning- and knowledge-transfer processes? Are there ways, methods, or viewpoints by which this effectivity can be increased?

The increasing need of cooperation of the World's markets and societies are obviously followed by the trends of extensive growth in both business life and in education as well. This article wants to know whether these volume-type of increases (higher activity of global companies, more and more international students in international university programmes, etc.) are also followed by *higher quality of knowledge-transfer* or not. Is knowledge-conversion more successful than it was in the previous decades? Or may the promising trends of quantitative increase be accompanied only by slow knowledge-transfer with only fractional results?

## **2. Research background** (Knowledge-transfer — why is it so mysterious?)

One of the most important topics in knowledge management is the effective knowledge-transfer. This gives the highest relevance to the distinction between explicit and tacit knowledge. While studies in the late eighties and early nineties emphasized the role of information in business success, later publications realised that it is rather knowledge and not information that acts as a main factor in business (and everyday) success. (Sveiby, 1997, pp. 14-22.)

Of course, the obtainment of certain kind of special information can have critical importance in some decisions (e.g. the plan of the enemy for the captain of a military unit in a war) but generally we can say that we usually have large volume of information around us: statistics, data and a high variety of publications stating the indisputable truth are available from several sources for anybody who is to make some important decisions for him/ herself or for any kind of organisations. Sometimes we even can state that there is too high volume of information around us: a lot of suppliers and agents of information tries to convince us every day to use their ideas, principles, theories or databases personally or through advertisements, e-mails and spams. It means, that in most of the cases the supply of information for us to make any important decisions is far enough: *the questions is how to use this huge amount of information to obtain our goals* — what are relevant from them for our special case and what are those which are unnecessary? Which are the decision-making methods or algorithms that can help us effectively to convert the high volume of available information into good decisions that help us to step forward towards the right direction? (Sveiby, 1997, pp. 47-53.)

It is *knowledge*, that enables us selecting the relevant information and leads us to make the right decisions based on the large volume of unstructured data — and knowledge is not so easy to obtain. By giving the part of the knowledge which can be put into the form of words (this small part of knowledge is called explicit knowledge), the most valuable parts of it will be lost. In case we get a book and read it, it is not necessary that we will be able to use the knowledge that the book originally offered us. If we listen to an interesting presentation, there is a great chance that we will understand only a part of the content that was told us, and we'll remember only a surprisingly small part of the whole presentation. Explicit knowledge — which can be transferred through information (either written or oral information) is such is a small part of the whole volume of knowledge, that it finally results only an average 10% of knowledge-transfer if we follow this way. (Davenport, Prusak, 2000, pp. 45-53.)

Really high-efficiency knowledge transfer is based on the so-called *master-student relation* where both sides (master and student) are *highly involved* in the teaching / learning process. The simple model of this kind of learning is as follows: the master shows the activity (to be learned) to the student; the student tries to do the same while the master is watching and after that, the master gives detailed feedback to the student about all the things he/she did well, and also about those ones, that he/she did wrong. After it, they repeat the whole cycle again, and again: master shows / student imitates / master gives detailed feedback. This practice of “*learning by doing*” shows an average effectivity of about 70% — no doubt, how better this knowledge-transfer method is, compared to the previous one. (Davenport, Prusak, 2000, pp. 61-67.) A large rate of the best professionals (no matter if they are professional salesmen, doctors, artists or hairdressers) had really great masters from whom they obtained extraordinary “volume” of real knowledge this way.

This is the point where knowledge-transfer comes into the picture again — when we speak about *real learning at international level*. Learning is not always that effective, as we could think before. The simple “dropping” of a book to a student asking him to learn it for the next week-exam is not real teaching and will not result effective learning (only in cases where the student has specially high motivation and tries to find some effective ways of learning by him/herself). It means, that not all global companies are good places for the employees to learn new things, and similarly not all universities or colleges are good places for students to learn new stuff.

How can a place of work or a place of study become a place where learning is effective? The 2 keywords that give the answer to this question are (a) *proper methods*, and (b) *adequate motivation* (Garvin, 2003, pp. 4-12.):

- a) *Proper methods* to be applied in educational and business organisations mean the high level of appliance of effective knowledge-transfer methods: so instead of focusing only on information-based knowledge-transfer (see above), a high endeavour is invested on the introduction of teaching- and cooperation forms where the high involvement of the participants is an obvious purpose and is encouraged at a high level. There are a lot of good examples for practises which exploit the opportunities of the master-student relation: many types of case-studies and simulations working in teams based on project management-driven principles and many-many types of group-creative techniques are great examples for the professional application of highly effective knowledge-transfer methods of cooperation and learning. (Havas 2002, p. 1-2.)
- b) *Adequate motivation*: is it an element of the given organisation that we can expect being so obvious for all the members of the team? Let’s take the example of a brilliant salesman at a company trading with cars: Mr. Smith has the highest sales figures among all the colleagues in the sales team — he sells more than 70%(!) of the cars: his lovely and patient behaviour together with his high empathy towards the customers and his always up-to date knowledge about all new trends in the car market makes him able to be the most popular car-seller in the town: all types of customers (e.g. young yuppies, single girls or families) all want even to go back to him when — after a couple of years — they decide to buy their second car (after being so satisfied with the 1<sup>st</sup> that also Mr. Smith sold them). He even knows how to teach the young colleagues (see proper methods at point (a)): he invites them to all his sales negotiations and after each deal they analyse the cases together, then - step by step - he delegates some parts of the whole “negotiation cycle” to them: when they try for the first time, he is there to help them from the background, and after each of their negotiations they analyse the situations and step by step the young salesmen-trainees become similarly professional as him. (Marcell-Szilágyi, 2015, pp. 353-358.)

c) Ok, up till now we could see a fine example of how a person is able to use teaching techniques based on the principles of master-student relation. But will Mr. Smith be motivated to use these really effective methods of knowledge-transfer if his boss asks him to teach 5 young sales trainees taking into account that he is not really young, and the years of his retirement are coming soon? (Marczell-Szilágyi, 2012, pp. 115-117.)

If we tried to think as Mr. Smith, the answer would probably be “NO”. The better job he makes in teaching the trainees, the sooner he is sent to retirement. And he loves his work. He is still fresh and successful and has all the abilities and enthusiasm to go on with his job at as high level as he did before. Mr Smiths also loves the money he earns: besides his fixed salary he also gets a nice commission: 4% of the revenue after each car he sells! It means again the same: the better job he makes (so the more time he will spend with his young trainees and the more their sales skills develop), it will be them, who are going to sell more and more cars and not Mr: Smith — who rather turns to be a great teacher by now, not an active car-seller.

d) In case the director of the firm is talented enough to understand this problem, he/she has to change the motivation system: if it is NOT a typical custom at the company to send the good-quality workers to retirement is they are still performing at a high level (and they wish to stay) then Mr. Smith also will have less anxiety and concern about his future at the company (especially, if his old “master” was NOT sent to retirement 40 years before when Mr. Smith was *his* young trainee). In case his premium-system is restructured, and he gets e.g. 2% of commission after each case when one of his students sell a car, Mr. Smith can see even better opportunities about his future salary if he performs as a trainer. Ok, now let’s see one example of his non-material motivators: he always used to be the “*salesman of the year*” up till now and all the members of the company celebrated him at every Christmas party. Now he will be the “*trainer of the year*” instead and the same enthusiastic celebration will be organised for him at every Year-End Party. (Marczell-Szilágyi, 2012, pp. 117-123.)

Can we see how the good motivation system is able to form the company culture? If the rewards (premiums) will consequently be distributed on the basis of how the given employee shared his knowledge and energies with the others, then the habits of knowledge-sharing and supportive teamwork will get stronger very soon: it will be obvious for all the colleagues that the company success is based on common efforts and it also results benefits for each employee. This is what I call company culture that promotes the knowledge-transfer and this kind of view can be introduced in any organisations (both in business and also in education).

### 3. Methodology (Wished conditions vs. reality)

We have defined the desirable situation wished for business and/or educational organisations: *effective methods applied for knowledge transfer* and the whole institution should have a strong and supportive *organisational culture* that *clearly promotes knowledge-transfer*.

The next step is to examine whether the current conditions in the labour-market, in business life and in higher education can promote knowledge-transfer efficiently or not.

My primary research is based on interview-analysis. All the interviewees I asked are currently students in international business study-programmes. They come from various places (from Asia, Europe and North-Africa). (Their most typical sending countries are Russia, Pakistan, India, Georgia, Syria, Azerbaijan, Kazakhstan and Turkey from the Asian direction, Nigeria, Cameroon and Libya from Africa, and Germany, Ireland, France, Italy and Spain from

Europe). Currently they learn in Budapest – both in BA and in MA international study programmes in English language.

The types of interviews I applied were both personal interviews and focus-group interviews. Even though I also “act” as their teacher in several courses, I can state that the connection between me (the interviewer) and the students is really friendly and supportive (particularly, that they consider me as a mentor-type of figure from whom they can ask questions and help if needed). Even though my interview-analysis cannot be regarded as representative, I think I can propose some questions about the effectivity of knowledge-transfer in higher education and in the labour-market of the freshly graduated business students — based on the experiences of this interview-analysis of mine about the Hungarian conditions. Based on the problems emerging in the Hungarian relations, I think some further research can be started to compare these Hungarian conditions with the ones in other parts of the World.

The focus of my questions of my interview-research was the efficiency of teaching (the efficiency of knowledge-transfer) in the international BA- and MA- business programmes in Hungary and the experiences of the students who try to be involved in the Hungarian labour market (which is — for them — a foreign working environment).

## **4. Results**

### ***4.1. Experiences in higher education***

It was quite a usual opinion among the students that they found most of their teachers competent enough in their fields of study but this competence many times was not accompanied by effectiveness of knowledge-transfer in the classrooms.

At the very beginning of the conversations most of the students mentioned the importance of considering the *language barriers*: it does not only mean that the teachers in the university should mind about the fact that English is NOT the mother-tongue of most of the students and it should increase the importance of expressing themselves with a style as clear as possible, but they also were complaining about their teachers’ English-speaking competences. It means that they did not only miss the clear way of English communication from their teachers side, but many times they also noticed inadequacies in their English-speaking abilities.

Several critiques were composed about teachers and courses in the university education. On the other hand, also some illustrious teachers were mentioned: the opinions showed quite a high level of accordance in the case of mentioning the best teachers and courses. There were two main “characters / styles” outlined when the students reviewed who were their best teachers and trainers. the “*Modern and open*” type was (of course) the most popular type: teachers who try to present their subjects on an interesting way while trying to involve their students actively to the common teaching-learning process had the greatest respect among the students; besides the “*Strict – but fair*” type was also highly respected. These are teachers who know their professional areas very deeply and — even though they do not apply too modern methods for knowledge-transfer — their detailed explanations and their hard work to help their students make them highly valued and respected among their students.

The scale of the *critiques expressed* by the interviewees in face-to face discussions were quite different *based on the “sending” culture* where the given student came from. The critiques were remarkably stronger if we watch the results of the regular survey of the university about the students’ satisfaction with their courses and students of the semester — the form of this

survey is a written and anonym form to be filled and submitted to the quality control system of the information system of the school. It shows that international students from all around the world are *aware of their expectations* towards the quality of education.

In case a *teacher behaves on a supportive way* towards the students (e.g. asks for feedback to see if they have understood the lesson and offers extra help and alternative methods of explanation in case something was not clear), the students quickly show *high gratitude* and evaluate the teacher really positively. One of the greatest acknowledgements from the students is if they start searching for new courses of the teacher they are satisfied with.

It became clear from the interviews that it can mean a high risk in the current university education practises, if the evaluation of basic student's competences is inadequate: in case there is an insufficiency in the level of a given competence at a student, it may not turn out in the right time. A good example for this is when some students are proved to be weak when they start writing their thesis. This time is far too late for starting to improve these skills with the right methods as the time-need for the improvement of this competence can be much higher than the time given. Taking into consideration that academic writing skills in English language can be evaluated as basic ones, this practise of missing the evaluation of basic student's competencies in the right time must be improved very soon.

It is also a typical mistake that happens quite often when *students are "left alone" with a type of task* in which they would need help. The interpretation of what kinds of duties a thesis-consultant teacher has towards his/her students shows a high variety among the university teachers. There are students whose consultants offer high level and detailed information about how to start the entire work of writing a thesis; e.g. which the good ways are to for finding and processing adequate literature for the topic chosen, etc. At the same time other students have consultant teachers who encourage them to work and decide independently from the very beginning of the whole project of completing their thesis. (While offering independence to the student can be a useful point of view in many cases, there still might be a high number of students who needed a little bit higher level of assistance from their teachers). It means, that the "abandonment" of the students with some types of tasks that they are not ready for, can be quite a dangerous practise: this is the time when one part of the students may easily start cheating and the other part of them start being driven to despair.

The level of *legal remedy* in case there are any unfair cases happening against a given student may also *vary from time to time and from student to student*. Braver students (who usually come from independent types of home cultures) can stand for themselves remarkably effectively. On the other hand, there are a lot of shy students who respect their seniors so much that even in case of some unfair processes against them they stay silent and rather suffer than fight.

It is also among the students' problems that when coming to a new country they would need some basic help in their starting of their "settling down": some absolutely first steps for them e.g. in the process of finding their first apartment to rent or in guiding them towards a doctor in case they catch a flu could mean a lot when everything is new in an even non-English speaking town.

After my first question to my interviewees about their evaluation of the education, my second question was what they think about the working opportunities in a big city like Budapest

(where we “can expect” a high number of opportunities offered by numerous global companies as well).

#### ***4.2. Experiences in labour market***

Beyond the problems that the students mentioned about higher education, they also referred to several types of questions that makes us think that also the freshly graduated students’ labour market cannot offer knowledge-transfer processes for its member which are free of difficulties and barriers. Before starting to summarise the types of problems that the interviewees (students) mentioned, it is worth clarifying at the beginning, that currently it is 2019 (summer) and both the Hungarian and also the European- and World labour-markets are in the situation of serious lack of workforce. (Baker, 2019, pp. 1-7.) It means, that finding a job should be easy for both the experienced and for the newly graduated job seekers, too.

Even though there are remarkable differences among the students in their successfulness of finding a job in Hungary, it is quite a general attitude mentioned by them that the *Hungarian labour market does not have a definite open-minded type of attitude*. Of course, there can be high differences among the companies but picking up a position as a foreigner does not mean the easiest task here.

One problem that we can mention first is the *language barrier again*: even though a good speaking of English is almost a must for any young candidates who seek for a good job in business life, it can easily be a serious problem if someone does not speak Hungarian. Why? The official language in global companies (in Hungary) is very often the English and companies founded by Hungarians have such an active communication with their foreign partners that English is also a basic requirement there. Even these facts are true, we should not forget that any bigger company has got several levels and a lot of employees (administrators, blue-collar workers, etc.) does not speak a good English in Hungary. This is the reason that even in remarkably successful companies in Budapest need employees with not only good English-speaking skills but also the ability to speak Hungarian.

Students searching for job opportunities in Budapest often complain about that companies which they apply to, do not even answer to their applications. Being too busy at an HR department may be mentioned as a typical excuse for such a behaviour but we also can consider this question as being part of the working culture. Regarding the overdemand in the labour markets it would even be more advisable for the companies to keep polite contacts with any job- applicants. Taking one more step behind in business to have a wider point of view, the whole language-problem (introduced above) can also be interpreted on a different way: in case companies invested just a little bit into the Hungarian language studies of their foreign employees, it would have several positive consequences: 1) such an effort is able to increase the involvement of the foreign employees 2) being able to communicate more with the native Hungarian speakers, both party could improve its language skills (Hungarians could practice more English, while colleagues coming from abroad could speak more Hungarian) 3) such an increase in their volume of communication could strengthen the company culture from the point of view of cohesion and solidarity 4) also the attitude of creativity and open-mindedness could increase: employees could see that some increased efforts to be invested to understand each other better can have various benefits for themselves: direct and indirect ones. (Of course, such efforts — to understand the different languages within a company better — could make similar improvement in any global companies taking the example of any language groups). (Cristopher, 2006, pp. 1-4.)

When we talk about the special group of the newly graduated students in the labour market, we may have the idea that they could be promoted by certain organisations or institutions to find their first jobs easier. Such a promoting service could be offered also by the universities themselves: colleges and universities should pay higher attention to their possible role of acting as a “*connecting agency*” between their students and the companies and institutions of the labour market (i.e. the employers). This service becomes more and more important within the circumstances of the global markets of the early 21<sup>th</sup> century: at this age of ours the changes in the business environment are so fast, that organisations should understand the need for intermediation services between the demand-, and the supply- side of the labour market and also undertake its duties.

What kind of changes are needed in a university to be able to fulfil its job as an effective mediator between employers and potential employees? Anyway, almost all institutions of high education have career- centres where they try to build up connection with potential employer institutions to assure the opportunity for their students for potential workplaces (e.g. to negotiate about trainee-workplaces for their students). There are many possible ways to make these connections between the universities and companies closer: it should just be taken a little bit more seriously.

In case a university decides to start teaching young persons with the purpose of satisfying the *current wishes of the labour-market demand* (employers) — then it is worth to check time by time what those companies really need: there are great forms of conversations that should be kept continuously with them: (a) invitations to professional forums where the representatives of the high-education can show their current teaching schedules and contents; (b) company - representatives could actually be invited to university lessons either as observers or as lecturers; (c) companies can also invite students to introduce their activities; (d) scholarship – and/ or trainee programmes for university students should be organised continuously by companies. At the beginning of the 21<sup>st</sup> century when changes in global markets and in societies are so quick that it means a high challenge to follow them and to react to them in merit, it is an obvious need that business and educational organisations should keep continuous contacts to be able to follow the changing needs for HR-competences and to answer to these needs at a high level.

The cooperation introduced above is a question of approaches on one hand and a question of some institutional changes on the other hand (in the manner of creating some forums for mutual communication and the harmonization of interests and actions).

The last part of this section that summarises the feedbacks of the students participating in the interview-analysis, has even a bigger focus on institutions: this area consists of governmental rules and institutions that control and regulate the citizens of the world in their activity of travelling among different countries and staying there for shorter or longer time. The keywords of this topic are residence permit, visa, work permit, immigration office, etc. In case a foreign student wishes to study in a university abroad, it certainly means a longer stay in that foreign country. The EU offers free opportunities for its inhabitants to travel within its whole territory, no matter which member country the targeted place is. But this question is more difficult for those who arrive from countries that are not part of EU. If we take the period of university studies, the procedures to be followed are not very complicated: as long as the student can show up a valid legal relation with a university, he/she will get the residence permit sooner or later. Here the problem can typically be the speed of the process, because it happens very often that the autumn- or spring terms have already started in the

universities but students can join only one or two months later as there can be such a long delay in the issue of their residence permit and they simply cannot represent themselves in the lessons before.

A larger and more serious problem is when they finish their studies and wish to find a job not in their home country but somewhere in the international labour market (e.g. in the country where they have just finished their university studies). It is not easy even to imagine how many documents, justifications, certifications have to be presented by them to prove to the given authority that they “only” would like to work in the given country. There are even many-many cases where the very complicated processes of bureaucracy almost make it impossible for the poor applicants to go through them, as certificates needed for a given permission at a certain level can only be obtained by getting another permission of a later/future level of the inextricable system. Of course, serious procedures and regulations are needed to guarantee the safety of the citizens of a given country, but these systems seem to be so complex and hard to go through for an applicant, that we definitely can evaluate them as being too complicated to serve the interests of the persons involved.

As a result of these difficulties and problems mentioned above, the opportunity of the students studying abroad is not exploited and utilised to the extent as it could be. Based on the results of the interviews, there are — of course — remarkable differences in their successfulness of finding a job as a student or as a newly graduated in the Hungarian labour market. Those, who have higher level of self-assertion and also those who — above their English-speaking skills and the knowledge they get in the BA-, or MA- business courses — have some special skills or attainments (e.g. they speak another language that is in demand in the current job-supply) have considerably more success in finding favourable jobs. Still, there are many of those students who spend a lot of time with searching for job opportunities with no success or there are also several ones who only can find a job here far below their abilities (e.g. dishwashing, etc.).

These results can definitely be evaluated as poor not only because market equilibrium is not worked out at a high level in the labour market (there are surpluses on both the demand- and also on the supply-side), but also remarkably favourable impacts of diversification are missed this way: variousness in labour-supply generally offers wide benefits of the increasing innovation- and creativity-potential for any kinds of organisations. (Samovar – Porter – McDaniel 2014, p. 1-4.) Of course, these difficulties summarised above (i.e. the inadequate job-finding opportunities for young and talented foreign university students or for new graduates in spite of the clear overdemand in the labour market) are true for the Hungarian labour-market, but the situations in other countries are worth examining.

## **5. Conclusion**

The practises of international knowledge-transfer offer high level of various advantages and benefits both for business organisations and for international markets. This study examined if such advantages are utilised and exploited at an adequate level in higher education and in the labour-market of the new graduated university students. The place of the survey was Hungary, the methodology was interview-analysis among international students coming from different parts of the world (Asia, Africa, Europe) and studying on international BA- and MA- business programmes in Budapest, Hungary.

The results of the research show that neither the higher education nor the labour-market of the new graduated international university students show such a high level of efficiency in international knowledge-transfer which could guarantee the proper and favourable utilisation of the rich opportunities of transferring the differentiated knowledge-contents and problem-solving approaches originated from different cultures, different countries.

In the field of education, it would be beneficial to introduce some more flexible and modern teaching methods which are built upon a higher involvement of both students and teachers and which can improve the deeper and wider understanding of the contents learnt by the students. Such methods could more efficiently cope with the language and cultural barriers in international study programmes. Also, the mentor-type of roles should be strengthened in teachers and the educational institutions should reinforce their supporting tasks towards the students. Encouraging the flexibility of thinking and the creativity should be a highlighted goal; and the whole higher education should stimulate the practical usability of the freshly learnt knowledge. The best universities of the future will be those educating institutions that will be able to increase the motivation-level of their students for being continuously open for new concepts and ideas (Pink, 2010, pp. 5-107.) and also those who permanently work on creating closer and better connections between education and the current needs of the labour-market.

In the field of the labour-market, a higher level of open-mindedness and supporting attitude is needed. Even though the deeper understanding of the different cultural backgrounds needs remarkable investment of attention and energies, the extra force is worth investing, as diversification has proved to improve creativity and well-being on the long run. (Csíkszentmihályi, 2018, pp. 5-146.) Institutional backgrounds of the nations should also consider these benefits, therefore political decision makers should be motivated to make the systems responsible for issuing residence- and work permits more flexible and more supportive.

Even though the desired changes summarised above need innovative steps to renew both several types of approaches and institutions, it is worth mentioning that approaches, cultures and institutions are able to influence each other to create a positive spiral of changes in both side — that is why each innovative steps taken by any participants of the education system or of the labour markets is able to start favourable changes that even can have multiplication effects.

## References

1. Karl Erik Sveiby (1997), *The New Organizational Wealth: Managing and Measuring Knowledge-Based Assets*; Publ. Berrett-Koehler
2. Thomas H. Davenport, Laurence Prusak (2000), *Working Knowledge: How Organizations Manage What They Know*; Harvard Business School Press
3. Havas Péter (2002), *Tudásmenedzsment, tanulástudomány, tanulásfejlesztés*. Oktatókutató és Fejlesztő Intézet, Budapest
4. Garvin David A. (2003), "How Professional Schools Teach Professional Skills: The Case Method in Action."; Harvard Business School Working Paper, No. 03-202, May 2003.
5. Kayes D. Christopher (2006): *Team Learning in Organizations: A Review and Integration*; [http://www2.warwick.ac.uk/fac/soc/wbs/conf/olkc/archive/olkc1/papers/177\\_kayes.pdf](http://www2.warwick.ac.uk/fac/soc/wbs/conf/olkc/archive/olkc1/papers/177_kayes.pdf) (Accessed: 16/ June / 2019)
6. Bencsik Andrea (2009), *A tudásmenedzsment emberi oldala*. Z-Press Kiadó, Budapest

7. Pink, Daniel (2010), *Drive – The Surprising Truth about what motivates us*; Canongate Books
8. Willemse, I., De Hauw (2012), *Developing employee competencies: a study of the employee's perspective*; Vlerick Business School – HR Management; <https://www.vlerick.com/en/research-and-faculty/knowledge-items/knowledge/developing-employee-competencies-a-study-of-the-employees-perspective> (Accessed 04/18 / 2019)
9. Marczellné Szilágyi Eszter (2012), Tudás, intelligencia, motiváció: merre visznek, és miért pont arra?; in: 2012-es Szegedi Taylor Konferencia tanulmánykötete; p. 115-123. <http://vikek.hu/wp-content/uploads/2014/02/4-%C3%89VFOLYAM-5-SZ%C3%81M.pdf> (Accessed: 26/ June / 2019)
10. Samovar L. A., Porter R. E., McDaniel E. R., Sexton Roy C. (2014), *Intercultural Communication: A Reader*; Cengage Learning
11. Peterson John (2014), *Developing a shared vision*; <https://www.linkedin.com/pulse/20140526010551-31971126-developing-a-shared-vision> (Accessed: 9/ June / 2019)
12. Eszter Marczell-Szilágyi (2015), *Cognitive and emotional factors of tacit knowledge*; (in: II. Gazdálkodás és Menedzsment Tudományos Konferencia: „A vidék él és élni akar” Tanulmánykötet; I. kötet) ISBN 978-615-5192-33-3 II.
13. Csíkszentmihályi M. (2018), *Kreativitás; Akadémiai Kiadó*
14. Mary Baker (contributor) (2019), *Gartner Quarterly Update on Global Workforce Trends*; <https://www.gartner.com/smarterwithgartner/gartner-quarterly-update-on-global-workforce-trends/> (Accessed 04/18 / 2019)

## SELECTED ASPECTS OF MANAGEMENT IN THE SME SECTOR BASED ON THE 'DOING BUSINESS' REPORTS: THE EXAMPLE OF POLAND AND HUNGARY

*Patrycja KOKOT-STĘPIEŃ*

*Czestochowa University of Technology, Czestochowa, Poland*

*E-mail: patrycja.kokot-stepien@wz.pcz.pl*

**Summary:** In the territory of the country, the activities of small and medium enterprises are subject to certain legal regulations conditioning starting a business. The emergence and development of entrepreneurship is fostered by the friendly economic environment. The economic climate and the conditions for conducting a business in 190 countries are measured, among others, within the framework of the report of Doing Business. The information presented in the study refers to difficulties existing in the country and indicates where decision makers can search for good practices.

**Purpose:** The objective of the article is to analyze the conditions for conducting a business from the perspective of small and medium enterprises operating in Poland and in Hungary based on the indicators included in the report of Doing Business.

**Methodology:** The first part of the article is based on an analysis of literature on the issues discussed. Then, based on the Ease of Doing Business Index, the business environment in Poland and Hungary in 2017-2019 was assessed.

**Findings:** Comparing the data concerning conducting a business activity in different countries and indicating the areas which require changes allows for improving the conditions of the business environment. The introduction of efficient, commonly accessible and easy to use regulations has positive impact on the management of enterprises of the SME sector in the country. The elimination of unnecessary regulations and excessive bureaucracy allows for reducing operating costs, increasing productivity and consequently maintaining the proper level of competitiveness.

**Keywords:** business management, Doing Business reports, Easy of Doing Business, SME sector

### 1. Introduction

Better understanding of the environment and the conditions creating it allows for improving the competitive position of the company and leads to higher efficiency of operations. The skillful and quick processing of the collected information concerning changes taking place in the environment is favorable for the right decisions taken at the right time. The continuous analysis of the environment and the related opportunities and threats becomes necessary from the point of view of the existence of the company and its further development. However, due to the high fragmentation, enterprises of the SME sector generally have little impact on the conditions of management. Therefore, it is worth learning the factors affecting the operation of enterprises in different countries. In this case, the report of Doing Business, aimed at providing a reliable database, which can be a starting point for creating the policy and further research into the impact of regulations and business environment institutions on economic phenomena, becomes really helpful. The objective of the article is to assess the ease of setting up a business activity, especially starting a business in the case of small and medium

enterprises in Poland and in Hungary, based on the indicators included in the reports of Doing Business 2017-2019, published by the World Bank.

## **2. Literature review / Research Background**

Doing Business is a series of annual reports investigating the scope and manner of regulations that enhance business activity and those that constrain it. The Doing Business project aims to advance the World Bank Group's private sector development agenda: (1) Motivating reforms through country benchmarking; (2) Informing the design of reforms; (3) Enriching international initiatives on development effectiveness; (4) Informing theory (Luo 2016, p. 295). The report focuses on the regulations concerning a business activity and their practical use from the point of view of small and medium enterprises.

The ranking included in the report measures the friendliness of economies towards entrepreneurs through the assessment of 10 areas of business regulations. The report assessing the favor of procedures and legal regulations towards entrepreneurship indicates the position of the country among economies taking part in the research. A high degree of the ease of conducting a business activity means that the regulatory environment is more favorable for setting up and running a local company. Rankings allow to compare economies from different regions in a selected period of time. Doing Business encourages economies to compete for more effective regulation and offers tangible reference points for reforms (Kokot-Stępień, Krawczyk, 2018, p. 205).

Luo emphasizes that governments play a crucial role in supporting a dynamic ecosystem for firms. The Doing Business project aims to deliver a body of knowledge that will catalyze reforms and help improve the quality of the rules underpinning the activities of the private sector (Luo, 2016, p. 295). Using data from the World Bank's Ease of Doing Business Reports, results suggest that overall Ease of Doing Business has a positive effect on business creation. This relationship is most strongly driven by the Starting a Business component, but Paying Taxes is also important. In addition, the effect of the Starting a Business component is driven by the financial cost rather than the time and administrative cost (Canare, 2018, p. 555).

Article Oto-Peralias and Romero-Wvila provides a brief review of the main studies analyzing the effect of the legal rules and regulatory indicators-used in our empirical analysis on economic and financial outcomes, both from a macroeconomic (country-level) and microeconomic (firm-level or industry-level) perspectives (Oto-Peralias, Romero-Avila, 2017, p. 37).

Ease of Doing Business indicators are essential to overall understanding and evaluation of national business environment, and strategy formulation for business policy and regulations (Roham, Gabrielyan, Archer, 2009, p. 531). The Ease of Doing Business Index is widely used by multinationals in their investment location decisions (Pinheiro-Alves, Zambujal-Oliveira, 2012, p. 66).

## **3. Methodology**

The data coming from the reports of Doing Business, prepared by the World Bank Group, were used in the article. Within the framework of *Doing Business*, there are analyzed the regulations concerning conducting a business activity that have impact on national small and medium enterprises in 10 areas in 190 economies. The information on the conditions of the

operation of enterprises of the SME sector in Poland and in Hungary in the three subsequent years was selected from the reports of Doing Business 2017-2019. The following categories of conducting a business activity were taken into account in the research: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency.

#### 4. Results

In the ranking of Doing Business by the World Bank, which compares the conditions for conducting business activities in 190 countries of the world, thus indicating the economies with the regulations which are the most favorable for conducting a business, both Poland and Hungary recorded the highest positions in 2017, occupying respectively the 24<sup>th</sup> and 41<sup>st</sup> place (Table 1). Unfortunately, in the subsequent two years of the research period, due to a steady decline, both countries occupied more distant positions. In 2018, Poland fell by 3 positions in the ranking whereas in the following year, as a result of a further decline, it finally occupied the 33<sup>rd</sup> position. In turn, at first Hungary fell by 7 positions and by another 5 in 2019, taking the 53<sup>rd</sup> place in the last year.

**Table 1: Easy of Doing Business Index in Poland and in Hungary in 2017-2019**

Ranking	Poland			Hungary		
	DB 2017	DB 2018	DB 2019	DB 2017	DB 2018	DB 2019
Ease of Doing Business Rank	<b>24</b>	<b>27</b>	<b>33</b>	<b>41</b>	<b>48</b>	<b>53</b>
Starting a Business	107	120	121	75	79	82
Dealing with Construction Permits	46	41	40	69	90	110
Getting Electricity	46	54	58	121	110	122
Registering Property	38	38	41	28	29	30
Getting Credit	20	29	32	20	29	32
Protecting minority Investors	42	51	57	81	108	110
Paying Taxes	47	51	69	77	93	86
Trading across Borders	1	1	1	1	1	1
Enforcing Contracts	55	55	53	8	13	22
Resolving Insolvency	27	22	25	63	62	65

Source: based on <http://www.doingbusiness.org> [03.06.19].

Taking into account the regulations concerning the time and procedures associated with starting a business activity in the whole analyzed period, Poland performed much worse than Hungary. Admittedly, in the following years both countries occupied increasingly lower positions, however, a much higher rate of decline occurred in Poland. A decline in the position from the 107<sup>th</sup> in 2017 to the 121<sup>st</sup> in the last year covered by the analysis was mostly affected by a high cost of starting a business, a high level of the required capital and a long period associated with setting up a business activity. In Poland, the procedure of establishing a company lasts invariably for 37 days and costs about 12% of income per capita. The introduction of the one stop principle, lowering the minimum amount of share capital for limited liability companies and the possibility of much faster and, at the same time, cheaper online registration of the company, the so called “s24”, unfortunately, did not translate into the level of the tested indicator. In turn, in Hungary, the company can be established already within 7 days and with an increasingly lower cost. However, despite the

fact that the cost incurred to start a business activity decreased from 7.1% in 2017 to 4.9% of income per capita in 2019, the lack of reforms in this field affected a drop in the position in the ranking. The changes introduced in other countries caused that establishing a company is easier, faster and cheaper there. Moreover, it should be remembered that Hungary hampered starting a business activity by increasing the minimum capital requirement in 2015.

In terms of obtaining a construction permit, the situation is much more favorable in Poland than in Hungary. Taking into account the first and the last year of the research period in this category, Poland advanced by 6 positions in the ranking, from the 46<sup>th</sup> to the 40<sup>th</sup> place. The analysts of the World Bank calculated that obtaining necessary permits to build a small commercial warehouse takes 153 days in Poland, it is associated with following 12 procedures and costs 0.3% of the warehouse value. In turn, Hungary, at first fell from the 69<sup>th</sup> to the 90<sup>th</sup> position in 2018 and subsequently, after a drop by another 20 positions in 2019 it finally occupied the 110<sup>th</sup> position. This was undoubtedly associated with a systematic increase in the number of procedures (from 17 in the first analyzed year to 22 in the last one) as well as an increase in costs from 0.3 in 2017 to 0.8% of the warehouse value in 2019. Admittedly, the processing time for the required procedures was reduced from 202 to 192.5 days, however, a significant increase in the other parameters making up this assessment was reflected in the level of the analyzed indicator. Moreover, in Hungary, the process of the power grid connection is really time-consuming and cost-intensive. The processing time for all the necessary procedures is as many as 257 days and in 2019 it costs 82.6% of income per capita.

In 2017 Hungary occupied a very high 8<sup>th</sup> position in terms of collecting contract receivables which lasted for 395 days at that time and cost 15% of the claim. However, in the subsequent two years, in spite of maintaining the costs at the same level, due to a significant prolongation of the time needed by the court to enforce the contract up to 605 days, there was a decline in the ranking by 5 positions and by another 9 in 2019. On the other hand, in Poland, the cost and time needed to collect contract receivables in the whole analyzed period did not change and in all the years of the research period it cost 19.4% and lasted for 685 days. In 2017, in this category, Poland occupied the 55<sup>th</sup> position, in the next year the result was repeated whereas in 2019, through the introduction of the automated system of random allocation of cases to judges, Poland advanced by 2 positions in the ranking, ultimately occupying the 53<sup>rd</sup> position.

In each year of the research period, Poland and Hungary occupied the same positions in the category of getting credits. In both countries, the position in the ranking dropped from the 20<sup>th</sup> in 2017 to the 32<sup>nd</sup> place in the last year covered by the analysis. Admittedly, in Hungary, in 2018 the access to credit information was improved, however, this did not have significant impact on the level of the tested indicator. Despite the fact that, in Poland, enterprises do not have difficult access to credits the lack of reforms in this field causes a systematic decline in the position in the ranking.

In the category of paying taxes, Poland occupied the 47<sup>th</sup> position in the first year covered by the research whereas in 2019 the 69<sup>th</sup> place. Such a significant decline in the ranking was mainly due to the prolongation of the time to pay taxes by entrepreneurs. According to the data by the World Bank, the number of hours needed for tax settlements increased from 260 in 2018 to as many as 334 in the following year. The changes implemented in this field, which translated into an increase in tax reporting, are to tighten the tax system.

On the other hand, the position of Hungary in this category was alternating. In 2017 this country took the 77<sup>th</sup> position, in the following year it dropped to the 93<sup>rd</sup> position to advance to the 86<sup>th</sup> place in the last year covered by the analysis. The advancement in 2019 was associated with the reduction in costs of paying taxes. In the first two years of the research period, a Hungarian entrepreneur, in order to meet the requirements of tax regulations, had to make 11 payments, making up a total of 46.5% of the company's profits, thus devoting 277 hours a year. In turn, in the last analyzed year, the number of procedures and the time related to their processing remained the same although the cost of paying taxes changed, i.e. it was reduced to 40.3% of the profit.

## 5. Discussion

The research presented in the publication allowed for familiarizing with the conditions for conducting a business activity in Poland and in Hungary. The comparison of the analyzed indicators may encourage both countries to improve the conditions of the business environment. Having in mind that entrepreneurs are more willing to set up their companies where there are fewer barriers, the authorities of each country should strive to create the most favorable economic environment which facilitates the operation of enterprises, allows for investments and an increase in employment.

## 6. Conclusion

The conducted analysis indicates that the countries included in the research increasingly strive for entrepreneurs, constantly improve the conditions for conducting a business, by means of which it is more and more difficult to advance in the ranking. Both Poland and Hungary recorded the highest position in 2017. In the following years, in spite of the fact that some aspects of the operation of small and medium enterprises improved, the existing barriers caused that there was a slight decline in the position of both countries. Moreover, in other countries, the implemented reforms improved the business environment much more. However, it should be remembered that the Polish and Hungarian authorities, take a range of different actions favorably affecting the process of management of enterprises of the SME sector, however, not all improvements are already in force. Moreover, there are the ones which already apply but enterprises still do not use them. However, invariably for years, one of the greatest barriers to business, either in Poland and in Hungary, has been taxes and the requirements related to meeting tax obligations.

## References

1. Canare T. (2018), *The Effect of Ease of Doing Business on Firm Creation*, "Annals of Economics and Finance", volume 19, Issue 2, pp. 555-584.
2. Kokot-Stepień P., Krawczyk P. (2018), *Determinants of Running a Business - Example of Poland and the Czech Republic*, In: Slavickova P., Talasek T. (ed.) *Knowledge for Market Use 2018: Public Finances in the Background of Sustainable Development*, Palacky University Olomouc, Olomouc.
3. Luo J.Q. (2016), *Studying the Ease of Doing Business and Comparing its difference between Korea and China*, In: Lee J.W., Kim D.H., Youn M.K., Lee J.H., Hwang H.J. (ed.), 2016 International Conference on Business and Economics (ICBE2016), pp. 295-299.

4. Oto-Peralias D., Romero-Avila D. (2017), *Literature Review on the Effect of the Ease of Doing Business on Economic and Financial Outcomes*, In: Oto-Peralias D., Romero-Avila D. (ed.) *Legal Traditions, Legal Reforms and Economic Performance: Theory and Evidence*, Contributions to Economics, pp. 37-56. Doi:[10.1007/978-3-319-67041-6\\_4](https://doi.org/10.1007/978-3-319-67041-6_4).
5. Pinheiro-Alves R., Zambujal-Oliveira J. (2012), *The Ease of Doing Business Index as a tool for investment location decisions*, "Economics Letters", volume 117, Issue 1, pp. 66-70. Doi: [10.1016/j.econlet.2012.04.026](https://doi.org/10.1016/j.econlet.2012.04.026).
6. Roham M., Gabrielyan A.R., Archer N.P. (2009), Fuzzy Linguistic Modeling of *Ease of Doing Business Indicators*, "International Journal of Uncertainty Fuzziness and Knowledge-Based Systems", volume 17, Issue 4. Doi: [10.1142/S0218488509006133](https://doi.org/10.1142/S0218488509006133)
7. *Doing Business 2019: Training for Reform*. World Bank Publications, Washington.
8. *Doing Business 2018: Reforming to Create Jobs*. World Bank Publications, Washington.
9. *Doing Business 2017: Equal Opportunity for All*. World Bank Publications, Washington.
10. *Doing Business in Poland 2015*. World Bank Publications, Washington, from <http://www.doingbusiness.org/> (access date: 03.06.2019).

## **TALENT MANAGEMENT AS A WAY TO BUILD A COMPETITIVE ADVANTAGE OF AN ENTERPRISE**

**Aleksandra CZARNECKA**

*Czestochowa University of Technology, Czestochowa, Poland*

*E-mail: aleksandra.czarnecka@wz.pcz.pl*

**Summary:** The concept of talent management should not be treated as a modern trend used only by big international corporations, but as one of the ways for building a competitive advantage of a modern enterprise. Analyzing literature as well as observing organizations in Poland it may be said that this idea was transformed in many different programs and it is successfully implemented in a practical way of management. These activities seem to be necessary for organizations to be able to function and develop on the demanding market of the 21<sup>st</sup> century. Enterprises wanting to gain an advantage over competition should be aware that the most important elements of their human capital are the knowledge and talents of employees. Talent management will result in strengthening employees and increasing the level of their competence and the prestige of the entire organization. Thus, talent management is important itself but it is a big challenge for modern organizations. Many management practitioners and theoreticians wonder how the optimum process of talent management should look like, what is the most important and then needs the most care and concentration and also how important is the dependence between talent management and the organization's environment. These dilemmas have become an impulse for creating various models of talent management, which fundamentally differ in the perspective of perceiving this phenomenon.

**Purpose:** The goal of this essay is to show issues connected with talent management in organizations. The thesis was accepted that talent management is a very important element of modern organizations' management which can significantly contribute to build their competitive advantage and, therefore, their success.

**Methodology:** In this essay the author used literature research and analysis of selected research reports and good practices.

**Findings:** The effect of above considerations is gaining the positive answer on questions: Is it worth to manage talents in the contemporary organization? and Does talent management bring benefits to organizations and their employees?

**Keywords:** human capital organization, human resource management, talent management

### **1. Introduction**

Continually changing environment has an impact on enterprises which are forced to adapt to the changes taking place, because otherwise they would have to give up their activities. It is known that the most difficult resources to reconstruct – regardless of whether the sector of the organization's activity is the public, private or non-profit sector – are those which are stuck in people.

Development, which is inscribed into life is always connected with a perspective of changes in different areas of organization's functioning. Thus, the ways of functioning of various spheres of human activity, or the state of social structures are changing. This fact is related to the new technical and technological solutions or management methods (Baruk, 2006, p. 42). Talent management is still one of the new methods of management.

Without competent and developing staff, majority of enterprises would not survive too long on a market, not to mention that it would be difficult to gain a competitive advantage. Because of the fact that the economic system is constantly changing and takes the form of a knowledge-based economy, in order to ensure a company's competitiveness, it is necessary to undertake various activities. It is necessary both to improve in the field of traditional key success factors, such as productivity or labor costs, and to develop creativity and risk management in the sphere of personal function, and above all, to acquire talents and to keep them in the organization (Stabryła, 2008, p. 5; Chand, Markova, 2019, pp. 519-529).

The use of employees' talents and competences will be for sure the most important factor of the economic growth and will allow to use chances and reduce threats both in today's and the future economic situation. (Erkanli, Topuz, Cop, 2015, pp. 85-107)

## **2. Literature review**

Economic and production potential of modern organizations is dependent on its intellectual abilities and the value of most of the products depends on its assets which are based on knowledge (Baruk, 2006, p. 42). This fact leads to that companies not only strive to raise the qualifications of the entire staff through its continuous training or subjecting to improvement processes, but also note that the key to success are talented employees who can be on the one hand a source of activities of priority importance for the organization, and on the other hand, a determinant of their competitiveness in a knowledge-based economy. (Pocztowski, 2008, p. 15.)

The transformation of the traditional organization into the knowledge organization and even into the creative organization is influenced by such phenomena as, for example, re-evaluating the motives of creating goodwill from financial and material capital for human capital, transforming hierarchical structures into heterarchic structures, increasing the importance of intangible assets and "soft" management tools, or increasing the importance of functional flexibility and constant development. Using many ways of creating and stimulating creativity in the organization becomes action not only necessary, but even crucial. A creative organization is one in which this construct should be implemented at every level. (Białasiewicz, 2015, pp. 9-21)

Creativity commonly means the ability to create something new, original, not present yet that is leading to innovation. Creativity is also a set of a particular person's traits which allows to seek new solutions. The source of creativity in organizations are always their employees. Thus, this concept is connected in an inseparable way with innovations and human capital. (Wiśniewska, Janasz, 2012, pp. 41-49)

The sources of creativity are mainly employees with high potential referred to as talents or key employees. They characterize by high creative potential and commitment to action that results from internal discipline, perseverance in pursuit of long-term goals, diligence, and strong belief in the value of the work performed. They have a significant added value for organization that is the core of its human capital, and even a kind of business investment. That is why it is a key issue for modern enterprises to gain, develop and keep employees with high potential. (Khoreva, Vaiman, Van Zalk, 2017, pp. 19-33)

The necessity of a coherent and comprehensive approach to this issue resulted in the emergence of the talent management concept, which at the beginning was treated as one of

many functional areas or a human capital management tool, and is now a philosophy of human capital management that permeates all of its processes (Armstrong, Baran, 2008, pp. 124-126).

High potential employees due to the low supply, they are special, and this makes it necessary to apply appropriate management planned in the long-term, taking into account the premises of the adopted business strategy and characterized by a holistic approach. According to this assumption, the process of talent management consists of: employment planning, selection, employee retention, development of potential, evaluation of work results, career planning. It should bring benefits both to the enterprise and the employee himself. (Grodzicki, 2011, p. 179)

Apart of the fact, that the process of gaining talents (of those unique employees) is the crucial part of the talent management's strategy, however, it cannot be focused only on it, because it would be ineffective. Talents have to be managed effectively, motivated accordingly and built the commitment. (O'Connor, Crowley-Henry, 2019, pp. 903-917), In the processes of motivating and developing talents, it is very important to self-improve and adequately address the key organizational roles of development programs. (Listwan, 2005, pp. 22-25)

The concept of talent management occurred in the 90s of the twentieth century with the conceptuality: "war for talents" (Beechler, Woodward, 2009, pp. 273-285). This approach was based on the concept started in the United States in the 1980s, in which human resources were considered as assets and intellectual capital of the organization. The idea was based on a principle that investing in employees' development, formation of a specific employment structure and the arrangement of the characteristics of the staff leads to achieve a competitive advantage over other business entities. (Brzeziński, 2016, p. 129)

The fundamental area of talent management focuses on actions connected with defining and implementing strategies, and the presence of this strategy in the organization has a significant impact on all other areas of human resources management. Its effectiveness is conditioned by consistency of the definitions used, as well as its inclusion in the strategic goals of the organization. (Pruis, 2011, pp. 206-216; Whysall, Owtram, Brittain, 2019, pp. 118-129)

According to Bieniok (2010, p. 23) talent management should involve the following issues:

- enlisting promising candidates for work for the organization,
- correct and effective diagnosis of their talents and strong personality traits,
- teaching and convincing them to multiply their strengths and talents,
- adequate motivation and stimulation of talented employees for innovative action for the organization,
- searching for the most effective methods of improving the efficiency of managing the potential of human talents.

### **3. Methodology**

The author of this article is going to use the hypothetical-deductive model of formulating conclusions (Pooper, 1997; Hajduk, 2001, p. 142-144), using secondary data from various types of reports as well as information contained in literature and specialist articles. The paper has the descriptive and explanatory character, it is going to be the introduction to wider research, both quantitative and qualitative.

In the essay the author is going to use literature research and analysis of selected research reports and good practices.

#### **4. Results**

The analysis of different reports presents that "war for talents" is considered worldwide as the second, most important trend in HR area. Also in Poland managers dealing with human resources management treat this fight as a very important problem. Differences between tendencies in Poland as well as in the world can result from the fact that Polish economy belongs to developing economies and not in all Polish companies advanced HR tools are used. (Deloitte, 2013b, p. 7)

As the research report 2013 Top Five Global Employer Rewards Priorities Survey (Deloitte 2013a) shows, the most important challenge for HR specialists is searching, motivating and keeping talents in organizations.

A very important aspect which cannot be forgotten is globalization that raises competition in terms of gaining the most talented employees. (Deloitte, 2013b, p. 38)

Another problem resulting from reports analysis is about an issue of acquiring suitable candidates from the labor market, which consists in the lack of sufficient experience (this applies above all to candidates for managerial positions), lack of sufficient motivation to work (primarily among regular employees), as well as competency gaps. (HR Challenges, 2013, p. 9)

In the realm of talent management, high attention is paid to development and keep talents revealed among their own human resources, and much less to attract them. Recruitment in Poland is difficult because the education system is not suitable with requirements of the labor market. Polish University graduates do not feel well prepared to start a professional career, and vocational schools do not have adequate infrastructure and staff that would allow the graduate to "release" a market. (Deloitte, 2013c, pp. 30-31)

#### **5. Discussion**

The implementation of talent management programs is an action which favors building a learning organization (Tabor, 2008a, pp. 52-58) and moving away from a simplified approach to development, which consists in using only specialist training, for the implementation of integrated development programs (Tabor, 2008b, pp. 58-64).

The key problem of consistency of the approach to talent management throughout the organization (Ingram, 2011, pp. 14-16) results from the fact that both in theory and in practice, talent is defined as outstanding employees, as well as the potential of all members of the organization, regardless of their position.

One of the most important issues which should be at first solved by organizations which want to implement talent management is identifying talents among their staff. Its early discovery is a condition of a proper use of the owned potential by the organization. An equally important activity is the constant acquisition of new talents, which will strengthen the already possessed potential.

An effective talent management is not possible without systematic, comprehensive and objective process of employee appraisal as well as motivating them. Just, selection of

appropriate motivational tools (both tangible and intangible) is a key element of the talent management strategy. The abovementioned components of the talent management strategy must be closely coordinated with the remuneration system in the organization.

## 6. Conclusion

Acquisition, maintenance and development of employees with high potential and so, those who are determined as talents become for modern and conscious organizations a key action. Such behavior needs from organizations' managers development and implementation of a strategy for talented employees management, which must be coherent with the organization's strategy.

The issue of talent management apart of the discussion that has been going on for many years, both theoreticians and practitioners of management, remains important and valid. It creates wide research opportunities which will allow to find answers for bothering, especially practitioners, questions.

## References

1. Armstrong M., Baran A. (2008), *Zarządzanie kapitałem ludzkim. Uzyskiwanie wartości dodanej dzięki ludziom*, Wydawnictwo Wolters Kluwer, Kraków
2. Baruk J. (2006), *Zarządzanie wiedzą i innowacjami*, Wyd. Adam Marszałek, Toruń.
3. Beechler S., Woodward I.C. (2009), The global "war for talent", "Journal of International Management", Volume 15, Issue 3, pp. 273-285, DOI: 10.1016/j.intman.2009.01.002, (access: 28.06.2019).
4. Białasiewicz M. (2015), *Kreatywność i talent w koncepcji kapitału ludzkiego*, „Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania” nr 39, t. 1, pp. 9-21, DOI:10.18276/sip.2015.39/1-01 (access: 28.06.2019).
5. Bieniok H. (2010), *Rola zarządzania talentami w procesie budowy potencjału innowacyjnego organizacji*, In: Jagoda H., Lichtarski J. (eds), *Kierunki i dylematy rozwoju nauki i praktyki zarządzania*, Uniwersytet Ekonomiczny we Wrocławiu, Wrocław.
6. Brzeziński Ł. (2016), *Zarządzanie talentami w organizacji*, Czasopisma Naukowe UKW „Szkola - Zawód – Praca”, Nr 12, Wydawnictwo Uniwersytetu Kazimierza Wielkiego w Bydgoszczy, pp. 126-143.
7. Chand M., Markova G. (2019), *The European Union's aging population: Challenges for human resource management*, "Thunderbird International Business Review", Volume 61, Issue 3, pp. 519-529, DOI: 10.1002/tie.22023, (access: 28.06.2019).
8. Deloitte (2013a), *2013 Top Five Global Employer Rewards Priorities Survey*, Deloitte Development LLC, [https://www.iscebs.org/Resources/Surveys/Documents/Top5RewardsSurvey2013\\_030813.pdf](https://www.iscebs.org/Resources/Surveys/Documents/Top5RewardsSurvey2013_030813.pdf) (access: 28.06.2019).
9. Deloitte (2013b), *Elastyczność i zmiana horyzontów. Trendy HR 2013*, Deloitte Development LLC, [https://www2.deloitte.com/content/dam/Deloitte/pl/Documents/Reports/pl\\_Raport\\_trendyHR%202013\\_PL\\_1.pdf](https://www2.deloitte.com/content/dam/Deloitte/pl/Documents/Reports/pl_Raport_trendyHR%202013_PL_1.pdf) (access: 28.06.2019).
10. Deloitte (2013c), *Pierwsze kroki na rynku pracy. Międzynarodowe badanie studentów i absolwentów 2013*, Raport, Deloitte Development LLC, [https://www2.deloitte.com/content/dam/Deloitte/pl/Documents/Reports/pl\\_Deloitte\\_PierwszeKrokiNaRynkuPracy\\_2013\\_1.pdf](https://www2.deloitte.com/content/dam/Deloitte/pl/Documents/Reports/pl_Deloitte_PierwszeKrokiNaRynkuPracy_2013_1.pdf) (access: 28.06.2019).
11. E. Pruis, *The five key principles for talent*, „Development Industrial and Commercial Training” 2011, Vol. 43, No. 4, s. 206–216, DOI: 10.1108/00197851111137825 (access: 28.06.2019).

12. Erkanli H., Topuz Y.V., Cop R. (2015), *The Effect of Personality and individual values on the perception of employer brand attractiveness: A sample study on business administration students*, "Istanbul University Journal of Faculty of Political Sciences-Siyasal Bilgiler Fakultesi Dergisi", Issue 52, pp. 85-107.
13. Grodzicki J. (2011), *Talent w przedsiębiorstwie opartym na wiedzy*, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk.
14. Hajduk Z. (2001), *Ogólna metodologia nauk*, Wydanie II zmienione, KUL, Lublin.
15. Ingram T. (ed), (2011), *Zarządzanie talentami. Teoria dla praktyki zarządzania zasobami ludzkimi*, PWE, Warszawa.
16. Khoreva V., Vaiman V., Van Zalk M. (2017), *Talent management practice effectiveness: investigating employee perspective*, "Employee Relations", Volume 39, Issue 1, pp. 19-33, DOI: 10.1108/ER-01-2016-0005, (access: 28.06.2019).
17. Listwan T. (2005), *Zarządzanie talentami – wyzwanie współczesnych organizacji*, In: *Zarządzanie talentami*, (ed) S. Borkowska, IPISS, Warszawa.
18. O'Connor E.P., Crowley-Henry M. (2019), *Exploring the Relationship Between Exclusive Talent Management, Perceived Organizational Justice and Employee Engagement: Bridging the Literature*, "Journal of Business Ethics", Volume 156, Issue 4, pp. 903-917, DOI: 10.1007/s10551-017-3543-1, (access: 28.06.2019).
19. Poczowski A. (2008), *Zarządzanie talentami w organizacjach*, Wydawnictwo Wolters Kluwer Polska, Kraków.
20. Popper K. R. (1997), *Mit schematu pojęciowego. W obronie nauki i racjonalności*, Książka i Wiedza, Warszawa.
21. Stabryła A. (2008), *Teoretyczne i metodyczne aspekty audytu personalnego*, In: Poczowski, A. (ed.), *Prace z zakresu zarządzania kapitałem ludzkim*, Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie, Kraków.
22. Tabor J. (2008a), *Rozwój organizacji uczącej się a zarządzanie talentami*, „e-mentor”, nr 2(24), s. 52–58, <http://www.e-mentor.edu.pl/artukul/index/numer/24/id/538> (access: 29.06.2019).
23. Tabor, J. *Programy rozwojowe – jak kształcić talent w organizacjach*, „e-mentor” (2008b), nr 5(27), s. 58–64, <http://www.e-mentor.edu.pl/artukul/index/numer/27/id/599> (access: 29.06.2019).
24. Whysall Z., Owtram M., Brittain S. (2019), *The new talent management challenges of Industry 4.0*, "Journal of Management Development", Volume: 38, Issue: 2, pp. 118-129, DOI: 10.1108/JMD-06-2018-0181, (access: 28.06.2019).
25. Williamson D., *Talent management in the New business Word: How organizations can create the future and not be consumed by it*, „Human Resource Management International Digest” 2011, Vol. 19, No. 6, s. 33–36, <http://dx.doi.org/10.1108/09670731111163518> (access: 28.06.2019).
26. Wiśniewska J., Janasz K. (eds), (2012), *Innowacyjność organizacji w strategii inteligentnego i zrównoważonego rozwoju*, Difin, Warszawa.
27. *Wyzwania HR. Raport 2013*, Grupa Pracuj Solution, [http://www.moznainaczej.com.pl/download/Wywiady/Wywiady2013/Wyzwania\\_HR\\_2013.pdf](http://www.moznainaczej.com.pl/download/Wywiady/Wywiady2013/Wyzwania_HR_2013.pdf) (access: 28.06.2019).

## THE INFLUENCE OF STAKEHOLDERS' PRESSURE AND LEGAL REQUIREMENTS ON ENVIRONMENTAL STRATEGIES: THE CASE OF POLAND

**Oksana SEROKA-STOLKA**

*Czestochowa University of Technology, Czestochowa, Poland*

*E-mail: oksanaseroka@gmail.com*

### **Summary:**

**Purpose:** The aim of article is to evaluate the influence of external stakeholders' pressure on types of environmental strategies – from reactive to proactive ones of Polish companies. This study also seeks the effect of legal requirements of environmental protection on types of environmental strategies as a result of firms' adaptation.

**Design/methodology/approach:** Firstly, the Kruskal-Wallis and median tests were conducted in order to analyse if there are significant differences in the pressure of stakeholders and legal requirements influence between types of environmental strategies. Secondly, post-hoc tests verify which particular differences of stakeholders' pressures and legal requirements between the groups of environmental strategies are statistically significant.

**Findings:** The stakeholder pressure increases in line with changes in strategic response of the enterprise from reactive to proactive and the pressure strength is not homogeneous. The influence of legal requirements on environmental strategies is negative.

**Research limitations:** The main limitation is the low level of the response rate.

**Practical implications:** The study demonstrates a practical value by indicating the most important external influence of legal requirements of environmental protection and the stakeholder pressure on types of environmental strategies in Polish companies. The results highlight understanding the influence of external factors on the degree of environmental proactivity for managers.

**Keywords:** environmental strategies, legal requirements, stakeholder pressure, management

### **1. Introduction**

Numerous difficulties for enterprises emerge in the situation of growing legal requirements related to changes in regulation on the environmental protection. What more, reactions of enterprises to their surroundings should also include relations with various persons and interest groups – stakeholders who are interested in the business of an enterprise and who exert certain manners of influence (pressure). Therefore, organisations design different types of environmental strategies in an attempt to respond to environmental demands groups of stakeholders and legal requirements (e.g., Henriques and Sadorsky, 1999; Buysse and Verbeke, 2003; Sharma and Henriques, 2005).

The aim of the article is to assess the impact of external stakeholders' pressure on types of environmental strategies – from reactive to proactive environmental strategies of Polish companies. This study also seeks the influence of legal requirements of environmental protection on environmental strategies from reactive to proactive in relation to external changes, according to the adaptation cycle.

## 2. Literature review

The literature presents different environmental response patterns which differ from the degree of proactivity. Henriques and Sadosky (1999) presented the classification of the environmental response patterns which they named: *reactive*, *defensive*, *accommodative*, *proactive*. These response patterns differ from the degree of commitment to natural environment. Buysse and Verbeke (2003) identified three strategic responses which were named: *reactive strategy*, *pollution prevention strategy*, *environmental leader strategy*. Murillo-Luna et al. (2008, 2011) proposed four environmental response patterns: *passive response*, *attention to legislation response*, *attention to stakeholders' response* and *total environmental quality response*. These four patterns represent relationships between a firm and its environment that are ordered from less to more commitment to environmental goals (Murillo-Luna et al., 2008, 2011). Seroka-Stolka (2017) performed four types of environmental strategies named: *passive*, *reactive*, *attention to stakeholders*, and *proactive*. Every pattern presents incrementally growing amount of time and resources of firms devoted to the implementation of the chosen a type of environmental strategy. All classifications prove that there is a *continuum* in organisations' strategic response to environmental issues that ranges from the most reactive environmental strategies to the most proactive ones (González-Benito and González-Benito, 2006; Murillo-Luna et al., 2011; Delgado-Ceballos et al., 2012).

Despite being some differences between classifications of firms' responses to environmental issues presented by researchers, it can be concluded that dominant at first strategic pattern of securing the compliance with the law is gradually extended with voluntary „beyond regulation” activities for the environmental protection, as a sign of legal regulation anticipation and meeting regulatory requirements.

Henriques and Sadosky (1999) identified four groups of stakeholders that demand firms to protect the natural environment: regulatory stakeholders, organizational stakeholders, community stakeholders, and the media. This classification of stakeholders includes the changing of the strategic response to the stakeholders: firstly from regulatory then to non-governmental stakeholders. Buysse and Verbeke (2003) proposed an alternative classification: regulatory stakeholders, external primary stakeholders, internal primary stakeholders, and secondary stakeholders. Furthermore, organisations with reactive environmental strategies are under more pressure from regulators than organisations with proactive environmental strategies (Buysse and Verbeke, 2003; Sarkis et al., 2010). Some authors point out the importance of the pressure of stakeholders to change the response pattern from reactive to proactive one. The greater pressure are exerted from a stakeholder group, the greater the strategic environmental proactivity response pattern (Murillo-Luna et al., 2011; Garcés-Ayerbe et al., 2012). Based on arguments from past research, it is proposed the following hypothesis:

- H:1** The effect of legal requirements on enterprise proactive environmental strategy is weaker in comparison to the effect on environmental strategies of enterprises with lower level of adaptation to the environment
- H:2** The pressure exerted by external stakeholders positively affects enterprise proactive environmental strategy and changes in line with the change in enterprise strategic response.

### 3. Methodology

The research was conducted on the sample of total 750 randomly chosen enterprises, based on the stratification criterion, from the following industries: food, fuel and energy, and chemical. A final sample consist of 180 firms, and the response rate is - 24 %. A questionnaire survey was fulfilled by management staff responsible for environmental management, or production management. The four descriptions of environmental strategies (passive, reactive, attention to stakeholders, proactive strategies) were included in the questionnaire (Seroka-Stolka, 2017). Respondents were asked to choose the most appropriate description of the environmental strategy type if at least four of the aspects of the description were suitable for their firms.

The Kruskal-Wallis and median tests were conducted to verify if there are significant differences between stakeholders pressure and legal requirements between types of environmental strategies (three groups). In order to identify which particular differences of stakeholder's pressures and legal requirements (based on means of ranks) are significant, post-hoc test were performed. The statistical verification of hypotheses was performed at  $\alpha = 0.05$ . The analysis included eight dependent variables and one categorical independent variable - a type of environmental strategy. Every dependent variable was assessed on a seven-point Likert scale where 1 meant "strongly disagree" and 5 meant "strongly agree".

### 4. Results and Discussion

The results of the self-classification indicate that 37% Polish companies chose a reactive environmental strategy, 35 % companies chose a strategy of "attention to the stakeholders" and 28% of the firms recognized a proactive environmental strategy. It has not been identified any company with declared the passive environmental strategy. As a result, the sample consisted of three groups of firms with different environmental strategies. To test the hypotheses, the Kruskal-Wallis test and median test were performed. Table 1 shows the average ranks and average medians to each variables and the results of testing the differences between the groups of strategies based on post-hoc tests.

The results from the research indicate that the strength of legal requirements effect on enterprise proactive environmental strategy is weaker in comparison to the strength of the effect on strategies of enterprises with lower level of adaptation to the environment. We can also observe a decline influence on environmental proactivity. It means that strength of the impact of legal requirements is the highest on reactive environmental strategies, and the weakest on proactive environmental strategies. Nevertheless, the significant differences between the groups of environmental strategies were observed for two tested dependent variables-"restrictiveness of environmental regulations" ( $H= 6.12$ ;  $p=0.04$ ;  $\chi^2 = 7.81$ ;  $p=0.023$ ) and "bureaucracy and complexity of environmental regulations" ( $H= 5.70$ ,  $p=0.003$ ;  $\chi^2 =5.99$ ,  $p=0.062$ ). Post-hoc tests indicate statistical differences between proactive vs. reactive, and proactive vs. attention to stakeholders groups of strategies. Stakeholder pressure was consider from different stakeholder's groups separately and the results show that each group has different influence on types of environmental strategies. The pressure from competitors and customers is the highest for proactive environmental strategies. Nevertheless, significant differences between groups of environmental strategies are gained only for the pressure from competitors ( $H= 25.55$ ,  $p=0.000$ ;  $\chi^2 = 33.97$ ,  $p=0.001$ ). The results of the study support hypothesis 1 and 2 that stakeholder pressure has a positive influence on proactive environmental strategy and the influence of legal requirements on environmental strategies is negative.

The results of reveal that the stakeholder pressure increases in line with changes in strategic response of the enterprise from reactive to proactive and the effect of legal requirements on enterprise proactive environmental strategy is weaker in comparison to the effect on reactive environmental strategies. Notwithstanding, statistical significances for each relationships between dependent variables and groups of environmental strategies cannot be proved. The results also show that the pressure strength is not homogeneous. The competitors and customers exert the strongest pressure on proactive environmental strategies in Polish companies. NGOs and media also exert strong pressure on proactive environmental strategies but significant differences are only observed between proactive and reactive strategies. These findings are fully consistent with research done by Murillo-Luna et al. (2008) and Pinzone et al. (2015). It means that the greater the stakeholder pressure on environmental issues, the greater the proactivity of the environmental strategy.

The results indicate that legal requirements from regulators have less impact on proactive environmental strategies than on reactive environmental strategies. The findings are partially consistent with past research that environmental reactivity is associated with greater pressure from regulatory stakeholders (government and supervisors), and strategic environmental proactivity is related to greater pressure from competitors, clients, suppliers, NGOs, communities and social groups. (Murillo-Luna et al., 2008; Murillo-Luna et al., 2011, Darnall et al., 2010, Delgado-Ceballos et al., 2012).

Unfortunately, the results has not proved that strategic environmental proactivity is related to greater pressure from consumers and suppliers. The study has not proved significant differences between the proactive environmental strategy and strategies with lower level of adaptation to the environment from the consumers' and suppliers' pressure. It means that green consumerism is not a driving factor in the transition towards more proactive strategic thinking of surveyed companies.

## 5. Conclusion

According to the obtained results (Table 1), it can be concluded that stakeholder pressure and legal requirements have an impact on strategic environmental types of Polish firms.

**Table 1: The influence of stakeholders' pressure and legal requirements on types of environmental strategies. Kruskal-Wallis and median tests**

Independent variables	Types of environmental strategies	Average rank	median	test H	p	test $\chi^2$	p	Differences between groups	Z test	p
Competitors	proactive	<b>110.14</b>	3	25.55	0.000	33.97	0.001	proactive vs. reactive	<b>4.82</b>	0.000
	attention to stakeholders	95.64						proactive vs. attention to stakeholders	<b>3.06</b>	0.006
	reactive	67.31								
Suppliers	proactive	86.14	2	2.79	p>0.05	0.09	p>0.05	proactive vs. reactive	-	p>0,05
	attention to stakeholders	85.57						proactive vs. attention to stakeholders	-	p>0,05
	reactive	69.75								
Customers	proactive	<b>105.35</b>	3	11.24	0.003	7.31	0.025	proactive vs. reactive	<b>2.89</b>	0.013
	attention to stakeholders	90.14						proactive vs. attention to stakeholders	-	p>0,05
	reactive	73.86								

NGOs	proactive	<b>101.85</b>	3	10.02	0.006	2.24	p>0.05	proactive vs. reactive	<b>3.04</b>	0.009
	attention to stakeholders	93.00						proactive vs. attention to stakeholders	-	p>0,05
	reactive	76.25								
Media	proactive	<b>100.55</b>	3	8.29	0.015	5.34	p>0.05	proactive vs. reactive	<b>2.72</b>	0.019
	attention to stakeholders	94.00						proactive vs. attention to stakeholders	-	p>0,05
	reactive	77.06								
Consumers	proactive	87.23	4	2.34	p>0.05	0.066	p>0.05	proactive vs. reactive	-	p>0,05
	attention to stakeholders	98.28						proactive vs. attention to stakeholders	-	p>0.05
	reactive	85.59								
Restrictiveness of environmental regulations	proactive	86.74	<b>4</b>	<b>6.12</b>	<b>0.040</b>	<b>7.81</b>	<b>0.023</b>	proactive vs. reactive	<b>2.81</b>	<b>0.029</b>
	attention to stakeholders	96.56						proactive vs. attention to stakeholders	<b>2.27</b>	<b>0.049</b>
	reactive	<b>102.21</b>								
Bureaucracy and complexity of environmental regulations	proactive	84.14	<b>4</b>	<b>5.70</b>	<b>0.030</b>	<b>5.99</b>	<b>0.062</b>	proactive vs. reactive	<b>2.46</b>	<b>0.036</b>
	attention to stakeholders	92.02						proactive vs. attention to stakeholders	<b>2.35</b>	<b>0.041</b>
	reactive	<b>102.25</b>								
Instability of environmental law	proactive	84.00	3	2.11	p>0.05	2.18	p>0.05	proactive vs. reactive	-	p > 0,05
	attention to stakeholders	89.86						proactive vs. attention to stakeholders	-	p > 0,05
	reactive	97.35								
Penalties and fees for inconsistent using of the environment	proactive	80.35	3	2.40	p>0.05	2.30	p>0.05	proactive vs. reactive	-	p > 0,05
	attention to stakeholders	82.04						proactive vs. attention to stakeholders	-	p > 0,05
	reactive	83.56								

Source: own elaboration

The research results contribute to further evidence on the stakeholders' pressure and legal requirements as drivers of environmental strategies for companies that operate on Polish market. The main limitation is the low level of the response rate. Furthermore, the conclusions are applied to three types of industries: food, fuel and energy, and chemical. However, similar industry sectors are likely to show stronger results. In the future the sample needs to be expanded to represent the Polish industry in general.

## References

1. Abreu, M. C. S., Castro, F. C., & Lazaro, J. C. (2013), *Stakeholder influence on environmental proactivity of Brazilian companies*. "Revista de Contabilidade e Organizações", 7:(17) <http://dx.doi.org/10.11606%2Frco.v7i17.56693>
2. Buysse, K., & Verbeke, A. (2003), *Proactive environmental strategies: A stakeholder management perspective*. "Strategic Management Journal", 24:(5), pp. 453–470. <https://doi.org/10.1002/smj.299>
3. Darnall, N., Henriques, I., & Sadorsky, P. (2010), *Adopting proactive environmental strategy: The influence of stakeholders and firm size*. "Journal of Management Studies", 47:(6), pp. 913–1218. <https://doi.org/10.1111/j.1467-6486.2009.00873.x>

4. Delgado-Ceballos, J., Aragon-Correa, J. A., Ortiz-de-Mandojana, N., Rueda-Manzanares, A., & Hospital, F. (2012), *The effect of internal barriers on the connection between stakeholder integration and proactive environmental strategies*. "Journal of Business Ethics", 107:(3), pp. 281-293. <https://doi.org/10.1007/s10551-011-1039-y>
5. Garcés-Ayerbe, C., Rivera-Torres, P., & Murillo-Luna, J. L. (2012), *Stakeholder pressure and environmental proactivity: Moderating effect of competitive advantage expectations*. "Management Decision", 50:(2), pp. 189-206.
6. González-Benito, J., & González-Benito, Ó. (2006), *A review of determinant factors of environmental proactivity*. "Business Strategy and the environment", 15:(2), pp. 87-102. <https://doi.org/10.1002/bse.450>
7. Henriques, I., Sadorsky, P. (1999), *The relationship between environmental commitment and managerial perceptions of stakeholder importance*. "Academy of Management Journal", 42:(1), pp. 87-99.
8. Murillo-Luna, J. L., Garce's-Ayerbe, C., & Rivera-Torres, P. (2008), *Why do patterns of environmental response differ? A stakeholders pressure approach*. "Strategic Management Journal", 29:(11), pp. 1225–1240. <https://doi.org/10.1002/smj.711>
9. Murillo-Luna, J. L., Garce's-Ayerbe, C., & Rivera-Torres, P. (2011), *Barriers to the adoption of proactive environmental strategies*. "Journal of Cleaner Production", 19:(13), pp. 1417–1425. <https://doi.org/10.1016/j.jclepro.2011.05.005>
10. Pinzone, M., Lettieri, E., & Masella, C. (2015). *Proactive environmental strategies in healthcare organisations: drivers and barriers in Italy*. "Journal of business ethics", 131:(1), pp. 183-197. <https://doi.org/10.1007/s10551-014-2275-8>
11. Sarkis, J., Gonzalez-Torre, P. and Adenso-Diaz, B. (2010), *Stakeholder pressure and the adoption of environmental practices: the mediating effect of training*, "Journal of Operations Management", 28:(2), pp. 163-176. <http://dx.doi.org/10.1016/j.jom.2009.10.001>
12. Seroka-Stolka (2017), *Uwarunkowania proaktywnego podejścia do proekologicznego rozwoju przedsiębiorstwa*, Wydawnictwo Wydziału Zarządzania Politechniki Częstochowskiej, Częstochowa, 2017.
13. Sharma, S., Henriques, I. (2005), *Stakeholder influences on sustainability practices in the Canadian forest products industry*. "Strategic Management Journal", 26:(2), pp. 159-180. <https://doi.org/10.1002/smj.439>.

## THE ROLE OF MANAGEMENT ACCOUNTANT IN ACHIEVING JOB SECURITY IN ORDER TO ENABLE EMPLOYEES TO MAKE DECISIONS

*Asmaa N. JASIM<sup>1</sup>, Qusay J. MOHAMMED<sup>2</sup>, Mohammed A. HUSSEIN<sup>3</sup>*  
*<sup>1, 2, 3</sup> Tikrit University, Tikrit, Iraq*  
*E-mail: asmaajasim@tu.edu.iq*

### Summary:

**Purpose:** The aim of this study is to develop the role of management accountant on order establishing the foundations of job security and instill the empowerment and participation in decision making in business organizations. The study also identified the basic role of the management accountant in the decision making process and the attempt to enhance this role through his participation with the team in developing business organizations Strategies.

**Design/methodology/approach:** The deductive approach and the inductive approach were used to achieve the objectives of the study and to test the validity of its hypotheses. A field study was required on a sample of 10 organizations with a high workers density as a random sample for different administrative levels. The information needed to test the hypotheses was collected on the basis of a questionnaire designed by authors for this purpose.

**Findings:** The findings indicate that there are a number of determinants of the prospective role of the management accountant. The most important of which is the communication and provision of information related to the work team. The participation of the board in the formulation of indicators of employee performance evaluation and the level of progress in decision making. The contribution of the management accountant to the design of the reward system, training of employees, periodic reporting on progress in career empowerment processes and the use of delegation processes and decision making. We found that the development of the role of the management accountant in business organizations has a positive impact in providing information supporting the safety the functional and empowerment of employees for the purpose of participating in and supporting decision-making.

**Keywords:** management accountant, job security, enable employees, make decisions

### 1. Introduction

The interest in the human element in administrative field was formed through the contributions of human relations and behavioral theories, which has reflected on adopting the empowering of businesses in light of information and communication revolution. In result, it provided each individual in organizations to obtain information to assist him / her decision making process without referring back to administrate chain.

The current focus sheds the light on human scope issues in achieving the ultimate benefit of human resources management, most importantly the participation of workers in the decision making process.

Establishing the requirements of achieving jobs security is considered as one of the success pillars for businesses and increasing productivity which is represented by creating a safe working environment. It serves as a boost to reassure the workers in having safe career path and eliminating all forms of fear from job termination. That reflects to the workers' performance which differ from one worker to another according to variety of considerations.

All is taken into consideration to empower the decision making process. (Christian & Bernhard, 2016, p. 476)

The existence of job security supports the empowering and positively affects the performance of workers in the organization. Additionally, it strengthens the bonds amongst the workers and provide them a chance in taking higher responsibilities and making decisions. The main idea of empowering is to form a bond of trust between management and workers and enabling workers in the decision-making process. It also helps in breaking the barriers of internal administrative chains on some levels. Some might confirm that job security is in fact a feeling of right equality and duties and each member has the right to participate in the decision making process directly or indirectly. (Yong & Hongdan, 2012, p. 20)

The researchers believes that there are important relations between administrative accountant and management tasks in businesses. The Admin Accountant contributes in the Acting roles of business owners and provide accounting information to support tasks pf planning, monitoring and decision making. The role of admin accountant has to be present full time in businesses. (Sylvie & Janet 2016, p. 237)

The admin accountant is considered one of the management team which leads the support of decision making by providing information directly & indirectly or by preparing the general atmosphere of for that process. Additionally, the admin accountant supports the process of the accounting system by design and operation in addition to analyzing and supporting the empowerment and job security. Ensuring the participation in the decision-making process hence the need to achieve the highest job security levels which supports all level of worker` empowerment in the making of decision.

### ***1.1. Research Problem***

The Admin Accountant is responsible for providing accounting and administrative information which forms an essential part in the decision-making process for businesses. This information represents the foundation of establishing the prioritization of alternatives and in result making better decisions. The A.A. sets the line of questioning through the job description by providing sufficient information that directly contributes to the decision-making process.

The main of this study is provide information of admin accounting which helps to give job security to workers and enables the empowerment of workers in the process of decision making.

In this research, few questions emerged:

- Does the information system of admin accounting has the effect in achieving job security levels to empower the participation of workers in the decision making process?
- Is the current situation providing the requisites to achieve job security supporting empowerments to enable workers in making decisions?
- What is the role of Admin Accountant in providing supporting information in achieving job security and empower the workers and naturally in the decision making process?

### ***1.2. Research Goals***

This research aims to achieve the following:

- Demonstrate the influential role of the Management Accounting Information System in ensuring the achievement of appropriate job security levels to enable and involve staff in support and decision-making.

- Diagnosis of the current situation of the requirements of achieving job security supporting the empowerment processes achieved for the participation of workers in support and decision-making.
- reach a conclusion on the prospective role of the administrative accountant in providing information supporting the achievement of job security and empowerment of employees and of course participate in support and decision-making.

### ***1.3. Research hypotheses***

In light of the research problem and its objectives, the researchers assumes the following hypotheses:

- The preliminary premise states that "the current situation in business organizations does not achieve levels of job security to support the functional empowerment processes achieved to involve workers in support and decision-making"
- The second hypothesis states that "there is no significant statistical significance of administrative accounting information to ensure the achievement of the appropriate degree of job security for the empowerment and participation of staff in support and decision-making"
- The third hypothesis states that "the prospective development of the position of the administrative accountant does not have any positive effect on the provision of supporting information for the achievement of job security and the empowerment of employees for the purpose of participation in support and decision-making.

## **2. Conceptual Framework for Study**

### ***2.1. The concept of job security***

Job safety is a personal assessment conducted by the individual for the possibility of losing his job or loss of job status, and refers to the sense that employees are equal in rights and duties as members participating in one organization.(Yong & Hongdan, 2012,p.20)

Job security represents the desired level of job stability in a business organization, through which the job prospects are reassured. It indicates the individual's perceptions about the potential risks of continuing the job, even the health, behavioral and living risks related to work or loss. (Michelle & Lingard, 2016, p. 616-617)

Some believe that job security is the right environment for the productivity of all functional capacities. It is the necessary condition for the attainment of the potential productivity of the working competencies. It is the employee's sense of safety, the source of income and job stability, and ensuring that he is not exposed to organizational and personal conflicts and work pressures. (Al-Manea, 2013, p. 185)

The researchers defines the concept of job security as the acceptable degree of internal feeling of psychological, physical and functional stability, in order to ensure effective participation in achieving the objectives of business organizations in a fair framework of rights and duties among all employees.

### ***2.2. The Concept of Empowering Workers***

The concept of empowering workers as a new way of thinking about many of those who are used in the structural structure of management, in terms of thinking of workers in a different manner in terms of authority and responsibility delegated to them, can be expressed as the delegation of powers and competencies and the delegation of influence For workers in business organizations. (Richard & Raymond, 2011, p. 503)

Empowerment is defined as the adoption of the idea of abandoning the organization of traditional practices such as the centrality of decisions. In fact, it represents the participation of managers in decision-making, problem solving, creative thinking, attitude, accountability and control. As a result, unequal power involves a base of few who try to control others. Two important things are needed. First, self-efficacy, which emphasizes the technical capacity and practical experience of workers, and second, availability of capacity Control and decision-making that enable empowering participation in industry and decision-making (Linjuan & Don W. Stacks, 2013, p. 175).

Empowerment refers to providing an appropriate degree of discretion to employees by assigning tasks that they perform with a degree of independence by assuming responsibility for the results of their work. It does not mean giving the employee authority without giving him the opportunity to provide his best expertise and information, which achieves excellence and creativity. In the workplace, this requires the worker to have the ability to make personal judgment, to be independent in decision-making with responsibility in accordance with specific regulations, and if so, effective participation is the product of good empowerment (Karthik, Priyanko & Puiwa, 2014, p. 71-72)

Thus, the researchers believes that empowerment of workers is to direct the worker and set his/her own goals, and to take decisions, and solve all problems within the framework of authority and responsibility that ensure accountability and commitment, and ensure reward and punishment. Empowerment does not result from granting the worker the power to make decisions and implement them and to develop a sense of responsibility through participation and delegation.

There are types of empowerment of the workers, including direct empowerment, which uses the mandate to participate in decision-making, and psychological empowerment, which goes to a group of psychological cases in which people feel how to control how they perform their work, and then shows the period of impact on the effectiveness of the results, Or in terms of job satisfaction because the worker is able to be positive and more involved in the work.

And that the dimensions of that empowerment include the meaning of the job, the purpose of the function, and the meaning of competence and refers to the individual's belief that he has the ability to perform the required work and job activities, as well as the self-determination concerned with the degree of freedom the individual has in choosing the methods of carrying out the work tasks, Refers to the effect that the degree to which a person achieves a strategic impact on the output of work and employment means that he is effective in his job. (Al-Suwaiyy, 2015, p. 111-112)

This is confirmed by the fact that empowerment includes three important elements that lead to the achievement of the desired benefit and achievement in business. These elements are as follows (Richard & Raymond, 2011, p. 503):

- Employees to briefed information on the performance of the organization: where the worker, when fully empowered, has access to all financial services and operational information of the organization in which he or she operates.
- The worker must have the necessary knowledge and skill to contribute to the achievement of the objectives of the organization: This is done through the use of training programs and the use of human development tools to help acquire the knowledge needed by the nature of work.

- The worker shall have the power to make decisions: this is within the framework of assuming responsibility and in a manner that ensures direct positive impact of the work procedures and the organization of performance.

The researchers asserts that empowering employees is an important method for managerial and behavioral thinking, which empowers the decision-making authority for a group of employees who are competent, skilled and capable, while bearing the consequences of decisions, provided that transparency, accountability and clarity of objectives are in place for effective participation.

### **2.3. The Concept of the Role of Management Accountant**

The researchers points out that the traditional view of the management accountant, which means the participation of the financial accountant in providing information to serve the management when making decisions, the administrative accountant according to the definition of Financial Executives Institute FEI that the administrative accountant is the planner of the Department, which prepares reports that provide information to assist in the control, Future expectations are more predictable than the financial accountant. (Andreasson & Baladh, 2005, p. 13)

And that this view has been replaced by the modern view that the administrative accountant is part of the administrative team most connected to the decision-making process, as well as associated with the strategy of the organization, due to external factors and technological changes and communication revolution affected the use of new methods in management, which affects the role of the administrative accountant (Baldvinsondtio, 2009, p. 53-58)

The researchers considers that the administrative accountant has powers and importance different from the financial accountant because S/He can spread at various levels of management to solve problems, and provide guidance, where his/her main role is to assist the administration in solving problems and decision-making and participates with the team in the development of strategies of the organization, the modern concept is only an aid to management but a part of it.

The role of the administrative accountant in business organizations is formed through a set of functions, where some indicate that they are divided into two functions (Andreasson & Baladh, 2005, p. 17-20):

**A- Management Process** - This function includes the following sub-functions:

- Participate in the development of the strategy.
- Preparing the estimated budgets.
- Determine product cost, conversion rates and cost criteria.
- Supervision of human resources.

**B - Development of the accounting management information system** - Includes a set of sub-functions, which include the following:

- Preparing internal reports.
- Improving the administrative processes related to increasing the value of the organization.
- Training and continuous improvement of his skills and knowledge.

The researchers emphasizes that the modern view of the administrative accountant refers to the shift away from the practice of traditional functions, especially the function of measurement, and approach more than the reporting function as a basis for the performance of

its functions and the role and associated analysis and interpretation of the information in internal reports addressed to different levels of management.

### 3. Research Framework

#### 3.1. Research sample

The research sample includes organizations which use human resources intensively, i.e. where it is necessary to make the effort to achieve the job security of its employees, where there is need to benefit from human expertise in decision making and achieving the strategies of the organization. The total size of 60 respondents is 10 companies operating in various fields of service, industry and trade.

#### 3.2. Theoretical Analysis of Research Hypotheses

The researchers use analytical methods to verify the hypothesis of research through the following:

*Testing the initial hypothesis of research:* The initial hypothesis states that "the current situation in business organizations does not achieve levels of job security, so that functional empowerment processes are supported to involve staff in support and decision-making".

To test this hypothesis, the researchers uses an analysis (Chi square test) for the answers expressed on the general average of administrative accounting information in the current situation, as shown in Table 1.

**Table 1: Chi square to test the first hypothesis**

The general average of administrative accounting information in the current situation	
Chi-Square	33.000 <sup>a</sup>
Df	30
Asymp. Sig	0.323

<sup>a</sup>. 31 cells (100.0%) have expected frequencies less than 5.  
The minimum expected cell frequency is 1.9

From Table 1 it is clear that the duplicates obtained from the respondents' answers are distributed in flat (regular) increments for the gradual expressions of high importance to the insignificant size of the sample (60 respondents).

Table 1 shows that the value of (Chi square test) is 33, which is less than the value of the table at a significant level of 0.33 greater than the level of 0.05 indicating that there is no correlation between the observed and expected frequencies at the mean. Acceptance of Zero-Density "The current situation in businesses does not achieve levels of job security to support the functional empowerment processes of participation of support and decision. Thus, it reflects the current situation of the processes of achieving job security and enable the workers that it does not participate in decision-making due to the researchers to lose the current role of the administrative accountant in it.

Test the second hypothesis of the research: It states that "there is no significant statistical significance of administrative accounting information to ensure the achievement of the appropriate degrees of safety to enable and participate in the support and decision-making"

The researchers uses multiple linear regression analysis to verify the significance of the second research hypothesis with ANOVA. As shown in Table 2.

**Table 2: F Test (ANOVA<sup>b</sup>)**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1. Regression	104.133	13	8.010	68.547	0.000 <sup>a</sup>
Residual	5.375	46	0.117		
Total	109.508	59			

Table 2 shows that the value of (f) is 68.547, which is greater than the value of the scale at a significant level close to zero, which is less than the significant level of 0.05, in which it is decided to reject the statistical zero hypothesis and accept the alternative hypothesis, which states that "there is a significant statistical effect administrative accounting information to ensure that the appropriate degree of job security is achieved to enable and involve staff in support and decision-making".

The researchers pointed out that the statistical hypothesis was rejected with a high explanatory power, which is shown in Table 3.

**Table 3: The explanatory power of the second hypothesis variables (Model Summary)**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.975 <sup>a</sup>	0.951	0.937	0.34184

Table 3 shows that the value of the explanation factor ( $R^2$ ) is 95%, which is a high explanatory value indicating the importance of the variables related to administrative accounting information in ensuring high degrees of job security which is appropriate for the empowerment and participation of staff in support and decision making.

Table 4 points at (Beta) test about the significance of each variable of the regression function variables.

**Table 4: Beta analysis of second hypothesis variables (Coefficients<sup>a</sup>)**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.002	0.255		0.008	0.994
Compliance with occupational safety and health requirements	-0.750	0.117	-0.827	-6.396	0.000
Availability of sanitary conditions in the workplace	0.426	0.192	0.430	2.213	0.032
The need to exercise during recreation	-0.148	0.158	-0.128	-0.934	0.355
Suitable salary with the value of work performed	-0.078	0.172	-0.072	-0.456	0.651
The salary meets my requirements, my family and mine	0.020	0.243	0.021	0.081	0.936
Full understanding of the nature of work	0.673	0.144	0.662	4.691	0.000
Availability of data confidentiality reserves in place of work	0.294	0.259	0.300	1.133	0.263
I make my recommendations and suggestions without any threat	-0.015	0.211	-0.017	-0.071	0.944
Provide adequate communication channels between my colleagues and my superiors	-0.217	0.165	-0.203	-1.314	0.195
Co-operation among problem-solving workers	0.246	0.205	0.272	1.201	0.236
The existence of tight legal systems to control my relations	0.280	0.160	0.322	1.746	0.087
There is an area for arbitrary dismissal	0.030	0.164	0.031	0.183	0.856
The existence of opportunities for professional growth in the field of work	0.100	0.187	0.085	0.533	0.597

The previous analysis indicates that there are different levels of morale for the significance of this hypothesis. It is clear that the constant regression equation is insignificant. The sig value is 0.994, which accepts the statistical hypothesis, and the existence of a number of non-significant variables representing the coefficients (0.65), salary meeting requirements (0.936), making recommendations and suggestions from the worker without any threat (0.944), etc., which emphasizes the need to support the current administrative accounting information by increasing the role of the administrative accountant to achieve the greatest degree of job security, empowerment requirements and participation of decision making.

(H) Test the third hypothesis of research: It states that "the prospective development of the job of the administrative accountant does not have any positive effect on the provision of supporting information to achieve job security and empower employees to participate in support and decision-making"

Multiple linear regression analysis is used to verify the significance of the second research hypothesis with ANOVA, which is shown in Table 5.

**Table 5: Test (f) to validate the third hypothesis (ANOVA<sup>b</sup>)**

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	101.421	2	50.710	18638.889	0.000 <sup>a</sup>
	Residual	0.155	57	0.003		
	Total	101.576	59			

The above table shows that the value of (q) is 18638, which is greater than the value of the table at a significant level close to zero, which is less than the significant level of 0.05, in which it is decided to reject the statistical zero hypothesis and accept the alternative assumption that " Management has a positive impact on the provision of supporting information to achieve job security and empower employees to participate in support and decision-making "

The researchers pointed out that the statistical hypothesis was rejected with a high explanatory power, which is shown in Table 6.

**Table 6: The explanatory power of the variables of the third hypothesis (Coefficients<sup>a</sup>)**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.116	0.020		5.754	0.000
The general average of the requirements for the achievement and participation of decision-makers	0.042	0.128	0.043	0.324	0.747
The overall average of job security requirements	0.942	0.130	0.956	7.239	0.000

The previous table indicates the significance of the regression equation, as well as the significance of the general average of the requirements for achieving job security, where the moral level is less than the level of 0.05, and the researchers points out the need to review the requirements of the investigation and participation of decision-making personnel.

#### **4. Conclusions**

It is decided to accept the zero hypothesis that "the current situation in businesses does not achieve levels of job security that support the functional empowerment processes that contribute to the participation of workers in support and decision-making".

The current situation of the processes of achieving job security and empowering employees does not contribute to decision-making due to the loss of the current role of the administrative accountant.

It is decided to reject the statistical zero hypothesis and accept the alternative hypothesis, which states, "There is a significant statistical significance of the administrative accounting information to ensure the achievement of appropriate job security levels to enable and share the support and decision-making staff" at a level below 0.05.

The value of the interpretation factor (R<sup>2</sup>) is 95%, which is a high explanatory value indicating the importance of the variables related to administrative accounting information in ensuring the achievement of high levels of adequate job security to enable the participation of staff in support and decision making.

The results of the statistical analysis show that the regression equation constant is insignificant where the level of significance (sig) is 0.994 and that there are a number of variables that are not significant from independent variables which represent the requirements of achieving job security and empowering employees, one of them is the sufficiency of the gotten salary with the value of the achieved work (0.65) salary sufficiency of the family requirements (0.936), and the submission of recommendations and proposals without any threat (0.944), which confirms the need to support the current administrative accounting information to increase the role of the administrative accountant to achieve the greatest degree of job security and empowerment requirements and participation of decision makers.

Accepting the alternative assumption that "the expected development of the role of the administrative accountant has a positive effect on the provision of supporting information to achieve job security and empowering employees to participate in support and decision-making.

The value of the interpretation factor (R<sup>2</sup>) is 99%. It indicates the importance of the variables in the prospective role of the administrative accountant in ensuring high degrees of job security to enable the participation of the employees in the support and decision making. It exceeds the explanatory power before developing that role by increasing the functions of the administrative accountant In the area of participation and empowerment of decision makers.

#### **References**

1. Al-Manea, Al-Jawhara bint Abdurrahman Ibrahim (2013), "The Impact of Job Safety on the Production of Public Sector Employees in Saudi Arabia," World Education Magazine, Egypt, Year 14, No. 42, April, p. 185.
2. Al-Suwayy, Hind Halifa (2015), "Knowledge Sharing and its Relation to Empowerment of Employees: An Applied Study of Libyan Hospitals", Scientific Journal of Economics and Commerce, Ain Shams University

3. Andreasson, Lisa & Baladh, Anders (2005), The Role of the Management Accounting in the Swedish Public, master thesis, Gothenburg University, January.
4. Christian Nitzl, Bernhard Hirsch (2016), "The drivers of a superior's trust formation in his subordinate: The manager-management accountant example", *Journal of Accounting & Organizational Change*, Vol. 12 Issue: 4, pp. 472-503.
5. Baldvinsdottir, G. H. (2009), Management accounting and the institutionalization of trust. *Problems and Perspectives in Management*, 7:(2), pp. 53-60.
6. Richard & Raymond (2011) "Organization Theory and Design" Tenth Edition, Mason, OH 45040 , USA, p. 503
7. Sylvie Berthelot, Janet Morrill, "Management Control Systems and the Presence of a Full-Time Accountant: An Empirical Study of Small and Medium-Sized Enterprises (SMEs)" In *Advances in Management Accounting*. Published online: 23 Nov 2016; pp. 207-242.
8. Linjuan Rita Men, Don W. Stacks (2013), "The impact of leadership style and employee empowerment on perceived organizational reputation", *Journal of Communication Management*, Vol. 17 Issue: 2, pp. 171-192.
9. Michelle Turner, Helen Lingard (2016), "Improving workers' health in project-based work: job security considerations", *International Journal of Managing Projects in Business*, Vol. 9 Issue: 3, pp. 606-623.
10. Yong Han, Hongdan Zhao (2012), "Shanghai Peaksafe scales the HR heights: Policies boost employees' sense of job security", *Human Resource Management International Digest*, Vol. 20 Issue: 2, pp. 19-21.

## CHALLENGES AND SOLUTIONS OF VIETNAMESE UNIVERSITIES IN INTRODUCTION AND TEACHING INTERNATIONAL FINANCIAL REPORTING STANDARDS

*Duc Phong NGUYEN<sup>1</sup>, Anita TANGL<sup>2</sup>*  
*<sup>1,2</sup> Szent István University, Gödöllő, Hungary*  
*E-mail: ducphong2110@gmail.com*

### **Summary:**

**Purpose:** The implementation of International Financial Reporting Standards (IFRS) in the world is becoming more and more popular. IFRS brings significant benefits in improving the quality, transparency, comparability of accounting information and contributing to the creation of a global accounting language. For businesses, the application of IFRS could enhance the reliability of investors and promote the capacity to raise capital, especially foreign capital. Thanks to the application of IFRS, investors could quickly understand the financial status of listed companies on the stock market to make the right decisions. However, the IFRS application process of countries also has its difficulties. These difficulties and challenges are even more complicated for a developing country like Vietnam. Therefore, to implement IFRS in Vietnam in the coming period, many issues should be changed including education and training. The renovation of training and updating IFRS knowledge of Vietnamese universities is necessary. The main purpose of this article is to assess the current status of IFRS training at universities in Vietnam, show some challenges and provide some solutions in IFRS teaching in those universities.

**Design/methodology/approach:** The article uses the archival research method to conduct research. Research data includes studies on IFRS in emerging and developed countries, studies and opinions of IFRS experts in Vietnam as well as other countries.

**Findings:** The result shows that there are several challenges for Vietnamese universities such as the quality of teachers, the lack of resources to invest in new training programs, outdated technology in teaching and foreign language proficiency of teachers and learner. The study also provides some solutions such as IFRS introduction roadmap suitable for each university, training program for each group students as well as changing traditional teaching methods to dynamic teaching methods.

**Keywords:** IFRS, Vietnamese university, education, training

### **1. Introduction**

IFRS is currently being implemented in more than 100 countries worldwide, including countries in Southeast Asia. In Vietnam, when the economy is entering a period of active international integration, IFRS becomes a hot topic and draw a lot of attention from policymakers and domestic experts as well as the business community. Vietnam is in the process of international economic integration, the Government's direction is to apply IFRS in the near future. Many factors contribute to the success of implementing IFRS in Vietnam, and one of the important factors is the IFRS accounting and auditing training at Vietnamese universities. The preparation of a young workforce with good knowledge and skills in using IFRS is the responsibility of colleges and universities operating in Vietnam. The objective of this article is to assess the accounting training at Vietnamese universities, highlight the opportunities, challenges, and some recommendations in implementing IFRS training in the future.

## **2. Overview of accounting training at Vietnamese universities**

In Vietnamese universities, accounting training courses have been available for 60 years. Some universities have a long history and reputation for accounting training such as the Academy of Finance and the National Economics University. Before 2000, only economic universities had accounting programs with annual graduates of about 8,000 to 10,000 students. Thanks to economic development, the number of newly established enterprises increased rapidly, leading to a sharp increase in the demand for accounting workers. Therefore, non-economic universities and technical universities have also conducted accounting training courses to meet the labor demand. Up to now, it is over 300 universities where have accounting programs with 50,000 to 60,000 graduated accounting students every year.

### ***2.1. The orientation of accounting training at Vietnamese universities***

There is no formal assessment and classification; however, the accounting training universities in Vietnam are divided into two main orientation groups, which are academic and practical accounting bachelor training. The selection of training orientation strongly influences objectives, training methods, and especially the training program in accounting in each university. Universities' orientation in training strongly influences international accounting syllabus.

### ***2.2. Designing international accounting syllabus in the training program***

From the 1990s to the present, the viewpoint on accounting training based on international accounting practices (international accounting standards or accounting practices of some developed countries) is divided into two phases:

The period from the early 1990s to the early 2000s: This was the period when Vietnam fundamentally reformed accounting system, shifting to implementing the accounting system that supports enterprises and market economy. Universities actively innovated in content and improved accounting training programs. After 3-4 years implementing, basically, the main accounting contents related to the market economy were fully conveyed in the accounting training programs at Vietnamese universities. During this period, several famous economic universities in accounting training also incorporated international accounting courses and introduced some foreign accounting systems (such as the American accounting system, French accounting system) in their training programs. However, those international accounting courses accounted for only about 5% of the accounting training program. Non-famous economic universities and technical universities almost did not pay attention to international accounting courses in their programs. Even they did not mention international accounting in the curriculum.

The period after 2000 up to now: This is the period when the Vietnam Accounting System has implemented substantial reforms to accord with the market economy and international integration. In 2006, Vietnam Accounting Standard (VAS) made based on international accounting standards was officially issued and implemented, which led to the need to study and research on international accounting standards (IAS, IFRS). Besides, international accounting professional associations have also contributed to raising awareness of educational managers about accounting integration and international accounting training at universities. In recent years, Vietnamese researchers have conducted much research on the accounting systems from developed countries and especially international accounting standards as well as

international financial reports. Most of these researches show that international accounting training is essential and urgent for the Vietnamese economy as well as universities. The main reason is that Vietnam's economy is developing rapidly in the direction of deep and full international integration; therefore, Vietnam needs high-quality human resources for international auditing and accounting firms, multinational companies and corporations. Currently, almost Vietnamese universities have international accounting courses with different levels in their syllabus, and reputable universities tend to invest more in international accounting programs than other universities.

### ***2.3. Resources for the training of international accounting courses***

Many factors affect the quality of training, and one of the essential factors is the quality of the lecturers. The resources of lecturers who teach international accounting courses have been prepared by universities in recent years. Some selected lecturers are sent to study abroad in developed countries, and some other lecturers are trained under programs associated with foreign universities in Vietnam. However, the number of lecturers who are qualified for training programs in international accounting and international accounting standards is not much, accounting for no more 10% of lecturers of each university. The main reason is that lecturers' English proficiency is not enough to attend training courses in English.

Investment resources on the facilities of universities are quite limited, and the system of international accounting materials is relatively weak. Universities mainly compile general accounting materials related to accounting systems from developed countries such as French-American accounting systems as well as international accounting standards. There are currently no universities that use standard textbooks which have been recognized by famous universities.

## **3. Methodology of the research**

The article uses the Archival Research method to conduct research. Research data includes studies on IFRS in emerging and developed countries, studies and opinions of IFRS experts in Vietnam as well as other countries.

## **4. Results and discussion**

### ***4.1. Advantages for Vietnamese universities***

The Vietnamese government has issued a policy and the roadmap for applying IFRS in Vietnam. It could be considered as the third accounting reform in Vietnam, a crucial milestone in the process of comprehensive accounting integration. At the same time, it creates enormous pressure on Vietnamese accounting human resources. It is not to mention that ASEAN countries have a high-quality human resource that creates fierce competition in the labor market. Therefore the organization of international accounting training at universities is indispensable to meet the requirements of accounting integration and improve the quality of the Vietnamese labor market. In the next section, the author points out the advantages and prerequisites for implementing IFRS training in Vietnamese universities.

After 2000, the Vietnamese accounting system has made significant reforms to be compatible with the market economy and international integration. Vietnamese scholars have studied international accounting and accounting systems in developed countries, which has created a trend of learning and research for many years. Therefore, putting IFRS in the syllabus at the university could get a high consensus from educational managers, scientists, and teaching

staff. That consensus is a favorable condition for Vietnamese universities to bring IFRS into mass teaching, especially for universities with a large-scale accounting training tradition.

Putting IFRS into the training programs is an excellent opportunity to renovate the curriculum content and teaching methods at Vietnamese universities. Vietnamese accounting history has shown that whenever the Vietnamese accounting system has fundamental reforms, the training institutions also make necessary changes in the syllabus content and teaching methods. So when the Vietnamese government decides to apply IFRS in the future, which lead to a strong push to reform the accounting training in universities.

Under current conditions, it is highly feasible to introduce IFRS into the curriculum at most economical universities. Many Vietnamese universities today have been associated with foreign universities to implement undergraduate and postgraduate programs related to international accounting courses and IFRS. Besides, some universities are implementing high-quality training programs that have been greatly supported by international professional organizations and the Ministry of Education and Training. The goal of these high-quality training programs is to provide accountants who are able to work in global companies and multinational corporations. Therefore, the experience, teaching methods, and teaching staff of these programs could be fully developed, replicated, and disseminated to other universities.

#### ***4.2. Challenges for Vietnamese universities***

The awareness and determination to teach IFRS courses of universities are not the same levels, leading to stratification in the development of training programs and approaches to training. Besides, the demand for accounting human resources is quite diverse, divided into different levels. In fact, if IFRS is applied in Vietnam according to the roadmap, about 70% - 80% of the accounting force will work for small and medium enterprises. The reason is that the number of small and medium enterprises accounts for more than 90% of the enterprises in Vietnam. The segment of the high-quality accounting labor market is relatively narrow, and the competitiveness is very high. Therefore, not all universities have the goal of training according to international standards.

The resources available to invest in the IFRS training program are quite limited. Firstly, selected lecturers have been invested; however, it can be said that the number of lecturers who are well-trained abroad or international programs still accounts for a tiny portion of the total number of lecturers. Moreover, these lectures only teach at some famous universities in two big cities, Hanoi and Ho Chi Minh City. Secondly, the financial resources of universities are also very limited. Today, many Vietnamese universities have implemented financial autonomy, so investing in a training program takes time to prepare and accumulate finance.

The teaching of international accounting and IFRS requires innovation in teaching methods, assessment methods, and new training approaches. Those requirements are a massive challenge for universities, so they need time to meet the requirements step by step. Foreign language barriers for both lectures and learners are also a significant challenge. International accounting materials and IFRS are all published in English, which requires readers to have a good command of English to understand clearly.

### ***4.3. Solutions for Vietnamese universities***

Introducing and training IFRS is a great opportunity as well as poses many challenges for universities in Vietnam. Introducing IFRS at universities is an inevitable trend in the integration process of Vietnamese accountants with the region and the world. For the IFRS to be implemented soon and achieve good results, we have some recommendations.

#### *For Vietnamese universities*

First of all, the application of IFRS in Vietnam is an excellent opportunity for Vietnamese universities to improve their training programs towards international standards of International Federation of Accountants (IFAC), as well as to enhance the quality of training, shorten the quality gap with other universities in Asian. However, Vietnamese universities need to define their segments in the accounting labor market clearly. For top-ranked universities in terms of scale and quality of training, IFRS training programs should be prepared and implemented early. Usually, it takes about 2-3 years to implement a new training program (including initial research, preparation, and implementation). Thus, if these universities immediately implement the IFRS training program, it is expected that the first graduate students are in 2023.

Secondly, depending on the actual conditions of each university, the training goal and the segmenting of the accounting labor market, there are two options for implementing IFRS into the training program. The first option is a roadmap to add some IFRS related subjects/modules to replace some current subjects/modules under the current training program; integrating IFRS content into accounting subjects. This option is suitable for universities that do not have much experience in international education and determine the IFRS training program is not the central goal. The product of this program is that graduates still master the Vietnamese accounting standards and have a basic knowledge of IFRS. However, graduated students have not been able to adapt immediately to the IFRS full working environment. The second option is to design a completely new international accounting training program, which is advanced and high-quality training programs. This option could be applied in universities where have a long tradition of accounting training, have great resources in lecturers and finance, and have quality students. For these universities, the high-quality accounting labor market segment is defined as a central goal. Graduated students could master foreign languages, have an in-depth understanding of IFRS, and apply IFRS in an international environment.

Thirdly, one of the most critical issues is to quickly innovate the way of training, renovate teaching, and learning methods. These methods should focus on helping students understand the nature of accounting principles, analyzing the essence of accounting problems, and presenting financial information instead of focusing on bookkeeping techniques.

#### *For the Ministry of Finance*

To successfully apply IFRS, the Ministry of Finance should implement propaganda about IFRS. Publicity should be carried out through professional associations and telecommunications facilities. To achieve effective propaganda, it is necessary to improve transparency in the research and policy-making process, in which the following aspects are noted:

The Ministry of Finance should announce a clear roadmap for updating the Vietnamese Accounting Standards and the roadmap for implementing IFRS in Vietnam. When the roadmap is clearly announced, the preparation of the university can proceed in a timely and effective manner.

The Ministry of Finance should facilitate relevant stakeholders including accounting experts from companies, professional associations, lecturers and researchers to actively

participate in the research and planning processes that are related to the implementation of IFRS in Vietnam (such as developing circulars, explanatory documents, etc.).

The Ministry of Finance should coordinate with international professional associations (such as ACCA, ICAEW, CPA Australia, etc.) to implement basic and advanced training programs, update IFRS for related subjects. With the roadmap to apply IFRS in the next five years, training IFRS should be implemented early and positively to build a fundamental source of accountants, lecturers, and consultants to meet practical needs.

The Ministry of Finance should soon coordinate with professional associations and universities to build an IFRS training program standard, or accredit IFRS training certificates of international professional organizations such as ACCA, ICAEW.

## 5. Conclusions

Applying IFRS is a practical requirement, associated with the trend of international convergence. Most of the countries in the world, especially developing countries have been implementing IFRS and Vietnam is not an exception. However, in order to successfully apply IFRS, state agencies, professional organizations, and training institutions that are mainly universities must have close coordination during the research process, implementing IFRS as well as assessing the implementation of IFRS in teaching and accounting practice in enterprises.

## References

1. Archana, P., Gupta, V.K. (2012), Adoption of International Financial Reporting Standards (IFRS) in Accounting Curriculum in India - An Empirical Study, *Procedia Economics and Finance*, 227-236.
2. Barth, M. E. (2008), Global financial reporting: Implications for U.S Academics. *The Accounting Review*, 83 (5), 1159-1179.
3. Katherine K., Peter H., John M. (2010), Introducing IFRS into introductory financial accounting courses, 1, (2), 39-47.
4. Jackling, B., de Lange, P. and Natoli, R. (2013), Transitioning to IFRS in Australian classrooms: Impact on teaching approaches. *Issues in Accounting Education*, 28 (2), 263-275.
5. Sunder, S. (2010), Adverse effects of uniform written reporting on accounting practice, education, and research. *Journal of Accounting and Public Policy*, 29 (2), 99-114.
6. Wells, M. (2011), Framework-based approach to teaching principle-based accounting Standards. *Accounting Education: An International Journal*, 20 (4), 303–316.
7. Le, T. T. H., Pham H. N. (2019), Khó khăn, thách thức trong đào tạo IFRS tại các trường Đại học và Cao đẳng Việt Nam. <http://www.hoiketoanhcm.org.vn/vn/trao-doi/kho-khan-thach-thuc-trong-dao-cao-cao-dang-viet-nam/> (access: 04/05/2019).
8. Nhue, M. (2017), Áp dụng IFRS: Thách thức không chỉ ở thời gian. <https://tinnhanhchungkhoan.vn/tien-te/ap-dung-ifrs-thach-thuc-khong-chi-o-thoi-gian-191135.html> (access: 07/05/2019).

## METHODOLOGICAL APPROACH TO THE PRACTICE OF STRATEGY PLANNING IN PARTICULAR THE INTERNAL ENVIRONMENTAL ANALYSIS

*Hajnalka MADAI<sup>1</sup>, Beata BITTNER<sup>2</sup>, Adrian Szilárd NAGY<sup>3</sup>, András NÁBRÁDI<sup>4</sup>*  
<sup>1, 2, 3, 4</sup> *University of Debrecen, Faculty of Economics and Business, Debrecen, Hungary*  
*E-mail: madai.hajnalka@econ.unideb.hu*

**Summary:** The market environment has changed significantly in recent years. Globalization, market concentration, rapid flow of information and technological advancement make increase competition in all industries. The previously commonly used the company, recognize the threats and opportunities outside the company, in this regard intuition skills have outstandingly importance. In this article, the authors present the importance of strategic planning and its connection to traditional planning and its differences. After that, the paper presents the internationally recognized strategic planning method, its steps and the quantitative approach was replaced by the emphasis on quality. The significant changes in the economic, social and natural environment require more responsible mentality and forcing companies to make more responsible decisions. Planning periods have been shortened. Due to rapid changes plans have to become dynamic and multiple controls and feedback have required at the planning stage. Due to the above changes, the overall strategic planning has also come to the fore. The main task of strategic planning is to recognize and respond to the opportunities of the organization in time, and to develop a systematic action program with a systematic approach to analyzing their risks. Successful strategy-making is a success factor of proper strategic thinking. This affects the company's framework of the strategy. The strategic thinker should coordinate a procedure to monitor the state of relationship of each step and its interrelation in particular the internal assessment methods. The development and formulation of the strategy begins with the definition of the business vision and the business mission. These are subordinated to analyze that seek to understand the firm's strategic position. After that, the possible strategic directions can be selected. After selecting the strategic direction (s), the long-term objectives of the organization should be recorded. Knowing the objectives, possible strategic options should be considered and analyzed. The final step of planning is the strategic choice that will help the organization decides which version or variations will be used in the implementation phase. The method described above provides a framework that can be applied not only at company level, but also at a sectoral, national, but individual level, as well.

**Keywords:** business strategy, strategic planning, internal analysis and audit

### 1. Introduction

“If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle.” (Sun Tzu, BC.4. century) As it is demonstrated the literature of strategic thinking has a long history, as the basic analysis of internal and external factors which determine the main and long term strategy of an organization. In this article we try to give a review of the latest results of methodology of the strategic planning with a special regards on the Internal Analysis, Approach or Audit of an organization. The review of the methods of Internal Audit is mostly based on an American strategic planning practice of Strategic Management published by David et al., 2017, 2019. But we tried to adapt the methodology to the European specialties.

## 2. Research Background

The history of strategy theory and the development of strategic planning are discussed in numerous Hungarian and international literature (Csath, 1990, 2004; Whittington, 2001; Fülöp, 2008; Gulyás, 2014; Balaton-Tari, 2014). In Hungary the stages of the development of corporate strategic theory were presented on the basis of the “Strategic and Business Planning” published in 2014 by Károly Balaton and Ernő Tari co-authors and by Gyula Fülöp, published in 2008 in his book “Strategic Management: Theory and Practice”. Based on these books, four periods can be distinguished in the history of corporate development. These sections are:

- a) Experiences of corporate planning (until about 1965);
- b) The beginnings of the modern theory of the strategy (approximately 1965-1970);
- c) Development of strategic planning models and methods, constraints of strategic planning (ca. 1970-1980);
- d) Development of the theory of strategic management (approximately 1980 to the turn of the millennium) (Balaton and Tari, 2014).

The strategic management, as a process: like strategic analysis, strategy formulation and implementation, is far more the only a strategic planning approach. "Competitive Strategy" and value chain method was also developed by Porter, which was published in the book "Competitive Advantage" published in 1985. The essence of the model is to break down the value-creating activities into strategically relevant phases that can be separated from each other in order to identify the strong and weak links of the value chain (Fülöp, 2008). The model proved to be suitable for separating primary and complementary activities within the company. Furthermore, the analytical method graphically depicts the individual activities in terms of their role in value creation (Marosán, 2002). In the course of resource based analysis, the process of strategy development was based not on the requirements of the competitive environment, but on the level of resources available to the organization (Balaton and Tari, 2014). Among the theorists of the resource-based approach was Barney, who developed the approach into a coherent theory. In his view, strategic assets are nothing but the tangible and intangible resources of the company. Nowadays the leading authors of Strategic Management and as part of that Strategic Planning are publishing in the United States. The book of Strategic Management published by Fred R. David at al., in 2019 is the 17<sup>th</sup> edition now and used in 80 countries in the world as a university textbook.

## 3. Methodology and Discussion

Within the process of Strategic Management and as a part of it Strategic Planning we are focusing on the process of the Internal Audit which is the second level of the analysis of an organization which serves to formulate a sufficient strategic plan. The main aim of the process of Internal Audit is to reveal and evaluation of the strengths and weaknesses in all business areas of the organization. Representative managers, leaders of an organization and employees from throughout the company need to be involved in determining a firm's strengths and weaknesses. The internal approach which could be also called as audit requires collecting and assimilating information about the firm's management, marketing, finance/accounting, production/operations, research and development (R&D), and management information systems, operations, culture of the firm, and goodwill.

Almost parallel to the analysis of the external environment, internal analyzes should also be carried out. There are also several procedures for internal analysis. We reviewed the next four:

- *Resource Based View (RBV) Approach*
- *Analyzing Key Internal Forces (KIF)*
- *Value Chain Analysis (VCA), (Activity Based Cost accounting, ABC analysis)*
- *Internal Factor Evaluation (IFE) Matrix* (Nábrádi et al., 2018)

In the case of an internal analysis of an enterprise, we have to consider its capabilities, and we focus on how the company can meet the expectations set out there in the future. This point is where the internal analysis connects to the above mentioned mission statement and vision of the organization. During the process of strategic planning, first we have to clarify the general fundamentals of internal analysis which covers the revealing of internal factors by using the suitable methods. We are trying to answer four important questions in this case: What, why, and how do we examine and analyze, at what we need to pay attention during the analysis?

We are trying to concentrate on the next tasks:

- Always concentrate on internal strengths and weaknesses of a company.
- These elements can be affected or modified by the firm.
- The analysis focuses only on the present circumstances or situations.
- The analysis is subordinate to the mission and vision

Basically, it is advisable to reveal the resources of the organization. The method of *Resource-Based Approach* means taking the most important resource and capital categories in turn and then evaluating them into the main objective outlined in the vision. What are these resources? There are three major groups of resources: Physical resources and technological resources, Financial resources; Human resources; Organizational resources, Culture; Brand and goodwill.

*RBV theory* asserts that resources are actually what help a firm to exploit opportunities and neutralize threats. Firstly, fixed assets, including intangible assets, tangible assets and financial assets, and current assets, their categories are stocks, receivables, securities and cash. In the analysis, we take a look at their internal composition and size, and examine how much we are able to meet the vision of the future. Following the tools, we examine human resources. We analyze whether there are enough graduates, men and women, the cost of the permanent employees, personal benefits, the fluctuation, the workplace atmosphere, the organization of the company, the corporate culture. Is there any personal development program for employees, are they aware of the company's mission and vision. Culture of an organization is quite important for the employees. The human affiliations and beliefs embedded in the life of the company, as well as the accepted common values, have been formulated in the Company's Code of Ethics.

If we evaluate the internal factors of an organization or an enterprise, we can apply the so called *Key Internal Factor Analysis (KIF)*. In the case of an organization, the investigation should be extended to the next factors: Management, Marketing, Financial accounting, Production service, Research and development, Management Information System (MIS) (Nábrádi et al., 2018)

The grouping of *Key Internal Factors* in this sense is not random. The most important element of a business in strategic terms is the management itself. As far as we know, no

business can be successful just because it produced an excellent product or because it was not indebted. What are the tasks and areas of analysis in the management analysis? It is advisable to identify which areas of management are responsible for this purpose. The management has five well-defined tasks. Planning, organizing, motivation, staffing and controlling

Evaluation of the company's marketing area is not an easy task. Either, during the analysis phase of strategic planning, it is worthwhile to explain the advantages and disadvantages of the following areas (Nábrádi et al., 2018.): The Main Areas of Marketing evaluation are: Customer Analysis, Customer Analysis, Market Segmentation, Trends in Sales of Products and Services, Product and Service Design, Pricing Practice, Distribution, Evaluation of Distribution Channels, Existence and practice of marketing research, Possibility Analysis, Marketing Mix Analysis.

The analysis of financial-accounting conditions can be found in the company's balance sheets and profit and loss accounts. The analysis should now also follow the basic principles that we are examining in the present - analyzing the company in accordance with the principles set out in the vision and mission. Factors to be analyzed are influenced by the company and its operation. We are trying to find out what strengths and areas to be strengthened are currently in place. The analysis of financial-accounting conditions is examined in five major groups in the strategic planning literature (Nábrádi et al., 2018): Solvency, Liquidity, Leverage, Activity, Profitability, and Growth. In each case, we analyze the financial situation of the company by analyzing numerical indicators, and from the past we have experienced the results of the present. Although these indicators are industry-specific, they can be interpreted differently in the primary (mining, agriculture), secondary (processing, machine manufacturing) and tertiary (service, trade) sectors, but there are also sectors that are sector-neutral.

#### *Evaluation of production and service*

Evaluation of production and service consists of analyzing all activities that convert or transfer the expenditures into revenues for goods and services. The main areas of analysis for strategic purposes include: Production Service Process, Capacities and Capacity Utilization, Inventory and Inventory Management, Structure, Preparedness and Efficient Use of Labor, Quality and Quality Management, Quality assurance. Evaluation and certification of production and service is not an easy task. Some of them can be quantified, while more elements are subjective.

#### *Evaluation of research and development*

From a strategic point of view, R & D is not a particularly appreciable aspect of the primary sector producing mass products and small businesses. However, there is the discovery and application of innovation results that can be realized in their own or in clusters, but its numerical values in the Hungarian economy are still not significant. Although today large companies still have the privilege of R & D, there are examples in small and medium businesses to develop new technology or services and running a new start-up.

#### *The management information system*

The Management Information System (MIS) generally refers to a computer system that allows managers to manage, evaluate, and effectively manage organizational units. The management information system is no longer an inevitable tool in our century. It can not only help managers, but also inform employees, "stakeholders" in business.

### *Value chain analysis*

Value chain analysis is a novel approach to analyzing internal factors. Its novelty lies in the fact that it does not take into account traditionally functional areas such as the resource-based approach, or the methodology for analyzing key factors, but is based on building product service closely over time. Basically, it analyzes costs with a specific approach. The method is really effective if the company covers a whole product chain, but it can be used well even if it is limited to the narrower segments of the supply chain. The method is publicized by Porter as it was mentioned in the background.

The complexity of Internal Approach will be developed into the form of *Internal Factor Evaluation (IFE) Matrix*.

There are therefore several approaches to analyzing the internal factors of the business. Whatever we do, we are basically seeking answers to two questions: where we need reinforcement (weaknesses) and what are already the goals to be achieved (strengths) in order to realize our vision and maintain our mission. A suitable method for deciding this and quantifying strengths and weaknesses is the Internal Factor Evaluation Matrix (IFEM). IFEM is characterized by a single number of the strengths and weaknesses of the company, and we can use it to make an assessment of where the company needs to strengthen its vision for the future, and which factors are significant strength can be demonstrated in its business. The essence of the process is to select the most significant 10-20 internal factors that give the company strengths or weaknesses to realize the vision. The method of working out the matrix was worked out by Fred R. David, 2017. in the IFEM.

## **4. Results and Conclusion**

During our educational practice of Strategic Planning we realized that student (especially corresponding students, who still have jobs) really enjoy this subject. A great benefit for them (as managers or employees), that they perform better when they understand how their work affects other areas and activities of the firm. When marketing and manufacturing managers or employees working in related divisions discuss issues related to internal strengths and weaknesses, they gain a better understanding of the issues, problems, tasks, and needs of all the functional areas. In organizations that do not use strategic management, marketing, finance, and manufacturing managers often do not interact with each other in significant ways. Compared to the external audit, the process of performing the internal audit provides more opportunity for participants to understand how their jobs, departments, and divisions fit into the whole organization.(Fred, R. D, 2017) Performing an internal audit thus is an excellent tool or forum for improving the process of communication in the organization.

In an extended paper we could demonstrate the methods of Internal Audit and Approach and the advantages of them through real, organizational examples from operating companies.

## **References**

1. Bittner B., Madai H., Nagy A., Nábrádi A. (ed.) (2018), A stratégiai tervezés gyakorlata. Debreceni Egyetem, Debrecen, pp. 7-158. ISBN 978-963-490-053-5
2. Csath M. (1990), Stratégiai vezetés-vállalkozás. Közgazdasági és Jogi Könyvkiadó, Budapest, pp. 9-205. ISBN 963-222-218-0
3. Csath M. (2004), Stratégiai tervezés és vezetés a 21.században. Nemzeti Tankönyvkiadó, Budapest, pp. 12-36. ISBN 963-19-5251-7
4. David, F. R., David, F. R. (2017), Strategic Management: A Competitive Advantage Approach, Concepts and Cases, 17th Edition. Pearson Education, pp. 32-276. ISBN 978-1-292-14849-6

5. Fülöp Gy. (2008), Stratégiai Menedzsment: Elmélet és gyakorlat. Perfekt Kiadó, Budapest, pp. 11-56. ISBN 978-963-394-748-7
6. Gulyás L. (2014), Stratégiai Menedzsment: Szun-Ce-től a „Kék Óceánig”. JATEPress, Szeged, pp. 19-27. ISBN 978-963-315-204-1
7. Marosán Gy. (2002), Stratégiai menedzsment. Műszaki Könyvkiadó, Budapest. pp. 44-118. ISBN 963-16-3045-5
8. Marosán Gy. (2006), A 21. század stratégiai menedzsmentje. Műszaki Könyvkiadó, Budapest. pp. 130-139. ISBN 963-16-6008-7
9. Porter, M. E. (2006), Versenystratégia. Akadémia Kiadó, Budapest, pp. 41-344. ISBN 963-05-8349-6
10. Sun Tzu, (BC.4. century), The Art of War
11. Whittington, R. (2001), What is strategy – and does it matter? Cengage Learning, London. ISBN 978-1-86152-377-8

## MANAGEMENT OF CREATIVITY OF EMPLOYEES IN SMALL AND MEDIUM-SIZED ENTERPRISES

*Edyta KULEJ-DUDEK*

*Częstochowa University of Technology, Częstochowa, Poland*

*E-mail: edyta.kulej-dudek@wz.pcz.pl*

**Summary:** The aim of this publication was to indicate the factors affecting the creativity of employees and to determine how to manage creativity and ensure that creativity is an integral part of the company. The paper characterizes creativity and its components and indicates how important it is to manage talented employees effectively. Characteristics of creative people were described. Important factors influencing employees' creative attitudes and favouring creativity in the workplace were reviewed and analysed. Activities that can motivate creative employees were identified. It was also indicated how creativity can be stimulated and developed.

**Keywords:** creativity, creativity management, developing creativity, factors influencing employees' creativity, knowledge management, motivation

### 1. Introduction

The subject matter of creativity, its determinants and role in enterprises is extensive and more and more often developed and explored by many researchers. Effective management of creativity and talented employees is essential in the knowledge-based economy and influences knowledge management processes. Well-managed teams composed of talented and creative staff are more involved in performing their tasks, whereas greater job satisfaction strengthens social ties between employees. In many enterprises, it remains impossible to create an environment that is conducive to creativity, innovation and continuous development. This is due to e.g. misconceptions about creativity.

Employees very often have great potential for creativity, which usually goes unnoticed. Creativity is not a natural aptitude. Each employee has a creative potential, which can be gradually developed. The knowledge and experience of employees can help identify different aspects of the problem and generate unconventional and innovative solutions. The creativity of employees increases if competent leaders guide them. Many modern companies and organizations depend on creative employees. Therefore, the ability to manage them is essential. Entrepreneurs should focus on ensuring good conditions and motivating to be involved in creative activity (Jagoda-Sobalak, Łapuńska, 2018; Lemańska-Majdzik, Okręglicka, Gorzeń-Mitka, 2016, pp. 1090-1099; Bylok, Cichobłaziński, Pabian, Zawada, 2015, pp. 45-52).

The aim of this publication was, therefore to indicate the factors affecting the creativity of employees and to determine how to manage creativity and ensure that creativity is an integral part of the company.

## 2. Components and characteristics of creativity

Nowadays, the ability to think creatively and solve problems represents one of the key competences of employees working at virtually every independent position. Creativity is the basis for work, with any action initiated by an idea and a willingness to implement it. However, the ability to create new, unconventional ideas is more and more often a big challenge.

Creativity can be defined as a set of characteristics of a person, allowing for a constant search for new solutions. Employees are the source of creativity in every company. Since creativity is composed of many abilities and skills typical of any employee, it is an element that is intangible and difficult to grasp.

In management science, creativity is often associated with creative thinking, i.e. the ability and skills to create something new or original. It means creating new quality, making discoveries, inventions, or improvements. As stressed by H. Bieniok, a creative person is "someone creative, resourceful, active and dynamic, able to generate and synthesize unusual, unconventional, innovative, original and interesting solutions" (Bieniok, 2014, pp. 49-51).

In the literature, creativity is often identified with creative work (Jerzyk, Leszczyński, Mruk, 2004, p. 9; Nęcka, 2003, p. 17). It is most often defined as "the state or property of being inventive, the ability to create" (Sloane, 2005, p. 17). The creative things are those which "are new and useful to a certain group of people at a certain time". In order for a given idea to be considered creative, it should be characterized by novelty and usefulness (value) (Łukasiewicz, 2012, pp. 62-70).

Many researchers have emphasized that creativity is formed from such components as knowledge, motivation and creative thinking. Knowledge means being familiar with the field in which the person works. Motivation is the willingness to act creatively. Furthermore, creative thinking concerns flexibility in approaching the problem and the ability to utilize a person's full creative potential.

Lloyd indicated four characteristics of creativity (Lloyd, 2009):

- creativity requires the use of imagination,
- creative activity is a purposeful action aimed at achieving a result,
- the effect of creative activity is an original piece of work,
- the effect should be valuable from the standpoint of the adopted goals.

Furthermore, Nęcka (2003, p. 17) emphasized that person's creativity depends on four components:

- expertise,
- ability of creative thinking,
- an entrepreneurial personality,
- internal motivation.

Creativity is a trait that allows a person to open and recognize new ideas, alternatives and opportunities that can help solve problems or communicate with other people.

### **3. Creativity management in the company**

It is critical for managers in enterprises to have the ability to manage creativity and ensure that it is an integral part of the enterprise. One of the main elements of professional management is the development of the organization's environment conducive to the development of employees' creativity and transforming the effects of individual and team creativity into enterprise performance.

Richard L. Florida stressed the development of a new class, the so-called creative class, whose role in innovation processes is the most significant. According to Florida, in order to understand the foundations of the contemporary economy, it is necessary to look deeper and see what it is based on. Its essence is creativity, whereas knowledge and innovation are derivatives of creativity (Słocińska, 2016, pp. 124-127; Ali Taha, Sirková, Ferencová, 2016, pp. 7-17). Placing creativity at the centre of social attention and providing conditions for its development represents an element of the ethos of everyday life (Osika, 2014, pp. 155-164, as cited in Florida, 2012, pp. 6-15).

Many modern organizations depend on a handful of creative employees. Therefore, the ability to manage such employees is essential, especially in terms of knowledge management.

Effective management of talented employees influences all processes of knowledge management, but it is particularly closely related to (Fazlagić, 2014, pp. 160-161):

- knowledge sharing: if managed more effectively, teams of talented employees are more involved in the tasks,
- knowledge creation: the creativity of talented employees increases if they are guided by competent leaders,
- knowledge acquisition: talented employees have many social contacts, participate in industry conferences, receive industry newsletters and read a lot.

The value of talented employees results from their knowledge and creativity. They gain knowledge through experience and regular improvement of their competences. Talented employees are constantly learning. The employer should, therefore, focus on creating the conditions and motivation for creative activities.

### **4. Overview of factors influencing employees' creativity**

The subject matter of creativity, its determinants and role in enterprises is very broad and more and more often developed and explored by numerous researchers. The factors that determine these changes and actions play an important role in the development of the creative environment. Studies conducted worldwide have identified different groups of these factors in organizations and their effect on the creative environment (See: Bugaj M, Szarucki M. (2018); Amabile T., Kramer S. (2011); Krajewska-Nieckarz M. (2016); Styhre A., Sundgren M. (2005)). This effect can be positive, i.e. conducive to the development of creativity, and negative (hindering the development).

Knowledge of the elements conducive to the development of creativity contributes to obtaining guidelines on the elimination of barriers and effective stimulation of the creative potential of employees (Tomczak-Horyń, Knosala, 2018, pp. 215-244, as cited in Karwowski, 2009, p. 19). Hunter and his colleagues carried out a thorough analysis of the factors conducive to creativity in the workplace. The analysis concerned 45 research studies on a

climate conducive to creativity. It allowed for the identification of the following 14 factors (Hunter, 2007, p. 105):

- positive peer group,
- positive relations with the superior,
- resources,
- challenge,
- mission clarity,
- autonomy,
- positive interpersonal exchange,
- intellectual stimulation,
- support for the management staff,
- reward orientation,
- flexibility and risk-taking,
- focus on the product,
- participation,
- organizational integration.

According to other authors, significant factors affecting creative attitudes of employees include (Korkosz-Gębska, 2014, p. 956-966, as cited in Szopiński, 2013):

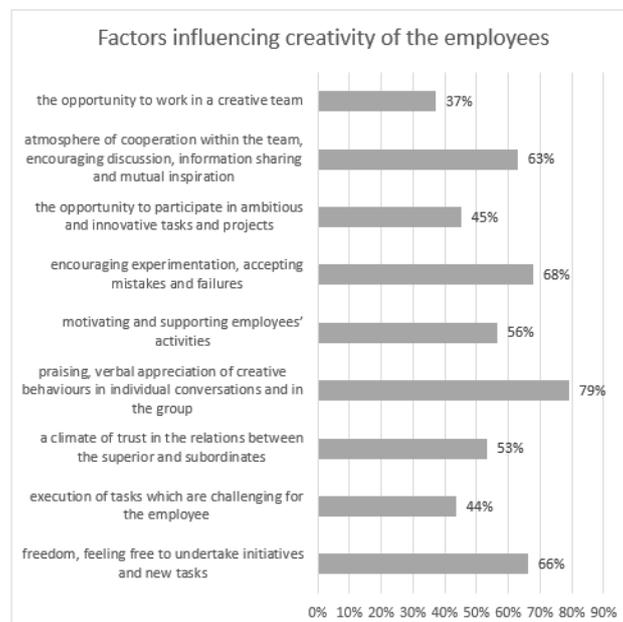
- environment that supports the employee in his or her creative activity, friendly climate in the company, appreciation of creative initiatives,
- working atmosphere, teamwork that encourages discussions that contribute to the creation of innovative ideas,
- leadership style: autocratic style does not favour creativity in the enterprise, and inhibits the independence and autonomy of employees,
- choice of the right people for the right positions; clarity of their roles and place in the enterprise,
- clarity of responsibilities, assignments and expectations towards employees,
- matching employees' skills, interests and personality traits to their duties,
- constructive criticism, providing employees with clear guidance on expected behaviours.

Isaksen, Dorval, Treffinger also highlighted the factors conducive to the development of a creative working environment, which they termed stimulants (Bugaj, Szarucki, 2018, pp. 133-145, as cited in Isaksen, Dorval, Treffinger, 2011, p. 183). Examples of stimulants include freedom, sense of control, encouragement, collaborative atmosphere, challenge, appropriate recognition and reward, openness to trying something different, ability to disagree about issues without personalizing them, and important, worthwhile and meaningful projects or tasks to work on.

As part of the author's studies, the factors influencing the creativity of employees in small and medium-sized enterprises were identified. An analysis of Polish and foreign literature was used to prepare the research assumptions of the creative environment and to plan the pilot project. The research was conducted in 62 small and medium-sized enterprises from the Silesian Voivodeship and attempted to identify important factors influencing employees' creativity. The study aimed to identify the main factors influencing employees' creativity and to determine whether employers created an environment conducive to creativity and whether they encouraged creative behaviours.

The survey showed that only 39% of the respondents indicated that there was an environment conducive to creativity, innovation and continuous development; half of the respondents stated that such activities do not occur in their enterprise. Furthermore, 68% of the respondents indicated that there were teams of people with different thinking styles, knowledge and experience in their enterprises. This was mainly explained by the randomness of such actions rather than by the deliberate planning of diversity. Some workers had long working experience whereas young people were recruited to replace those retired. Respondents were also asked about the practice of using effective systems of rewarding and motivating employees to be involved in creative activities. 15% of the respondents confirmed that these measures are applied every time, 23% indicated that they are applied quite often, 29% on an occasional basis, while 34% believe that they do not apply such systems in their companies. This is a worrying phenomenon, particularly in the context of workers' expectations.

In the opinion of respondents, praising and appreciation towards a given employee during individual conversations and in a group, are the most important factors influencing employees' creativity. This factor was indicated by as many as 79% of respondents (Figure 1.). Competition, which distorts trust and intensifies criticism, and excessive control that limits decision-making during performing tasks and reduces the sense of responsibility and internal motivation, is not conducive to openness and creativity. Employees with more freedom and autonomy will be more inclined to generate creative solutions compared to those who are excessively controlled by their superiors and co-workers. Therefore, it is worth giving the employees some independence and motivating them to act independently. This is confirmed by 68% of the respondents indicating that they were encouraged by managers to experiment by accepting mistakes and failures that may happen during creative activities, while 66% of the respondents declared freedom to undertake initiatives and new tasks.



**Figure 1: Factors influencing creativity of the employees in Polish small and medium-sized enterprises**  
*Source: author's own elaboration*

In most employees, the assessment of ideas raises uncertainty and unwillingness to invent unconventional solutions. Fear of being evaluated and criticised by other employees or a superior is one of the key problems of creativity at the workplace and the effectiveness of

creative work of entire teams. Therefore, it is important for the respondents to have a friendly atmosphere of cooperation in a team that encourages discussion, information and knowledge sharing and mutual inspiration while performing creative tasks, which was indicated by 63% of the respondents. The least significant factor was the possibility to work in a creative team: only 37% of respondents indicated this factor.

## **5. Developing creativity among employees**

There are many guidelines in the literature on how to create the environment conducive to creativity. Creative solutions allow for the implementation of innovations and unconventional actions. It should be remembered, however, that creativity is not an innate predisposition, and each employee has a creative potential that can be regularly developed. The knowledge and experience of employees can help identify different aspects of the problem and generate unconventional and innovative solutions.

There are several ways to approach and support creativity in an enterprise. These include recruitment of creative employees, developing the skills of current employees or eliminating barriers to creativity within the organization. When recruiting creative employees, it is worth looking for people with broad knowledge, diverse interests and passion, and those characterized by cognitive openness, curious about the world and creative. It is also important to develop different skills of current employees, for example through training of creative thinking.

The organization and its representatives must provide the right conditions to develop the creative skills of employees. The key issues here are good communication, motivation to act creatively and appreciation of new ideas (Karwowski, 2009, p. 19).

Stimulating creativity can also be achieved through:

- creating teams of people of different age: senior experts with a lot of knowledge and young people with fresh thinking and new ideas,
- right choice of team members according to their intellectual abilities, e.g. people with the ability to synthesize are important during the period of generating ideas, whereas elimination of the ideas occurs better if people with analytic abilities are involved,
- maintaining diversity within the company in terms of personality,
- gathering and encouraging even the most improbable ideas from employees, as they are often the source of innovation.

Whether at individual or group levels, stimulating creativity is not easy. There are numerous factors that hinder its development. Eliminating these factors requires a lot of effort from the enterprise, oriented not only towards changing the principles of work organization, ways of communicating between the superior and his or her subordinates or management styles but above all, towards changing the mentality of employees (Łukasiewicz, 2012, pp. 62-70).

## **6. Conclusion**

Creative employees cope more easily with difficult situations, have a high ability to achieve their goals, are more persistent at work, and maintain their energy at a high level. This may improve performance of the entire enterprise and is also reflected in the company's range of products or innovativeness of services and products. Nowadays, it is particularly desirable to build teams working creatively to solve the problems they face.

The creativity of employees in the enterprise is one of the key elements of work performance in contemporary business reality. Without an active and creative approach to emerging opportunities, challenges and problems, it is becoming increasingly difficult to stay on the market. Enterprises should strive to encourage the most favourable climate for its development. Therefore, it is the duty of the company's managers to create teams composed of people with different thinking styles, different levels of knowledge and experience, using appropriate systems of rewarding and motivating employees, building a climate of cooperation, and implementing modern systems of management of knowledge and ideas.

## References

1. Ali Taha V., Sirková M., Ferencová M. (2016), The Impact of Organizational Culture On Creativity And Innovation, "Polish Journal of Management Studies", 14 (1), DOI: 10.17512/pjms.2016.14.1.01
2. Amabile T., Kramer S. (2011), *The Progress Principle: Using Small Wins to Ignite Joy, Engagement, and Creativity at Work*, Harvard Business Review Press, Boston.
3. Bieniok H. (2014), *Kreatywność jako źródło nowoczesności i rozwoju przedsiębiorstw*, „ZN Politechniki Śląskiej, Seria: Organizacja i Zarządzanie”, z. 73, nr 1919.
4. Bugaj M, Szarucki M (2018), *Czynniki determinujące kreatywne środowisko w uniwersytecie*. Studia i prace Kolegium Zarządzania i Finansów, Zeszyt Naukowy 161/2018, Szkoła Główna Handlowa w Warszawie, Oficyna Wydawnicza SGH.
5. Bylok F., Cichobłaziński L. Pabian A., Zawada M. (2015), *Role of a Manager in Creating Organizational Trust in Small and Medium-Sized Enterprises*, Academic Conferences and Publishing International Limited, Reading.
6. Florida R.L. (2012), *The Rise of the Creative Class: Revisited*, Basic Group, New York.
7. Hunter S.T., Bedell K.E., Mumford M.D. (2007). *Climate for Creativity: A Quantitative Review*. "Creativity Research Journal", 19, DOI: 10.1080/10400410709336883.
8. Isaksen S. G., Dorval K. B., Treffinger D. J. (2011), *Creative Approaches to Problem Solving. A Framework for Innovation and Change*, 3 rd ed., Sage, London.
9. Jagoda-Sobalak D., Łapuńska I. (2018), *Impact of Employees' Creativity and Quality of Communication on the Innovative Potential of the Company*. Proceedings of the 32st International Business Information Management Association Conference, Editor Khalid S. Soliman, Seville, Spain.
10. Jerzyk E., Leszczyński G., Mruk H. (2004), *Kreatywność w biznesie*. Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań.
11. Karwowski M. (2009), *Klimat dla kreatywności*. Difin, Warszawa.
12. Korkosz-Gębska J. (2014), *Kreatywność i innowacje w zarządzaniu nowoczesnym przedsiębiorstwem [in:] Innowacje w Zarządzaniu i Inżynierii Produkcji*, Oficyna Wydawnicza Polskiego Towarzystwa Zarządzania Produkcją.
13. Krajewska-Nieckarz M. (2016), *Uwarunkowania kreatywności pracowników i twórczości organizacyjnej w kontekście zmian*, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, nr 457, DOI: 10.15611/pn.2016.457.04.
14. Lemańska-Majdzik A. Okręglińska M., Gorzeń-Mitka I. (2016), *Selected Development Factors of Small and Medium Enterprises*, International Business Information Management Association (IBIMA), Norristown.
15. Lloyd K., Smith P. (2009), *Developing Creativity for Learning in the Primary School a Practical Guide for School Leaders*, National College for School Leadership.
16. Łukasiewicz G. (2012), *Architektura zarządzania zasobami ludzkimi wspierająca kreatywność pracowników [in:] red. Lipka A., Waszczak S., Ekonomia kreatywności. jakość kapitału ludzkiego jako stymulator wzrostu społeczno-gospodarczego*, Studia Ekonomiczne, Zeszyty Naukowe Wydziałowe Uniwersytetu Ekonomicznego w Katowicach, Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach, Katowice.
17. Nęcka E. (2003), *Psychologia twórczości*. Gdańskie Wydawnictwo Psychologiczne, Gdańsk.

18. Osika G. (2014), *Podnoszenie kreatywności pracowników – konteksty społeczne*, Zeszyty Naukowe Politechniki Śląskiej Seria: Organizacja i Zarządzanie z. 72, Nr kol. 1918.
19. Sloane P. (2005), *Twórcze myślenie w zarządzaniu*. Gdańskie Wydawnictwo Psychologiczne, Gdańsk.
20. Słocińska A. (2016), *Requirements of Improving Knowledge Sharing Behavior. Creativity Context*, [in:] (red.) Formankova S., *Trends of Management in the Contemporary Society*, Mendelova Univerzita v Brne, Brno.
21. Styhre A., Sundgren M. (2005), *Managing Creativity in Organizations: Critique and Practices*, Palgrave Macmillan, New York.
22. Szopiński T. (2013), *Kreatywność i jej znaczenie w biznesie*, [in:] red. Kosieradzka A., *Metody i techniki pobudzania kreatywności w organizacji i zarządzaniu*, Wydawnictwo edu-Libri, Kraków-Warszawa.
23. Tomczak-Horyń K., Knosala R. (2018), *Prokreatywna przestrzeń przedsiębiorstwa produkcyjnego*, *Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania 52/2*, Wydawnictwo Naukowe Uniwersytetu Szczecińskiego, Szczecin.

## OPTIMIZING RESOURCES ASSIGNMENT FOR BALANCING MODULAR PRODUCTION LINE

*Tuan-anh TRAN<sup>1</sup>, Miklós DARÓCZI<sup>2</sup>, János ABONYI<sup>3</sup>, Tamás RUPPERT<sup>4</sup>*

*<sup>1, 2</sup> Szent István University, Gödöllő, Hungary*

*<sup>3, 4</sup> University of Pannonia, Veszprém, Hungary*

*E-mail: anhtt.vck@vamaru.edu.vn*

**Summary:** Unbalance in manufacturing line is commonplace in production, which causes waste in manufacturing lead-time and productivity. In a modular production system, due to large number of product variants, it is more challenging to create a production plan for every variant, which contains reasonable assignment of resources (human labour, equipment, time) into workstations, and by the meantime complies with the requirement of productivity and balance status. This research provides a framework to find the most appropriate assignment of resources during production of different product variants in a modular production system, by using multilayer network approach.

**Purpose:** The research finds a way to support the assignment activity of assembly line.

**Design/methodology/approach:** Based on the literature review, a new requirement of the assembly line is discussed. Thus, an algorithm is modified based on a combination of Simulated Annealing (SA) with Hungarian algorithm, to perform meta-heuristics search to find the best assignment, take into consideration the requirement of line balance status.

**Findings:** The proposed algorithm can return an output space of possible assignment, with vertexes are the assignments with the combination which yields the best result in one criteria. The final decision can be made according to different criterion.

**Research limitations:** This research only copes with the unbalance of the work activities statically. There are other possible dynamic balancing methods which can be studied in the future, such as modifying production sequence, flexible cycle time, etc.

**Practical implications:** This optimization can be performed during the production planning phase, by which the production targets such as desired productivity, balance status, human and equipment utilization can be well defined.

**Social implications:** In this research, the capability of human labour is taken into consideration in the productivity and balance status of modular manufacturing line, as another type of resource.

**Keywords:** line balancing, modular production, optimization, resources management

### 1. Introduction

Assembly Line Balancing Problem (ALBP) is commonplace in manufacturing, since unbalance causes waiting time, lower productivity, longer lead-time and higher production cost. In context of modular production, many product variants are produced on the same line to reduce the cost, makes ALBP more problematic (Ruppert, 2018; Radatz et al., 2019). Besides traditional constraints used in ALBP, there are more data sources in the Internet of Things (IoT) to aid balancing process (Peres et al., 2018; Ruppert and Abonyi, 2018). These information can be studied with the help of network science, to get deeper insight of the system (Boccaletti et al., 2014; Ruppert, Honti and Abonyi, 2018).

The aim of this research is to find the suitable framework to utilize the big data gathered from IoT, to balance the assembly line, by using multilayer network representation of production system. The suggested algorithm proposed the optimal assignments of human and facility resources for different product variant in modular manufacturing, takes into consideration the line balance status, labour uncertainty, equipment utilization, which were neglected in previous studies.

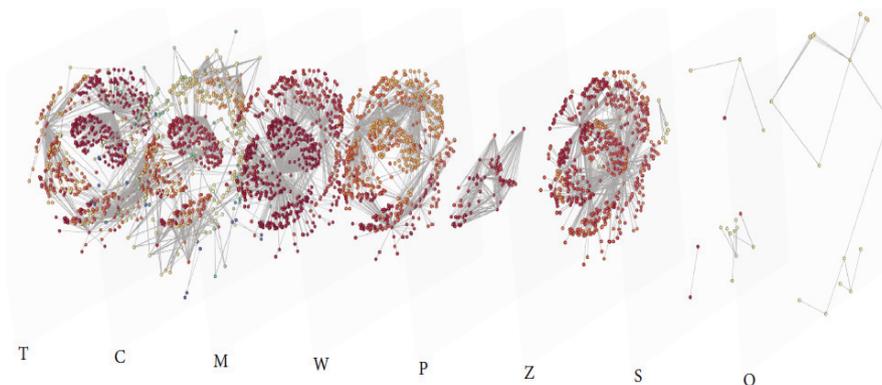
## 2. Literature review

In reality, the most frequent ALBP is defining the possible balance for a given amount of resources: number of stations and cycle time, in which no precedence constraint is violated (Hoffmann, 1963; Daudt, 2013). Traditional resources are constraint of resource (Bukchin and Tzur, 2000), equipment cost (Pereira, Ritt and Vásquez, 2018). Constraints such as human labour, machine utilization (Nguyen Thi et al., 2016; Dolgui and Gafarov, 2017; Lolli et al., 2017) were discussed, but were not incorporated into balancing algorithm.

In our approach, we assume that some tasks using the same resources (e.g.: jigs and fixtures) need to stay in one workstation, to avoid duplicating the number of equipment and creating additional time in repeating fixing-unfixing motions.

The other constrain is the skill level of operators, since the inexperienced operator requires additional time compared with the standard processing time.

Due to the complexity of manufacturing system, network science is suggested to deployed (Vathy-fogarassy and Abonyi, 2016; Lin and Chen, 2017). Multilayer network is used by (Ruppert, Honti and Abonyi, 2018) to represent modular manufacturing system (Figure 1), and conduct analysis based on it. However, in modular production, these concepts were still in developing phase.



**Figure 1: Multilayer network representation of production system**

*Source: Ruppert, Honti and Abonyi, 2018*

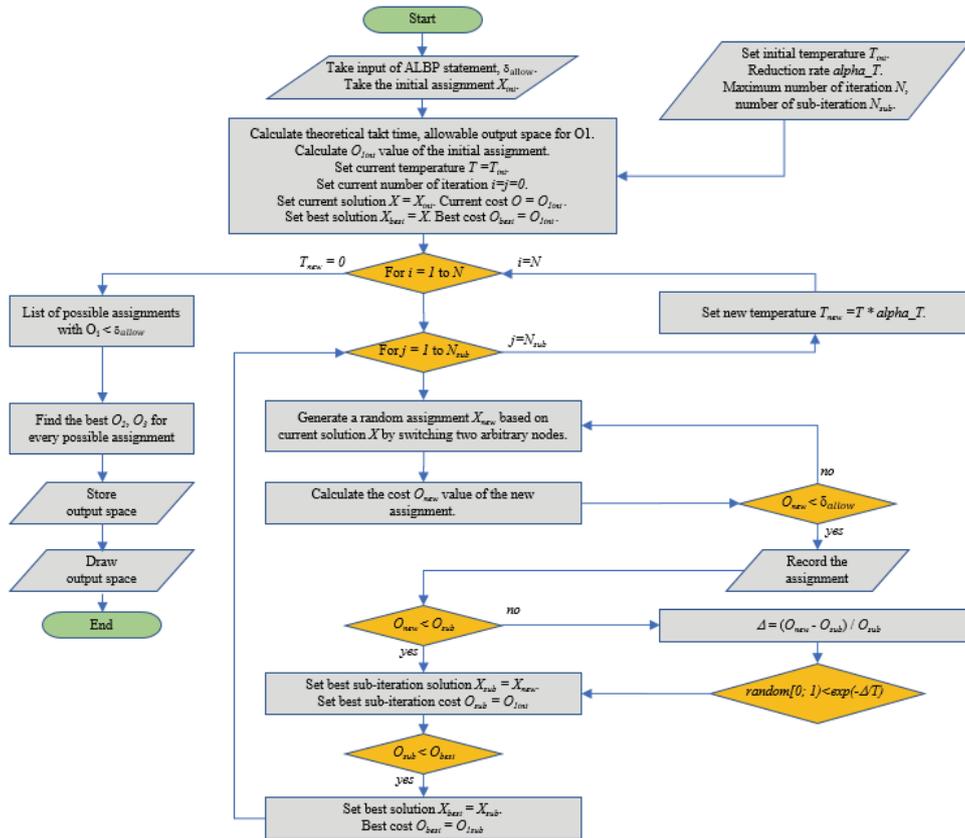
## 3. Methodology

This research uses the multilayer network approach, to utilize big data gathered from IoT. More information considered, more layers are created and assessed. The optimization algorithm is based on the simulated annealing algorithm suggested by (Leitold, Vathy-fogarassy and Abonyi, 2018), and the modification of Hungarian algorithm (Jonker and Volgenant, 1986). Inputs and output are listed in (Table 1), (Figure 2) shows the algorithm, and its cost objectives are described in (Table 2).

**Table 1: The inputs and output of the optimization algorithm**

Input	Process	Output
Work instruction (task name, precedence, task time). Number of workstations. Product modules. Skill record. List of workers, equipment.	Set an initial assignment. Calculate resultant status. Analyze the situation. Run metaheuristics search to improve cost and find optimal assignment.	Assignments with: smallest unbalance, smallest additional time, smallest number of equipment.

Source: own-study



**Figure 2: Optimization algorithm**

Source: own-study

**Table 2: The cost objectives of the optimization algorithm**

Name	Function	Name	Physical meaning	Priority
$O_1$	$\sum_1^{N_{ws}}  \delta_i  / N_{ws}$ (%)	Balance status	Deviation of workstation time from practical takt time.	1 <sup>st</sup>
$O_2$	$N_{de} \times 100 / N_e$ (%)	Equipment utilization	Ratio of duplicated equipment.	2 <sup>nd</sup>
$O_3$	$\sum_1^{N_{ws}} T_{add}^i / T_{theo}$ (%)	Labor uncertainty	Ratio of additional time to practical takt time.	2 <sup>nd</sup>

$\delta_i$  is the deviation of real workstation time from the theoretical takt time of a workstation  $WS_i$ .

$N_{de}$  is the number of duplicated equipment.  $N_e$  is the number of necessary equipment.

$T_{add}^i$  is the additional time of workstation  $WS_i$ .  $T_{theo}$  is the theoretical takt time.

$N_{ws}$  is the number of workstations.

Source: Own-study

#### 4. Results and Discussion

The modular production system in the case study can produce four modules (Table 3), which can form four types of product variants (Figure 3). The production tasks are listed in (Table 4), along with the name of fixtures need to be used. The precedence of tasks is described in (Figure 4). (Table 5) gives the time to use fixture, and (Table 6) gives the additional time of inexperience operators.

Table 3: List of modules and product variants

Module name	Module function	Product A	Product B	Product C	Product D	Usage frequency
Core	Basic feature	1	1	1	1	100%
Mod 2	Audio system	1	1			60%
Mod 3	Heated seat	1		1		40%
Mod 4	Reinforcement	1	1	1		90%

Source: own-study

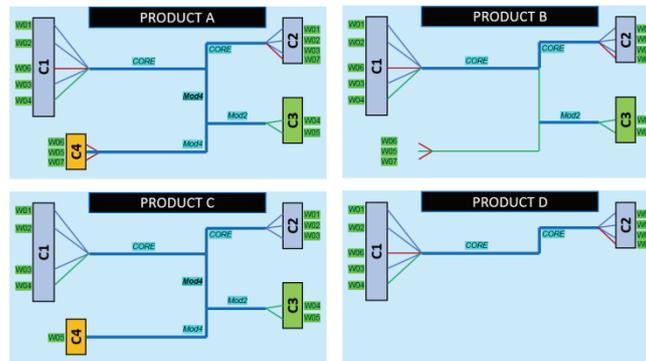


Figure 3: Four types of product variants

Source: own-study

	C1	C2	C3	C4	W01_A	W01_B	W02_A	W02_B	W03_A	W03_B	W04_A	W04_B	W05_A	W05_B	W06_A	W06_B	W07_A	W07_B	CORE_1	CORE_2	Mod2_3	Mod4_4	Mod4_C	OC
C1	1																							
C2		1																						
C3			1																					
C4				1																				
W01_A					1																			
W01_B						1																		
W02_A							1																	
W02_B								1																
W03_A									1															
W03_B										1														
W04_A											1													
W04_B												1												
W05_A													1											
W05_B														1										
W06_A															1									
W06_B																1								
W07_A																	1							
W07_B																		1						
CORE_1																			1					
CORE_2																				1				
Mod2_3																					1			
Mod4_4																						1		
Mod4_C																							1	
OC																								1

Figure 4: Precedence constraint

Source: own-study

**Table 4: Working instruction**

Task	Type	Time (sec)	CORE	Mod 2	Mod 3	Mod 4	Fixture
C1	Connector handling	4	1				C1
C2	Connector handling	3	1				C2
C3	Connector handling	2		1			C3
C4	Connector handling	3				1	C4
W1A	Insert 1 <sup>st</sup> end, routing	10	1				C1
W1B	Insertion 2 <sup>nd</sup> end	5	1				C2
W2A	Insert 1 <sup>st</sup> end, routing	10	1				C1
W2B	Insertion 2 <sup>nd</sup> end	5	1				C2
W3A	Insert 1 <sup>st</sup> end, routing	10	1				C1
W3B	Insertion 2 <sup>nd</sup> end	5	1				C2
W4A	Insert 1 <sup>st</sup> end, routing	10		1			C1
W4B	Insertion 2 <sup>nd</sup> end	5		1			C4
W5A	Insert 1 <sup>st</sup> end, routing	10		1			C3
W5B	Insertion 2 <sup>nd</sup> end	5		1			C4
W6A	Insert 1 <sup>st</sup> end, routing	10			1		C1
W6B	Insertion 2 <sup>nd</sup> end	5			1		C3
W7A	Insert 1 <sup>st</sup> end, routing	10			1		C3
W7B	Insertion 2 <sup>nd</sup> end	5			1		C2
CO1	Taping	15	1				
CO2	Taping	13	1				
Mo3	Taping	11		1			
Mo4	Taping	17				1	
MC	Taping	15				1	
QC	QC final	10	1				

*Source: own-study***Table 5: Time to use fixtures**

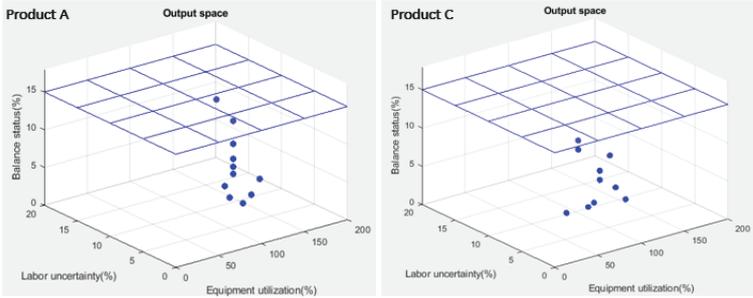
Task	Time (sec)	Core	Module 2	Module 3	Module 4
Fixing + unfixing C1	2	1			
Fixing + unfixing C2	2	1			
Fixing + unfixing C3	2		1		
Fixing + unfixing C4	2				1

*Source: own-study***Table 6: Additional time of labour uncertainty**

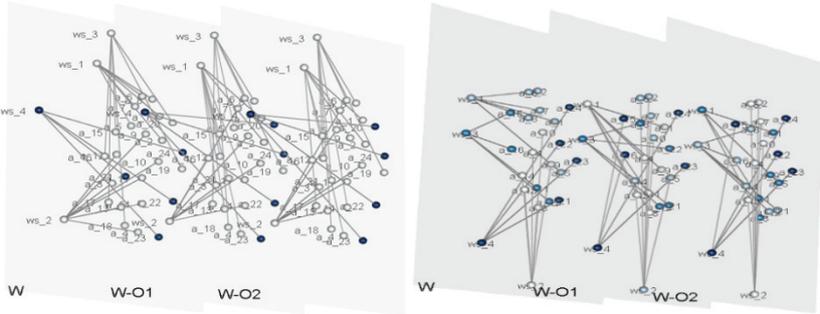
	O1	O2	O3	O4	O5	O6
Fixture C1	0	1	0	0	8888	0
Fixture C2	0	0	3	4	0	2
Fixture C3	0	2	0	5	0	2
Fixture C4	1	0	2	8888	1	3

*Source: own-study*

The optimization algorithm then generated different work assignment for different product variants (*Fig 5*) depicts output spaces of product A and product C (*Figure 6*) show the optimal assignment of tasks into workstations. The detailed cost values is listed in (*Table 7*).



**Figure 5: Different output spaces of different product variants**  
 Source: own-study



W: the initial assignment. W-O1: assignment with the best O1.  
 W-O2: assignment with the best O2.

**Figure 6: Different assignment of different product variants**  
 Source: own-study

**Table 7: Cost values of different assignments**

	Product A			Product C		
	O1	O2	O3	O1	O2	O3
Best O1	1,01%	175%	14,14%	2,38%	100%	7,14%
Best O2	2,02%	125%	8,08%	4,76%	100%	8,08%

Source: own-study

The case study illustrates the capability of the approach and the optimization algorithm to optimize work assignment for modular production, take into consideration time, human labour, equipment as different types of resources.

**5. Conclusion**

ALBP of modular production is solved theoretically with the aid of multilayer network approach. A framework to use miscellaneous data from IoT is suggested, with an optimization algorithm to find the possible output space of possible assignment. Multilayer network successfully represents the complexity of the production system, provide a platform to diagnose, analyse, improve and optimize the current production status. Process engineers and line supervisors can use the result as reference to carry out the production planning, with resources assignment.

This study still in lack of absenteeism, and dynamic approach of production sequence. Other methods can be considered such as dynamic cycle time, optimal sequencing. These shortcomings can be targeted at for future research.

## References

1. Boccaletti, S. et al. (2014), '*The structure and dynamics of multilayer networks*', Physics Reports. Elsevier B.V., 544(1), pp. 1–122.
2. Bukchin, J. and Tzur, M. (2000), '*Design of flexible assembly line to minimize equipment cost*', IIE Transactions, 32(7), pp. 585–598.
3. Daudt, C. G. (2013), '*Applying Dynamic Programming to Assembly Line Balancing and Sequencing Problems*'. Federal University of Rio Grande Do Sul.
4. Dolgui, A. and Gafarov, E. (2017), '*Some new ideas for assembly line balancing research*', IFAC-PapersOnLine. Elsevier B.V., 50(1), pp. 2255–2259.
5. Hoffmann, T. R. (1963), '*Assembly Line Balancing with a Precedence Matrix*', Management Science, 9(4), pp. 551–562.
6. Jonker, R. and Volgenant, T. (1986), '*Improving the Hungarian Assignment Algorithm*', Operations research letters, 5(4), pp. 171–175.
7. Leitold, D., Vathy-fogarassy, A. and Abonyi, J. (2018), '*Network Distance-Based Simulated Annealing and Fuzzy Clustering for Sensor Placement Ensuring Observability and Minimal Relative Degree*', Sensors.
8. Li, Y. et al. (2017), '*Complex networks in advanced manufacturing systems*', Journal of Manufacturing Systems. The Society of Manufacturing Engineers, 43, pp. 409–421.
9. Lin, Y. C. and Chen, T. (2017), '*A ubiquitous manufacturing network system*', Robotics and Computer-Integrated Manufacturing. Elsevier, 45, pp. 157–167.
10. Lolli, F. et al. (2017), '*Stochastic assembly line balancing with learning effects*', IFAC-PapersOnLine. Elsevier B.V., 50(1), pp. 5706–5711.
11. Nguyen Thi, L. et al. (2016), '*Lean Line Balancing for an Electronics Assembly Line*', Procedia CIRP. Elsevier B.V., 40(1), pp. 437–442.
12. Pereira, J., Ritt, M. and Vásquez, Ó. C. (2018), '*A memetic algorithm for the cost-oriented robotic assembly line balancing problem*', Computers and Operations Research. Elsevier Ltd, 99, pp. 249–261.
13. Peres, R. S. et al. (2018), '*IDARTS – Towards intelligent data analysis and real-time supervision for industry 4.0*', Computers in Industry. Elsevier, 101(October 2017), pp. 138–146. doi: 10.1016/j.compind.2018.07.004.
14. Radatz, H. et al. (2019), '*Selection of equipment modules for a flexible modular production plant by a multi-objective evolutionary algorithm*', Computers and Chemical Engineering, 123, pp. 196–221.
15. Ruppert, T. (2018), '*Industrial Internet of Things based Cycle Time Control of Assembly Lines*', in IEEE International Conference on Future IoT Technologies (Future IoT).
16. Ruppert, T. and Abonyi, J. (2018), '*Software sensor for activity-time monitoring and fault detection in production lines*', Sensors (Switzerland), 18(7). doi: 10.3390/s18072346.
17. Ruppert, T., Honti, G. and Abonyi, J. (2018), '*Multilayer Network-Based Production Flow Analysis*', Complexity, 2018.
18. Vathy-fogarassy, A. and Abonyi, J. (2016), '*Scalable Co-Clustering using a Crossing Minimization – Application to Scalable co-Clustering using a Crossing Minimization – Application to Production Flow Analysis*', Acta Polytechnica Hungarica, (March).

## MODELLING CULTURAL CONSUMPTION OF MOVIES: A THEORETICAL ANALYSIS OF CONSUMER BEHAVIOR, SERVICE PROCESS AND CULTURAL CONSUMPTION MODELS

*Ádám HORVÁTH<sup>1</sup>, Balázs GYENGE<sup>2</sup>*  
*<sup>1,2</sup> Szent István University, Gödöllő, Hungary*  
*E-mail: horvath.adam.benedek@gtk.szie.hu*

### **Summary:**

**Purpose:** This paper aims to analyze the concept and main features of movie watching, as a form of cultural consumption, while also aiding in the preparation to create a specific concept model of movie consumption. This model to be created would explore the consumer's black box in detail as well as summarize all influencing and decisive attributes, which might play a role in the choices regarding movies as unique products, as well as their other (but still closely related) behaviors beyond movies.

**Design/methodology/approach:** The paper explores earlier models made on the field of consumer- and buyer behavior, as well as certain service process models for their approach and some decision models made specifically about cultural consumption, thus establishing a proper background to further support the creation of the research model. The paper will also examine the prospective elements of the model in more detail, thus preparing for the creation of a concept model what will both serve as a backbone to the future primary research, and be validated by it.

**Findings:** The research has identified that for the most part, movies as products (or even more, as unique services) are well defined by the general product life-cycle model. Each independent cycle can be identified in the movies 'lifespan', from the introduction of a starting production all the way to the long decline/extension, when most movies leave the silver screen to enter the domain of the television / mobile screens. Through the analyzed models the paper has also highlighted various general motives and mechanisms that might prove to be true to movie consumption as well.

**Research limitations:** The research was limited by the fact that currently it only included theoretical approaches, as it is mainly aiding the creation of the model for further primary research. Another limiting factor was that the research (and the analyzed models) mainly focused on the demand side, while the supplier side of movies (be it movie makers or distributors) only appeared indirectly, even though their approach carries heavy influence on the performance of a movie and its surroundings.

**Keywords:** behavior model, consumer behavior, cultural marketing, movie consumption

### **1. Introduction**

In the field of cultural markets, culture can be seen as a creative and performing activity, in which artistic/aesthetic value, cultural product are created. Under the term 'cultural consumption', we may think of activities that involve the reception and consumption of these artistic products through entertainment, leisure or deep thoughts. Consumers thus gain experience goods, which are served through not only the artistic creations, but all the related services and their host environment (Pavluska, 2014). Based on the experience-like nature that follows from the unique production and consumption of cultural goods, Petró (2002) pointed out that in their case the term 'throughput' (the measure of which is ultimately

measured by the number of people gaining access to the offered experience goods). determines how much they have received for the adventurous product offered) is more justified than the regular ‘output’.

There are many ways to access and watch a particular movie – just going by the display size, we can make a list starting from the enormous IMAX cinemas all the way to the screens of smartphones in our pockets. This results in a broad spectrum of consumer behavior with movies as unique products, or rather as unique cultural services. All the while we must not forget that the carrier itself (be it digital access, DVD/Bluray disc or even a movie ticket) ultimately only mediates, as it only provides the opportunity to receive the experience (Petró, 2002). The relation between cultural goods (with movies among them) and service marketing was pointed out in the works of Pavluska (2014) as well as Kotler and Keller (2016), and Kandikó (2010), who referred to movies as both tangible products and service products. All the while it should be highlighted that many of the influencing effects associated with the film may have affect other behaviors even beyond watching movies (be it product placements or related merchandising products, but there are many other forms of this occurrence as well).

The aim of this study is to create a theoretical base for analyzing movie consumption behavior, which will further aid in the creation of our own concept model. Consumer and buyer behavior models (in addition to aggregating existing knowledge) provide an excellent starting point for further research, thus can be used in such area-specific research, like cultural consumption and, in particular, movie related behaviors, with all their unique influencing and decision-making factors. The different views and different types of models of the various schools help illustrate the factors that influence movie consumption as a singular process. The two main aspects of selecting the presented models were their historical significance and their function mechanism that could be applied to movie consumption. Considering the latter aspect, we have also showcased such models in our study that only have a looser (or seemingly none whatsoever) connection towards the topic at hand. Thus, as an alternative grouping method (or as evaluation criteria), we could distinguish between the primary (closely related to the topic) and the inspirational (partially related to the topic) models, from which only certain specific ideas will be used going forward.

## **2. Literature review**

Models of consumer and buyer behavior, similarly to service process models aggregate all existing knowledge in a structured way. They also provide an excellent starting point for further research, even for such specific fields, like cultural consumption (and the various behaviors related to movie watching).

### ***2.1. Consumer and buyer behavior models***

The first step in modeling consumer behavior is to review models of general consumer and buyer behavior. During their creation, the researchers were driven by the need for a more accurate description of the purchasing decision process, the influencing factors of which are closely related to consumption (which provides a framework for purchasing), though the two areas are separated in most cases (Töröcsik, 2016). Buyer behavior models may be grouped in several ways, Lehota (2001) distinguished the so-called stochastic (fe. choice of brand, purchase location, purchase time) and structural models. This latter group was further broken down into partial and complete models. While partial models only examine separate parts of the decision-making process, differentiating between macroeconomic-, psychological- and sociological models; complete models cover the whole process. The following models belong

in the latter, the primary goal of which was to capture the general features of the purchasing decision process. Apart from a few exceptions (such as Pilgrim and Grunert models, which we examined for their approach), no distinction was made based on the characteristics of each product group (Hofmeister-Tóth, 2006).

The behavioral model developed by Nicosia (1966) focused primarily on the circular relationship between the company and its potential consumers. The interaction between the two parties consists of corporate communication (marketing messages) on one side, and the consumers' purchasing decisions (active or passive) on the other, ultimately both trying to influence the other. In the explanation of the model, Nicosia has also pointed out that the model could be set in motion as a result of activity in any of its steps (Hofmeister-Tóth, 2006; Milner, Rosenstreich, 2013).

The model created by Howard and Sheth (1969) drew attention to the importance of input variables in purchasing-decision processes (highlighting the effects of both the social and the marketing stimuli) and the expected decisions that were depending on them. As a critique of the model, it can be highlighted that consumers do not always go through all the steps of the model, and the model is too complicated for routine purchases (Milner, Rosenstreich, 2013). To interpret consumer behavior, Kotler and Keller (2016) built a stimulus-response model. Various marketing and environmental factors enter the consumer's mind (which they referred to as the black box), where different psychological processes mix with other consumer characteristics that ultimately affect the consumer's decision-making process. As a result to the workings of the black box we get to the purchase decision itself, which may concern the product, brand, dealership, purchase quantity, purchase time or payment method.

Töröcsik (2016) created a similar base model. While summarizing the substantive correlations, Töröcsik showed a weak effect of environmental stimuli on buyer habitus (which is the relatively stable attitude of a person towards purchases), distinguishing it from the transaction (the particular purchase, its current situation and circumstances) as well as the consequences of the process (for the product, the purchase or the customer itself).

The Engel, Blackwell and Miniard (2006) model examined the consumer decision-making in a complex way. In their complicated process system, they attempted to map the mind of the consumer, focusing on the different stages of the decision-making process: recognizing the problem, finding information, evaluating the alternatives, making the decision, following the consequences (in case of purchase: consumption and evaluation, which may carry a satisfied and unsatisfied outcome as well, which will also affect future purchases through memory). The operation of the model is similar to that of the Howard-Sheth model in that it can only be fully applied to products and services where the consumer has a high interest and there are significant differences between the brands.

Pilgrim's (1957) food-consumption related model was first and foremost highlighted because of its approach. Based on its logical framework, it could also be classified among the product group related models. Perception plays a key role in the model, whereby the consumer's decision is shaped by the interaction of three factors: the product itself and its characteristics, the person, and the economic and social factors.

Based on the work of Pilgrim (1957), Grunert et al. (1996) created the food-oriented lifestyle model. In their work, they emphasized that the relationship between the product and the value that can be derived from it, in certain cases can only be indirect, as the derived value is highly

dependent on the situation in which it is used as well as the product itself. This highlights both the difficulty consumers have to face, while trying to match the expected value to their choice, and also the freedom they gain by being able to gain value in whatever way they choose. In their model Grunert et al. identified this freedom of consumption of the various products as expressions of different lifestyles.

## ***2.2. Service process models***

It stems from the nature of watching movies that they often do not even appear as physical products in the hands of consumers; be it a visit to a movie theatre, a variety of home movie watching methods (both legal and illegal kinds), or watching movies on portable devices (phones, tablets etc.). As a result, certain variations of movie watching can be interpreted as services (and distributors as service providers), which is why it was important to examine a few related service process models as well.

On the field of service quality, one of the original starting point of the so called Nordic school was the model created by Grönroos (1984), which was based on the notion that to achieve customer satisfaction the quality they expect and actually perceive must be the same. This meant that service providers had to have the same grasp on the way consumers perceive quality as they do on the other features that can affect service quality. Grönroos identified three components of service quality: technical quality (what the consumer actually gets, the end result), functional quality (how the company provides the service, how the consumer evaluates said service process), and the image, which delves from the previous two (traditions, social relationships, reputation etc.).

Rust and Oliver's (1994) model primarily aimed to fine-tune the Grönroos model, in their interpretation the technical and functional quality was replaced by service-product (result) and service-provision (process) components respectively, while a brand new dimension appeared in the inclusion of the service environment (with the aim of displaying the physical conditions in the process as well)

## ***2.3. Cultural consumption related decision models***

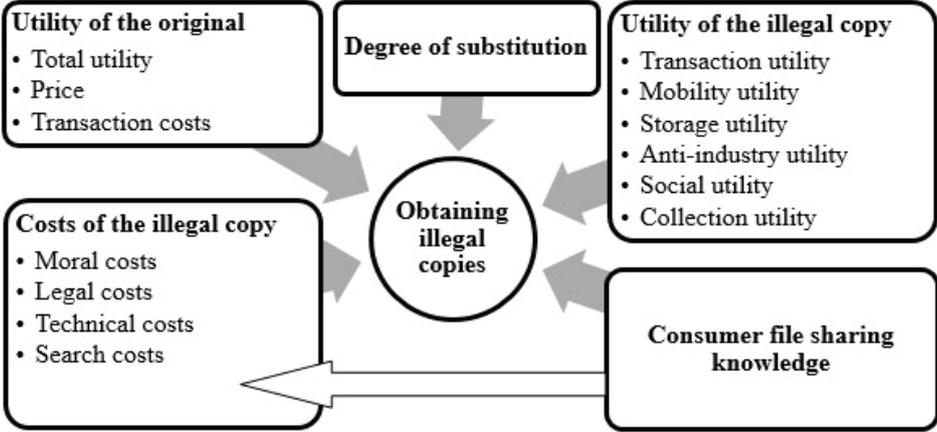
Following the previous understanding of model types, the models we may find about cultural consumption in literature are usually of the partial structural kind, which are based on different areas and different particular aspects of cultural consumption.

To study cultural consumption behavior we should first give mention to Holbrook and Hirschman's (1982) model framework. Although they didn't specifically create their design for cultural consumption analysis purposes – on the contrary, the creators denied to call their new structure as new theory, which is why we do not refer to it as a model in the study –, but as a criticism of previous models of consumer behavior it was first to draw attention on some previously neglected factors. Among these factors were the role of purely aesthetic products, the multi-sensory aspects of certain products, the time factors of seeking satisfaction, and other factors such as product related dreaming and imagination, the various feelings stemming from consumption, like being entertained or feeling joy.

Rocheland and Le Guel (2005) developed their model of illegal content sharing and their driving factors by studying the music industry and digital file sharing in general. They have named three major influencing groups as the basis for consumer value judgements between the 'original' and the illegal source: the usefulness of purchasing the original (including the added value of all originals and their associated costs); the cost of purchasing the illegal version (costs derived from the process of procurement, which do not necessarily involve

actual cash flow, but may carry a deterrent effect); and the degree of interchangeability between the two versions.

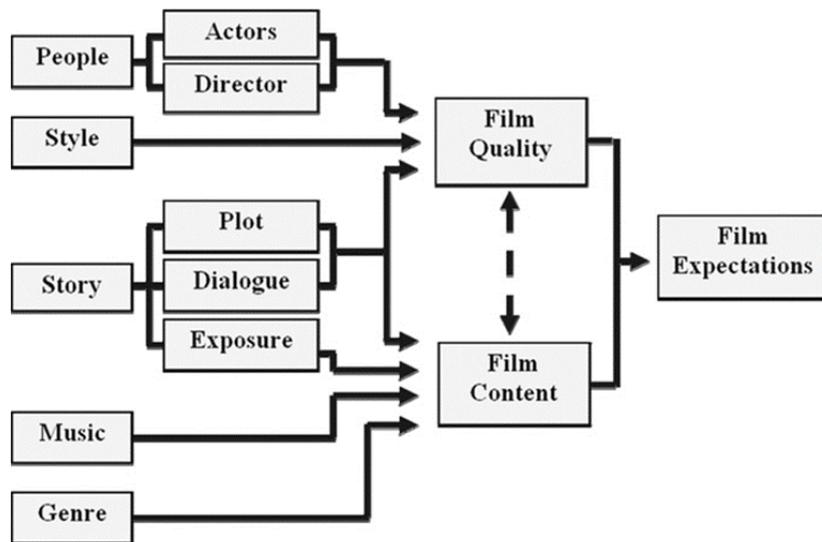
Continuing Rocheland and Le Guel’s utility-centered thinking, Hennig-Thurau et al. (2007) developed their own model for movie sharing (Figure 1), in which the distribution of the Rochelandet and Le Guel model was further expanded by two additional groups concerning movie related file sharing behaviors: the specific utility of the given illegally obtained movie (which may provide additional benefits, otherwise unobtainable by purchasing the original) or the consumer’ file sharing knowledge (which minimizes the effort of obtaining the illegal copy, thus directly affecting the procurement and searching costs of an illegal movie).



**Figure 1: Structure model of factors affecting file sharing**  
 Source: Hennig-Thurau et al., 2007

Another interesting aspect of the model is that in their research Bodó and Lakatos (2009) have also identified similar areas, while mentioning the value of access as a potential benefit to illegal movies, pointing out that certain movies are simply not accessible to ordinary consumers legally.

Expectations towards movies were modeled by Finsterwalder et al. (2012), where they separated the expectations and their influencing factors on film quality, film content as well as those that had an impact on both (their theoretical structure is shown on Figure 2).



**Figure 2: Factors influencing movie related expectations**  
 Source: Finsterwalder et al., 2012

In the primary research they conducted to validate their model they concluded that filmmakers and especially the leading actors are the main determinants of quality (supporting the already widespread general notion of ‘star power’ influence), while they found genre being the leading factor in content. The researchers have highlighted that as movie distributors have a relatively low impact on the above (in contrast to the filmmakers themselves), thus their influence instead appears in the way they can present these to the consumers through their pre-release communication (previews, advertising materials etc.).

### 3. Methodology

Consumer behavior (directly and indirectly) related to movie watching may be best examined using theoretical models. To support the creation of our own concept model we have studied and introduced the main consumer behavior models of literature as well as various related service process and cultural consumption models, which partly explain the processes of movie watching as a cultural consumption behavior. The leading factor behind the selection of the featured models were their historic significance and their influencing mechanisms that could be applicable to movie consumption as well.

### 4. Results and discussion

Within the presented models (apart from the basic models generalizations applicable to every product and services) there are a number of operating principles and motives that seem to be true for movie consumption as well. Among these the following should be highlighted:

- The possibility of spontaneous operation (Nicosia, 1966). Here we can think of leaving behind the strict process structure regulatoin, forsaking the notion that consumer behavior may only occur between the confinements of a starting and ending point, moving only in one direction (which is unrealistic for the case of movies as well).
- The distinction between the consumer habitus (which is relatively constant) and the particular purchase or decision-making situation (Töröcsik, 2016). Emphasizing the importance of the circumstances of a given decision, whether it is about the products themselves, the available distribution channels, or their unique atmosphere which could all affect on the consumer. This is also related to the freedom of consumption (Grunert, 1996)

and to the lifestyle that manifests itself through the acquisition of value (as the movie is received for consumption).

- Preserving the experiences of previous interactions and using them as inputs of information processing (Engel et al., 2006). All the while it is also important to bring attention to the expected distortion of memory (Lehota, 2001), and the possible emergence of long term effects that may have a constant influence on the consumers (such as the attitude towards certain genres, filmmakers, or even towards loosely connected, albeit separate movies).
- The perception of the qualities of the given product as an influencing factor (Pilgrim, 1957). Beyond the obvious objective and subjective characteristics of movies, we can think of the physiological effects triggered (or expected) by them (or by the accompanying communication).
- Distinguishing between the technical (content) and functional (form, distribution medium) qualities become more important as we approach from the service process viewpoint to define the quality of a given movie (Grönroos, 1984). Additionally looking back on individual consumer situations it is also important to mention the appearance of the service environment as a separate dimension (Rust – Oliver, 1994), which in our case may refer to the influencing factors of the distributing channel.
- Specific characteristics of complex products aiming to fulfil needs of leisure and entertainment (which differ from the general understanding of need towards value- or profit gain) (Holbrook – Hirschman, 1982). In the case of movies there are a multitude of such factors (like question of language, unique quality indicators, moral questions etc.), but we can also sort the expectations towards movies (regarding the technical and functional quality) in this group (Finsterwalder et al., 2012).
- Aspects of choosing between the legal and illegal content (Rochelandet – Le Guel, 2005; Hennig et al., 2007). As with any other cultural content spreading through modern media, we can't avoid the issue of freely available pirated content, the influence of which is often beyond the scope of watching movies in our homes.

## 5. Conclusion

Through the operating principles presented in the results, the showcased models are indeed well distinguished from one another according to the new grouping method that was mentioned in the introduction: whether they are models directly tied to movie watching (buyer and consumer, cultural consumption and decisions models), or only loosely connecting, mainly inspiration models (process models, unobservable behavior models and service-process models). Among these it could be worthwhile to include further aspects (such as models on the relation between leisure and entertainment, or consumer attitude, image and quality perception) in the future.

The elements and features gathered as a result of this study will greatly aid the development of our own concept model, which will both appear as a theoretical framework for our primary research based on the topic, and will also be validated by said primary research.

The purpose of the concept model is to create a specific structural model that will be able to better explain the purchase decision processes related to movie consumption. Thus we could obtain a complete model for movie watching, which would describe the (direct or indirect) behavior of movie consumers in a more accurate way than any previous models created. The significance of such model lies with the fact that behavioral segmentation is becoming increasingly important not only for the movies themselves, but also for the products and services that (by using their popularity) extend beyond them.

The limitations of this study include the fact that it contains only the systematization of theoretical approaches and has no primary data collection. Another limiting factor is that the models presented mainly dealt with the demand side, while the provider aspect only appeared indirectly (as processes of movie production and distribution, which similarly carries a significant impact on the performance of a given movie and its extended reach).

## References

1. Blackwell R. D, Miniard P. W., Engel J. F. (2006), *Consumer Behavior*. Thomson/South-Western, Madison. p. 85.
2. Bodó B., Lakatos Z. (2009), *A filmek online feketepiacja és a moziforgalmazás*. "Szociológiai Szemle", 21 (2), pp. 111-140.
3. Dudás P. (2014), *A fogyasztói magatartás és a turisztikai kínálat összefüggései Jász-Nagykun-Szolnok megyében*, PhD dissertation. Szent István Egyetem, Gödöllő. p. 12.
4. Finsterwalder J., Kuppelwieser V. G., Villiers M. (2012), *The effects of film trailers on shaping consumer expectations in the entertainment industry—A qualitative analysis*. "Journal of Retailing and Consumer Services", 19 (6), pp. 589-595. <http://dx.doi.org/10.1016/j.jretconser.2012.07.004>.
5. Grönroos C. (1984), *A service quality model and its marketing implications*. "European Journal of Marketing", 18 (4), pp. 36-44. <http://dx.doi.org/10.1108/eum000000004784>.
6. Grunert K. G., Brunso K., Bisp S. (1993), *Food related lifestyle: Development of crosscultural valid instruments for market surveillance*. MAPP Working Paper 12 (10), pp. 14-15
7. Hennig-Thurau T., Henning V., Sattler H. (2007), *Consumer File Sharing of Motion Pictures*. "Journal of Marketing", 71 (4), pp. 1-18. <http://dx.doi.org/10.1509/jmkg.71.4.1>.
8. Hofmeister-Tóth Á. (2006), *Fogyasztói magatartás*. Aula Kiadó, Budapest. pp. 311-325.
9. Holbrook M. B., Hirschman E. C. (1982), *The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun*. "Journal of Consumer Research", 9 (2), pp. 132-140. <https://doi.org/10.1086/208906>
10. Howard J. A., Sheth J. N. (1969), *The Theory of Buyer Behavior*. Wiley, New York. p. 30.
11. Kandikó J. (2010), *Marketing szemlélet és módszerek alkalmazása a kultúrában*. <https://www.szinigazdasag.hu/images/cikkek/2012/2013/Marketing%20a%20kult%C3%BAr%C3%A1ban%202010.pdf> (access: 27-04-2019)
12. Kotler P., Keller K. L. (2016), *Marketing Management*. Pearson Education Limited, London. pp. 187-194.
13. Lehota J. (2001), *Élelmiszer-gazdasági marketing*. Műszaki Kiadó, Budapest. pp. 32-67.
14. Milner T., Rosenstreich D. (2013), *A review of consumer decision-making models and development of a new model for financial services*. "Journal of Financial Services Marketing", 18 (2), pp. 106-120. <https://doi.org/10.1057/fsm.2013.7>
15. Nicosia, F. M. (1966), *Consumer Decision Process*. Prentice-Hall, Eaglewood Cliffs. p. 156.
16. Pavluska V. (2014), *Kultúramarketing: Elméleti alapok, gyakorlati megfontolások*. Akadémiai Kiadó, Budapest. pp. 296, 330-334. <https://doi.org/10.1556/9789630598811>
17. Petró K. (2002), *A kulturális javak gazdasági jellemzői*. In: Daubner K., Horváth S. és Petró K. (2002): *Kultúra-gazdaságtani tanulmányok*. Aula Kiadó, Budapest. pp. 16-32.
18. Pilgrim F. J. (1957), *The Component of Food Acceptance and Their Measurement*. "American Journal of Clinical Nutrition", 5 (2), pp. 171-175. <https://doi.org/10.1093/ajcn/5.2.171>
19. Rochelandet F., Le Guel F. (2005), *P2P Music Sharing Networks: Why the Legal Fight Against Copiers May Be Inefficient*. "Review of Economic Research on Copyright Issues", 2 (2), pp. 69-82. <https://doi.org/10.2139/ssrn.810124>
20. Rust R. T., Oliver R. L. (1994), *Service Quality: Insights and managerial implications from the frontier*. In: Rust R. T. és Oliver R. L. (ed.): *Service Quality: New directions in theory and practice*. Sage Publication, Thousand Oaks. pp. 1-19. <https://doi.org/10.4135/9781452229102.n1>
21. Töröcsik M. (2016), *Fogyasztói magatartás, insight, trendek, vásárlók*. Akadémiai Kiadó, Budapest. p. 375-377., <https://doi.org/10.1556/9789630597371>

## EXAMINATION OF PLACE IDENTITY MODELS

*Ágnes URBÁNNÉ TREUTZ*

*Szent István University, Gödöllő, Hungary*

*E-mail: urbanne.treutz.agnes@gtk.szie.hu*

**Summary:**

**Purpose:** The aim of the study is to explore the place identity models and their factors that can be found in the literature. The research will also touch upon the reason why these models were created and how they were used previously.

**Design/methodology/approach:** The method of the research is the analysis of literature.

**Findings:** Proshansky (1978) has already dealt with the definition of place identity, he phrased that the places are contributing to the explanation of self-identity with its symbolic and physical features. The place and the self are continuously affecting each other which appears in the case of place identity as well. Place identity involves the identification of the self with the given place, which in many occasions approaches its examination from the emotional side. Most of the place identity models approach the influential factors from a psychological standpoint, which is why several models are based on the affective, cognitive and conative factors. As a result, perception, commitment and action could all constitute as single dimensions of influential factors (e.g.: Weder, 1998). All the while, according to other approaches, other elements might appear as corner stones as well, like the physical elements (Relph, 1976; Chuo, 1998; Taylor, 2008; Zenker, Petersen, 2010), the townscape (Eberle Gramberg, Gramberg, 2004; Piskóti, 2012), the values (Eberle Gramberg, Gramberg, 2004; Marien, 2016), the life quality (Eberle Gramberg, Gramberg, 2004; Uzzell et al., 2002), the interaction with the community (Chuo, 1998; Yang, 2013; Kroger, 2016; Kermani et al., 2016) and the various work- and income opportunities and financial resources (Eberle Gramberg, Gramberg, 2004) that might serve as important factors as well. Certain models use the basis of the place attachment – place identity – place dependence trio as centerpiece to their examination of place identity in their research (Borocato, 2006; Qian, Zhu, 2014; Demir 2016; Goussous, Al-Hammadi, 2018), as numerous studies have already proven the relation between these elements.

The reviewed models that deal with place identity will all be summarized in a table at the end of the study, enclosing their origin, orientation and the various components that make up for the whole of the model.

**Keywords:** clusters, management, certification, regional development

**1. Introduction**

The aim for every settlement is to form a medium which could insure an adequate quality of life to the local residents and could be attractive to the potential settlers. The tools to build the positive image and good reputation are available to them which could help placing brand and aid the tourists and the residents to identify themselves with the settlement. The latter is an especially important factor as identification could lead to forming the attachment to the place, which could in turn help to stay in a place, otherwise it could cause leaving. While identification is important, at the same time it gets less attention in nowadays' place marketing. In order to shed more spotlight on this, the present study presents models, which deal with place identity and highlights their importance in the place marketing.

## **2. About the place identity in general**

To model the process of place identity Marzano (2015) uses the notion place-entity which is defined as a mosaic of a social and physical environment, which connects to a real place or a place representation (literature or virtual). The physical environment involves the landscape, the terrain, the fauna and the flora. The social environment incorporates the architecture, the traditions, the history, the art, the meal and the people. In the latter case, individuals' behavior, habits and local attitudes are understood. The individual and social experience aggregate in the social environment. This also points out that social environment is an essential component of the place. (Kerr, Oliver, 2015)

Marzano (2015) described the place identity as a process in which the emergence of the different elements of place entity lead to the identification. The place identity refers to the way the physical and symbolic characteristics of the place contribute to the interpretation of the self and his/her identity. (Proshansky et al., 1983) The place itself could have different meanings for each of the individuals, but certain parts of meaning would stay the same for everyone. Perceiving the elements of place entity could invoke place identity in the affected stakeholders. The local residents, the tourists/visitors, the place marketers, the cultural and governmental institutions and service producers are all concerned in the circle of stakeholders. Both social and physical factors are the creators of place identity according to Relph (1976), namely the mind, the experiences, the intent of the beholder, what they have seen, the settlement and the physical appearance of the place. Hereby, we can say that the characteristics of the built physical environment and the personal characteristics of the individual both have an influence over place identity. (Demir, 2016) With these factors combined together, place identity comes into existence as during the process the local residents interpret the various elements of the place (natural, built environment, culture, which could be influenced by the given place's within and outside factors). The place identity has several characteristics. The place identity is pluralistic in nature, as the judgement of a place depends on the individual's subjective evaluation, which could be positive and negative as well. The place identity is also fluid, namely it could continuously change in the social, cultural environment, generating value to the individual. The residents are the identity-holders, essentially the creators of the place, the participants of the local processes. At the same time it must be taken into consideration that place identity can only be realized by co-production which is a meaning-making process between the local residents and the place, as the individuals do not only consume- but also produce the identity. A constant and mutual process is realized between the residents and the place, in the course of which the individuals interpret the elements of the place, which could be realized through the communication between them (place-person, person-person). (Kerr, Oliver, 2015)

## **3. The place identity related models**

The literature refers to several models in connection with the place identity, henceforth these models will be the ones presented. Due to the limitations of this paper, only a few of these models will be represented at large, but all collected models will be represented in the results. Weder (1998) mentioned three dimensions of place identity: cognitive, affective and conative dimensions. Perception is located in the cognitive stage, where during the identification of the settlement, along with its elements and features. In the affective dimension is where the commitment comes into existence towards the place. The individual manifests his active obligation to the place, ingrained to the life of the settlement.

Uzzell et al. (2002) examined two parts (Onslow Village, Stoughton) of the British city called Guilford, and has produced two Structural Equation Models, one for each city parts. The identity stays in the middle of both models, which is influenced by the satisfaction, the sustainability, the cohesion and the identification. The satisfaction is measured by the environmental problems (the quality of the environment, air pollution, safety, crime) and the general residential satisfaction. In connection with the environmental sustainability the consumers' attitudes and behaviors were measured, which analyzed the knowledge of the individual in connection with the lifecycle of the waste, the evaluation of the water as resource, the responsibility for the common environment (whether the grooming of the environment is a private or common task in residential areas), and taking into consideration the ecological aspects in the course of buying process. The measurement of place identification were done according to factors, such as the denomination of the neighborhood where the respondent lives, its confinement in the map, the respondent's emotional bonding to the place and the special features (environmental, historical) of the place. The model measures the social cohesion through the participation in the social issues, both in the civil sphere and in the development of the settlement, through the quality and the quantity of social relationships, and time spent in the neighborhood. The study of Uzzell et al. (2002) points out that to examine sustainability, it is necessary to also view the correlation between the society, environment and place. The required changes in the sustainable environmental system are feasible mostly through the collective, social activities, to which we must have the knowledge of the processes connected to the identity and people's identification with a current place. The place related social identity is constituted by the social and individual connections with the place, which is an important element of the whole attitude in connection with the environment. The environment is an important factor of the social processes, as ignoring the distinctiveness of the environment, it is hard to understand the social processes that take place in a certain place. The social cohesion could come into existence through social processes that could play a different role, similar to the place identification. The social cohesion and the place identification are depending on the environment type and the population.

Eberle Gramberg and Gramberg (2004) approached the definition of identity from the viewpoint of the anthropological and psychological personality theory. According to their work the city identity has five pillars: the cityscape, the quality of life, the values, the work and earning opportunities, and the material resources and burdens. The pillars bear and influence the base of city identity components, and they also have an effect on the city identity as well. The model highlights the importance of the identification as the five pillars all stand on the same base, which is the identification with the place. The appearance of the city, the free time, the cultural and the available dwelt opportunities, the values of the city through its image (considering the residence, enterprises' park), the working opportunities, the financial situation of the city are all important converging elements of the pillars. (Reder, 2011)

Relph (1979) specified three elements of the place identity according to the place related Algerian study from Camus (1955, 1959): static physical setting, activities and meanings. The physical component comprises the natural and built environment. The activity could be creative, passive or destroyer on an individual or social level as well. The determination of the third element proves more difficult, as it is less tangible. While meaning could express the attachment to the physical environment or to the activities, it would rather refer to the human experiences and objects appearing in connection with this element. It is the complex totality of different factors, which could connect to the interest, experience, and viewpoint, from both

an individual or cultural aspect. It could be a characteristic which grabs the essence of the place. Taylor (2008) used this theoretical base to represent the place identity in one model. The identification of the place consists of the three consisted components (physical characteristics or presence, activities and functions, meanings or symbols). According to this Taylor (2008) distinguished the tangible physical identity and the intangible identity. The latter includes the location-related meanings with interwoven experiences, the symbols, the place image. These factors are important in the case of settlements where local traditions and historical memories are still strong today.

To create the resident-city identification model, Zenker and Petersen (2010) used the Customer Relationship Management (CRM) system approach, commonly found in business environments as well as the Social Identity Theory to assume that the strong resident-city identification comes from the identity that is fitting to the resident's self-concept and the city prototype. The city prototype is the mental representation of the city, which is formed by several elements (nature and recreation, urbanity and diversity, efficiency, job opportunities). These elements could be static or dynamic. The static elements are unvaried, they are not changeable, like geographic characteristics and the history of the city. The dynamic elements could change, like the infrastructure, the political environment, the demographical characteristics of the residents, and the economic environment. Overall, we can claim that these elements are the sum of all the macro environmental factors. One or more dimensional prototypes could be generated according to the elements. The authors took the three communication types by Kavartzis (2004) into consideration when they developed their model: the place physics as primary communication (architecture, offerings of the place), the place communication as the secondary communication (advertisement, PR activities), and the place word-of-mouth as tertiary communication (through media and residents). The first part of the model shows how the perceived complexity of the city prototype could assist the resident-city identification through some influencing factors. These influencing factors are (according to the model): identity fit, optimal distinctiveness and perceived attractiveness of identification. The more complex the place is, the easier it is fit the identity. This could be explained with the notion that the greater the offerings of a place are, the more target groups they can aim to satisfy, the easier it is for a single person to identify with the place. Therefore the identity fit basically depends on the characteristics of a place. Beside the identification with the settlement, it is also important to maintain the balance between the assimilation with the prototype and the distinctiveness of the individual. Therefore besides that the individual's attempt to identify him- or herself with the various characteristics of the settlement, it is also important to maintain some parts of his/her unique characteristics as well. The positive city prototype could enhance the individual's self-esteem, thus it could assist in the identification. The perceived attractiveness of identity could be perceived as a positive and negative aspect at the same time. From a positive view, it could buffer the impact of the negative elements. The totality of the communication elements and the influencing factors of identification generate the resident-city identification, which in turn generates commitment in the individuals; they will be flexible against the negative news in connection with the settlement, and thanks to the selective information seeking they will seek mostly positive contents. These all could generate satisfaction in the consumers, which will result in them wanting to stay in the settlement. Otherwise the intention to leave would occur.

Piskóti (2012) produced his city identity concept according to his careful examination of Miskolc city (Hungary). According to his work, the city identity is the sum total of the local residents' behavior, the settlement's performance's formal and pictorial image, and the marketing communication. This all gives an internal and an external dimension to the idea of

place identity. The external identity contributes to the identification of the place, highlighting the proper characteristics which could be seen as an attractiveness to the external target group. The internal identity reflects the local residents' identification with the settlement, and their localism. The model was created through a strategic approach, which draws on the role of place identity from the viewpoint of planning and strategic city leadership. It also demonstrates that the existence of place identity contributes to the building of place brand and place image.

Marien (2016) took both Piskóti's (2012) double sided approach and the complex model created by Zenker and Petersen's (2010) as a basis to create her own resident-settlement identification model. She specifies two influencing factors of identification, the place-picture and the I-picture. The continuous fitting of the individual and the environment is essential to establishing identification. The I-picture is influenced by the values, the experiences, the demographical and psychological characteristics of the individual. The place-picture is influenced by the place characteristics, the place communication, the competitor-place image and the word-of-mouth. Satisfaction could come into being due to the identification, which could generate the attachment to the place. If the individual's affection is strong to the place, he or she will stay, but if it does not evolve place attachment, the individual will move away from the settlement.

#### **4. Methodology**

The base of the research was literature review, so the method of the research is the analysis of literature.

#### **5. Results and discussion**

Most of the place identity models approach the influential factors from a psychological standpoint, which is why several models are based on the affective, cognitive and conative factors. As a result, perception, commitment and action could all constitute as single dimensions of influential factors (e.g.: Weder, 1998). All the while, according to other approaches, other elements might appear as corner stones as well, like the physical elements (Relph, 1976; Chuo, 1998; Taylor, 2008; Zenker, Petersen, 2010), the townscape (Eberle Gramberg, Gramberg, 2004; Piskóti, 2012), the values (Eberle Gramberg, Gramberg, 2004; Marien, 2016), the life quality (Eberle Gramberg, Gramberg, 2004; Uzzell et al., 2002), the interaction with the community (Chuo, 1998; Yang, 2013; Kroger, 2016; Kermani et al., 2016) and the various work- and income opportunities and financial resources (Eberle Gramberg, Gramberg, 2004) that might serve as important factors as well.

Based on the literature review I created a table (Table 1) where the similar place identity models are collected and structured.

**Table 1: Summary table**

Author(s)	Name of the model	Elements of the model	Main orientation	Previous models, studies	Focus	Type of model according to the dimension
Relph (1979)	Three components of place identity	<ul style="list-style-type: none"> <li>- static physical setting</li> <li>- activities</li> <li>- meanings</li> </ul>	Place, place identity	Camus A. (1955, 1959)	individual (consumer behaviour)	three-dimensional
Chuo (1998)	Dimensions of place identity	<ul style="list-style-type: none"> <li>- identity with the physical environment</li> <li>- identity with economic life</li> <li>- identity with social life</li> <li>- identity with cultural life</li> <li>- sense of belonging</li> </ul>	Place identity	-	macro factors' relations to the identity	five-dimensional
Weder (1998)	Dimensions of the local identity	<ul style="list-style-type: none"> <li>- cognitive</li> <li>- affective</li> <li>- conative</li> </ul>	Local identity as a base of the place marketing	-	individual's psychological factors	three-dimensional
Uzzell, D.; Pol, E.; Badenas, D. (2002)	Structural Equation Model (Onslow Village Model, Stoughton Model)	<ul style="list-style-type: none"> <li>- satisfaction</li> <li>- sustainability</li> <li>- cohesion</li> <li>- identification</li> </ul>	Place identification, social cohesion and natural environment	-	settlement	four-dimensional
Eberle Gramberg, G.; Gramberg, J. (2004)	Five dimensions of city identity	<ul style="list-style-type: none"> <li>- cityscape</li> <li>- quality of life</li> <li>- values</li> <li>- work and income opportunities</li> <li>- financial resources and burdens</li> </ul>	City identity	-	settlement	five-dimensional
Taylor (2008)	Place identity and their components	<ul style="list-style-type: none"> <li>- physical components</li> <li>- activities</li> <li>- symbols / meanings</li> </ul>	Place identity	Relph, 1976	individual (consumer behaviour)	three-dimensional
Zenker S.; Petersen S. (2010)	Resident-City Identification Model (RCI)	<ul style="list-style-type: none"> <li>- place physics</li> <li>- place communication</li> <li>- place word-of-mouth</li> <li>- identity fit</li> <li>- optimal distinctiveness</li> <li>- perceived attractiveness of identification</li> </ul>	Place identification regarding the city's and the individual's characteristics	Kavaratzis, 2004	individual and city	multi-dimensional
Piskóti (2012)	City identity concept and its elements	<ul style="list-style-type: none"> <li>- performance, city products</li> <li>- residents' behaviour</li> <li>- city design</li> <li>- marketing communication</li> </ul>	City identity, strategy (city brand, city image )	Ebert, 2004	individual and place	four-dimensional
Grajczár (2013)	Examination of residents of Dabas according to identification levels	<ul style="list-style-type: none"> <li>- Feeling</li> <li>- Liking</li> <li>- Pride</li> <li>- Preferences</li> <li>- Superiority</li> <li>- Localism</li> </ul>	Identity examination in local, national and European level	Dekker, Malová model	individual attitude	six-dimensional
Yang, Z.; Li, L.; Zhu, C.; Guo, L.; Huang, L. (2013)	Examining place identity of Chinese students	<ul style="list-style-type: none"> <li>- the home living environment</li> <li>- the home cultural environment</li> <li>- the people at home</li> <li>- a sense of alienation from home</li> <li>- behavior at home</li> <li>- the home economy</li> </ul>	Place identity	Shih-hung Chuo, 1998	environment, individual	multi-dimensional
Qian, J.; Zhu, H. (2014)	Relationship between place attachment and place identity	<ul style="list-style-type: none"> <li>- place attachment</li> <li>- place identity</li> <li>- place dependence</li> </ul>	Examining Sense of place's dimensions	Williams et al., 1992	individual (consumer behaviour)	two-dimensional
Kermani, A. A.; Charbgoon, N.; Alalhesabi, M. (2016)	Conceptual model of identity and heritage relation	<ul style="list-style-type: none"> <li>- Conceptual level</li> <li>- Cognitive level</li> </ul>	Relationship between elements of place identity and heritage	-	individual, values of the place	place identity part: two-dimensional, whole model: multi-dimensional
Marien (2016)	Resident-place identification model	<ul style="list-style-type: none"> <li>- Place-picture</li> <li>- I-picture</li> </ul>	Identification between local residents and place, moving/staying intention	Zenker, Petersen (2010), Piskóti (2012)	individual and place	multi-dimensional

Source: own edition

## 6. Conclusion

All in all, the examination of the place identity models highlights the importance of the place identity in the case of place marketing, as the place identity could influence the individual's staying or living intent. There are micro- and macro factors inside the influencing factors, and some of them play important role, such as the individual's psychological factors, the physical characteristics of the place, the place's communication and the resident-city identity fit. With the knowledge and improvement of the models we can give help to the local governments to take out the problems and to maintain the local residents. Nevertheless, the examination of place identity models offer the basis for the creation of an own model.

## References

1. Borocato E. D. (2006), *Place Attachment: An investigation of environments and outcomes in a service context*, Dissertation, The University Of Texas at Arlington. p. 125
2. Demir O. (2016), *Place Identity: Assessing Individual's Preferences and Perceptions of Residential Characteristics*, Dissertation. North Carolina State University, Raleigh. p. 218
3. Eberle Gramberg G., Gramberg J. (2004), *Stadtidentität*, In: Hilber, M. L., Ergez, A. (2004), *Stadtidentität. Der richtige Weg zum Stadtmarketing*, Orell Füssli Verlag AG, Zürich. p. 27-35.
4. Goussous J. S., Al-Hammadi N. A. (2018), *Place attachment assessment of a heritage place: A case study of the Roman amphitheater in downtown Amman, Jordan*, *Frontiers of Architectural Research*. Vol. 7. p. 1–10.
5. Grajczjár I. (2013), *Identifikációs szintek és dimenziók Dabason: A kvantitatív vizsgálat tapasztalatai*, In: Jablonczay – Grajczjár (2013), *Területi Identitás stratégiák I. Dabas helyi identitáspolitikája és imázsa*, Felső-Homokhátság Vidékfejlesztési Egyesület, Dabas. p. 67-98.
6. Kermani A. A., Charbgoon N., Alalhesabi M. (2016), *Developing a model for the relation between heritage and place identity*, *World Academy of Science, Engineering and Technology International Journal of Architectural and Environmental Engineering*. Vol.10. No.3. p. 406-411.
7. Kerr G., Oliver J. (2015), *Rethinking place identities*, In: Kavartzis M. – Warnaby G. – Ashworth G. J. (ed.) (2015), *Rethinking place branding*, Springer, Switzerland. p. 66-70.
8. Kroger H. (2016), *The Role of Sustainability in Enhancing Place Performance Through an Identity-Based Approach to Place Branding*, Doctoral Thesis. Plymouth University, Plymouth. p. 412
9. Marzano G. (2015), *Using Resource Description Framework (RDF) for description and modeling place identity*, *Procedia Computer Science*. 77. p. 135 – 140.
10. Piskóti I. (2012), *Régió- és településmarketing*, Akadémiai Kiadó, Budapest. p. 400
11. Qian J., Zhu H. (2014), *Chinese urban migrants' sense of place: Emotional attachment, identity formation, and place dependence in the city and community of Guangzhou*, *Asia Pacific Viewpoint*. Vol. 55, No. 1. p. 81-101.
12. Reder C. (2011), *Die Stadt als Marke. Eine empirische Untersuchung am Beispiel der Stadt Mautern an der Donau*, Magisterarbeit. Universität, Wien. p. 118
13. Relph E. (1976), *Place and placelessness*, Pion, London.
14. Relph E. C. (1979), *Place and placelessness*, Pion Limited, London. p. 156
15. Taylor K. (2008), *Landscape and Memory: cultural landscapes, intangible values and some thoughts on Asia*, In: 16th ICOMOS General Assembly and International Symposium: „Finding the spirit of place – between the tangible and the intangible”. 29 September – 4 October 2008, Quebec, Canada. [openarchive.icomos.org/139/1/77-wrVW-272.pdf](http://openarchive.icomos.org/139/1/77-wrVW-272.pdf) (access: 30.01.2019.)
16. Uzzell D., Pol E., Badenas D. (2002), *Place Identification, Social Cohesion, and Environmental Sustainability*, *Environment and Behavior*. Vol. 34. No. 1. p. 26-53.
17. Weder K. (1998), *Lokale Identität als Ansatzpunkt des Stadtmarketing. Das Image der Stadt Lüdinghausen*, Diplomarbeit, Münster.

18. Williams D.R., Patterson M.E., Roggenbuck J. W. (1992), *Beyond the commodity metaphor: Examining emotional and symbolic attachment to place*, Leisure Sciences. Vol. 14, No. 1. p. 29-46.
19. Yang Z., Li L., Zhu C., Guo L., Huang L. (2013), *Local identity of no-fee preservice students and its impact on their localized professional orientation*, Chinese Education and Society. 46 (2-3) 90-99.
20. Zenker S., Petersen S. (2010), Resident-City Identification: *Translating the Customer Relationship Management Approach into Place Marketing Theory*, 50th European Regional Science Association Congress, Jönköping, Sweden, 19-23 August, 2010  
<http://hdl.handle.net/10419/118787> (access: 01.02.2019.)

## ARTIFICIAL INTELLIGENCE IN THE AGRICULTURE

*Enikő LENCSEŚ<sup>1</sup>, Attila KOVÁCS<sup>2</sup>*  
<sup>1, 2</sup> *Szent István University, Gödöllő, Hungary*  
*E-mail: lencses.eniko@gtk.szie.hu*

**Summary:**

**Purpose:** All kind of sectors was transformed by data science and artificial intelligence. Artificial intelligence gives the promise of driving an agricultural revolution at a time when the world must produce more food using fewer resources. Agricultural production tripled between 1960 and 2015 as the world's population grew from 3 billion people to 7 billion. Climate change is rapidly altering the environment. The degree of manmade emissions of greenhouse gases (GHGs) has reached the highest in history, according to a 2014 report of the Intergovernmental Panel on Climate Change (IPCC). Agriculture contributes the largest share of global methane and nitrous oxide emissions. A side effect of climate change is an increase in the variability of precipitation and a rise in the frequency of droughts and floods, which tend to reduce crop yields. Factors such as climate change, population growth and food security concerns have propelled the industry into seeking more innovative approaches to protecting and improving crop yield. Farmers will have the tools to get the most from every acre. The aim of our study to reveal the present situation of the usage of artificial intelligence in the agriculture.

**Methodology/approach:** this paper is a first step of our research about artificial intelligence in the agriculture. In this step we focused on the literature background of the topic. This stage of our research provides us an opportunity to understanding of current and emerging trends, and present representative examples of popular applications.

**Findings:** artificial intelligence helps farmers with sensors, drones, robots and serious computer power. It is giving farmers the tools they need to grow crops more sustainably and efficiently. Automating farm equipment avoid obstacles and monitor plants to save inputs. Algorithms can identify diseases and the early detection allows farmers to act quickly and minimize losses. The most popular applications of AI in agriculture appear to fall into three major categories: agricultural robots, crop and soil monitoring, predictive analytics (machine learning models).

**Keywords:** Agriculture 4.0, smart farming, precision farming, decision making, strategic thinking

**1. Introduction**

All kind of sectors was extremely transformed by data science and artificial intelligence. Artificial intelligence gives the promise of driving an agricultural revolution at a time when the world must produce more food using fewer resources. Agricultural production tripled between 1960 and 2015 as the world's population grew from 3 billion people to 7 billion. (FAO, 2017) Climate change is rapidly altering the environment. The degree of manmade emissions of greenhouse gases (GHGs) has reached the highest in history, according to a 2014 report of the Intergovernmental Panel on Climate Change (IPCC). Agriculture contributes the largest share of global methane and nitrous oxide emissions. A side effect of climate change is an increase in the variability of precipitation and a rise in the frequency of droughts and floods, which tend to reduce crop yields. (IPCC, 2014) Factors such as climate change,

population growth and food security concerns have propelled the industry into seeking more innovative approaches to protecting and improving crop yield. Farmers will have the tools to get the most from every acre. In addition in the future we look for opportunities and publications where AI can provide support in decision preparation and decision making. In many cases AI will be very helpful in supporting decision models. Forexample in case of the GHG calculations to explore correlations and more efficiently generate suboptimal solutions (Kovács, 2015; Kovács in NFM Case Study, 2015; Kovács et al., 2016) or to simulate the spread of plant infections, the related drones can be generated to generate an optimal route (Lencsés et al., 2018).

The aim of our study to reveal the present situation of the usage of artificial intelligence in the agriculture.

## **2. Literature review**

Artificial intelligence (AI), is the ability of a computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. This term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans (ability to reason, discover meaning, generalize, or learn from past). Since the development of the digital computer in the 1940s, it has been demonstrated that computers can be programmed to carry out very complex tasks (e.g. solve mathematical problems; playing chess). Even so despite constant progress in speed and memory capacity of computer, there are yet no programs that can match human flexibility over wider domains or in tasks requiring much everyday knowledge. On the other hand, some programs have attained the performance levels of human experts and professionals in performing certain specific tasks, so that artificial intelligence in this limited sense is found in applications as diverse as medical diagnosis, computer search engines, and voice or handwriting recognition. Research in AI has focused chiefly on the following components of intelligence: learning, reasoning, problem solving, perception, and using language. (Encyclopædia Britannica, 2019).

The earliest substantial work in artificial intelligence was done in the mid-20th century by Alan Mathison Turing. Turing described an abstract computing machine. The actions are dictated by a program of instructions that also is stored in the memory in the form of symbols. All modern computers are universal Turing machines. (Gill, 1977) The earliest successful AI program was written in 1951 by Christopher Strachey. (Luger, 2005) According to some researchers the history of artificial intelligence is date back much further.

### ***History of Artificial intelligence***

The disciplines that contributed ideas, viewpoints, and techniques to AI are the following: Philosophy (Aristotle, Hobbes, Da Vinci, Pascal, Bacon, etc.), Mathematics (Euclid, Göbel, Turing, Cook, Bayes, etc.), Economics (Smith, Neumann, Morgenstern, etc.), Neuroscience, Psychology, Computer engineering (Jacquard, Babbage, etc.), Cybernetics and Linguistics. (Stuart & Norvig, 2010)

*Antiquity:* According to McCorduck (2004) the idea of intelligent robots first applied in the Greek mythology concretely myths of Talos, who was a giant automaton made of bronze to protect Europa. The idea of artificial beings started with Galatea (statue carved of ivory by Pygmalion, which then came to life) and Pandora (was the first human woman, created by Hephaestus, the God of craftsmen). In the Chinese mythology also there is a mechanical man Yan Shin. Sacred mechanical statues built in Egypt was believed to be capable of wisdom and emotion. In the B.C. 4<sup>th</sup> century Aristotle describe the method of formal, mechanical thought

(called syllogism). In the 1st century Heron of Alexandria (mathematician and engineer) write a thesis about who to make automatons ('Peri thé automatopoiiktikhón'). Geber (Arabic alchemist) wrote the theory of artificial creation of life in the laboratory (including human life). (McCorduck, 2004)

*Middle age:* Al-Jazari, Arabic mechanical engineer and mathematician in 1206 created the first programable automata (a musical automaton with mechanical human beings). (Sharkey, 2007) Pope Sylvester II, Bishop Grosseteste, Roger Bacon and Albertus Magnus are said to have "brazen heads," simultaneously sources and proof of their owners' wisdom; Ramon Llull, Catalanian mystic and theologian, invents his "Ars Magna," a machine for discerning truth by "bringing reason to bear on all things". (McCorduck, 2004)

*Renasas:* Mechanical clocks, the first modern measuring machines, appear in European. Paracelsus claimed to have created an artificial man out of magnetism, sperm and alchemy. (McCorduck, 2004)

*Baroque:* In 1580 a Rabbi of Prague was said to have invented the Golem, a clay man brought to life. In the early 17th century Descartes proposed that bodies of animals are nothing more than complex machines. In 1623 Wilhelm Schickard drew a calculating clock on a letter to Kepler. In 1642 Pascal invented the mechanical calculator, the first digital calculating machine. In 1672 Leibniz invented the binary numeral system and envisioned a universal calculus of reasoning (alphabet of human thought) by which arguments could be decided mechanically. Leibniz work was a prelude to an algebraic solution to all possible problems. In 1726 in Gulliver's Travels, Jonathan Swift published the description of the Engine, a machine on the island of Laputa: "a Project for improving speculative Knowledge by practical and mechanical Operations. The machine was a parody of Ars Magna, one of the inspirations of Gottfried Leibniz' mechanism. In 1769 Wolfgang von Kempelen built his chess-playing automaton. (McCorduck, 2004)

*19th Century:* Mary Shelley's Frankenstein consideration of the ethics of a creating beings. Charles Babbage & Ada Lovelace worked on programmable mechanical calculating machines. Samuel Butler suggested that Darwinian evolution also applies to machines and speculates that they will one day become conscious and eventually supplant humanity. (McCorduck, 2004)

*Early 20th Century:* Time for revolutionized formal logic. In 1923 Rossum's Universal Robots (R.U.R.) showed in London. It was the first use of the word "robot" in English. In 1931 Kurt Gödel, who is called 'father of theoretical computer science' had to build an universal, integer-based programming language. In 1941 the first working program-controlled computers were built. (McCorduck, 2004)

*Middle 20th Century:* In 1943 Warren Sturgis McCulloch and Walter Pitts take foundations for artificial neural networks. Game theory which would prove invaluable in the progress of Artificial Intelligence was introduced with the 1944 paper, Theory of Games and Economic Behavior by mathematician John von Neumann and economist Oskar Morgenstern. John von Neumann said that it was impossible for a machine to think: "You insist that there is something a machine cannot do. If you will tell me precisely what it is that a machine cannot do, then I can always make a machine which will do just that!". Von Neumann was presumably alluding to the Church-Turing thesis which states that any effective procedure can be simulated by a (generalized) computer. (Stuart & Norvig, 2010)

The 50s was a very important period in the history of the Artificial Intelligence. In 1950 Alan Turing proposes a test to measure of machine intelligence, named Turing Test. In the same year Isaac Asimov published his Three Laws of Robotics.

In 1951 the first working AI programs were written on the University of Manchester: a checkers-playing program written by Christopher Strachey and a chess-playing program written by Dietrich Prinz. IBM made the first game-playing program between 1952 and 1962 by Arthur Samuel. (Stuart & Norvig, 2010)

The terminology ‘artificial intelligence’ was born in 1956. The Godfathers of AI was John McCarthy who organized a two-month workshop at Dartmouth in the summer of 1956. There were 10 attendees in all, including Trenchard More from Princeton, Arthur Samuel from IBM, and Ray Solomonoff and Oliver Selfridge from MIT. (Stuart & Norvig, 2010) In 1959 John McCarthy and Marvin Minsky founded the MIT Artificial Intelligence Lab.

The golden years of the Artificial Intelligence was between 1956 and 1974. In this period many successful programs and new directions were established.

*Late 20th Century:* There were two major winters in 1974-1980 and 1987-1993. The AI winter is a period of reduced funding and interest in artificial intelligence research. The field has experienced several hype cycles, followed by disappointment and criticism, followed by funding cuts, followed by renewed interest years or decades later. The AI winter is primarily a collapse in the perception of AI by government bureaucrats and venture capitalists. Despite the rise and fall of AI's reputation, it has continued to develop new and successful technologies. (Stuart & Norvig, 2010)

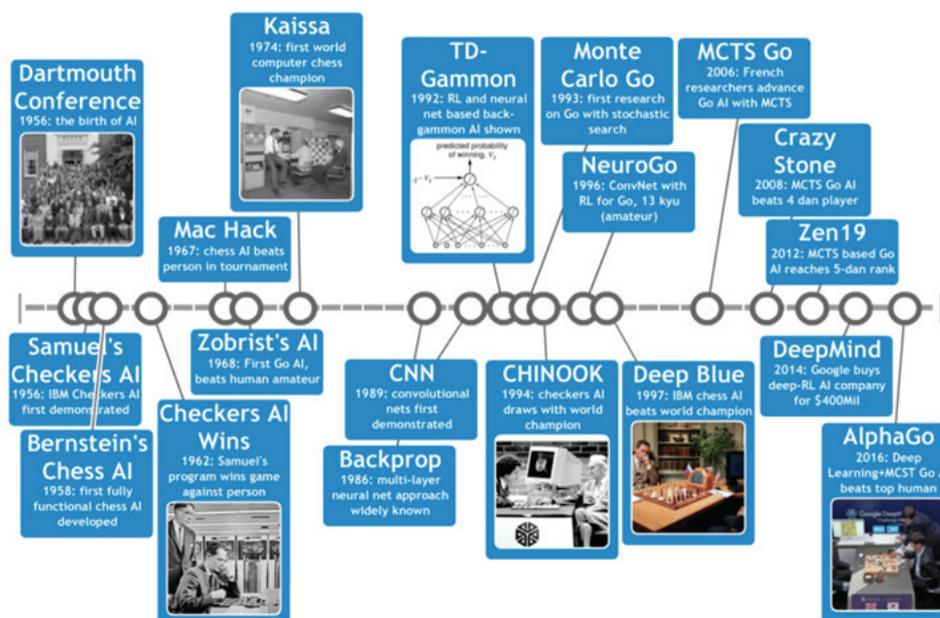
*21th Century:* Interactive robopets appeared and become commercially available. Cynthia Breazeal describing a robot, with a face that expresses emotions. In 2002 iRobot's Roomba lunched what autonomously vacuums the floor while navigating and avoiding obstacles. Few years later DARPA introduces the DARPA Grand Challenge requiring competitors to produce autonomous vehicles for prize money. NASA's robotic exploration autonomously navigate rovers are Spirit and Opportunity. (McCorduck, 2004) In 2005 ASIMO (artificially intelligent humanoid robot) by Honda, was able to walk as fast as a human, delivering trays to customers in restaurant. In 2009 Google builds autonomous car. Between 2011 and 2014 introduced smartphone apps that use natural language to answer questions. In 2015 Google DeepMind's AlphaGo defeated three time European Go champion 2 dan professional Fan Hui by 5 games to 0. (Kurenkov, 2016) (Figure 1)

Artificial Intelligence raised several ethical issues, therefore in 2017 Asilomar Conference on Beneficial AI was held, to discuss existential risk from artificial general intelligence. (FLI, 2017) According to this conference the ethics and values of the artificial intelligence are the followings:

- Safety: should be safe and secure throughout their operational lifetime, and verifiably so where applicable and feasible.
- Failure Transparency: if an AI system causes harm, it should be possible to ascertain why.
- Judicial Transparency: any involvement by an autonomous system in judicial decision-making should provide a satisfactory explanation auditable by a competent human authority.
- Responsibility: designers and builders of advanced AI systems are stakeholders in the moral implications of their use, misuse, and actions, with a responsibility and opportunity to shape those implications.

- Value Alignment: highly autonomous AI systems should be designed so that their goals and behaviours can be assured to align with human values throughout their operation.
- Human Values: AI systems should be designed and operated to be compatible with ideals of human dignity, rights, freedoms, and cultural diversity.
- Personal Privacy: people should have the right to access, manage and control the data they generate.
- Liberty and Privacy: the application of AI to personal data must not unreasonably curtail people's liberty.
- Shared Benefit: AI technologies should benefit and empower as many people as possible.
- Shared Prosperity: the economic prosperity created by AI should be shared broadly, to benefit all of humanity.
- Human Control: Humans should choose how and whether to delegate decisions to AI systems, to accomplish human-chosen objectives.
- Non-subversion: the power conferred by control of highly advanced AI systems should respect and improve, rather than subvert, the social and civic processes on which the health of society depends.
- AI Arms Race: an arms race in lethal autonomous weapons should be avoided.
- Risks: risks posed by AI systems must be subject to planning and mitigation efforts commensurate with their expected impact.
- Common Good: superintelligence should only be developed in the service of widely shared ethical ideals, and for the benefit of all humanity rather than one state or organization.

In 2017 and 2018 a lot of programs based on Artificial Intelligence were appeared on the market. For example, Libratus (for Poker); Google DeepMind's AlphaGo; Alibaba language processing; Google Duplex (AI assistant to book appointments over the phone); etc. (Figure 1)



**Figure 1: History of artificial intelligence (A.I.)**  
 Source: Kurenkov, 2016

### 3. Methodology

This paper is a first step of our research about artificial intelligence in the agriculture. (Focused on the literature background of the topic)

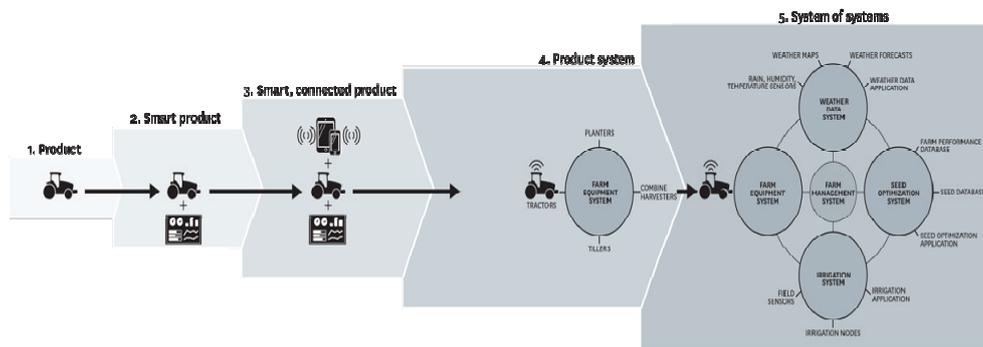
This stage of our research provides us an opportunity to understanding of current and emerging trends, and present representative examples of popular applications.

### 4. Discussion

The evolution of artificial intelligence in the agriculture is slower than in the other sectors, but the number of experiments and promising examples is growing. (Bögel, 2015)

Agriculture 4.0 is an analogy to Industry 4.0. It is the integrated internal and external networking of farming operations as a result of the emergence of smart technology in agriculture.

The increasing capabilities of smart, connected products not only reshape competition within industries but expand industry boundaries. Smart, connected products are defining a new standard for operational effectiveness. The move to smart, connected products creates new best practices in the value chain. Smart, connected products are changing how value is created for customers, how companies compete, and the boundaries of competition itself. (Porter and Heppelmann, 2014) (Figure 2)



**Figure 2: Evolution of farming systems**  
Source: Porter and Heppelmann, 2014

### 5. Conclusion

Artificial intelligence helps farmers with sensors, drones, robots and serious computer power. It is giving farmers the tools they need to grow crops more sustainably and efficiently. Automating farm equipment avoid obstacles and monitor plants to save inputs. Algorithms can identify diseases and the early detection allows farmers to act quickly and minimize losses. The most popular applications of AI in agriculture appear to fall into three major categories: agricultural robots, crop and soil monitoring, predictive analytics (machine learning models)

In addition, in the future we look for opportunities and publications where AI can provide support in decision preparation and decision making. In many cases AI will be very helpful in supporting decision models.

## References

1. Bögel Gy. (2015), *Competing in a smart world*; In: Proceedings of the 5th International Conference on Management 2015. Management, leadership and strategy for SMEs' competitiveness. Szent István University Publishing House, Gödöllő, pp. 8-12. ISBN 978-963-269-492-4 DOI: 10.17626/DBEM.ICoM.P00.2015.p002
2. Chrisley R. (2000), *Artificial Intelligence, Critical Concepts*; Published by Routledge, ISBN 0-415-09332-X
3. Fogarassy, Cs.; B. Horvath; A. Kovacs (2015), Cross-sector analysis of the Hungarian sectors covered by the Effort Sharing Decision – Climate policy perspectives for the Hungarian agriculture within the 2021-2030 EU programming period; APSTRACT - Applied Studies in Agribusiness and Commerce 9 : 4 pp. 17-24., DOI: 10.19041/APSTRACT/2015/4/2
4. Encyclopædia Britannica (2019): *Artificial Intelligence*.  
<https://www.britannica.com/technology/artificial-intelligence>
5. FAO (2017): *The future of food and agriculture – Trends and challenges*; Rome; <http://www.fao.org/3/a-i6583e.pdf>; ISBN 978-92-5-109551-5
6. Gill, Jhon (1977): *Computational Complexity of Probabilistic Turing Machines*; SIAM Journal on Computing, 6(4), 675–695. <https://doi.org/10.1137/0206049>
7. IPCC (2014): *Climate change 2014, Synthesis Report – A report of the intergovernmental panel on climate change*; <https://archive.ipcc.ch/report/ar5/syr/>
8. Kovács, Attila (2015): Planning of agricultural enterprises with interaction of environmental effects; doctoral thesis; Szent István Egyetem, DOI: 10.14751/SZIE.2015.016
9. Kovács, A. in Fogarassy et al. (2015), European Council 2030 Climate and Energy Policy Framework Detailed Impact Assessment of Hungary's Sectors: Case Study to the Ministry of National Development
10. Kovács, A. Zs.; B. Horváth; W. A. H. Al-Zaidi; E. Lencsés (2016), The importance of corporate and social involvement in the implementation of climate friendly projects; European Journal of Business Science and Technology 2:(2), pp. 131-140.
11. Kurenkov A. (2016), *Brief History of Game AI up to AlphaGo*;  
<https://www.andreykurenkov.com/writing/ai/a-brief-history-of-game-ai/>
12. Lencsés et al. (2018), A stochastic simulation of the unmanned aerial vehicles in weed management; In: Illés, B. Cs. (ed.) Proceedings of the International Conference “Business and Management Sciences: New Challenges in Theory and Practice”/“Gazdálkodás- és szervezés-tudomány: Új kihívások az elméletben és gyakorlatban” nemzetközi tudományos konferencia tanulmánykötete: Volume I / I. kötet; Gödöllő, Magyarország: Szent István Egyetemi Kiadó, pp. 319-325.
13. Luger, George (2009): *Artificial intelligence: Structures and strategies for complex problem solving (6<sup>th</sup> edition)*; Pearson ISBN-13: 9780321545909
14. McCorduck, Pamela (2004), *Machines Who Think (2<sup>nd</sup> ed.)*, Natick, MA: A. K. Peters, Ltd., ISBN 978-1-56881-205-2
15. Porter, Michael and Heppelmann, James (2014), How Smart, Connected Products Are Transforming Competition; Harvard Business Review; 92, pp. 64-88; ISSN: 0017-8012 <https://hbr.org/2014/11/how-smart-connected-products-are-transforming-competition>
16. Sharkey, Noel (2007): *Robot wars are a reality*. The Guardian. Retrieved 27 April 2011.
17. Stuart Russell and Norvig Peter (2010): *Artificial Intelligence A Modern Approach Third Edition (3<sup>rd</sup> ed.)*; Pearson Education Inc. ISBN: 978-0-13-604259-4
18. FLI - Future of Life Institute: *Asilomar AI Principles*; <https://futureoflife.org/ai-principles/?cn-reloaded=1>

## PRODUCT DIAGNOSTIC, INFORMATION SUPPLY AND TRUST IN THE HUNGARIAN FOOD SUPPLY CHAIN

*Zsuzsanna LEHOTA<sup>1</sup>, Enikő LENCSE<sup>2</sup>*  
*<sup>1, 2</sup> Szent István University, Gödöllő, Hungary*  
*E-mail: lencses.eniko@gtk.szie.hu*

### **Summary:**

**Purpose:** Food market typically is a saturated market in developed countries. It is true for both the fresh and processed food market. The attitude of customers and consumers becomes more and more critical point in the supply chain. Previously the push strategy was typical but nowadays it being turned into pull strategy. The number of food safety problems are increasing, and it led to food scandal. The food scandals have a high impact on food consumption. These impacts affect food boycotts, which the consumption significantly reduced in a short time. In the long-time food scandals lead to more and more strict food safety rules and regulations. The other trend of consumers behaviour is the differentiation of the value. Traditionally the value was connected to the organoleptic characteristics, determinants of health, process characteristics. Nevertheless, the convenience factors, environmental effects of the products, social effects, and ethical concerns are becoming more and more important in the point of value determination. The new elements in the value determination are categorised as credence products parameters which based on reliability of information. In case of lack of trust and confidence, the level of perceived risk is relatively high. The high perceived risks are attributable to a lack of information and knowledge. The aim of this paper to analyze the effects of traceability in the food supply chain to the consumers behaviour.

**Methodology/approach:** Structural model adapted by Choe was in the focus of our research among the Hungarian food consumers attitude. In the framework of the omnibus survey, 1038 person filled in the questionnaires. This survey was representative of the Hungarian adult population in case of gender, age, domicile, and profession. The questionnaire contains questions about information supply, trust, and product diagnostic (external and internal quality, flavour, freshness, indication of geographical origin, water consumption in the production, etc.). Interval-scale (1-5) helps to measure the variables.

**Findings:** The consumers determine the product characteristics heterogeneity. The standard deviations of the answers were very high, so we need to analyze different consumer segments separately. Hungarian consumers behaviour is the opposite of international trends. Among Hungarian food consumers, traditional food characteristics are more important than the new effects (sustainability production, ethical issue, guarantee). The direct parameters are more important than the indirect (brand, trademark, origin). The consumers lean on their previous experiments.

**Social implications:** raise awareness among the consumers is the most import point in case of upgrade the monitoring system in the food supply chain. Consumer awareness and conscious consumer behaviour are the basics of the monitoring system. The Hungarian food industry needs to pay more attention to consumer safety and exchanges of information.

**Keywords:** information supply, trust, food safety, product parameters

### **1. Introduction**

The saturated consumption is typical of the food markets of developing countries. This concern on both the fresh and processed fruit and vegetable markets. The attitude of the buyers and consumers and their product selection become more and more critical factors in

the supply chain. Previously the 'push' strategy was the characteristic strategy in the supply chain that was based on the supplies. However, these days, the importance of the 'pull' strategy, which acts upon the costumers' value is increasing (Nosratabadi et al., 2019).

In this market transformation, the bottleneck factors are the followings (IsaFruit, 2006): inadequate quality, safety problems of fruit and vegetable, limited availability of choice, lack of comfort factors and relatively high prices. Food scandals are becoming increasingly common. Such as Listeria, E-coli/spinach, usage of alar pesticide, cucumber crises, and chemical residues of vegetables and fruits. The risk of chemical residues is increasing because of the synergic effects of the chemical 'cocktail' (Luijk et al., 2000). According to Grunert (2005), food safety quality problems in the context of consumer risk perception is like a sleeping lion. It has considerable effects on the market. Firstly, through food boycotts, it could lead to a significant decrease in consumption in short-term. Secondly, it leads to more and more strict food safety rules and regulations in the long-term.

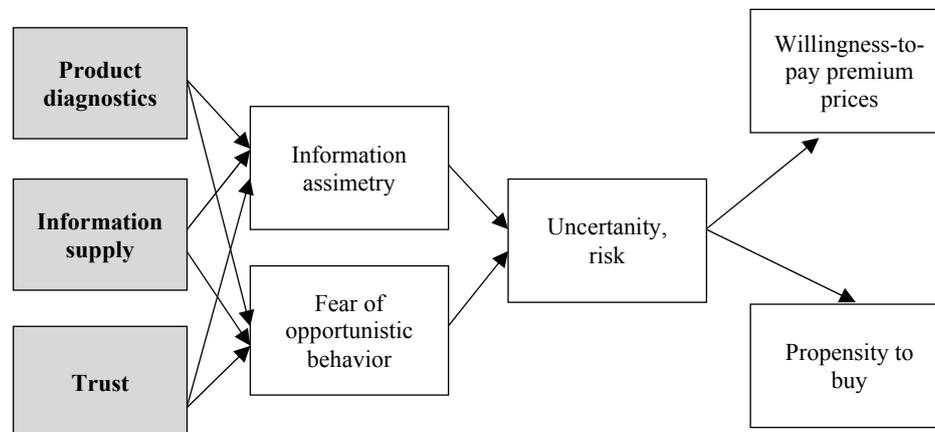
Furthermore, the other crucial trends in food consumer behaviour are the intense differentiation of consumer values. Traditionally, the consumers' choice based on organoleptic features (taste, color, size, shape, hardness), effects on health (functional ingredients), process trait (production technology, food processing technology, storage technology). Recently the convenient product features (e.g., time-saving) are becoming more and more important for the consumers. Moreover appeared to be factors such as sustainable features, effects on environment (resource use, emission of harmful substances, etc.), social factors (working conditions, corporate social responsibility, etc.), ethical factors (fair trade, origin, etc.) (Sparks et al., 2013; Yang et al., 2007).

The aim of this paper to analyse the consumers behaviour in the Hungarian fruit and vegetable supply chain.

## **2. Literature review**

The new elements in the consumer decision are included in the trust features of the product (credence) which based on the trust in information. Food consumer control possibilities are reducing both before, during, and after the purchase. In the case of lack of trust and confidence, there is a significant increase in the perceived risk of food which is caused by information lack about products, product features and parameters and the absence of information about the consequence of food consumption. Product diagnosticity, informativeness, and trust are the mitigators of the uncertainty sources. The uncertainty mitigators provided by the Food Traceability System should result in reduced information asymmetry as well as reduced fear of seller opportunism. (Choe et al., 2007) (Figure 1) The reasons for the uncertainty of consumer choice can be traced back to two areas (Pavlou et al., 2007) on the one hand, the characteristics of the seller, the supplier and the product characteristics, i.e., product quality. In the interest of reducing decision uncertainty, the food consumers try to gather information. (Kim, Beubasat, 2003). The intensity of the information search is significantly influenced by the degree and level of consumer interest (Solomon, 2007). Low consumer interest leads to routine shopping and consumption. High consumer interest requires intensive problem solving from food consumers, which encourages increased information search. If the decision about the purchase could cause significant risk and health consequences, it creates a high consumer interest situation), thus leading to the search for active consumer information. (Verbeke and Nackier, 2004).

According to the literature about food monitoring, consumer behavior demonstrates that the consumer's attention and interest in monitoring are relatively low. Because of it Bradu et al. (2014), Illés et al. (2008/a), and Illés et al. (2008/b) suggested that it should be the link of the follow-up with other product features which are important to the consumer.



**Figure 1: Networking of the market uncertainty and information supply**

Source: Choe et al., 2007, p. 76.

### 3. Methodology

This research focused on monitoring the supply chain point of view. The key factor of this is the customer behaviour which impacts on the supply chain system. Structural model adapted by Choe et al. (2007) was in the focus of our research among the Hungarian food consumers attitude. The research methodology was based on quantitative marketing research, including a questionnaire survey. The survey took place in 2013. In the framework of the omnibus survey, 1038 person filled in the questionnaires. This survey was representative of the Hungarian adult population in case of gender, age, domicile, and profession. In the survey, interval-scale (1-5) helps to measure features of customer behaviour. The questionnaire included food risks, food-purchase attitudes, willingness to pay, the value system, non-food risks, and non-food product categories of sustainable consumption and culture consumer behaviour attitudes.

In this paper, the following elements of the model have evaluated: product diagnostics, information supply, and trust in the monitoring system. Within the questionnaire, the following statements relate to each block of the applied structural model:

- Product diagnostics:
  - external properties of food (size, color, shape, frame, etc.),
  - internal properties of food (nutrient, vitamin, energy content, etc.),
  - taste and freshness of food,
  - compliance with the requirements of a healthy diet (mineral content, antioxidants),
  - purchase of seasonal foods,
  - manufactured designed food brands,
  - private label (brands) products (e.g., Tesco, Spar, etc.),
  - purchase of geographical-labeled foods,
  - origin of foods (country, region, etc.),
  - preference is given to foods with low water consumption,
  - preference is given to foods with low CO<sub>2</sub> emission.

- Information supply:
  - better preparing and planning in case of purchases,
  - check the product ingredients listed on the food label,
  - collect more information about foods (from doctors, from dietetics, from journals, from internet, etc.).
- Trust:
  - in the control of the Hungarian phytosanitary, veterinary and environmental authorities,
  - in food monitoring and identifying system in the supply chain (farmer, producer, retailer),
  - in risk minimisation activities of authorities,
  - trust in a quick and efficient recall system (rapid clarification system, rapid withdrawals from the market, and shredding).

#### **4. Results and discussions**

The results of this paper divided into three parts. We examined the following fields: product diagnostics, information supply, and trust in the monitoring system.

##### ***Product diagnostics***

The product diagnostics model contains nine variables like product features, technological parameters, origin, brand label. According to the respondents, the most important parameters are the taste and the internal features of food. The origin and the seasonality of the foods had also received a favorable rating. These results are parallel with other researches in the literature. The features connected with environmental (e.g., water consumption, CO<sub>2</sub> emission) has a medium rating in the Hungarian representative sample. The branding (both industrial and both private) is as important as the origin; both got medium rating. (Table 1)

In addition to the average data, the standard deviation and the coefficient of variation were examined, what fluctuated between 20.5% and 32.7%. According to statistical categorization, there is no variable for which the average data would provide a well-usable value; that is, the perception of individual properties is not homogeneous. In the light of the above, it can be concluded that, in addition to defining the general context of the model, it is appropriate to categorize respondents in more homogeneous groups and to examine the model. The distribution of the variables is characterized by a skewed to the right, the value of which ranges from -0.371 to -1.433. The proportion of respondents with a high value (4 or 5) in the majority of variables. In the case of the freshness and the internal features of food was the two variables which has high rated (above 80%). Between 60% and 80% of the respondents gave high value for healthy dietary requirements, origin, and seasonality. In the case of other variables the rate of high value is less than 60%. (Table 1)

**Table 1: Variables and results in product diagnostics model**

Product features	average	standard deviation	coefficient of variation	skew	4-5 value (%)
Freshness and taste of food	4,54	0,715	23,0	-1,433	89,6
Internal features of food	4,25	0,872	20,5	-1,018	80,2
Requirements of healthy dietary	4,08	0,940	23,0	-0,820	73,5
Origin of food	3,99	0,982	24,6	-0,863	74,8
Seasonal foods	3,90	0,996	25,5	-0,673	68,0
Label of geographical origin	3,60	1,093	30,4	-0,535	55,4
Low water consumption	3,43	1,122	32,7	-0,390	48,0
Manufactured designed food brands	3,40	1,018	29,9	-0,408	47,4
Private label (brands) products	3,38	1,105	32,7	-0,371	47,6

*Source: own research*

In summary, it can be concluded that consumers decide to buy food primarily for what traditional product characteristics like taste, nutrition. The innovative product characteristics as brand garanti and origin are underestimated by the Hungarian fruit and vegetable consumers. Based on the preceding that consumers concentrated on the products features and the branding and labeling are not important for them in the Hungarian fruit and vegetable supply chain.

Within the product properties, the role of direct food characteristics is decisive; the roles of indirect product properties (e.g., brand, trademark, origin) are smaller compared to the previous ones.

### ***Information supply***

Consumers primarily build their own buying experience and information in purchasing decisions. Improving their purchasing decisions is thought to increase the planning of food purchases. The average values of the variables considered to be medium. According to the literature background and the seconder survey, the importance of the food label is medium because of the information lack and the interpretation of information. The Hungarian fruit and vegetable customers are less search-after and use other sources of information as doctors, dietetics, off-line, and online sources. Raising consumer awareness would be important for improving the consumer perception of the food traceability system. That is an essential criterion to develop and improve the conscious consumer behavior.

The standard deviation values are relatively high in the information supply model. The coefficient of variation is higher than 40% in the case of ‘collect more information’. In the case of the other two variables, the value was under 40%. All the variables are right-skewed. The rate of high values (4 or 5) are medium, in case of planning and monitoring it is around 50%. (Table 2)

In the case of model elements, it is also considered that the behavior of consumers and buyers is relatively differentiated so that the model values obtained from the average data are not sufficiently stable.

**Table 2: Variables in the information supply**

Features	average	standard deviation	coefficient of variation	skew	4-5 value (%)
Better prepare of purchase	3,57	1,145	32,1	-0,460	53,8
Monitoring food label information	3,28	1,247	38,0	-0,424	48,8
Collect more information (doctors, journals, internet)	2,97	1,313	44,2	-0,143	38,0

Source: own research

### **Trust**

The Hungarian fruit and vegetable consumers moderately trust in the phytosanitary, veterinary, and environmental authorities. In case of the quick and efficient recall system (rapid clarification system, rapid withdrawals from the market and shredding) the consumers show moderate to high trust. Average values of variables move within a relatively narrow band (3.81–3.92). The standard deviation values are medium, and the coefficient of variation values moved between 24.7% and 26.4%. All the variables are right-skewed. In case of all elements in the trust model, the rate of high value (4 and 5) is above 65%. (Table 3) The differences between the individual variables of the model elements are small and structurally a relatively homogeneous system.

The confidence of Hungarian food consumers in the monitoring system is relatively favorable, but further improvement is warranted. The main problems are the low awareness and that the consumers are not able to interpret the product features and food risks or understand the possibilities to reduce it and the importance of the monitoring system.

The confidence of Hungarian food buyers in the traceability system is low due to a lack of confidence in the supply chain.

**Table 3: Variables in trust**

Features	average	standard deviation	coefficient of variation	skew	4-5 value (%)
Trust in authorities	3,92	0,969	24,7	-0,587	65,8
Trust in quick and efficient recall system	3,89	1,022	26,3	-0,724	67,0
Turst in risk minimisation activities of authorities	3,84	0,994	25,9	-0,592	64,4
Turst in food monitoring system in the supply chain	3,81	1,007	26,4	-0,718	65,2

Source: own research

## **5. Conclusion**

The product characteristic shows heterogeneity according to the consumers. The standard deviations of the answers were very high, so in the future, we need to analyze different consumer segments separately. Hungarian consumers behaviour differs from international trends. Among Hungarian food consumers, traditional food characteristics are more important than the new effects (sustainability production, ethical issue, guarantee). The direct parameters are more important than the indirect ones (brand, trademark, origin). The consumers lean on their previous experiments.

Raise awareness among the consumers is the most important point in case of upgrade the monitoring system in the food supply chain. The Hungarian food industry needs to pay more attention to consumer safety and exchanges of information.

## References

1. Bradu C., Orquin J. L. and J. Thøgersen (2014): *The Mediated Influence of a Traceability Label on Consumer's Willingness to Buy the Labelled Product*. Journal of Business Ethics, 12:(4) pp. 283- 295. <https://doi.org/10.1007/s10551-013-1872-2>
2. Choe Y., Park J., Chung M., Lee C., Moon J. (2007): *Effect of the Food Traceability System for Building Trust: Price Premium and Buying Behavior*. AMCIS 2007 Proceedings, <http://aisel.aisnet.org/amcis2007/> pp.59. <https://doi.org/10.1007/s10796-008-9134-z>
3. Illés B. Cs., Komáromi N., Lehota Zs. (2008a), *Traceability in Hungarian fresh vegetable and fruit sector: An Transaction Cost Economics approach*. Annals of the Polish association of agricultural and agribusiness economists, 10:(5) pp. 26-31.
4. Illés B Cs., Komáromi N., Lehota Zs. (2008b), *Development of traceability in Hungarian fresh vegetable and fruit sector*. Hungarian Agricultural Research, 17:(2-3) pp. 37-41. ISSN 1216-4
5. ISAFRUIT (2006), *Increasing fruit consumption through a trans-disciplinary approach delivering high quality produce from environmentally friendly, sustainable production methods*, Annex 1. Description of Work, European Commission, Brussels, Belgium, (FP6-food-ct-2006-016279). pp. 284.
6. Nosratabadi, S.; Mosavi, A.; Shamsirband, S.; Kazimieras Zavadskas, E.; Rakotonirainy, A.; Chau, K.W. (2019), *Sustainable Business Models: A Review*. Sustainability, 11:(6), pp. 1663-1693. <https://doi.org/10.3390/su11061663>
7. Pavlou P. A. , Liang H., Xue Y. (2007), *Understanding and mitigating uncertainty in online environments: a principal-agent perspective*. MIS Quarterly, 31:(2) pp. 105-136. <https://doi.org/10.5465/ambpp.2005.18781473>
8. Solomon M. R. (2007), *Consumer behavior- Buying, having, and being*, New Jersey: Pearson Education, Inc. ISBN: 139780135153369, DOI: 10.1108/00251740910960169
9. Sparks B. A. , Perkins H. E. , Buckley R. (2013), *Online travel reviews as persuasive communication: The effects of content type, source, and certification logos on consumer behavior*. Tourism Management, 39:(1) pp. 1-9. <https://doi.org/10.1016/j.tourman.2013.03.007>
10. Yang S., Park J. K., Park J. (2007), *Consumers' channel choice for university-licensed products: Exploring factors of consumer acceptance with social identification*, Journal of Retailing and Consumer Services, 14:(3) pp. 165-174. <https://doi.org/10.1016/j.jretconser.2006.04.004>

## CONSUMER WILLINGNESS AND PRICE PREMIUM CHARACTERISTICS IN THE HUNGARIAN FOOD SUPPLY CHAIN

*Zsuzsanna LEHOTA<sup>1</sup>, Enikő LENCSE<sup>2</sup>*  
*<sup>1, 2</sup> Szent István University, Gödöllő, Hungary*  
*E-mail: lehota.zsuzsanna@gtk.szie.hu*

### **Summary:**

**Purpose:** The food consumers may confidently rely on information about product characteristics and their previous shopping experiences under traditional food choice condition. Due to changes in trends, the decision-making of the customers becomes more difficult, and their own previous shopping experiences become unreliable. The non-measurable (qualitative) product characteristics are increasingly important for the food consumer, for example, personal benefits, social advantage, and community preferences, ethical issues, technology to be used in processing. The customers' intention of re-purchase is a key-factor for the producer. Additional costs should be expected for the producers if they want to fit the food-safety regulation and changed consumers requirements (origin of the product). Because of this it is very important to examine the willingness-to-pay price premium of consumers. Our paper aims to examine the connection between the follow-up/monitoring and its effect on the food consumers' attitude, which is the key process of supply chain management. We examine the correlation between re-purchase willingness and the willingness-to-pay price premium.

**Methodology/approach:** Structural model adapted by Choe was in the focus of our research among the Hungarian food consumers attitude. In the framework of the omnibus survey, 1038 person filled in the questionnaires. This survey was representative of the Hungarian adult population in case of gender, age, domicile, and profession. The questionnaire contains questions about food risk, purchasing behaviour, willingness-to-pay premium, value system, non-food risk, sustainable consumption, and culture. Interval-scale (1-5) helps to measure the willingness-to-pay price premium.

**Findings:** The purchase-willingness of the Hungarian food-consumers are very low in the case in low-risk foods. It reached the medium level in the case of seasonal foods, local foods, and free-range animals. On condition of the organic foods, the purchase willingness is very low. The standard deviations of the answers were very high, so we need to analyze different consumer segments separately. The high demand for risky foods is due to the low-income level, high food price, and the low level of awareness of consumers. The average of the willingness-to-pay price premium is very low. In the case of Hungarian consumers, the willingness-to-pay price premium is very low on organic and fair-trade food.

**Keywords:** information supply, trust, food safety, product parameters

### **1. Introduction**

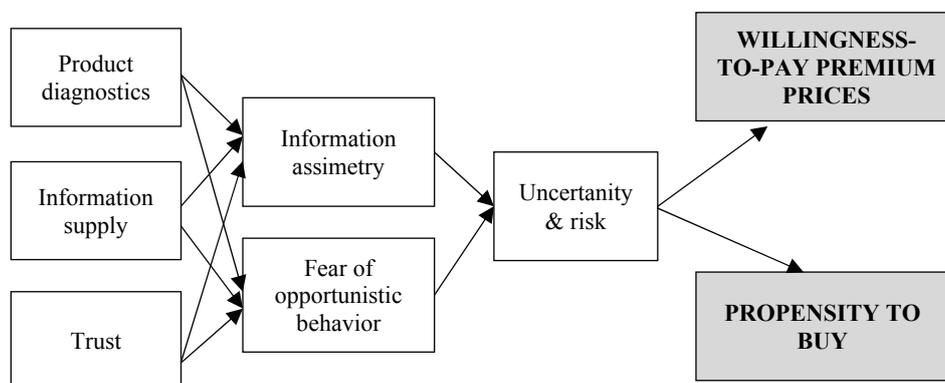
In the circumstances of a traditional food selection, the food consumers based their purchase decision on the organoleptic assessment of the product or their own previous experiences. Recently there were changes in the food selection trends. The decisions have been becoming harder and harder for the food consumers, and their own previous experiences became unreliable. Increasingly differentiated food demand requires greater market orientation at all stages of the food chain, from the farmer to the retailer, to the final consumer. The heterogeneity of the final market demand also defines the type and degree of market

orientation (Grunert et al., 2005). It is increasingly important for food consumers to take into consideration non-measurable (qualitative) product characteristics like as personal benefits (comfort, health, safety, organoleptic properties), social and community benefits (impact on natural environment, biodiversity, and ethical issues), as well as the process characteristics (quality control, product origin, technological features). (Zimmermann-van der Vorst, 2009). According to the literature about food monitoring, consumer behavior demonstrates that the consumer's attention and interest in monitoring are relatively low. Because of it Bradu et al. (2014), Illés et al. (2008a), and Illés et al. (2008b) suggested that it should be the link of the follow-up with other product features which are important to the consumer.

In the case of foodstuffs, the existence of a re-purchase intention is a key factor for foodstuff and brand. Product features such as better quality, safety food, compliance with specific requirements, defined origin usually are additional costs for the seller. Therefore, it is very important for the seller to have a willingness to buy and to pay the price premium from consumers.

Perceived seller and product uncertainty and risk effects on both the intention to purchase and the consumer's willingness-to-pay price premium. The price premium is the amount of money above the average price that the purchaser is willing to pay for a product that meets a specific expectation (Ba et al., 2002).

As illustrated in Figure 1, information asymmetry and fear of opportunism are the sources of the perceived uncertainty. The positive consequences of mitigated perceived uncertainty are the price premium and increased purchase intention. The consumers' purchase is significantly influenced by their 'mitigated uncertainty' about the food supply chain. With mitigated uncertainty, consumers are inclined to buy more food with their information provided in the traceability system than pay more for them. The results imply that consumers may switch their consumption of food from non-traceable to traceable. (Choe et al., 2007)



**Figure 1: Networking of the market uncertainty and information supply**

*Source: Choe et al., 2007, p. 76.*

## 2. Methodology

This research focused on monitoring in the supply chain point of view. The key factor of this is the customer behaviour which impacts on the supply chain system. Structural model adapted by Choe et al. (2007) was in the focus of our research among the Hungarian food consumers attitude. The research methodology was based on quantitative marketing research, including a questionnaire survey. The survey took place in 2013. In the framework of the omnibus survey, 1038 person filled in the questionnaires. This survey was representative of

the Hungarian adult population in case of gender, age, domicile, and profession. In the survey, interval-scale (1-5) helps to measure features of customer behavior. The questionnaire included food risks, food-purchase attitudes, willingness to pay, the value system, non-food risks, and non-food product categories of sustainable consumption and culture consumer behaviour attitudes.

In this paper, the following elements of the model are evaluated: willingness to buy and willingness to pay. Within the questionnaire, the following statements relate to each block of the applied structural model:

- willingness to buy:
  - eco and organic food,
  - fair trade food,
  - seasonal food,
  - locally produced and processed food,
  - free-kept animals ' products (egg, milk, meat),
  - special diet (vegan, ovo-, lakto-, ovo-lakto vegetarian, semivegetarian).
- willingness to pay price premium:
  - for good tasting and fresh food,
  - for better food quality,
  - for safer food,
  - for food which more favorable to the natural environment,
  - for ethical food.

### **3. Results and discussions**

The results of this paper divided into two parts. We examined the following fields: willingness to buy and willingness to pay.

#### ***Willingness to buy***

In case of willingness to buy the questionnaire contained six different low-risk food types. The willingness to buy low-risk foods is especially low among Hungarian consumers. Only in the case of three types, the respondents showed medium willingness to buy. The Hungarian consumers willing to buy a higher amount of seasonal food, locally produced and processed food and free-kept animals' products. (Table 1)

Also, the standard deviation of variables was between 0.974-1.279, and the coefficient of variations fluctuated between 30% and 50%. According to statistical categorization, there is no variable for which the average data would provide a well-usable value; that is, the perception of individual properties is not homogeneous. In the light of the above, it can be concluded that, in addition to defining the general context of the model, it is appropriate to categorize respondents in more homogeneous groups and to examine the model. In the case of four variables, the distribution of the variables is characterized by a skewed to the right, the value of which ranges from -0.134 to -0.662. In the case of 'eco and organic food' and 'vegetarian food' the distribution of the variables is characterized by a skewed to the left, the value of which ranges from 0.622 to 1.492. In case of the proportion of respondents with a high value (4 or 5), only the 'Seasonal food' and 'locally produced and processed food' were the two variables which has medium-high rated (above 50%). Between 30% and 50% of the respondents gave high value for 'free-kept animals' products' and 'fair trade food'. In the case of 'eco and organic food,' the rate of high value is very low, numerically less than 20%. According to our representative research, Hungarian food consumers do not willing to buy more vegetarian food. (Table 1)

**Table 1: Variables and results in willingness to buy**

	Average	standard deviation	coefficient of variation	skew	4-5 value (%)
Seasonal food	3,94	0,974	24,7	-0,662	68,8
Locally produced and processed food	3,66	1,062	29,0	-0,536	58,2
Free-kept animals' products	3,31	1,214	36,7	-0,395	45,9
Fair trade food	2,88	1,279	44,4	-0,134	33,8
Eco and organic food	2,17	1,232	56,8	0,622	16,7
Vegetarian food	1,61	1,035	64,3	1,492	7,9

Source: own research

Overall, the demand for low-risk food is low in spite of high perceived food risks. This tendency to purchase partly due to lack of income, relatively high prices, and relatively low levels of consumer awareness in the Hungarian fruit and vegetable supply chain.

Among Hungarian food consumers, the willingness to purchase is low in the tested food groups, and the model-related variables are almost on similar levels.

### **Willingness to pay a price premium**

The cost of price premium was measured with the help of an interval scale, which was to a Likert scale from 1 to 5. In case of willingness to pay a price premium, the average value on the scale was between 1.33 and 1.72. The lowest willingness to pay price premium was in the case of ethical foods (1.33). However, the highest willingness to pay it was observed for safer foods (1.72). The standard deviation values were medium; it moves between 0.677 and 1.136. Because of the relatively low average values, the coefficient of variations was extremely high. For two variables, it is under 60%, for the other three variables these values moved between 60% and 70%. In case of all variables, the distribution of the variables is characterized by a skewed to the left, the value of which ranges from 1.654 to 2.306. The rate of the high value (4 or 5) was extremely low in case of willingness-to-pay price premium, only for the 'safer foods' this rate is above 10%, in case of 'better food quality' and 'good tasting and fresh food' were between 5% and 10% and for the other two variables it was under 5%. The willingness of Hungarian consumers to pay a price premium is particularly low for foodstuffs, especially for the natural environment and ethical aspects according to our research. (Table 2)

**Table 2: Variables and results in willingness-to-pay premium price**

	average	standard deviation	coefficient of variation	skew	4-5 value (%)
Safer food	1,72	1,136	66,0	1,654	10,3
Better food quality	1,67	1,068	63,9	1,690	8,6
Good tasting and fresh food	1,63	1,050	64,4	1,783	9,2
Environment friendly food	1,50	0,864	57,6	1,891	4,3
Ethical food	1,33	0,677	50,9	2,306	2,0

Source: own research

The questionnaire contains the question about the level of the price premium which the respondents will-to-pay maximum. The possible price premium levels were the following: 0-5%, 6-10%, 11-15%, 16-20%, over 21%. The majority (more than 60%) of the respondents willing to pay 0-5% higher price than for traditional foods. In the case of 'better food quality' and the 'safety food' willing to pay a higher price with 6-10%. The Hungarian fruit and vegetable consumers do not willing to pay more for environmentally friendly and ethical

food. One of the paradoxes of Hungarian food consumer behavior is the willingness to pay a price premium for low-risk food, despite high perceived food risks. (Table 3)

**Table 3: Level of a price premium**

	0-5 %	6-10 %	11-15%	16-20%	> 21%
Good taste and freshness	65,2	18,7	7,9	4,6	3,6
Better food quality	62,2	20,9	8,4	4,6	4,0
Safety food	61,6	20,8	7,2	5,0	5,3
Environmentally friendly food	68,7	18,4	8,6	3,1	1,2
Ethical food	76,3	16,7	5,0	1,8	0,2

Source: own research

#### 4. Conclusion

The purchase-willingness of the Hungarian food-consumers is very low in the case in low-risk foods. It reached the medium level in the case of seasonal foods, local foods, and free-range animals. Overall, the demand for low-risk food is low in spite of high perceived food risks. This tendency to purchase partly due to lack of income, relatively high prices, and relatively low levels of consumer awareness in the Hungarian fruit and vegetable supply chain. One of the paradoxes of Hungarian food consumer behavior is the willingness to pay a price premium for low-risk food, despite high perceived food risks. Among Hungarian food consumers, the willingness to purchase is low in the tested food groups, and the model-related variables are almost on similar levels. The willingness of Hungarian consumers to pay a price premium is particularly low for foodstuffs, especially for the natural environment and ethical aspects according to our research.

#### References

1. Ba. S. and Pavlou, P. A. (2002), *Evidence of the effect of trust building technology in electronic markets: price premium and buyer behavior*. MIS Quarterly, 26:(3), pp.243-268. <https://doi.org/10.2307/4132332>
2. Bradu C., Orquin J. L. and J. Thorgersen (2014), *The Mediated Influence of a Traceability Label on Consumer's Willingness to Buy the Labelled Product*. Journal of Business Ethics, 12:(4) pp. 283- 295. <https://doi.org/10.1007/s10551-013-1872-2>
3. Choe Y., Park J., Chung M., Lee C., Moon J. (2007), *Effect of the Food Traceability System for Building Trust: Price Premium and Buying Behavior*. AMCIS 2007 Proceedings, <http://aisel.aisnet.org/amcis2007/> p. 59. <https://doi.org/10.1007/s10796-008-9134-z>
4. Grunert K. G. (2005), *Food quality and safety: consumer perception and demand*. European Review of Agricultural Economics, 32:(3), pp. 369-391. <https://doi.org/10.1093/eurrag/jbi011>
5. Illés B. Cs., Komáromi N., Lehota Zs. (2008a), *Traceability in Hungarian fresh vegetable and fruit sector: An Transaction Cost Economics approach*. Annals of the Polish association of agricultural and agribusiness economists, 10:(5), pp. 26-31.
6. Illés B Cs., Komáromi N., Lehota Zs. (2008b), *Development of traceability in Hungarian fresh vegetable and fruit sector*. Hungarian Agricultural Research, 17:(2-3), pp. 37-41. ISSN N 1216- 4
7. Zimmermann K. L. and Van der Lans I. A. (2009), *The paradigm of consumer-driven and responsive supply chains: an integrated project approach*. Journal of Horticultural Science & Biotechnology, ISAFRUIT Special Issue, 45:(4), pp. 7-12. <https://doi.org/10.1080/14620316.2009.11512587>

## INFORMATION ASYMMETRY, FEAR OF CONDUCT OPPORTUNIST AND ROLE OF UNCERTAINTY RISK IN THE HUNGARIAN FOOD SUPPLY CHAIN

*Zsuzsanna LEHOTA<sup>1</sup>, Enikő LENCSÉS<sup>2</sup>*  
*<sup>1, 2</sup> Szent István University, Gödöllő, Hungary*  
*E-mail: lehota.zsuzsanna@gtk.szie.hu*

### Summary:

**Purpose:** According to international literature, the perceived consumer risk is higher if the product quality is not homogeny, or it is hard to adjudge it. That characteristic of the fruit and vegetable sector. The information asymmetry is the character of these market. Asymmetric information, also known as "information failure," occurs when one party to an economic transaction possesses greater material knowledge than the other party. This typically manifests when the seller possesses greater knowledge than the buyer. The aim of this paper to analyse the effects of traceability in the food supply chain to the consumers behaviour.

**Methodology/approach:** Structural model adapted by Choe was in the focus of our research among the Hungarian food consumers attitude. In the framework of the omnibus survey, 1038 person filled in the questionnaires. This survey was representative of the Hungarian adult population in case of gender, age, domicile, and profession. The questionnaire contains questions about information asymmetry, fear of producers from the opportunist behaviour, uncertainty risk in food consumption. Interval-scale (1-5) helps to measure the willingness-to-pay price premium.

**Findings:** The Hungarian food costumers estimated the information asymmetry medium-high. The standard deviations of the answers were very high, so we need to analyze different consumer segments separately. The main methods to decrease the information asymmetry on the fruit and vegetable market is to favour Hungarian products over the other according to the respondents. The food producers believe that Hungarian consumers preferred Hungarian food. The food risks were observed by consumers are very high, which is a very important barrier in case of increase of food consumption.

**Keywords:** information supply, trust, food safety, product parameters

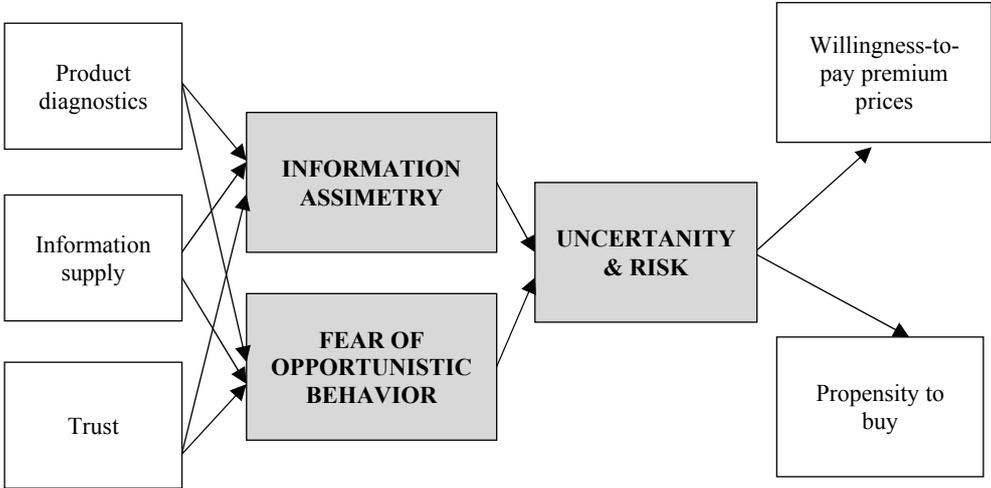
### 1. Introduction

The relationship between the producer and the consumer is fundamentally determined by the separation of the actors, which is shown below (Lehota, Tomcsányi, 1994): local separation, time separation, ownership separation, the separation between the values and the existing segregation of information.

Changes in the macro-and micro-environment have strengthened the separation of the producer, the processor, the distributor and the consumer, and the disadvantages and risks arising therefrom. The relationships between the players in the distribution channel were constantly in existence, which was mainly involved in marketing and logistics functions. The main task of the supply chain is to create demand, generate customer value, and distribute revenue between channel operators. The main task of the physical distribution of goods (logistics) is to deliver the product requested by the purchaser in sufficient quantity, quality, condition, time and place, and at the expense (Szegedi, Prezenszky, 2008).

Chung et al. (2006) consider that the perceived consumer risk is high if the product quality is not homogeneous or if it is difficult to judge. This is a typical feature of fruit and vegetable customer behavior. The information asymmetry between the seller and the buyer, both in the extensive or intensive form of consumer information collection, is a typical situation. According to the information asymmetry (Pavlou et al., 2006; Nelson, 1970), the buyer or consumer take that the seller has more and better information about the product, product properties, and sales practices. As a consequence of information asymmetry, consumers and buyers find it difficult to distinguish between high- and low-quality products, as it makes it impossible to know all the properties and characteristics of the product before the purchase process. The main reason for information asymmetry is the consequence of the opportunistic behavior of sellers and suppliers, which is based on excessive, unilateral enforcement of self-interest, for example misleading quality attributes and, labelling, intentional contract errors, faulty interpretation of product properties, misleading quality assurance (Mishra et al., 1998). In the fruit and vegetable market, the quality provided and expected by the consumer is different. One possible solution for this problem is the segmentation of consumer markets and the adaptation of products to consumer segments. (Bauer, 1967)

As illustrated in Figure 1, information asymmetry and fear of opportunism are the sources of the perceived uncertainty. The consumers' purchase is significantly influenced by their 'mitigated uncertainty' about the food supply chain. With mitigated uncertainty, consumers are inclined to buy more food with their information provided in the traceability system than pay more for them. The results imply that consumers may switch their consumption of food from non-traceable to traceable. (Choe et al. 2007)



**Figure 1: Networking of the market uncertainty and information supply**  
 Source: Choe et al., 2007, p. 76.

According to EU research (EUROBAROMETER) on perceived food risks, food risks perceived by Hungarian consumers are high, and they have a strong link to the risks in the media, with the news. That is, the risks are not product-specific, but the consequences of the media risk magnifying effect.

**2. Methodology**

This research focused on monitoring the supply chain point of view. The key factor of this is the customer behaviour which impacts on the supply chain system. Structural model adapted

by Choe et al. (2007) was in the focus of our research among the Hungarian food consumers attitude. The research methodology was based on quantitative marketing research, including a questionnaire survey. The survey took place in 2013. In the framework of the omnibus survey, 1038 person filled in the questionnaires. This survey was representative of the Hungarian adult population in case of gender, age, domicile, and profession. In the survey, interval-scale (1-5) helps to measure features of customer behaviour. The questionnaire included food risks, food-purchase attitudes, willingness to pay, the value system, non-food risks, and non-food product categories of sustainable consumption and culture consumer behaviour attitudes.

In this paper, the following elements of the model are evaluated: information asymmetry, opportunistic behaviour of the seller, uncertainty of risk. Within the questionnaire, the following statements relate to each block of the applied structural model:

- Information asymmetry:
  - reduce the purchase of food from distant countries,
  - prefer Hungarian food to foreigners,
  - buy from local producers and processors and not from far transported foodstuffs,
  - buy in usual shop.
- Fear of the seller's opportunistic behavior:
  - non-buying food from illegal or typically cheap sources,
  - prefer products which produced in non-large-scale firms,
  - prefer food produced by traditional technology,
  - buy on the local market or the farmer's market,
  - produced my own food.
- Uncertainty and detected food risk:
  - food-related health risks,
  - residues of pesticides in food (corn, fruit, vegetable),
  - residues of veterinary medicines in meat and milk,
  - toxic heavy metals (lead, mercury, cadmium, etc. ),
  - microbiological (virus and bacterial) infections of foodstuffs,
  - consumption of genetically modified food,
  - additives and preservatives in processed foods,
  - zoonotic diseases (could be transferred from animals to humans), e.g. BSE, poultry and swine flu, etc.,
  - harmful molds in foodstuffs,
  - produce technology (food preservatives in nano, high-pressure, or high-voltage space).

### **3. Results and discussions**

The results of this paper dived into three parts. We examined the following fields: information asymmetry, opportunistic behaviour of the seller, the uncertainty of risk.

#### ***Information asymmetry***

The information asymmetry of food consumers was indirectly measured. In particular, variables were introduced in which case the information asymmetry between seller and buyer can be reduced or is lower than average. This was also encouraged by the fact that, in secondary literary research, there was no sufficient information on how Hungarian consumers assessed information asymmetry, whereas Hungarian researches and analyses were not available.

Information asymmetry is assessed by Hungarian food consumers to be of medium-high value. The average values move between 3.31 and 4.01. The standard deviations of variables were above 1 in all case. The coefficient of variations fluctuated between 20% and 30% in one case ('Prefer Hungarian to foreigners'). In the case of three variables, the coefficients of variations move between 30% and 40%. Based on these data, there are also considerable differences in the level of information asymmetry in the perception of Hungarian consumers. In case of all variables, the distribution of the variables is characterized by a skewed to the right, the value of which ranges from -0.360 to -0.998. (Table 1)

According to statistical categorization, there is no variable for which the average data would provide a well-usable value; that is, the perception of individual properties is not homogeneous. In the light of the above, it can be concluded that, in addition to defining the general context of the model, it is appropriate to categorize respondents in more homogeneous groups and to examine the model.

In case of the proportion of respondents with a high value (4 or 5), only the 'Prefer Hungarian to foreigners' was the only one variable which has high rated (above 80%). In the case of the other three variables, it was between 40% and 60%. (Table 1)

**Table 1: Variables and results in information asymmetry**

	Average	standard deviation	coefficient of variation	skew	4-5 value (%)
<b>Prefer Hungarian to foreigners</b>	4,01	1,010	25,2	-0,945	82,3
<b>Buy from local producer</b>	3,58	1,117	31,2	-0,551	56,0
<b>Reduce food from distant countries</b>	3,51	1,108	31,6	-0,998	49,4
<b>Buy directly from producer, manufacturer</b>	3,31	1,203	36,3	-0,360	46,6

*Source: own research*

### ***Opportunistic behaviour of the seller***

Also, the indirect measurement method was used to measure the fear of the seller's opportunistic behavior. In particular, variables were introduced in which case, the opportunistic behavior of the seller can be reduced or low. In terms of the seller's opportunistic conduct, Hungarian food consumers are also characteristic of the general perception, namely, the producers are loyal and faithful with their supplier. This also shows confidence in the source of supply from consumer behavior, while this cannot be linked to a specific product or product property.

Hungarian consumers are less regarded as a means of reducing opportunistic behavior by local farmer markets and food supply from their own production.

The standard deviation values move between 0.829 and 1.505. The coefficient of variations was between 19.2% and 58.8%. In the case of the first variable ('do not buy illegal, typically cheap food') the coefficient of variations was 19.2, meaning the calculation based on the average would result in reliable model values. For three variables, the coefficient of variations was between 20% and 30% and in the case of 'Produced food for me,' this value was relatively high, 58.8%. In each case, the variables of fear of the seller's opportunistic behavior are skewed to the right, the value of which ranges from -0.331 and -0.935. The rate of the high value (4 or 5) was above 70% in the case of two variables and under 40% in the case of 'Produced food for me.' In the other case the rate of high value was between 50% and 70%. (Table 2)

### ***Uncertainty and detected food risk***

According to respondents, the level of the risk of food was high in Hungary, in the case of the nine variables, the value of each of above 4, excluding ‘modern food technologies’ (3.98). The average values of food risks vary between 3.98 and 4.45, with very high for ‘Residues of heavy metal,’ ‘Residues of pesticides,’ ‘Zoonotic diseases,’ ‘Microbiological infections,’ ‘Harmful food molds’ and ‘Residues of Veterinary medicine.’ From these four it is important in case of fruit and vegetable consumption. In the case of the risks under consideration, the standard deviation is medium-low, it was 0.743-0.964. The coefficient of variation is less than 20% for seven variables and 20% for two variables. In the decisive part of the variables, the average data is suitable for model calculation as they are homogeneous and relatively low relative scattering. For each of these variables, a right skew is characteristic, which varies between -0.752 and -1.280. The ratio of the high value (4-5) to risk factors and variables given by respondents is particularly high. Except for ‘modern food technologies’ the rate of high value is above 80%. (Table 3)

**Table 2: Variables and results in opportunistic behaviour of the buyer**

	average	standard deviation	coefficient of variation	skew	4-5 value (%)
<b>Do not buy illegal, suspiciously cheap food</b>	4,31	0,829	19,2	-0,935	76,0
<b>Buy in same shop</b>	4,16	0,936	22,7	-0,892	78,1
<b>Prefer traditional technology-produced food</b>	3,88	0,961	24,8	-0,659	67,6
<b>Prefer food from non-large company</b>	3,57	1,014	28,0	-0,478	53,7
<b>Buy on local market from farmers</b>	3,38	1,206	35,7	-0,417	59,7
<b>Produced food for me</b>	2,56	1,505	58,8	-0,331	32,4

*Source: own research*

**Table 3: Variables and results in uncertainty and detected food risk**

	average	standard deviation	coefficient of variation	skew	4-5 value (%)
<b>Residues of heavy metal</b>	4,45	0,751	16,9	-1,225	87,6
<b>Residues of pesticides</b>	4,39	0,743	16,9	-0,937	86,6
<b>Zoonotic diseases</b> (could be transferred from animals to humans)	4,36	0,818	18,8	-1,280	85,6
<b>Microbiological infections</b>	4,34	0,813	18,7	-1,147	85,0
<b>Harmful food molds</b>	4,33	0,822	19,0	-1,127	84,4
<b>Residues of Veterinary medicine</b>	4,31	0,805	18,9	-0,868	82,2
<b>Additives and preservatives</b>	4,28	0,802	18,7	-0,874	83,0
<b>GMO food</b>	4,27	0,861	20,2	-1,008	81,2
<b>Modern food technologies</b>	3,98	0,964	24,2	-0,752	70,5

*Source: own research*

#### 4. Conclusion

The Hungarian food costumers estimated the information asymmetry medium-high. The main methods to decrease the information asymmetry on the fruit and vegetable market is to favour Hungarian products over the other according to the respondents. Hungarian food consumers prefer domestic food to foreigners, and this is seen as a way to reduce information asymmetry. This is beneficial for the sale of the domestic food economy but is not beneficial for consumer behavior. Hungarian Food consumers consider the general criteria for the main forms of food risk reduction. The food risks were observed by consumers are very high, which is a very important barrier in case of increase in food consumption. Overall, it is considered that Hungarian food consumers also consider the level of fear of the opportunistic behavior of sellers in a general context, less linked to products and product characteristics. The risks of food products perceived by Hungarian food buyers are high, which also constitute an important obstacle to the increase in the consumption of foodstuffs. Differences in the perceived dietary risk variables are small and structurally relatively homogeneous.

#### References

1. Bauer, R.A. (1967), Consumer Behavior as Risk Taking. In: Cox, D.F., Ed., *Risk Taking & Information Handling in Consumer Behavior*, Graduate School of Business Administration, Harvard University, Boston, 23-33
2. Choe Y., Park J., Chung M., Lee C., Moon J. (2007), *Effect of the Food Traceability System for Building Trust: Price Premium and Buying Behavior*. AMCIS 2007 Proceedings, <http://aisel.aisnet.org/amcis2007/> pp.59. <https://doi.org/10.1007/s10796-008-9134-z>
3. Chung M., Moon J., Yoo B., and Choe Y. (2006), *Paradox of information quality: Do pay more for premium product information on e-commerce sites?* Proceedings of the twelfth American Conference on Information Systems. Acapulco, Mexico, pp. 418-424.
4. EUROBAROMETER: <http://www.europarl.europa.eu/hungary/hu/aktualis/eurobarometer.html>
5. Lehota J, Tomcsányi P. (1994), *Agrármarketing*, Mezőgazda Kiadó, Budapest, ISBN 978-963-843-92-39
6. Mishra D. P., Heide J. B., Cort S. G.(1998), *Information asymmetry and levels of agency relationships*. *Journal of Marketing of Marketing Research*, 35:(3) pp. 277-295. <https://doi.org/10.2307/3152028>
7. Nelson, Phillip (1970), *Information and Consumer Behavior*, *Journal of Political Economy*, 72 (March-April), 311-29. <https://doi=10.1086/259630>
8. Szegedi Z., Prezenszky J. (2006), *Logisztika-menedzsment*, Kossuth Kiadó, Budapest, ISBN 97896309-8877-3
9. Pavlou P. A. , Liang H., Xue Y. (2007), *Understanding and mitigating uncertainty in online environments: a principal-agent perspective*. *MIS Quarterly*, 31:(2) pp. 105-136. <https://doi.org/10.5465/ambpp.2005.18781473>

## SOCIAL, ECONOMIC AND ENVIRONMENTAL ASPECTS OF MILITARY UNITS' PRESENCE IN MUNICIPALITIES

*Marzena PIOTROWSKA-TRYBULL<sup>1</sup>, Stanislaw SIRKO<sup>2</sup>*

*<sup>1,2</sup> War Studies University, Faculty of Management and Command, Warsaw, Poland*

*E-mail: mtrybull@yahoo.co.uk*

**Summary:** The article refers to the discussion on the impact of military units on the socio-economic situation, state of the natural environment and development of the territorial units in which they are located.

**Purpose:** Taking into consideration that military units affect the socio-economic situation in municipalities to different degrees the goal of the studies was formulated as follows: how the inhabitants of selected municipalities perceive the presence of a military unit in the social, economy and environmental spheres and which factors affect this perception.

**Design/methodology/approach:** In 2017, the inhabitants of five municipalities in Poland were asked for an opinion on the impact of the military unit on the socio-economic situation in their municipalities. The article contains the results of own analyses, which were carried out on the basis of data collected by ASM using the CATI method.

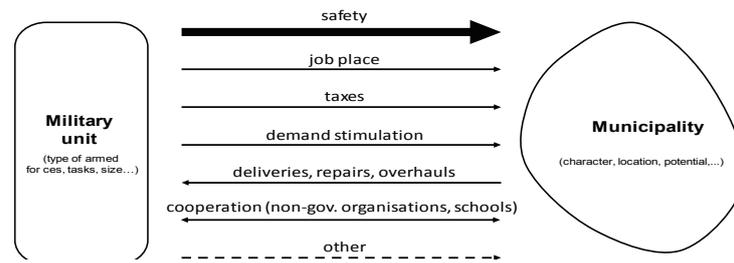
**Findings:** The presence of military units in the municipalities is accepted by their inhabitants. The majority of the residents participating in the study assessed the presence of a military unit in the municipalities positively. In general, the relations between an individual and local entities are also perceived as positive. These results indicate acceptance of the military presence. Stationing of a military unit in municipalities creates both job places for residents and benefits for some companies because of the products supplied to the units, services provided for soldiers and their families, overhaul and construction works performed within the units, carried out by local companies as a result of tenders announced. The units also feed the budgets of the municipalities from taxes paid by them, which is very important for some of the regions.

**Keywords:** military units, influence, municipalities, local development

### 1. Introduction

Location of military units in a specific geographical space is dictated by considerations of national security. Belonging to specific types of army and armed forces, they carry out defence tasks, and their stationing in the territory of municipalities, results from operational conditions. Their presence is conducive to establishing relations with local authorities, inhabitants, schools and various associations. Municipalities can see the units as „partners” who, to a certain extent, can participate in the local development process. Their role and place in this process is determined by the tasks they perform, their structure, the number of soldiers and military personnel they employ, the intensity of cooperation with entities in the municipalities, as well as the nature and potential of the municipalities on whose territory the units are based. Military units, which are separated administratively and economically and have legal personality, offer jobs to local people, they function as employers for product suppliers or for the entities performing overhauls and repairs, and finally they pay the following taxes: agricultural, real estate and forestry taxes. They also cooperate with educational institutions and local governments, taking part in the process of raising young

people and cultivating patriotic traditions. This results in a greater or lesser impact on the socio-economic situation in municipalities (Figure 1).



**Figure 1: Influence in the military unit-municipality system**  
*Source: own study*

From the point of view of the municipalities' inhabitants, it is important to have a stable situation, both regarding their place of residence, work, education and in the country, because then both they and local authorities focus more on those elements which are closer to them. The Armed Forces of the Republic of Poland have an important role to play in satisfying the need of life, in conditions of peace and stability. According to the information presented in announcements by CBOS (Public Opinion Research Center) (Assessment of State Security, 2014), in the period from 1992 to 2017 Poles assessed the army well. The good opinion about this institution shared among the inhabitants of municipalities and representatives of local authorities throughout the country is also confirmed by the results of study in which the authors of the article were involved at the beginning of this decade. They show that the majority of the surveyed municipalities' residents (51.9%) assessed the military presence in their municipalities positively. Nearly half of them (48%) declared that they felt safer when there was a military unit in their community. The presence of the army in a municipality was also well received by the majority of local authorities' representatives (77.8%) of those municipalities where military units were stationed. Representatives of the local authorities of municipalities from which military units were withdrawn, in majority (72.7%), expressed a negative opinion on such a decision (Sirko, Piotrowska-Trybull, 2013; Piotrowska-Trybull, 2013).

## 2. Research background

In the context of military relations with the environment (NGOs, local bodies), the following are presented in the publications: social and economic consequences of liquidation of a military unit (Paloyo, Vance, Vorell, 2010; Andersson, Lundberg, Sjöström, 2007; Cowan, Webel, 2008), issues of transfer of post-military property to other users (Cunningham, Klemmer, 1995, p. 36-41), revitalisation of the natural environment (Military base closures 2005, p. 1-2; Piotrowska-Trybull, 2013, p. 124-126), activities related to the reconstruction of the local economy, as well as the army's impact on local development (Brzoska, Kingma, Wulf 1995, p. 6-11). Referring to the source literature and own studies, it can be concluded that the impact of military units on the socio-economic situation in municipalities is diversified and depends on the type of a territorial unit. The forms and intensity of the impact are not the same (Stenberg, Rowley, 1993; Stenberg, 1998). With regard to the living conditions of the inhabitants and the conditions of conducting business activity, this impact may be both direct and indirect (Dardia, McCarthy, Malkin, Vernez, 1996, p. 8; Kriesel, Gilbreath, 1994, p. 47-48). The publications stress that the impact of the military base on the development of a given territory depends on the level of its integration into the local environment (Paloyo, Vance, Vorell, 2010, p. 569).

### 3. Metodology

In 2017, the inhabitants of five municipalities (Braniewo, Brzeg, Chełmno, Hrubieszów, Słupsk) were asked for an opinion on the impact of the military unit on the socio-economic situation in their municipalities. The data for the analyses were obtained during the studies carried out in November 2017, using the CATI (Computer Assisted Telephone Interview) method. The authors prepared questions which were presented to the respondents. 600 people took part in the studies, drawn from individual municipalities. When selecting the research sample, the division of the surveyed data by gender and age was taken into account, taking into consideration the proportions of residents living in particular municipalities. The largest group of the respondents were occupationally active persons (49.0%). The rest were the pensioners (38.3%), students (3.2%) and the unemployed (9.5%). The respondents had higher education (38.8%), secondary education (46.5%), vocational education (10.7%) and primary education (4.0%).

The analyses were performed using Excel and Statistica v.13.1 computer programmes. The descriptive statistical measures presented here are a derivative of the measurement scales used in the questionnaire. The  $\chi^2$  test was used to verify statistical hypotheses.

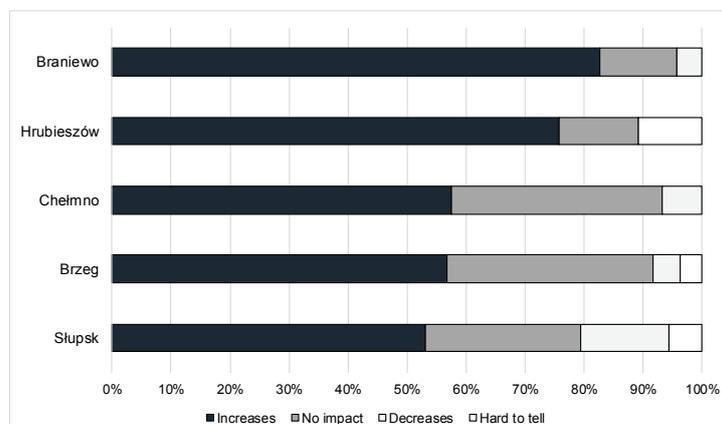
### 4. Results

In 2017, the majority of Poles (89%) participating in the survey organised by CBOS were convinced that they live in a safe country and that their immediate vicinity is a peaceful place (95%) (Strzeszewski, 2008; Kowalczyk, 2015; Głowacki, 2017). In municipalities where the residents were surveyed, the percentage of such persons was lower, because 78.3% of respondents from Braniewo, 78.0% from Brzeg, 71.3% from Słupsk, 70.3% from Hrubieszów and 69.9% from Chełmno said that Poles could feel safe. These included the employed (77.2% of respondents in this group), the unemployed (75.4%) and pensioners (64.4%). In each age group, the percentage of those who feel safe in Poland was high, but decreased with age (18-34 - 80.4%, 35-54 - 75%, 55-75 - 66.1%, over 75 - 64.9%) (statistically significant dependency at  $p < 0.05$ ).

Similarly as in the case of national security assessments, a lower percentage of those who assessed their municipality as a safe place (three out of four residents surveyed - 76%) was found in municipalities, compared to CBOS studies. Among them, there were 69.6% from Braniewo, 70.3% from Hrubieszów, 71.9% from Słupsk, 83.3% from Brzeg and 86.3% from Chełmno municipalities. The highest percentage of such responses was recorded among the employed (81.3%), the lowest among the unemployed (68.4%). The better the educational background of the respondents, the higher the percentage of those for whom their municipality is a safe place (62.5%, people with primary education, 82% with higher education).

According to the opinion of just over half of the respondents (57.0%), the presence of a military unit in the municipality contributes to the fact that people feel safer. In the eastern and north-eastern parts of the country, a higher percentage of the surveyed municipalities saw a positive impact of the military presence on their inhabitants' sense of security (Figure 2). The older the respondents were, the higher the percentage of those who noticed a positive influence of the army on the sense of security of the residents in the municipality (18-34 - 53.6% in this group, 35-54 - 56.8%, 55-75 - 57.9%, over 75 - 64.9%) (statistically significant dependency at  $p < 0.05$ ). In each municipality, among the people who participated in the

survey, there were those (56.5% of all respondents from Braniewo, 78.8% from Brzeg, 63.0% from Chełmno, 37.8% from Hrubieszów, 27.2% from Słupsk) who, in situations of various threats, witnessed the help of the army for the civilian population. A large group of them (68.3%) assessed these activities as good, stating that stationing a military unit in a municipality contributes to increasing the sense of security of its inhabitants.



**Figure 2: Distribution of answers given by municipalities' citizens in response to questions concerning the influence of a military unit on their sense of safety**  
*Source: own study*

Military units use resources to perform their assigned tasks, while the environment is provided with public goods, i.e. security, and generate effects resulting from the use of resources. Consequently, for some, the stationing of a military unit in their territory may be an advantageous circumstance, for others it may limit their development to a greater or lesser extent (Hicks, Raney, 2003). In this situation, proper relations of the army with the entities in the environment are very important.

According to the majority of respondents (61.0%), these relations are very good or good. This was the opinion of 83.3% of the respondents from Hrubieszów municipality, 73.9% from Braniewo municipality, 66.7% from Brzeg municipality, 56.7% from Słupsk municipality, 54.8% from Chełmno municipality. The largest percentage of answers, indicating correct relations between the army and its surroundings, was found in the group of the youngest and oldest respondents (66.7% in each group).

In the opinion of nearly half of the respondents (49.6%) the presence of a military unit contributes to the improvement of life quality in the municipalities. Others (43.2%) did not notice such an influence, they believed that the military presence led to a decrease in the quality of life in their municipalities (4.0%), or they could not take a clearly-defined stand (3.2%). The positive influence of the army was noticed by the respondents from all the municipalities. Among them, there were 73.9% from Braniewo, 73.0% from Hrubieszów, 50.7% from Chełmno, 46.6% from Słupsk and 46.2% from Brzeg municipalities. The positive influence of the military unit on the quality of life was noticed by 48.1% of the surveyed men and 50.9% of the women. The highest percentage of such indications was found among 18-34 year-olds (56.5%) and among those still learning (84.2%), while the lowest among 55-75 year-olds (43.7%) who are already retired (47.0%).

Military units have a greater or lesser impact on local labour markets. On the one hand, they may be an employer for the municipality's residents (Piotrowska-Trybull, 2018, p. 103-111), and, on the other hand, as a result of their liquidation, more unemployed people (Sirko,

Piotrowska-Trybull, 2012) may appear on the labour market and/or the employment level may decrease (Stenberg, 1998). The respondents' opinions on the role of the military unit on the local labour markets were divided. The least numerous group were those (15.7%), seeing a military unit as the main or one of the main employers in their municipality. In the opinion of a much larger group of respondents, the role of the army in this respect is small (53.8%) or average (30.5%). According to 94.6% of the surveyed residents from Hrubieszów municipality, 82.6% from Braniewo municipality, 63.0% from Chełmno municipality, 41.7% from Brzeg municipality and 40.6% from Słupsk municipality (where, according to CSO data, the biggest decrease in the number of the unemployed was recorded), it is difficult to obtain a job position in their municipalities.

It was found that the younger the respondents were and the higher their education was, the higher percentage of them did not indicate a military unit as an important employer (18-34 years - 61.9%, 35-54 years - 55.7%, 55-75 years - 48.6%, over 75 years - 40.4%) (higher - 63.1%, secondary - 50.2%, vocational - 46.9%, primary - 25.0%) (statistically significant dependency at  $p < 0.05$ ). The possibility of new jobs emergence, as a result of the stationing of a military unit on the territory of a municipality, was mainly noticed by the respondents from the municipality of Braniewo (43.5%) and from the municipality of Hrubieszów (40.5%). More than half of the respondents in particular municipalities stressed that they were afraid of environmental pollution resulting from the use of army's equipment to a very small and small extent. Among the respondents, the inhabitants of Braniewo and Chełmno most often provided such answers to this question - almost 70%, and the least frequently – the residents of Słupsk - 57%. At the same time, in Słupsk, 25% of the respondents stressed that they were concerned about this situation to an average extent, while 21% of the respondents in Braniewo stated that they are concerned about it to a large and very large extent.

It is worth emphasising that in the armed forces' actions are taken to minimise the negative impact of the army on the natural environment, including (Politics of Ministry of National Defence 2011, p. 8-10): the ones targeted at raising funds for pro-ecological investments, reducing the consumption of electricity, taking into account – in planning and preparing exercises – the requirements of plant and animal protection, retrofitting (bases, liquid fuel stations, sewage treatment plants), consisting of replacing substances that deplete the ozone layer with alternative and environmentally-friendly substances, including environmental criteria in public procurement, as well as concerning the management of unnecessary movable property, including the substances used in warfare. At the same time, different military facilities impact the environment in a variable manner, which is determined by their function. In the case of military airports or training grounds, this impact is stronger than in the case of barracks (Piotrowska-Trybull, 2013).

## **5. Results and discussions**

The issues reflected upon in this article refer to the discussion on the impact of military units on the socio-economic situation, state of the natural environment and development of the territorial units in which they are located. Military units affect the socio-economic situation in municipalities to different degrees. Military units stationing in municipalities acquire resources from their surroundings, provide security for the inhabitants and affect the environment as a result of using their resources. This impact depends on geographical location of a municipality, its nature, diversification of its economic structure, number of economic entities, population, economic activity of the population, available environmental resources.

The level of integration of military units with the local community is, among other things, determined by the applicable legal regulations and the need to maintain neutrality of the army in relation to other entities in a municipality. Legal provisions do not constitute a material restriction in terms of cooperation, they only make it more structured. However, the military units do not always play a significant role in municipal development, especially in large cities.

As far as the studied municipalities are concerned, it is noteworthy that in the opinion of the majority of respondents the presence of the army does not limit development of tourism, is not associated with excessive noise and does not lead to environmental pollution generated by the use of military equipment. In the context of the impact on the environment, the involvement of the Polish Armed Forces in ensuring compliance with the principle of sustainable development and protection of biodiversity is undoubtedly important in shaping the image of the army and may translate into positive assessments of its presence in municipalities.

## References

1. Andersson L., Lundberg J., Sjöström M. (2007), Regional Effects of Military Base Closures: the Case of Sweden, „Defence and Peace Economics”, 18:(1).
2. Brzoska M., Kingma K., Wulf H. (2005), Demilitarization and Conversion, Paper 1, Bonn International Center for Conversion, World Social Summit, Bonn, March 1995.
3. Cowan T., Webel B. (2008), Military base closures: socioeconomic impacts, CRS report for Congress, September 19.
4. Cunnigham K. B., Klemmer A. (1995), Restructuring the US military bases in Germany: scopes, impacts and opportunities, Report 4, Bonn International Centre for Conversion, Bonn.
5. Dardia M., McCarthy K. F., Malkin J., Vernez G. (1996), The Effects of Military Base Closures on Local Communities, RAND National Defense Research Institute, Santa Monica, CA.
6. Hicks L., Raney C. (2003), The Social Impact of Military Growth in St. Mary’s County, Maryland, 1940–1995, „Armed Forces & Society”, Spring, 29:(3)
7. Kriesel W., Gilbreath G. L. (1994), Community impacts from temporary military development: the case of Fort Stewart, GA., „Southern Journal of Rural Sociology”, 10:(1)
8. Military base closures. Updated Status of prior base realignments and closures (2005), GAO-05-138, US Government Accountability Office.
9. Paloyo A. R., Vance C., Vorell M. (2010), The regional economic effects of military base realignments and closures in Germany, „Defence and Peace Economics”, 21:(5-6)
10. Piotrowska-Trybull M. (2013), Jednostki wojskowe w rozwoju lokalnym w Polsce po 1989, „ZN AON”, Wyd. AON, Warsaw.
11. Piotrowska-Trybull M. (2018), The Armed Forces of The Republic of Poland as An Employer in Modern Labour Market in Opinion of Soldiers and Military Staff, *Acta Sci. Pol. Oeconomia* 17 (1) 2018, DOI:10.22630/ASPE.2018.17.1.1.
12. Polityka resortu obrony narodowej w zakresie ochrony środowiska (2011), Departament Infrastruktury Ministerstwa Obrony Narodowej, Warsaw.
13. Sirko S., Piotrowska-Trybull M. (2012), Sustainable Development of Municipalities and Polish Army Restructuring’ Interrelation, *The Journal of Security and Sustainability Issues*, 2:(2)
14. Sirko S., Piotrowska-Trybull M. (sc. ed.) (2013), Uwarunkowania lokalne i regionalne funkcjonowania jednostek wojskowych na terytorium kraju, AON, Warsaw.
15. Stenberg P. L. (1998), Rural communities and military base closures, “Rural Development Perspectives”, 13:(2)

16. Stenberg P. L., Rowley T. D. (1993), A comparison of military base closures in metro and nonmetro counties, 1961-1990, Staff report NO. Ages 9307, Washington D.C.
17. Thanner M. H., Segal M. W. (2008), When the Military Leaves and Place Change. Effects of the closing of an Army Post on the Local Community, „Armed Forces & Society”, July,34:(4)

## STRATEGIC THINKING OF THE HUNGARIAN CAR DEALERSHIPS

**Beatrix TURZAI-HORÁNYI**

*Szent István University, Gödöllő, Hungary*

*E-mail: horanyi.beatrix@gtk.szie.hu*

### **Summary:**

**Purpose:** Based on the research results of recent years, we can claim that small and medium size enterprises would need complex business development strategy to survive in this unstable, permanently changing market environment, however few of them recognize the importance of this and even fewer prepare business plans.

Automotive industry was one of the biggest losers of the global economic crisis of 2008, hence planning and strategy making is even more important for them. During my research, my aim was to examine the strategy of dealerships within automotive industry and to explore the characteristics of their strategic thinking.

**Design/methodology/approach:** The research was conducted by questionnaire survey was started to gain primary data: questionnaires were submitted to 405 car dealerships from which 60 could be evaluated. After demographic data, the questionnaire covered the competitiveness and strategy of dealerships and the effect of the crisis. Besides the time interval, objective, reason and result of the planning, I asked them about manager and employee trainings, the means of recovery and fields connecting to more parts of the business model.

To analyse and assess the data resulted from the research, I carried out cross-table analysis instead of parametric analysis, and cluster analysis.

**Findings:** By using cluster analysis, I examined how dealerships can be classified according to their strategy. I named the 3 identified clusters based on their characteristics, referring to the strategic thinking of the given group.

Manufacturer and importers influence not only the life and development of dealerships, but their strategy as well. Without importers, dealerships cannot even prepare annual plans, they need to have them accepted in any case, and their operation is under strict control.

Based on the results of the questionnaires, it can be said that strategic thinking is not general in case of the Hungarian dealerships, they do not apply conscious management tools and only few of them think consciously and on the long term from the aspect of the dealership.

**Research limitations:** My research focused on the strategy of Hungarian dealerships and strategic thinking of managers. Since one of the biggest losers of the crisis of 2008 was automotive industry also in many EU countries, carrying out the questionnaire in other countries is amongst my further research aims.

**Practical implications:** Results stem from my research might have positive effect on the life cycles of dealerships, their strategic thinking and competitiveness.

**Keywords:** automotive industry, car dealerships, strategy, vision

### **1. Introduction**

Cars significantly transformed the world when more than 100 years ago they practically opened a new era in human civilisation and social relations. The broad range of vehicle manufacturing, vehicle trading and the repair, maintenance and disassembly activity and the related services serve indirectly the interests of the whole society. ([www.maszsz.hu](http://www.maszsz.hu)) This industry became a leader sector, since it has a significant effect on the economic performance

and the labour market as well. Its importance in the EU and in Hungary is beyond debate and it forms an integral part of economy.

The world economic crisis started in 2008 had an adverse effect mostly on real estate and car market. The sharp decline in liquidity resulted in the decrease of the financing possibilities, as a result of which, car purchases were mostly postponed. However, independently of the crisis, there had been difficulties even before 2008 as well.

In this publication my aim is to analyse the strategy of the car dealerships in Hungary and strategic thinking of the managers thereof.

Automotive industry is a very specific sector, since behind their business model and strategy there is a supply chain highly influenced by the factory or the importer. I think that the results may be successfully used by the owners of the car dealerships as well to maintain their competitiveness and in case of another economic crisis.

## **2. Literature review / Research Background**

The focus of my research are a specially functioning supply chain, i.e. automotive industry, and especially the car dealerships.

Automotive industry is a highly complex sector that – with the contribution of many other sectors – produces among others passenger cars, relating to which it takes also into account the technical and customer needs of the given period. (Csikós, 2007; Fleischer, 2011) An increasing level of competition may be observed in the automotive industry supply chain which is defined by the need for different personalized solutions. Players of the sector need to monitor constantly consumer expectations in order to maintain their efficiency, and in their strategy, they need to pay special attention to handle problems of uncertainty (Kopeček and Pinte, 2014).

The automotive industry supply chain was analysed from different aspects by many researchers in the past two decades (e.g. Sánchez and Pérez, 2005; Józsa, 2015; Thun and Hoenig, 2011; Szegedi et al., 2017). In her researches, Gábrriel (2015) discussed on the upstream side of the automotive industry supply chain and put green supply chain management into the focus. Dömötörfi and Péter (2016) based on the results of Zhang (2014), elaborated an expanded network model indicating the multiple relations between suppliers. The world economic crisis of 2008 also accelerated the structural transformation of the sector. Production and trade are organised at mainly regional level instead of the global level. Besides, an important feature, which differentiates automotive value chain from the value chain of other industries, is that the balance between the main actors has been changed and rearranged (Szalavetz, 2013). Given that the structure of the consumer demand has completely transformed as a consequence of the crisis, it is uncertain whether the traditional strategy, outsourcing of the production and optimization of the value chain will be sufficient for maintaining competitiveness in the future. Additionally, as covered by the research of Balcet and Ruet (2011) and Balcet et al. (2012), new actors appeared on the market of the global automotive industry, namely multinational companies of the developing countries. Moreover, the transformation of the business model is expected in the future due to the increasing competence and market power of suppliers.

### ***Strategic thinking in case of SMEs***

It is hard or impossible for the SMEs to influence or modify their environment, however, they can decide how to relate to it. (Salamonné, 2007)

Basically, the enterprises have three options to follow:

1. They disregard the external environment in case of its (significant) change and if they are not strong enough, they start to decline.
2. The SMEs in the second group try to react to the changes as early as possible. These enterprises can increase on their success, if they continuously strengthen and develop their abilities.
3. Finally, the third group is for the proactive companies which preliminarily prepare for competition and elaborate the possible manoeuvres.

Based on the above, it can be stated that strategic thinking has two main characteristics: on the one hand the proactive conduct and the other the planning for longer run.

SMEs should have complex business development strategies to survive in this unstable and continuously changing market environment, however, the significance of it is realised only by few of them and even less make business plans.

According to the study of the CIB Stafétabot (CIB Baton) made on the basis of the representative research of the GFK, the managers gave only the rank 8 to the good strategy among the factors of success. The study writes also that about a fifth of the SMEs do not have any strategy and they are thinking only until the next day in advance. The companies which consider a business plan as important and actually do one, only think ahead for 1 or maybe 2 years. The situation is worsened on by that the strategy made is not reviewed and not tailored to the continuously changing environment. (Internet 1)

A year later (in 2015), in a study made again by the CIB Bank, the company managers were more optimistic: they calculated with growth and domestic expansion for the following years and more and more of them had strategy. 86% of the respondents planned ahead and made deliberately strategy for shorter and/or longer run. (Internet 2)

In the beginning of 2018, in the study made on commission from the Ricoh Europe, 86% of the company managers set the improvement of the business agility as objective for that year. About 50% of the respondents planned to introduce technologies with which they can react faster to new trends and opportunities. They thought that the most beneficial effect on their business activity would be achieved by automation, data analysis, document management and video conferences. (Ricoch Europe, 2018)

Many Hungarian and international researchers, such as Ridderstrale and Nordstrom (2003), Mitchell and Davis (2008) and Varga (2014) state that the business agility mentioned above will be one of the most important factors of competitiveness and the long-term survival in the 21<sup>st</sup> Century.

### **3. Methodology**

During my research, I was analysing the strategies of the Hungarian car dealerships and the strategic thinking of the managers thereof with the method of questionnaires. Questionnaires covered all dealerships of all brands. Upon the selection of the methodology, my primary aim was to analyse well-comparable and well-interpretable data covering the characteristics of the

given time range. In addition to the time frame, aim and results of planning, I asked about managerial and employee trainings, the tools to recover from a crisis and multiple areas regarding business model, such as the contact with the customers, communication, the role of internet and the ratios of costs.

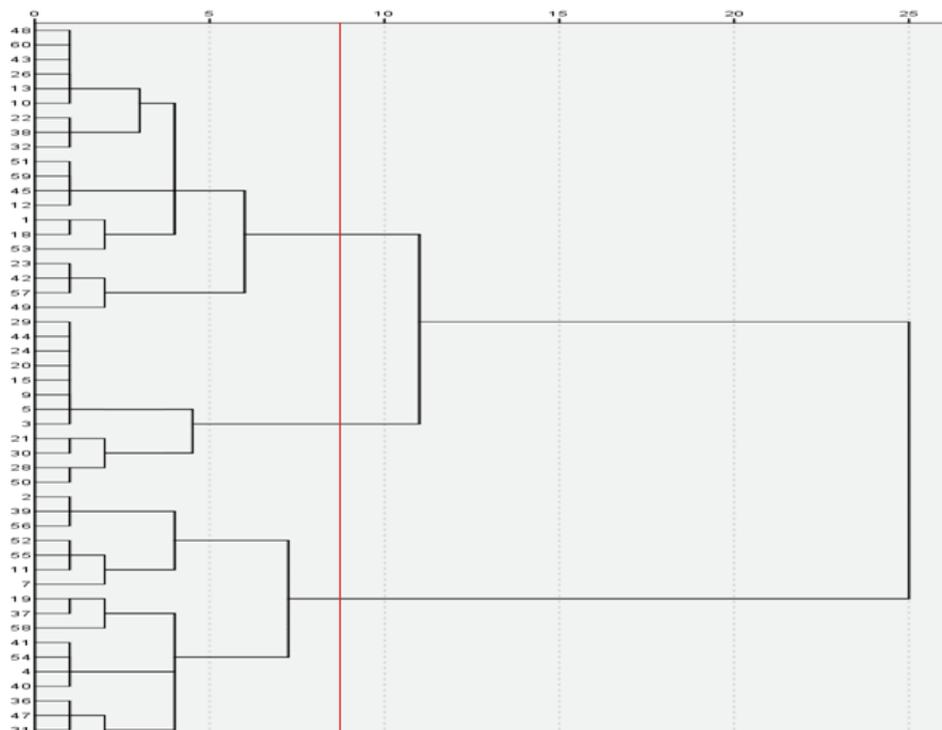
The questionnaires were sent to all 405 car dealerships of Hungary, therefore, I considered these dealerships as the population. 60 questionnaires were completed, which is the 15% of the car dealerships.

I made a cluster analysis regarding the grouping of the analysed dealerships based on their strategies. To determine the number of groups, I applied a hierarchical dendrogram and K-means method. After forming the clusters, further analyses were made by cross-table during which the answer to the following questions were searched for:

- Can any relationship be proven between the clusters formed and the school qualification of the owners/managers of the companies?
- Can any relationship be proven between the clusters formed and the applied managerial style?

#### 4. Results

I made a cluster analysis regarding the grouping of the analysed dealerships based on their strategies. To determine the number of groups, hierarchical dendrogram was applied and the result of this is shown by the Figure 1.



**Figure 1: Dendrogram made on the basis of the Ward method**

*Source: own analysis*

On the basis of the dendrogram, I found the formation of 3 clusters to be reasonable. Afterwards, a non-hierarchical cluster analysis method, the K-means algorithm was applied.

My aim to do so was not to classify each dealership into the appropriate group, but to create homogeneous groups to use as a basis of further analyses.

In the cluster analysis, the following questions were included from the questionnaire, as group forming characteristics:

- What is the strategy of the dealership like?
- What is the corporate governance and decision preparation system like?
- Do the senior managers take part in trainings?
- Do the employees take part in trainings?
- Do the employees know the vision, the annual business plan and the strategy of the company?
- What did help the dealership to survive the crisis?

Based on these questions, 10 of the sample of 60 were rejected due to incomplete answers and the remaining 50 dealerships can be classified into 3 groups. I tried to replace the rejected companies, however, as the answers to the questions had had a large deviation, it would not have been a good decision to replace the deficient answers, as it would have introduced significant distortions in the model.

25 dealerships were added to the first group, 13 to the second and 12 to the third group. Although the sample is not big, having 3 groups is still necessary, as there are differences between the groups and it would not suffice to define only two groups. At the same time, results show that clusters cannot be sharply and clearly separated.

The two types of cluster analyses led to similar results that are supported by the cross tabulation analysis (Table 1).

**Table 1: Cross tabulation analysis to compare the results of the different cluster analysis methods**

		Clusters resulted from the k-means method			Total
		1	2	3	
Clusters resulted from the Ward method	1	20	0	0	20
	2	5	13	0	18
	3	0	0	12	12
Total		25	13	12	50

Source: own analysis

I named the created three clusters based on their characteristics, referring to the strategic thinking of dealerships of the given groups.

**Cluster 1: Ambitious, open-minded, planner**

Strategic thinking features these dealerships in particular, as they have defined goals and plans to reach, and most of the employees are aware of these. To survive the crisis, they grabbed external opportunities as well, for example they involved new owner to the company and applied re-export as well.

**Cluster 2: Lucky survivor**

It can be said about these enterprises that in their opinion the current situation do not allow to plan and pursue long term strategy. The organisations are the less formalized and management is featured mostly by personal decisions, meanwhile only one third of the owners take part in training, conferences.

### ***Cluster 3: Consciously seeker***

Dealerships added to this group are featured the most with defined vision for the future, but they do not have strategic plan, how is unclear for them. They mostly take personal decisions, but use external consultation services as well.

After cluster analysis, I performed further tests with cross-table analysis regarding the clusters obtained to find whether the school qualification of the managers in these groups are different and how the decisions are made by the owner/manager. Due to the low number of items, statistically the typical school qualification in each clusters cannot be shown, however, based on the cross-table it can be stated that the managers in all three clusters have professional and economic qualification and only 3 of the 48 dealerships had a manager having only a diploma in economics.

The relationship between the clusters and the managerial style were analysed also by cross-table. As a result of this it can be stated that the managers of the dealerships in the cluster 1 and 3 make a decision mostly after the introduction of the problem and the recommendations, while the managers of the dealerships in the cluster 2 show the same percentage of autocratic and participating conduct. At the same time, it can also be observed that there is no manager with delegating managerial style in any of the clusters.

## **5. Conclusion**

The car factories and the importers significantly influence not only the life and the development of the car dealerships, but their strategy as well. Practically all importers pursue only their own interests. They affect the enlargement of the showrooms, the wages and the trainings as well. Without the importers, the dealerships are not allowed to make a yearly plan either, as this plan has to be accepted by the importer and the operation of the dealerships is also significantly regulated by the importers.

Based on the findings obtained it can be stated that strategic thinking is not general in case of the Hungarian car dealerships, they do not apply deliberate management tools and only few of them are thinking deliberately and in a long run regarding the dealership.

My research focused on the strategy of Hungarian dealerships and strategic thinking of managers. Since one of the biggest losers of the crisis of 2008 was automotive industry also in many EU countries, carrying out the questionnaire in other countries is amongst my further research aims. Results stem from my research might have positive effect on the life cycles of dealerships, their strategic thinking and competitiveness.

## **References**

1. Balcet G., Wang H., Richet X. (2012), *Geely – A Trajectory of Catching Up and Asset-seeking Multinational Growth*, International Journal of Automotive Management, 4 (12) 360–375. DOI: <https://doi.org/10.1504/IJATM.2012.051361>
2. Balcet G., Ruet J. (2011), *From joint ventures to national champions or global players? Alliances and technological catching-up in Chinese and Indian automotive industries*, ERIEP European Review of Industrial Economics and Policy, December, No. 3, 1-24.
3. Csikós Zs. (2007), *A legnagyobb autógyártó országok. Üldözőverseny*. Heti Világgazdaság, 41. 65–68.

4. Dömötörfi Á., Péter T. (2016), *Autóipari ellátási láncok modern modellezésének lehetőségei*. IFFK Konferenciasorozat, Budapest, 159-164.
5. Fleischer T. (2011), *Közlekedés és fenntarthatóság – különös tekintettel az EU 2011-es közlekedési fehér könyvére*, Európai Tükör 16(5) 23-38.
6. Gábrriel M. (2015), *Green supply chain management in Hungarian automotive OEM' practice*, in: Dunay A. (ed.), *Proceedings of the 5th International Conference on Management 2015. Management, leadership and strategy for SMEs' competitiveness*. Szent István University Publishing House, Gödöllő, pp. 432-438. ISBN 978-963-269-492-4
7. DOI: 10.17626/DBEM.ICoM.P00.2015.p080
8. Józsa V. (2015), *Change in the mindset? - Empirical evidence on the role of multinational companies in the evolution process of SMEs*, in: Dunay A. (ed.), *Proceedings of the 5th International Conference on Management 2015. Management, leadership and strategy for SMEs' competitiveness*. Szent István University Publishing House, Gödöllő, pp. 413-418. ISBN 978-963-269-492-4 DOI: 10.17626/DBEM.ICoM.P00.2015.p077
9. Kopeček, P., Pinte, M. (2014), *Optimization Heuristics for Supplies of Assembly Lines*. Periodica Polytechnica Transportation Engineering. 42(1), 49-51.
10. DOI: <https://doi.org/10.3311/PPtr.7118>
11. Mitchell D., Davis D. B. (2008), *Oracle Real Application Testing – business agility through superior testing*, OVUM, January
12. Ricoh Europe (2018), <https://www.ricoh-europe.com/news-events/news/agility-essential-to-SMB-survival-as-half-of-leaders-say-they-won-t-exist-in-2023-without-it.html> (Letöltve: 2018. 07. 11.)
13. Ridderstrale J., Nordstrom K. A. (2003), *Karaoke Capitalism – Management for mankind*. Bookhouse Publishing Sweden AB
14. Salamonné H. A. (2007), *Stratégia és stratégiaalkotás a magyarországi kis- és középvállalkozások gyakorlatában*. Competitio. VI. évfolyam 1. szám.
15. Sánchez A. M., Pérez M. P. (2005), *Supply chain flexibility and firm performance: A conceptual model and empirical study in the automotive industry*, International Journal of Operations & Production Management, 25(7) 681-700.
16. DOI: <https://doi.org/10.1108/01443570510605090>
17. Szalavetz A. (2013), *Régi-új világgazdasági jelenségek a globális értékláncok tükrében*. Külgazdaság, 57 (3-4). pp. 46-64.
18. Szegedi Z., Gábrriel M., Papp I. (2017), *Green supply chain awareness in the Hungarian automotive industry*. Polish Journal of management Studies 16 (1) 259-268.
19. DOI: <https://doi.org/10.17512/pjms.2017.16.1.22>
20. Thun J.-H., Hoenig D. (2011), *An empirical analysis of supply chain risk management in the German automotive industry*, International Journal of Production Economics, 131(1) 242-249. DOI: <https://doi.org/10.1016/j.ijpe.2009.10.010>
21. Varga J. (2014), *Üzleti agilitás és versenyképesség a XXI. szd. vállalkozásainál*. Vállalkozásfejlesztés a XXI. században. Budapest, pp. 189-203.
22. Zhang X. (2014), *Analysis for Scale-Free Network Characteristics of Logistics Distribution Network*. Journal of Service Science and Management. 7(3), 189-195.
23. DOI: <http://dx.doi.org/10.4236/jssm.2014.73015>
24. <http://www.marketing112.hu/a-kkv-k-egyetlen-eselye-a-profi-marketing-terv/> Internet 1. (Letöltve: 2018. 07. 11.)
25. <https://www.portfolio.hu/finanszirozas/kkv/egyre-tobb-kkv-keszit-strategiai-tervet.222489.html> (Letöltve: 2018. 07. 11.)
26. [www.maszsz.hu](http://www.maszsz.hu)

**SOCIAL AND ORGANIZATIONAL DETERMINANTS OF  
INTRA-ORGANIZATIONAL KNOWLEDGE SHARING BEHAVIORS  
AMONG EMPLOYEES FROM Z GENERATION**

***Anna ALBRYCHIEWICZ-SŁOCIŃSKA***

*Częstochowa University of Technology, Faculty of Management, Częstochowa, Poland*

*E-mail: slocinska@wp.pl*

**Summary:** For this paper following research assumptions were accepted: behaviors in terms of knowledge sharing, regardless of the reason for their appearance, constitute a manifestation of natural human activity; sharing knowledge requires specific social competences; exchange of knowledge between employees is conditioned by the level of social trust; organizations are responsible for shaping the of sharing knowledge culture and stimulation of behavior in terms of knowledge sharing is an element of personnel management. The goal of this essay is to expand knowledge about conditions of employees' attitudes- the representatives of Y and Z-generations about behaviors of organizational knowledge sharing. The subject of the research is analyzed according to the review of scientific literature and reports of various institutions and organizations, including OECD and mainly is based on the desk research method. Conclusions from analyzed reports underline that Z- generation, differently than Y-generation defines a category of knowledge - according to the problem of sharing knowledge is more often about sharing information than knowledge itself. Secondly, information sharing is significantly facilitated by digital skills, which are the strong competence of the Z-generation. However, with regard to knowledge sharing, social skills are gaining in importance, in which this generation is deficient.

**Keywords:** Y-generation, Z-generation, knowledge sharing, personnel management

## **1. Introduction**

Nowadays, in many European countries changes in the area of the labor market are observed. In the former „Eastern Block” countries, those changes are perceived as a kind of revolution in the work environment. Sources of those changes are connected with globalization, a technological leap to be called the Revolution 4.0, a generational gap in many occupations but, most of all, with entering the labor market of generations characterized by a different perception of the role of work in human life, expectations of work as a form of human activity and a different attitude towards an employer, compared to previous generations. In such conditions, it turns out that material motivators are not enough. The element which decides about attracting and, most of all, keeping an employee becomes a social work environment understood as relations with the supervisor and co-workers in the workplace (Robak, 2012, pp. 113-121). The specific element of social work environment is behavior within the scope of intra-organizational knowledge exchange, which not only influence improvement of employee skills and staff's efficiency, but also build positive relationships and influence engagement

The goal of this essay is to expand knowledge about conditions of employees' attitudes- the representatives of Y and Z- generations about behaviors of organizational knowledge sharing. The conclusion based on the analysis of chosen researches underlines that according to Y-generation behaviors in the field of knowledge sharing we are already dealing with employees

functioning over a decade on the labor market. On the other hand, in reference to the Z-generation, the research is based on indirect applications (concerning the educational competences of children) and declarations of young people. There are not many studies available yet regarding the behavior of this generation in the workplace. In the industrial reality where the ability to adapt and learn fast determines success both in the individual and organizational dimension, streamlining the flow of knowledge and its applicability seems to be an important factor determining the competitiveness of enterprises.

## **2. Features of knowledge and factors characterizing its exchange**

The currently growing importance of knowledge, information and data is caused by their avalanche growth and relatively easy access to them. Whereby, these resources may be understood both in the individual-ontogenic term as well as in the organizational context. Terms such as: knowledge, information and data are sometimes identified with each other or even treated as interchangeable conceptual categories. In modern organizations knowledge is often understood as accumulation of basic, technical knowledge and social skills (Szczepańska 2004, p. 37). Thus, it is a combination of elements acquired in the process of learning and socialization, but also acquired through the participation of the individual in various information networks which provide general and specific knowledge. With this point of view, the difference between knowledge and information is blurred, the only differentiating element is the fact that the transformation of information into knowledge takes place in the human mind through the process of judgment, i.e. identification, analysis and interpretation (Jabłoński, 2009, p. 16). Knowledge embodies human abilities to interpret information by giving them meaning and placing them in a specific context (Dziuba, 2000, p. 45). The natural conclusion from these considerations is assumption that knowledge is inseparable from a human being because it gives the driving force and decides about the possibilities of its use. It should be noted that while open knowledge does not pose major problems in the management of this resource, hidden knowledge, which is often difficult to define, and sometimes also is knowledge unaware of the owner himself, requires separate management methods (Smith, 2001). Hidden knowledge may be recognized in two dimensions: technical-know-how (often people who have it cannot express it in a scientific and technical way allowing it to be reproduced) and cognitive (composed of patterns, mental models, beliefs and insights rooted so deeply that the „knowledge carrier" accepts them as obvious and therefore nonspecific) (Nonaka, Takeuchi, 2000, p. 25). In such a system soft and qualitative elements of knowledge become its basis - knowledge must be "felt". It is an experience on the cognitive and emotional ground which is an argument for the adoption of the personalization strategy as a base strategy in undertaking various organizational activities in the area of stimulating knowledge exchange (Martz et al., 2003; Chen et al., 2006; Liu et al. 2009; Bautista-Frias et al., 2012; Słocińska, 2012).

Sharing knowledge may be considered in the context of interpersonal relations understood as a network, that is a system of connections between people, institutions and entities in which their position is determined by the number and quality of direct (and immediate) ties, but also of secondary and tertiary relations (Średnicka, 2011, p. 98). The system is a dynamic structure in which existing connections can take forms from regular to quite accidental, or even random (Watts, Strogatz, 1998, p. 440-442). Difficulty in management or even network control is based on the fact that contacts in the network are not based on common hierarchical relationships, but on interdependence and cooperation. This new perspective of people's functioning in the organization is based on the logic of the network, seems to be particularly close to young employees from the Y and Z generation.

### **3. The Y and Z generations- the generation characteristics**

In modern organizations representatives of four employees' generations might be met. The oldest of them are representatives of the Baby Boomers' generation and the X generation, the next generation is the Y and the youngest of them are from the Z generation. In the subject literature there is still a discussion about the legitimacy and regularity of grouping employees by age category and the term of generation itself, that is why different authors in relation to the analyzed problem, cite different classifications of generational divisions (Rodriguez et al., 2019; Bencsik et al. 2016; Bencsik and Machova, 2016; Goh and Lee, 2018; Kirchmayer and Fratricova, 2018; Dries et al., 2008; Lazanyi and Bilan, 2017; Bejtkovsky, 2016; Hejnova, 2015). The most popular division accepts that Z generation consists of people born after 1995 but sometimes, also people born in 1990 and in different sources, those who were born in 2000 and later; the Y generation consists of people born in years 1980- 1994, the X generation are people born in years 1965- 1979, the Baby Boomers is a generation of post- war babyboom and consists of people born in years 1946- 1964. Due to the purpose of the work, the author of the study will focus on the description of the youngest generation of employees in the labor market.

In a characteristics of people from the Z generation the most often it is underlined that its representatives have technology in a way that is "in their blood", which allows them to function efficiently in the virtual world and quickly acquire information. They like changes and they seem to be pragmatists, because they are aware of inevitable transformations in many spheres of life, including in the professional field that will occur in the future. It is the most homogeneous generation in terms of features. Thus, the representatives of the Y generation differed a bit depending on the wealth of the environments they came from, which conditioned the access to modern technology tools, while for representatives of the Z generation, they constituted elements of basic living standards. The Z generation's employees are ambitious, confident and hungry for knowledge. In the „Gen Z Rising” report the attention was paid to the difference between the Y and Z generations. For the Ys, the balance between the private and professional life is very important as well as pursuit of self-realization and high individualization. In the case of the Z generation shifting towards traditional professional values, such as a clear career path and stabilization, as well as the possibility of using the acquired knowledge (especially referring to modern technologies and knowledge of foreign languages) are visible. The representatives of the Z generation have a high self-esteem, but also awareness of the importance of education (the requirement of an ever-changing reality). They are characterized by assertiveness and their commitment to work are conditioned by a similar approach from the employer. Mostly, they were brought up without stress, they often get what they want, they are spoiled, that is why even in a workplace they show demanding and uncritical attitude.

### **4. Methodology**

The subject of the research is analyzed according to the review of scientific literature and reports of various institutions and organizations, including OECD and Ipsos study and mainly is based on the desk research method.

The adopted research assumptions allowed to formulate the following research questions: How do the representatives of the Z generation perceive the category of knowledge and its meaning? How do the employees from the analyzed group build networks of social relations

and cooperation (network logic)? What forms of sharing knowledge are preferred by representatives of generation Z? What organizational levels or organizational units are responsible for managing employee knowledge exchange processes?

## **5. The Y and Z generation employees in the field of sharing knowledge**

Analyzing reports and survey (Dolot, 2018; Duffy, 2018; Hijzen and Menyhert, 2016; Lazanyi and Bilan, 2017; The Y generation: needs and habits...; Lyons et al., 2017; O'Boyle, et al. 2017; OECD, 2014; Robak, 2017; Singh and Dangmei, 2016; Tulgan, 2013; Zwart and Baker, 2018) about organizational behaviors including in the field of knowledge sharing among employees and representatives of the Y and Z generation, a summary can be made regarding the observations made by the authors. This what connects both generations is a high attachment, not to say, addiction to modern information technologies and tools used for their service. It is worth underlining that the tool which features the Y generation is a laptop, thus, representatives of the Z generation prefer smartphones and iphones. For representatives of both generations they are basic communication tools that precede even the form of direct communication. Thanks to them young employees gain and share the knowledge. At the same time, knowledge for both generations is almost unambiguous with the category of information. It seems that representatives of the Z generation have much greater difficulties in verifying the quality of knowledge and information available in online resources. The factor which distinguishes these generations from the previous generations is perception of knowledge and information - they are not competitive goods for these groups. For the Baby Boomers and the X generation's employees, knowledge and information conditioned maintaining the workplace and gave a competitive advantage to other employees. Young people share this resource not perceiving it as unique and indispensable for shaping own career.

The representatives of both generations show readiness and willingness to learn and extend qualifications, however, not through direct contact with the teacher - games, simulations, e-learning, knowledge portals, forums, blogs etc. are preferred. Both groups' behavior in the area of relations with older employees is quite similar but is connected with separate themes. Representatives of the Y generation undermine the knowledge possessed by colleagues representing older generations, while representatives of the Z generation show concerns about contact with older colleagues related primarily to deficiencies in interpersonal skills. Representatives of both generations underline a key role of a superior as a person responsible for creating a social work environment, organization of work and transfer of knowledge. While the Z generation's representatives show much higher expectations in relation to superiors requiring that they behave in the workplace as well as parents - that is, they do not exert pressure, take care and are rather carers, partners rather than controllers of the tasks carried out. Also, they do not show too much willingness to initiate relationships with representatives of older generations in order to acquire knowledge necessary to perform tasks that are routine activities for older employees. It seems that in the future the problems can appear which will be connected with sharing knowledge or naming, expressing knowledge which is hidden knowledge and often unaware by the employee. Shortages in connection to social and communication abilities of the youngest generations may make it difficult to code and decode this kind of messages.

## 6. Discussion

In the industrial reality where the ability to adapt and learn fast determines success both in the individual and organizational dimension, streamlining the flow of knowledge and its applicability seems to be an important factor determining the competitiveness of enterprises.

Accepting that organizations which promote strategies of learners, should be interested in stimulating behavior in the field of knowledge sharing from the field of sharing knowledge; the question should be then asked if organizations through human resources should focus on training interpersonal skills of the representatives of the Y and Z generations, or rather, to encourage older employees to be more understanding, open-minded and mentally attentive towards younger colleagues. Also, managers should manifest different attitude in relation to the managerial staff and competences that should be held by people occupying such positions. Thus, it is necessary to reorientate the role of the superior from the administrator and supervisor for a leader, mentor and teacher. Because of the superficial treatment of knowledge by representatives of analyzed generations, more and more often it becomes necessary to place knowledge together with its proper context in the mind of the employee. In statements of many practitioners there are some voices about the necessity to give the sense of work that young employees do- they lack the basic skills of locating their role and position in a complex organizational system. No wonder then, they find themselves definitely better in flat organizational structures with a non-hierarchical arrangement.

## 7. Conclusion

The main conclusion about processes of exchanging knowledge inside the organization in relation to particular employees' generations, it is an observation that until recently the ability to share knowledge has been perceived as one of the main competencies of employees, currently it is one of the important competences of the organization referring to the basis of its functioning. Creating organizational knowledge bases, the particular attention should be paid to code and categorize knowledge so that getting to it was easier for employees accustomed to searching in public browsers for specific phrases corresponding to the problems defined by them. It is also important to create social work environment which sensitizes, most of all, older generation managers and employees on problems that may arise in the workplace in relation to contacts with younger generation employees.

The conclusion based on the analysis of chosen researches underlines that according to Y-generation and behaviors in the field of knowledge sharing we are already dealing with employees functioning over a decade on the labor market. On the other hand, in reference to the Z- generation, the research is based on indirect applications (concerning the educational competences of children) and declarations of young people. There are not many studies available yet regarding the behavior of this generation in the workplace.

## References

1. (The Y generation: needs and habits...) *POKOLENIE Y: potrzeby i nawyki wpływające na dzielenie się wiedzą*, Raport Podsumowujący Badania Prowadzone W Ramach Projektu „Ucząca Się Organizacja 2.0.” Realizowanego Przez Portal Interia.Pl Oraz Wszechnicę Uniwersytetu Jagiellońskiego, [http://www.wszechnica.uj.pl/\\_public/temp/Zalaczniki/dzielenie\\_sie\\_wiedza-raport.pdf](http://www.wszechnica.uj.pl/_public/temp/Zalaczniki/dzielenie_sie_wiedza-raport.pdf)

2. Bautista-Frias L., Romero-Gonzalez R. M., Morgan-Beltran J. (2012), *Knowledge maps in the conversion of tacit knowledge as a competitive strategy*, „Advances in Competitiveness Research”, Vol. 20 No 3/4, p. 47-58.
3. Bejtkovsky J. (2016), *The Employees of Baby Boomers Generation, Generation X, Generation Y and Generation Z in Selected Czech Corporations as Conceivers of Development and Competitiveness in their Corporation*, “Journal Of Competitiveness”, Volume 8, Issue 4, pp 105-123, DOI: 10.7441/joc.2016.04.07
4. Bencsik A., Horvath-Csikos G., Juhasz T. (2016), *Y and Z Generations at Workplaces*, “Journal Of Competitiveness”, Volume 8, Issue 3, pp. 90-106, DOI: 10.7441/joc.2016.03.06.
5. Bencsik A., Machova, R. (2016), *Knowledge Sharing Problems from the Viewpoint of Intergeneration Management*, Proceedings Of The 4th International Conference On Management, Leadership And Governance (ICMLG 2016), pp. 42-50.
6. Chen Z., Shepherd M., Abidi S. S. R., Finley G. A. (2006), *Linking tacit knowledge in the pediatric pain e-mail archives and explicit knowledge in PubMed*, [in:] *Proceedings of the 39th Hawaii International Conference on System Sciences in Kauai, Hawaii, 2006*, IEEE Computer Society, Washington DC.
7. Dolot A., 2018. *The characteristic of Generation Z*, “E-mentor”No 2(74) pp.44–50, <http://dx.doi.org/10.15219/em74.1351>.
8. Dries N., Pepermans R., De Kerpel E. (2008), *Exploring four generations' beliefs about career Is "satisfied" the new "successful"?*, “Journal Of Managerial Psychology”, Volume 23, Issue 8, pp. 907-928, DOI: 10.1108/02683940810904394.
9. Duffy B., Shrimpton H., Clemence M., Thomas F., Whyte-Smith H., Abboud T. (2018), *Beyond Binary. The lives and choices of Generation Z*, Ipsos MORI Social Research Institute, <https://www.ipsos.com/ipsos-mori/en-uk/generation-z-beyond-binary-new-insights-next-generation>
10. Dziuba D. T. (2000), *Gospodarki nasycone informacją i wiedzą. Podstawy ekonomiki sektora informacyjnego*, Katedra Informatyki Gospodarczej i Analiz Ekonomicznych UW, Warszawa.
11. Goh E., Lee C. (2018), *A workforce to be reckoned with: The emerging pivotal Generation Z hospitality workforce*, “International Journal Of Hospitality Management”, Volume 73, pp 20-28, DOI: 10.1016/j.ijhm.2018.01.016.
12. Hejnova V. (2015), *Accession Of Generation Z To Labour Market*, Znalosti Pro Trzni Praxi 2015: Zeny - Podnikatelky V Minulosti A Soucasnosti, Edited by Slavickova, P., Tomcik J., International Scientific Conference on Knowledge for Market Use - Women in Business in the Past and Present, Olomouc, CZECH REPUBLIC, pp. 199-208,
13. Hijzen, A., Menyhert, B. (2016), *Measuring Labour Market Security and Assessing its Implications for Individual Well-Being*, *OECD Social, Employment and Migration Working Papers*, 175, OECD Publishing, Paris, <https://doi.org/10.1787/5jm58qvzd6s4-en>.
14. Jabłoński M. (2009), *Kompetencje pracownicze w organizacji uczącej się. Metody doskonalenia rozwoju*. Wydawnictwo C. H. Beck, Warszawa.
15. Kirchmayer Z., Fratricova J. (2018), *What Motivates Generation Z at Work? Insights into Motivation Drivers of Business Students in Slovakia*, *Innovation Management And Education Excellence Through Vision 2020, VOLS I –XI*, Edited by:Soliman KS., pp. 6019-6030
16. Lazanyi K., Bilan Y. (2017), *Generation Z on the labour market - do they trust others within their workplace?* *Polish Journal of Management Studies*, 16(1), 78-93, DOI: 10.17512/pjms.2017.16.1.07.
17. Liu L., Li J., Lv C. (2009), *A method for enterprise knowledge map construction based on social classification*, „Systems Research and Behavioral Science”, Vol. 26 No. 2, s. 143-153.
18. Lyons M., Lavelle, K., Smith, D. 2017. *Gen Z Rising*, Accenture Strategy, [https://www.accenture.com/t20170901T080938Z\\_\\_w\\_/us-en/\\_acnmedia/PDF-50/Accenture-Strategy-Workforce-Gen-Z-Rising-POV.pdf](https://www.accenture.com/t20170901T080938Z__w_/us-en/_acnmedia/PDF-50/Accenture-Strategy-Workforce-Gen-Z-Rising-POV.pdf)
19. Martz W. B., Shepherd M. M. (2003), *Testing for the transfer of tacit knowledge: making a case for implicit learning*, „Decision Sciences Journal of Innovative Education”, Vol. 1 No. 1, s. 41-56.
20. Nonaka I., Takeuchi H. (2000), *Kreowanie wiedzy w organizacji. Jak spółki japońskie dynamizują procesy innowacyjne*, Poltext, Warszawa.

21. O'Boyle C., Atack J., Monahan K. (2017), *Generation Z enters the workforce. Generational and technological challenges in entry-level jobs*, Deloitte Insights, [https://www2.deloitte.com/content/dam/insights/us/articles/4055\\_FoW-GenZ-entry-level-work/4055\\_FoW-GenZ-entry-level-work.pdf](https://www2.deloitte.com/content/dam/insights/us/articles/4055_FoW-GenZ-entry-level-work/4055_FoW-GenZ-entry-level-work.pdf)
22. OECD, 2014. *How good is your job? Measuring and assessing job quality*, *OECD Employment Outlook 2014*, OECD Publishing, Paris, [https://doi.org/10.1787/empl\\_outlook-2014-6-en](https://doi.org/10.1787/empl_outlook-2014-6-en).
23. Robak E. (2012), *Równowaga między pracą a życiem osobistym pracowników jako istotny czynnik wpływający na kapitał ludzki*. Ekonomiczne i społeczne aspekty funkcjonowania współczesnego rynku pracy, ed. D. Kotlorz, „Studia Ekonomiczne, Zeszyty Naukowe Wydziałowe Uniwersytetu Ekonomicznego w Katowicach”, No 110, pp. 113-121.
24. Robak, E. (2017) *Expectations of Generation Y Connected with Shaping the Work-Life Balance. The Case of Poland*, “Oeconomia Copernicana” No 8(4), pp.579-594, DOI: 10.24136/oc.v8i4.35
25. Rodriguez M., Boyer S., Fleming, D., Cohen S. (2019), *Managing the Next Generation of Sales, Gen Z/Millennial Cusp: An Exploration of Grit, Entrepreneurship, and Loyalty*, “Journal Of Business-To-Business Marketing”, 26:(1), pp. 43-55, DOI: 10.1080/1051712X.2019.1565136.
26. Singh, A. P., Dangmei, J. (2016), *Understanding the generation Z: the future workforce*, “South - Asian Journal of Multidisciplinary Studies” (SAJMS), 3:(3), pp. 1-5., [https://www.researchgate.net/publication/305280948\\_UNDERSTANDING\\_THE\\_GENERATION\\_Z\\_THE\\_FUTURE\\_WORKFORCE](https://www.researchgate.net/publication/305280948_UNDERSTANDING_THE_GENERATION_Z_THE_FUTURE_WORKFORCE)
27. Słocińska A. (2012), *Dzielenie się wiedzą jako podstawowa kompetencja organizacji struktur sieciowych*, „Management” Vol.16 No, 1, s. 647-659.
28. Smith E. A. (2001), *The role of tacit and explicit knowledge in the workplace*, “Journal of Knowledge Management”, Vol. 5 No. 4, s. 311-321.
29. Średnicka J. (2011), *Indywidualizacja i dyfuzja sieciowości. Refleksje nad przemianami społeczno – kulturowymi w Polsce*, „Problemy Zarządzania”, Wydawnictwo Naukowe Wydziału Zarządzania Uniwersytetu Warszawskiego, Vol. 9, nr 2(32), Warszawa.
30. Szczepańska B. (2004), *Znaczenie wiedzy i informacji w zintegrowanym systemie zarządzania*, [in:] Borowiecki R., Kwieciński M. (ed.) *Informacje i wiedza w zintegrowanym systemie zarządzania*, Kantor Wydawniczy Zakamycze Oddział Polskich Wydawnictw Profesjonalnych sp. z o.o., Zakamycze.
31. Tulgan, B. 2013. *Meet Generation Z: The second generation within the giant "Millennial" cohort*, Rainmaker Thinking Inc., <http://www.rainmakethinking.com/assets/uploads/2013/10/Gen-Z-Whitepaper.pdf>
32. Watts D. J., Strogatz H. S. (1998), *Collective dynamics of 'small-world' networks*, „Nature”, Vol. 393.
33. Zwart, S., Baker, M. (2018), *Improving productivity and job quality of low-skilled workers in the United Kingdom*, *OECD Economics Department Working Papers*, 1457, OECD Publishing, Paris, <https://doi.org/10.1787/14dfd584-en>.

## PERSONNEL MANAGEMENT IN RELATION TO THE EXPECTATIONS OF WORKERS FROM GENERATION Z

*Anna ALBRYCHIEWICZ-SŁOCIŃSKA<sup>1</sup>, Elżbieta ROBAK<sup>2</sup>*  
*<sup>1,2</sup> Częstochowa University of Technology, Częstochowa, Poland*  
*E-mail: slocinska@wp.pl*

**Summary:** One of the key problem which modern organizations must cope with is to gain and maintenance employees. This situation is a consequence of many factors such as: transforming the labor market, strengthening the position of the employee, demographic gap and generational changes. After years of X- generation representatives' dominations, the existing balance of power on the labor market has disturbed the appearance of representatives of the Y- generation. Employees of this generation have contributed significantly to the transformations of the contemporary work environment. Thus, the following Z- generation seems to represent even stronger the employees' needs.

**Purpose:** The goal of the paper is to present the specifics of the expectations of the generation's representatives towards the place of work and the definition of activities in the area of personnel management that will allow the acquisition and maintenance of these employees.

**Design/methodology/approach:** In this essay the characteristics of Z- generation was presented based on the subjects' literature and it was also formulated, based on the analysis of selected reports, postulates regarding personnel management activities taking into consideration the specificity of these employees. The study mainly used the desk research method.

**Findings:** The key guidelines for employees of personnel departments referring to work with employees of Z- generation include: constant monitoring of the expectations of this group of employees with respect to the job and the workplace, and providing the superiors with knowledge about them and the ability to communicate with them.

**Keywords:** Z-generation, personnel management, workplace

### 1. Introduction

Functioning in the workplace and employees' expectations from Z- generation are a mystery for those who manage organizations. Difficulties rise to an understanding of their desires, ways of perceiving reality and motives of actions different from other generations of employees. Analyzed reports indicate the importance of Z- generation, above all, flexibility and well-being in the workplace. These elements in the light of the literature are assigned to the tasks of the personnel function and are most often associated with a flexible work organization and a wide range of social benefits. However, Z- generation sees them differently. In practice, it mostly means the availability of modern technologies and preparing supervisors to work with young employees who expect their attention, individual approach, care and guidance. The superior should play the role of not only the organizer of the work and the controller, but above all the career and partner.

On a modern labor market there are representatives of several employees' generations. Starting with still professionally active employees from the Baby Boomers' Generation, through dominant X- Generation and Y- Generation (Robak, 2017), to the youngest people who represent Z- Generation. In the subject literature a differentiation is visible which

concerns both terminology related to the naming of these generations, as well as delimitation between individual generations. (Bencsik, Horváth-Csikós, Juhász, 2016, p. 92; Bejtkovský, 2016, p. 106).

An interesting comparison of traits concerning representatives of the Baby Boomers, the X and the Y in relation to their personal lives and functioning in the workplace is provided by J. Bejtkovský (2016, pp. 108-109). Thus, it needs to be highlighted that majority of papers describing generation differences do not include analysis of the youngest, Z generation.

The authors, taking this topic into consideration, basing on the analysis of literature and opinions of practitioners, they made observations that the Z generation is the least researched and at the same time its representatives often cause difficulties for the managing organizations. These difficulties the most often are connected with irrelevant, intuitive, non-knowledge-based activities in the field of personnel management in relation to acquiring and keeping employees from this generation. The consequences of such irrational decisions are, on one hand, costs connected with repeated recruitment activities, or high retention rates, and, on the other hand, organizational problems resulting from the fact that the employees of the analyzed group do not work according to their capabilities. Intuitive management often leads to building inappropriate relationships and unskillful motivation, which results in their low effectiveness at work.

The goal of the paper is to present the specifics of the expectations of the generation Z representatives towards the place of work and the definition of activities in the area of personnel management that will allow the acquisition and maintenance of these employees.

## **2. Methodology**

In this essay the characteristics of Z- generation was presented based on the subjects' literature and it was also formulated, based on the analysis of selected reports and articles, postulates regarding personnel management activities taking into consideration the specificity of these employees. The main objective was to fulfill the realization of secondary research, mainly by the desk research method (Bednarowska, 2015). This research was identified through a search of scholarly literature available especially through electronic databases. For example, the articles at Web of Science database were taken into consideration.

## **3. Generation Z in a workplace**

According to some authors it is the most often accepted, that Z- Generation consists of people who were born after 1995, but still some researches include people born after 1990 among this group and in other terms even those who were born in 2000 and later (Dolot, 2018, p. 45).

The Z generation is also called: the Post- Millennials, the Digital Natives, the Silent or the New Silent. Calling the Z generation a name of the Silent generation is related mainly to the fact that young people from this generation function much better in the virtual reality than in a real life. Through the social media they make contacts but these contacts do not have the nature of in-depth relationships. In contrast to other generations they have lacks in the field of interpersonal skills, especially the lack of listening ability. It leads to difficulties with effective communication and making personal relationships (Cook, 2015; O'Boyle, Atack, Monahan, 2017). It happens because social space where they function have a virtual character which does not require interpersonal skills related to direct contact with another person.

Communication limitations of IT solutions have led to the failure to educate the ability to read other people's feelings correctly, and consequently to the lack of empathic skills (Bejtkovský, 2016, p. 109). IT tools are for the Z not only working tools, but mainly instruments through which they create their world. The virtual environment is also a preferred form of the socialization. The Zs can see that the virtual reality- online life does not fit into offline life-real one, which causes their anger, fears and disappointments. They are practical, but rather intelligent than wise. Representatives of this generation are ready to be leaders, they are characterized by their courage, they are not afraid of changes, in their opinion the Internet provides all the information necessary to solve emerging problems. Sharing knowledge and information is easy and fast for them but, most off all, public.

They expect from they environment that somebody will pay the attention to them and will tell what their parents used to say „you are fantastic”. They want to feel everywhere as at home. Their life goal and the main value is- life in the present. They make assessments of different situations based on the time perception that is specific to them. They live „online”, here and now, and they do not consider investing in potentially beneficial relationships in the future, because they must give an immediate profit. Their relationships are mainly virtual and superficial. The Z generation is characterized by undermining the sense of self-realization, intuitive IT, fast response, courage, quick access to information and searching for content, divisible attention, lack of thinking based on consequences, no need to make sense of things, blurring the boundaries between work and entertainment rozrywką (Bencsik, Horváth-Csikós, Juhász, 2016, p. 95). Generation representatives are able to do several things at the same time and this is in some way natural for them. (Tulgan, 2013; Sidorcuka, Chesnovicka, 2017, p. 809). The Zs take part in a teamwork only if it is necessary and in a virtual form. At work they do not compete with others. They prefer flattened organizational structures that allow young employees with little experience to feel equal members of the organization. This enables clear professional development, eliminates pressure to climb the career ladder and facilitates contact with the superiors (Bencsik, Horváth-Csikós, Juhász, 2016, p. 93).

People from this generation do not show proactive attitude of entering different bonds of relationships, passively expecting them to be included in existing relationships. In the new work they are passive at the entrance, they expect to take care of them so that they feel comfortable. The Zs are ready to engage at work uder one condition; this work has to give opportunities of optimal use of their strong points. Therefore, an employer must submit a job offer adequate to their expectations and it can not be neither below nor above the competence of the Zs.

#### **4. Gen Z challenge for HR - discussion**

Due to the specificity of the Z generation functioning in the workplace, it is a challenge for HR and direct superiors. A review of selected literature items (Singh, Dangmei, 2016; Lyons, Lavelle, Smith, 2017; Lazanyi, Bilan, 2017; Duffy et al., 2018) led the authors to formulate significant Zs expectations for the employer, which can be reduced to:

- immediate remuneration for work - which makes long-term motivational incentives useless;
- respect for their freedom and independence - which may mean using persuasion and incentives instead of orders and bans;
- training and development based on their interests and informal learning methods using modern technologies in communication processes, e.g. applications that enable learning through games, constant contact with a mentor or trainer;

- the need for the company to replace the family in which the Zs are in the focus;
- using modern technologies (digitize recruiting) to reach and attract talented young employees;
- enabling participation in comprehensive training, going beyond rigid functional structures and positions occupied by employees;
- showing the contribution and significance of the Z's work for the implementation of organizational goals;
- providing the Zs with the possibility of individualized development of skills and career paths, which must however be created with the participation of the interested themselves and not imposed on them in advance;
- creating a transparent coaching system for new employees helping them to strengthen their strong points and lead their career paths, guaranteeing an individual approach.
- making the organization of work and working time more flexible, which will enable the Zs to implement non-professional areas of life;
- including in the workplace the possibility of using devices enabling online access and access to a variety of information and communities;
- creating a work environment in which they will be able to fully use digital skills, which are their strongest side;
- taking care of mental and physical hygiene by creating a friendly workplace (eg organization of work space, interior design, opportunities to relax in the workplace, the possibility of using healthy meals);
- building the image of a socially responsible organization enabling participation in related activities (eg volunteering, work for the local community, ecological activities);
- creating a work environment that integrates their need for success and wellbeing.

The provided list of recommended tasks in the area of HR is based on the analysis of researches results and reports about the general functioning of the representatives of the Z generation, because it is a generation only entering the labor market, and therefore there is no deeper research on this subject.

## 5. Conclusion

Solving problems which results from the cooperation of representatives of four generations on the labor market is now a specific challenge for HR and is primarily associated with: making communication methods more flexible, understanding the diverse needs of employees of different generations, intergenerational education and encouraging the building of positive relationships (Smith, 2013).

Undoubtedly, it is a challenge for HR to formulate job offers corresponding to the needs of representatives of different generations showing different expectations for work and, at the same time, the observance of the principle of justice, ie not favoring any of the generations.

Whereas, in the accordance to the Z generation, in the situation when modernly many companies can meet their requirements about the opportunity to work with the use of the latest technological solutions, the decisive factor in staying at the workplace are social relations, especially those with the supervisor. Preparing supervisors for building these relationships should include: frequent feedback, skilful criticism, taking on the role of a partner and guardian towards the Zs rather than the controller, listening to their ideas and appreciating their opinions (despite their young age and limited professional experience), positive communication, fairness and honesty of the message.

The conclusions from analyzed reports are limited by the fact that Z- generation is already enters the labor market. By examining the experience of these employees regarding the work situation, these reports most often rely on their opinions referring to temporary work.

## References

1. Bednarowska Z. (2015), Desk research – wykorzystanie potencjału danych zastanych w prowadzeniu badań marketingowych i społecznych, „Marketing i Rynek”, 7, pp. 18-26.
2. Bejtkovský J. (2016), The Employees of Baby Boomers Generation, Generation X, Generation Y and Generation Z in Selected Czech Corporations as Concoivers of Development and Competitiveness in their Corporation, “Journal of Competitiveness”, 8(4), pp.105-123, DOI: 10.7441/joc.2016.04.07
3. Bencsik A., Horváth-Csikós G., Juhász T. (2016), Y and Z Generations at Workplaces, “Journal of Competitiveness”, 8(3), pp. 90-106, DOI: 10.7441/joc.2016.03.06
4. Cook V. S. (2015), Engaging generation z students. Sites.google.com. [https://sites.google.com/a/uis.edu/colrs\\_cook/home/engaging-generation-z-students](https://sites.google.com/a/uis.edu/colrs_cook/home/engaging-generation-z-students) (access: 24-06-2019).
5. Dolot A. (2018), The characteristic of Generation Z, “e-mentor”, 2(74) pp. 44–50, <http://dx.doi.org/10.15219/em74.1351>.
6. Duffy B., Shrimpton H., Clemence M., Thomas F., Whyte-Smith H., Abboud T. (2018), Beyond Binary. The lives and choices of Generation Z, Ipsos MORI Social Research Institute, <https://www.ipsos.com/ipsos-mori/en-uk/generation-z-beyond-binary-new-insights-next-generation> (access: 24-06-2019).
7. Lazanyi K., Bilan Y. (2017), Generation Z on the labour market - do they trust others within their workplace? “Polish Journal of Management Studies”, 16(1), pp. 78-93, DOI:10.17512/pjms.2017.16.1.07
8. Lyons M., Lavelle K., Smith D. (2017), Gen Z Rising, Accenture Strategy, [https://www.accenture.com/t20170901T080938Z\\_w\\_us-en\\_acnmedia/PDF-50/Accenture-Strategy-Workforce-Gen-Z-Rising-POV.pdf](https://www.accenture.com/t20170901T080938Z_w_us-en_acnmedia/PDF-50/Accenture-Strategy-Workforce-Gen-Z-Rising-POV.pdf) (access: 24-06-2019).
9. O’Boyle C., Atack J., Monahan K. (2017), Generation Z enters the workforce. Generational and technological challenges in entry-level jobs, Deloitte Insights, [https://www2.deloitte.com/content/dam/insights/us/articles/4055\\_FoW-GenZ-entry-level-work/4055\\_FoW-GenZ-entry-level-work.pdf](https://www2.deloitte.com/content/dam/insights/us/articles/4055_FoW-GenZ-entry-level-work/4055_FoW-GenZ-entry-level-work.pdf) (access: 25-06-2019).
10. Robak E. (2017), Expectations of Generation Y Connected with Shaping the Work-Life Balance. The Case of Poland, “Oeconomia Copernicana”, 8(4), pp. 579-594, DOI: 10.24136/oc.v8i4.35
11. Sidorcuka I., Chesnovicka A. (2017), Methods of Attraction and Retention of Generation Z Staff, International Conference of Central-Bohemia-University (CBUIIC) - Innovations in Science and Education, Prague, Czech Republic, pp. 807-814, DOI: 10.12955/cbup.v5.1030
12. Singh A. P., Dangmei J. (2016), Understanding the generation Z: the future workforce, “South - Asian Journal of Multidisciplinary Studies (SAJMS)”, 3(3), pp. 1-5, [https://www.researchgate.net/publication/305280948\\_UNDERSTANDING\\_THE\\_GENERATION\\_Z\\_THE\\_FUTURE\\_WORKFORCE](https://www.researchgate.net/publication/305280948_UNDERSTANDING_THE_GENERATION_Z_THE_FUTURE_WORKFORCE) (access: 24-06-2019).
13. Smith G. P. (2013), Managing generations in the workplace. Hrvoice.org. <http://www.hrvoice.org/managing-generations-in-the-workplace> (access: 26-06-2019).
14. Tulgan B. (2013), Meet Generation Z: The second generation within the giant "Millennial" cohort, RainmakerThinking Inc., <http://www.rainmakerthinking.com/assets/uploads/2013/10/Gen-Z-Whitepaper.pdf> (access: 26-06-2019).

## ROLE OF BUSINESS GAMES IN HIGHER EDUCATION

*Attila KOVÁCS*

*Szent István University, Gödöllő, Hungary*

*E-mail: kovacs.attila.szie@gmail.com*

### **Summary:**

**Purpose:** Even When I was a student, the course of the Case Studies was launched in the autumn of 1993 under the supervision of Prof. Csaba Székely. Within the course an entrepreneurial decision-making game was developed on the basis of DBase. The task was to maximize the amount of HUF 15 million in virtual assets received with the help of 10-year decisions. In a matter of moments, the entrepreneurial specialty was burning in student fever, but the seemingly easy-to-business decision game (BSG-Business Simulation Game) that led to the abdominal intuitive decision model led to bankruptcy in no time! The game was a tough competition between teams. Then the years passed and I took over this course and taught the game, and I myself participated in similar games organized by other institutions. Our game is very simple, but at the same time it provides an excellent basis for summarizing the knowledge acquired so far. This is the point where I started to search what was missing to make such a game more successful among the Students? What does it need to give even more experience and knowledge? Is it suitable for helping Students develop complex vision? Does It lastly help you become an entrepreneur?

**Design/Methodology/approach:** In this article I would like to present the experiences of the past decades, describing the literary background of decision-making games and the experiences of others In their role in education. I summarize the advantages and difficulties of decision games based on literature reviews and my own experiences. In addition to the presentation of the self-made game and the unique nature of the game, I also present the results of the questionnaire used during the execution.

**Findings:** I point out why it is advisable to execute the game within the scope of the course, and how it would be useful to develop it to be used in higher or specialized courses.

**Keywords:** decision games, business games, strategic thinking ability, developing risk-taking skill, entrepreneurial ability

### **1. Introduction**

In general, games have two basic elements: random and rule. Each game has its own rules to limit reality and make decisions within these limits. Anyone who wants to take part in the game must accept the rules and limits. At the same time, there is also a role for accidental influencing effects.

Basically, games can be single, double or n-Personas (where n is greater than 2). Another interpretation of the player is that they do not necessarily have to be individual. It can be a nation, a company, or a group of people who are interested in the direction of the game individually.

According to Steven J. Brams, Morton D. Davis, there are basically three characteristics that can be used to describe the games, grouped according to their extensive, normal (strategic) form or characteristic function:

- The normal (strategic) Form primarily characterizes double games. In this form, a game is represented by a payout matrix, where each line describes a player's strategy, and each column describes the strategy of the other player. Each strategic decision depends on the opponent's choice. Matrix entries at the intersection of each row and column choose the appropriate strategy for each player's results. The payout of the players associated with the result is the basis for determining whether the strategies are "balanced" or stable.
- Typical feature shape is usually used to analyse more than two players' games. It indicates the minimum value that a coalition of all players, including single-player coalitions, can guarantee itself when he is playing against a coalition of other players. (characteristic-function form)
- Most well-known and well-liked games go a step in the line, that is, after the action of one player follows the row. Thus, the ability to make step-wise decisions can be explored in the form of a game tree (decision Tree), in which each round is the culmination of a tree, where each branch represents the successive decisions of the players. We group these types of games based on the form of extension. In this case, the game can be either complete or incomplete.

In science, simulation is an attempt to establish relationships approaching real conditions, to detect probable behaviour of the objects or persons under investigation in real circumstances. Economic simulation is a study of economic problems through experiments on specific mathematical models. It is obvious that simulation can be applied to games that take place under economic conditions. In this article, I would like to present a comprehensive picture of the history of the simulation and the relationship between the game and the role that these play in higher education. I will briefly describe the decision-making game that I have used and partly improved (ProfitMax), and draw conclusions from its many years of experience, class performance and literature on its role in our education system.

## **2. Literature Review/Research Background**

Simulation tools enable the Experimer to study the processes in nature, since the simulation can be run multiple times with the values of the parameters modified between runs and changes in the observed outputs. (Maziar Mahboubian, 2009)

The possibility of experimenting with manipulable variables is particularly useful in management research, because moral and physical factors often prohibit experimentation with real people, systems, and Organizations (Berends & Romme, 1999; Maziar Mahboubian, 2009)

Simulation games are widely used in the military sector in the development of leadership capabilities (O'Neil & Fisher, 2004) and Combat Training (O'Neil & Andrews, 2000). The flight simulators are one of the oldest methods of training combat pilots (Moroney & Moroney, 1999).

Simulation games allow experiments in a fictive position to show the real behavior and outcome of possible relationships (Lean, Moizer, Towler and Abbey, 2006) and encourage experimentation with ideas in a Fictional world that is full of high-risk and complex Systems (Gee, 2008).

According to Maziar Mahboubian (2009), the simulation is usually used to help people understand the dynamics behind the elections made by humans in life. Some of these can be very lifelike and complex; Others are as simple as basic business skills that can be taught using simple mathematics. Better simulations use complex algorithms and contain virtual characters that allow for a lively negotiation situation that understands students how decisions can affect the success or failure of a large organization.

Simulation can be used in different areas of life. Some Example this on the following is readable:

- COMPUTER SYSTEMS: Hardware components, software systems, networks, database management, information processing, etc.
- PRODUCTION: Material handling systems, assembly lines, automated production facilities, stock control systems, equipment arrangement, etc.
- ENTERPRISE: Inventory and goods analysis, price policies, marketing strategies, cash flow analysis, forecasting, etc.
- GOVERNMENT: Military weapons and their uses, military tactics, population prediction, land use, health care, fire protection, criminal justice, traffic management, etc.

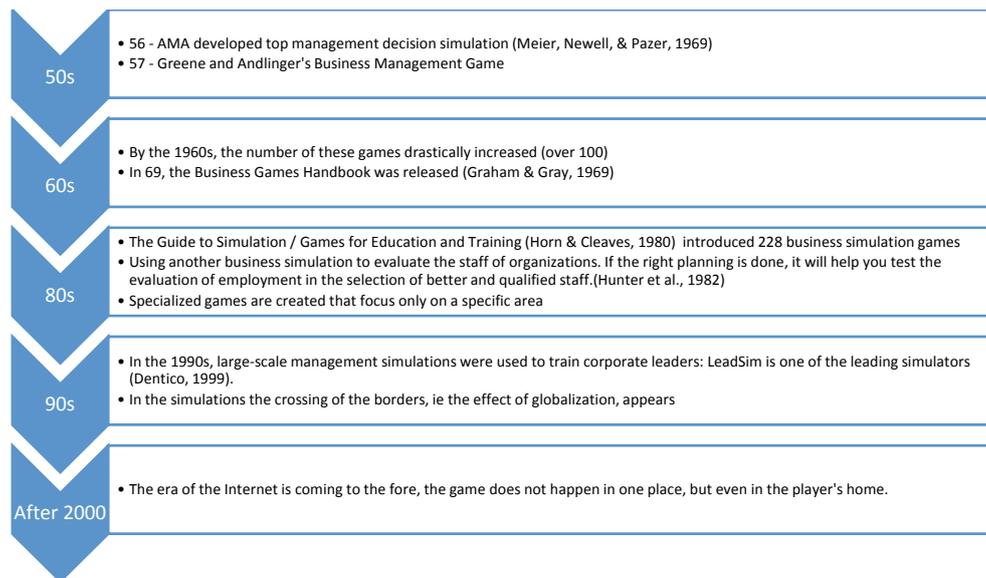
As for the application of the simulation in higher education, it is explained by many advantages that appear in different areas. Some of the most important benefits are summarised in the following, which are primarily important for education:

- The closer the simulation is to the actual environment of the learner, the greater the positive reception.
- Simulations provide a secure environment for committing errors.
- Simulations allow you to start learning without raising awareness for learners.
- Creating a simulation can help you understand complex processes.
- "Time compression" is possible, i.e. Long - term production cycles may be abbreviated (See Crop production).
- Well-designed simulations significantly reduce learning time. (Maziar Mahboubian, 2009)

### ***Business Simulation Games historical development***

Although the history of the business Games is traced back to games and war games of nearly 5000 years ago, it is basically a part of the II. Post-war period counts as the real historical beginnings. (Wolfe & Crookall, 1998)

The modern business simulation game dates back to 1955. The following figure illustrates the most important stations.



**Figure 1: Timeline of the BSG's history**  
*Source: Self-editing Mahboubian (2009) following*

### **BSG's role in education**

The development of high-level competences among university students is challenging. Students need to develop a broad range of thinking, problem solving, and cognitive abilities to effectively manage the knowledge they have gained in their future workplace. The global economy is changing rapidly. In this environment, dexterity, flexibility and adaptability are required to be successful in the listener. However, the commonly used methods and means of higher education institutions ' business skills are not sufficient to cope with the complexity of the organisation and the unstable conditions of today's market (Achtenhagen et al., 1993; Baker & O'Neil, 2002; Lehtinen, 2002; Machuca, 2000). As a consequence, the way students are educated is changed. In order to meet the listener on these requirements, and to develop new driving and other practical skills, it should be developed.

This is a way for students to prepare themselves to cope with the complexity of the business world by building computer simulation games in the subjects ' thematic themes. Simulation gaming environments can help students manage leadership, erratic situations, and solve problems. Previous studies have shown that for the purposes of learning, "real life" business operations create a complex learning environment for students. (Burgess, 1995; Sterman, 2001; Zack, 1998)

Leadership competence develops when the individual is forced to face the challenges of workplace situations such as innovation, decision-making, problem solving and adaptation. The main advantage of the BSG is that they allow students to become active participants in the education process. (Aldrich, 2005) Participants can usually take decisions without serious consequences, or assume personal risks, as the simulation model (Summers, 2004; Pejic, Bach and Ceric, 2007; Pasin and Giroux, 2011) provides a simplified simulation business environment Pose. Therefore, they allow players to improve their decision skills by analysing and consolidating their decisions in a detailed and positive impact on their future business and decisions (Gonen, Brill and Frank 2009). In addition, students will learn in the BSG how to work with different types of people and how to solve the conflict situation (Kim, Park, and Baek, 2009). At the same time, business simulation games (BSGS) have a positive impact on motivation and learning abilities. (Tao, Cheng and Sun, 2009; Yasarcan, 2010).

### 3. Methodology and discussion

Business simulation can also be used in training and education of specialists. In a wide range of 2004 studies, a number of professional professionals were interviewed who used simulation software in their teaching. The main topic was the objectives of using such simulations. The Table 1 shows the details of the research (Faria & Wellington, 2004).

**Table 1: What are your teaching objectives with regard to the business game (s) that you use?**

Objective	N	%
To give students decision-making experience	162	48.8
To Integrate theory with practice	120	36.1
To introduce student to planning	88	26.5
To have students experience teamwork	65	19.6
To have students engage in critical thinking	49	14.8
To Measure Comprehension and understanding	48	14.5
To have students experience business competition	31	9.3
To Interest and motivate students	20	6.0
To have students experience uncertainty/pressure	14	4.2
To have students develop writing/communication skills	8	2.4
No Objectives	7	2.1

Source: Faria & Wellington, 2004

Simulation games are also useful for employees working in knowledge-based industries (Roblek et al., 2013). Faria and Wellington (2004) showed that 30.6% of professors used BSG classes. In the United States, even greater use is seen in general and secondary education.

#### ***A brief description of the ProfitMax decision game***

ProfitMax is a simulation training tool that enables student groups to make decisions about managing a virtual company year after year. Team building is entirely up to the Students, with the requirement that at least two people should be in a team and generally do not let more than 4 people. The virtual companies in the classroom compete with each other. This competition is not real from the point of view of companies having no direct influence on their decisions. Market size - the total income in respect of - change during the simulation period, moreover, unlike in the case of certain products.

In order for the game to be effective, there is a need for a series of educational and construction steps to incorporate the gameplay into a framework. Based on the literature and years of experience, the gameplay looks like after Rogmans (2016) as follows in Table 2.

**Table 2: The execution steps of the ProfitMax decision game**

Brief-Play-debrief activities modified by Rogmans (2016)	
Brief	Instructor explains rules of business game and required theories
Entrepreneur Questionary	Questionary of Professor John Braun's at Bridgeport University in the United States, in the 90 's
Concept Plan	Students can make up to two pages of preliminary decision plan for when and what decisions would be made
Play	Students analyze information given and make decisions period to period
What if	Students analyze results in classroom setting and link game playing process and results back to course learning objectives and real world of business

Source: Self-editing by Rogman (2016)

Unfortunately, only a subset of the initial stand-alone subjects became the result of a transformed training system within the decision theory and methodology course. However, it is more useful to provide a deeper theoretical background for any usable pre-calculations, team design and decision model before the game is executed. As the game tends to be closer to a single-person game with random factors, the teams compete virtually.

#### 4. Conclusion

The game's experience so far is as follows:

- Initially, the first decisions will be taken slowly enough, and the data is being reabsorbed with less time.
- The experience of the individual utility functions discussed in the Decision Theory and Methodology course also shows that it is more difficult to start playing with the game because of the fall outside the decision range over the previous money amount.
- For this reason, it would be advisable to extend the game to correspondent Students, as there would be people who are already working or possibly in management positions, presumably with job results and easier decision-making practice.
- Groups that do not care about their decisions are usually in the 5-6. they go bankrupt for a cycle. Once, everyone can go bankrupt without any consequences. Usually learners learn from this that the second time the bankruptcy does not happen.
- The questionnaire is completed after team configurations, so it is not possible to change the composition of the teams as a function of knowing it.
- Previously, Students held a presentation about their decisions, which we discussed together. Unfortunately, there is no time for this.

In general, this part of the subject is the one that shows the greatest interest. Often, I find that the relationship between feedback accounting information and decisions is not understood by the students until the game is completed.

Since the game is not a real multiplayer game, it would be advisable to develop it in this direction. On its own, however, this game would be a very good introduction to a full semester course, and after a conclusion it could be a more complex multiplayer game.

#### References

1. Berends, P., Romme G. (1999), Simulation as a Research Tool in Management Studies. *European Management Journal*, 17:(6), pp. 576-583., DOI: 10.1016/S0263-2373(99)00053-5
2. Hall, B. (2003), Simulations. *Encyclopedia of Distributed Learning*. Retrieved SAGE Publications. 6 Mar. 2009.
3. Horn, R. E., & Cleaves, A. (1980), *The Guide to simulations/games for education and training*. Beverly Hills, CA: Sage, DOI: 10.1177/104687818001100412
4. Wolfe, J., & Crookall, D. (1998), Developing A scientific knowledge of simulation and gaming. *Simulation & Gaming*, 29:, pp. 7-19., DOI: 10.1177/1046878198291002
5. Meier, R. C., Newell, W. T., & Pazer, H. L. (1969), *Simulation in business and economics*. Englewood Cliffs, NJ: Prentice Hall, DOI: 10.1177/104687817000100309
6. Andlinger, G. R. (1958), Business Games — Play one! *Harvard Business Review*, 36:, pp. 115-125.

7. Hunter, J. E. and Schmidt F. L. (1982, Fall). "Ability Tests: Economic Benefits Versus The Issue of Airtime", *Industrial Relations*; Vol. 21.
8. Faria, A. J., & Wellington, W. (2004), Survey of simulation game users, former-users and never-users. *Simulation & Gaming*, 35:, pp. 178-207.,  
<https://doi.org/10.1177/1046878104263543>
9. Maziar Mahboubian (2010), Educational aspects of business simulation softwares. *Procedia Social and Behavioral Sciences*, 2:(2), pp. 5403-5407.,  
<https://doi.org/10.1016/j.sbspro.2010.03.881>
10. Roblek, V., M. Pejic Bach, M., Mesko, and A. Bertoneclj (2013), The Impact of Social Media to Value Added in Knowledge-Based Industries. *Kyberinternet* 42:(4), pp. 554-568., DOI/10.1108/K-01-2013-0014
11. Summers, G. J. (2004), Today's Business Simulation Industry. *Simulation and Gaming* 35:(2), pp. 208-241., DOI: 10.1177/1046878104263546
12. Pejic Bach, M., and V. Ceric (2007), Developing System Dynamics Models with ' Step-by-Step ' approach. *Journal of Information and Organizational Sciences* 31:(1), 171-185.
13. Pasin, F., and H. Giroux (2011), The Impact of a Simulation Game on Operations Management Education. *Computers and Education*, 57:(1), pp. 1240-1254., ISSN: 1848–9931
14. Gonen, A., E. Brill, and M. Frank (2009), Learning through Business Games – An Analysis of Successes and Failures. *On the Horizon* 17:(4), pp. 356-367.,  
<doi.org/10.1108/10748120910998434>
15. Kim, B., H. Park, and Y. Baek (2009), Not Just Fun, but Serious Strategies: Using Meta-Cognitive Strategies in Game-Based Learning. *Computers and Education* 52:(4), 800-810., DOI: 10.1016/j.compedu.2008.12.004
16. Tao, Y.H., C. J. Cheng, and S. Y. Sun (2009), What Influences College Students to Continue Using Business Simulation Games? The Taiwan Experience. *Computers and Education* 53:(3), pp. 929-939., <https://doi.org/10.1016/j.compedu.2009.05.009>
17. Yasarcan, H. (2010), Improving Understanding, Learning, and Performances of Novices in Dynamic Managerial Simulation Games. *Complexity* 15:(4), pp. 31-42., DOI 10.1002/cplx.20292
18. Steven J. Brams, Morton D. Davis (last update 2019), Game theory.  
<https://www.britannica.com/science/game-theory>

## KNOWLEDGE OF COACHING IN ORGANIZATIONS: POLISH EXPERIENCE

**Waldemar JĘDRZEJCZYK**

*Czestochowa University of Technology, Faculty of Management, Czestochowa, Poland*

*E-mail: waldemar.jedrzejczyk@wz.pcz.pl*

**Summary:** The study raises the issue of coaching in management. Coaching is generally understood as a process aimed at helping people to achieve better results of their undertakings. Using the coaching construct by managers in organizations contributes to the change of management style – a manager/supervisor ceases to be a solution “source” and becomes an inspiration “source” for his employees. Employees should become more and more independent over time – that is finding their own solutions to problems/tasks related to their roles in organizations. Widespread use of coaching in management is labelled as coaching management style.

The main goal of our own research in the field of coaching is to establish development factors and barriers of coaching management style implementation in organizations as well as to develop a reference competency model for coaching management style. This model will define the competences that should be distinguished by a manager-coach so that the coaching process carried out by him in the organization was qualitatively similar to the process conducted by a professional coach.

The main research problem in this article is the assessment of knowledge about coaching in organizations and its usefulness in management. In the theoretical part, the concept of coaching has been explained. In the empirical part, the issue has been narrowed down to the knowledge of coaching in organizations. The article is based on literature analysis and results of secondary and primary research. The empirical part concerns the Polish business practice. The main research problem comes down to searching for answers to the following problem questions:

- a.) How is the concept of coaching understood in modern organizations?
- b.) Can coaching be useful in management?
- c.) To what extent is coaching used in organizational practice?

**Keywords:** coaching, coaching management style, organization, management, knowledge of coaching

### 1. Introduction

Modern organizations should actively support employees in their professional development. The issue is topical and crucial because: 1) there already is a significant “shortage” of skills in the labor market, 2) the problem will increase due to the growing “demand” for new skills (Jędrzejczyk, 2019, p. 21). One of the relatively new methods of improving employee competences is coaching.

The main aim of the article is to determine the level of managerial staff and regular employees’ knowledge of coaching in order to assess whether it is possible to widely use coaching in organizations in human resources management? The discussed issues are part of a broader research in the field of coaching, the main purpose of which is to establish development factors and barriers of coaching management style implementation in organizations as well as to develop a reference competency model for coaching management

style. This model will define the competences that should be distinguished by a manager-coach so that the coaching process carried out by him in the organization was qualitatively similar to the process conducted by a professional coach.<sup>2</sup>

Before an attempt to answer the question whether is it possible to widely use coaching in organizations in human resources management was made? (this article), an assessment whether it is justified to support employee development in organizations with the aid of coaching had been made? – the results analyses are described in the article written by S. Brzeziński and W. Jędrzejczyk (2019). The answer was clear. It has been shown that the use of coaching in organizations in employees' professional development is justified. The conclusion confirms that the choice of the main problem of this article is just.

## **2. The importance of coaching in management**

The idea of using coaching in human resources management was initiated in the 60s of the 20th century. Whitmore and Leonard are considered pioneers of this trend. For several decades now, Whitmore (2011, p. 18) has seen coaching as a skill that can be used to stimulate human potential in order to maximize its effectiveness during the accomplishment of professional tasks. A skill that do not teach – it helps to learn. Leonard, on the other hand, was the founder of the first coaching school, Coach University, which was established in 1992 in the United States. He contributed to increasing the importance of coaching in practice (Vickers, Bavister, 2007, pp. 30-31). The issue of coaching in management can also be found in the following works: Evered, Selman (1989); Chapman, Best, Casteren (2003); Graham, Wedman, Garvin-Kester (2008); Bond, Seneque (2012); Milner, McCarthy, Milner (2017). In order to use the coaching potential, it is necessary to understand what coaching really is: for what purpose it can be used, when and to what extent, as well as who is able to use it properly. International Coach Federation (ICF) defines coaching as an interactive process which helps individuals or organizations accelerate their development pace and improve their performance. It also determines coaching as “improving a client's performance results as well as improving their way of learning (...) Coaching was created to provide clients with an opportunity to increase their ability to achieve their dream results and build confidence in their natural skills (What is coaching?). Other definitions of coaching can also be found in following papers: Parsloe (1998, p. 10), Bianco (2016, p. 3), Thrope, Clifford (2017, p. 17).

Coaching finds practical application in organizations, in human resources management in particular. It is perceived as a teaching process (Parsloe, 1995, p. 18). It is based on conversation, asking questions, active listening and a partnership that actively supports the search for good solutions and achievement of goals.

Coaching in the business area concerns employees' competence development necessary to achieve organizational goals (Wilson, 2010, p. 24; Wilson, 2014). It can be run by professional coaches – external or internal – as well as by direct superiors. Using the idea of coaching in the relationship between the superior and subordinate is also referred to as a coaching management style. This style is based on a belief that each employee has potential (knowledge and experience), which can be developed on the basis of one's own self-fulfillment needs. The employee knows the solutions to his own problems and the coach's role is to help him in reaching these solutions.

---

<sup>2</sup> The research is conducted by a research team headed by Waldemar Jędrzejczyk, author of the present study. The main research stream concerns the competence issue, both currently desirable and prospective, in relation to sectors, kinds and types of organizations, professional groups and key positions in organizations. In the area of coaching the main contractors are Artur Marszał and Dorian Pitera.

In the world's business practice, coaching is known and used on a large scale, whereas in the Polish business practice, coaching is only just beginning to gain in importance. Interest in the coaching practical application in organizations is slowly increasing. This is driven by a large number of foreign companies that have emerged on the Polish market. In these companies, coaching methods have long been actively used in the human resources management process and the coaches' roles are taken over by managers.

### **3. Knowledge of coaching and its usefulness in management – research results**

#### ***The research method***

The aim of the research presented in this article is to determine the level of managerial staff and regular employees' knowledge of coaching. The obtained results will allow to assess whether the current level of knowledge in the field of coaching in organizations enables the widespread use of this method in human resources management. Two main stages were distinguished in the described research process:

Stage 1: Determining the level of knowledge about the essence of coaching and its usefulness in management – from the managers' perspective;

Stage 2: Determining the level of knowledge about the essence of coaching and its usefulness in management – from the employees' perspective.

The research was conducted in the period from June to September 2018. They were of a quantitative nature. The diagnostic survey method was applied with the use of standardized questionnaires. The research was carried out using the CAWI (Computer Assisted Web Interview) method. Managers and executive employees of companies with different business profiles posed the target groups. In total, 115 people took part in the survey (45 people – research population of managers; 70 people – research population of executive employees). Stages 1 and 2 were carried out in parallel.

#### ***Knowledge of coaching in organizations – managerial perspective***

In the research part aimed at determining the level of managers' knowledge of coaching in organizations the answers to the following questions were sought-after:

1. How do managers in modern organizations understand the concept of coaching?
2. Is it possible to develop employees' professional competences by means of coaching?
3. To what extent do managers use the coaching method in management – do they use the so-called coaching management style?

The research results analysis shows that the vast majority of managers understand – perhaps intuitively – the idea of coaching. In a question concerning the understanding of the coaching concept, 93,3% of the respondents indicated that by asking appropriate questions, posing challenges and providing support, the coach makes the coached person start to rely on his own strengths.

Managers shared a view that coaching can be used to develop employee competences – 88,9% of respondents' responses.

The survey shows that managers not only understand the idea of coaching, but also try to use it in management practice. However, the percentage of such managers is relatively low – 24,4% of respondents – whereas the majority of them have heard about coaching in management, but do not know how to use it in practice – 66,7% of respondents.

### ***Knowledge of coaching in organizations – labor perspective***

In the research part aimed at determining the level of regular employees' knowledge of coaching in organizations the answers to the following questions were sought-after:

1. How do regular employees in modern organizations understand the concept of coaching?
2. How do employees perceive coaching?
3. Do employees know coaching as a method of supporting development? Have they ever experienced it?

On the basis of the research results analysis conducted on the population of regular employees it can be concluded that the vast majority of employees correctly understand the concept of coaching – 81,4% of respondents, similarly to the managerial staff, although by 12% less. The majority of employees also perceive coaching as a very useful method (59,4% of respondents). On the other hand, a significant percentage perceives coaching as a vogue or even a conceit – 18,8% and 13% of respondents respectively.

In practice, the indicators are much worse. 18,6% of respondents came into contact with coaching in person and only 11,4% indicated that such practice takes place in the organization they work in. Whereas, for 60% of respondents coaching is a method known only from hearsay.

## **4. Discussion**

The research results analysis, both from the managers and regular employees' point of view, shows that both of the groups are able to correctly define the concept of coaching. They are also convinced that it is highly useful in the processes of employee competence development. However, understanding the idea of coaching does not translate into the scale of using the method in management practice. A high percentage of managers cannot apply coaching in practice. A high percentage of employees treat coaching as a vogue or even a conceit.

The formed conclusions allow us to state that the main reason for the inability to make widespread use of coaching in human resources management in organizations is the lack of reliable and professional knowledge about coaching, both among managerial staff and regular employees – the research shows that both groups make extensive use of intuition and “hearsays”. The managerial staff poses a dominant factor – it depends primarily on managers whether the use of coaching in management is effective. The reason for such situation may be the lack of coaching-related subjects in higher education curricula in the field of management sciences.

The presented conclusions concern the Polish reality.

## **5. Conclusion**

The main aim of the article was to determine the level of managerial staff and regular employees' knowledge of coaching and to assess whether the current level of knowledge in organizations enables the widespread use of this method in human resources management. The answer is clear. The conducted analyses and empirical research show that the level of knowledge in the field of coaching, both managerial staff and regular employees', is medium in relation to theoretical knowledge and low in relation to practical knowledge. This indicates that, as of today, it is not possible to widely use coaching in organizations in human resources management.

## References

1. Bianco T. (2016), *Coaching as a Management Tool*, CPS HR Consulting, Sacramento.
2. Bond Ch., Seneque M. (2012), *Conceptualizing Coaching as an Approach to Management and Organizational Development*, "Journal of Management Development", Vol. 32, Iss. 1, pp. 57-72 (<https://dx.doi.org/10.1108/02621711311287026>).
3. Brzeziński S., Jędrzejczyk W. (2019), *Coaching as a Method of Supporting Employees' Development in Organizations – Polish Experience*, "Przegląd Organizacji", 6/2019.
4. Chapman T., Best B., Casteren P.V. (2003), *Executive Coaching: Exploding the Myths*, Palgrave Macmillan, London (<https://doi.org/10.1057/9780230508859>).
5. R.D. Evered, J.C. Selman (1989), *Coaching and the Art of Management*, "Organizational Dynamics", Vol. 18, Issue 2, pp. 16-32 ([https://doi.org/10.1016/0090-2616\(89\)90040-5](https://doi.org/10.1016/0090-2616(89)90040-5)).
6. Graham S., Wedman J.F., Garvin-Kester B. (2008), *Manager Coaching Skills: What Makes a Good Coach?* "Performance Improvement Quarterly", 7(2), pp. 81 – 94 (<https://doi.org/10.1111/j.1937-8327.1994.tb00626.x>).
7. Jędrzejczyk W. (2019), *Human-Organization Relation in the Perspective of Industry 4.0*, In: Trojanowska J., Ciszak O., Machado J.M., Pavlenko I. (ed.), *Advances in Manufacturing II. Vol.1 - Solutions for Industry 4.0*, pp. 14-24, Springer, Cham ([https://doi.org/10.1007/978-3-030-18715-6\\_2](https://doi.org/10.1007/978-3-030-18715-6_2)).
8. Milner J., McCarthy G., Milner T. (2017), *Training for the Coaching Leader: How organizations can support managers*, "Journal of Management Development", 37 (2), pp. 188-200 (<https://doi.org/10.1108/JMD-04-2017-0135>).
9. Parsloe E. (1995), *Coaching, mentoring, and assessing: A practical guide to developing competence*, Kogan Page, New York.
10. Parsloe E. (1998), *Coaching i mentoring*, Petit, Warszawa.
11. Thrope S., Clifford J. (2017), *Podręcznik coachingu*, Rebis, Poznań.
12. Wilson C. (2010), *Coaching biznesowy. Praktyczny podręcznik dla coachów, menedżerów i specjalistów*, MT Biznes, Warszawa.
13. Wilson C. (2014), *Performance Coaching: A Complete Guide to Best Practice Coaching and Training*, Kogan Page, London.
14. What is coaching? <https://www.experiencecoaching.com> (access date: 25-06-2019).
15. Whitmore J. (2011), *Coaching: trening efektywności*, Burda Publishing Polska, Warszawa.
16. Vickers A., Bavister S. (2007), *Coaching*, Onepress, Gliwice.

## CSR: A CHALLENGE OR AN OPPORTUNITY FOR MANAGEMENT IN THE ECONOMY 4.0

**Katarzyna ZADROS**

*Częstochowa University of Technology, Faculty of Management, Częstochowa, Poland*

*E-mail: katarzyna.zadros@wz.pcz.pl*

**Summary:** Participation in the technological revolution is a condition of survival and development for modern enterprises and entire areas of the economy. The process of unification of the real world, production machines and other devices with the virtual world and information technologies takes place before the eyes of modern people and no one is able to run away from it.

Robotization, although it is an expensive process, involves more and more business entities as well as non-profit organizations. However, many perceive it as a threat to a people and their autonomy in the work environment. Particularly frequently indicated problem is the threat of losing a job and an ever lower demand for workforce, especially for positions with a low level of qualifications. Certainly there is some of the truth in these fears. Are the changes really to be feared? Will they bring more benefits or more problems? These and many other questions since the nineties of the twentieth century are bothering scientists and practitioners, but so far no one is able to give an unambiguous answer.

The presented article is a theoretical analysis of changes that have already taken place in modern economies and which are inevitable for, among others, Polish companies wishing to effectively compete on the international market, which is increasingly using economics 4.0. Particular attention has been paid to issues related to opportunities and threats for employees who will have to adapt to the new principles of the functioning of organizations and markets. An attempt was also made to assess whether the implementation by companies of the principles of social responsibility and sustainable development can facilitate the transformation process from the economy 3.0 to the economy 4.0.

**Keywords:** Economy 4.0, management, CSR, a Men

### 1. Introduction

The activities of contemporary economists and managers for over twenty years are constantly accompanied by a dilemma whether the participation of companies and economies in the technological revolution is a necessity guaranteeing further functioning on the market, or maybe it is only one of possible ways of development. More and more spectacular successes of companies using the latest technologies, as well as problems in the competitive struggle of companies whose operations are based on traditional technologies, indicate that it is not possible to achieve market successes without engaging in processes related to the integration of intelligent machines and production systems, which include also creating accompanying new ways of working and changing the role of man in the production, distribution and sales system (Schwab, 2018, pp. 92-98).

New technical and technological solutions that cause concern are, among others, the Economy (industry) 4.0. This term is understood as an economy in which multilateral impact of the real and virtual world takes place, becoming the core of production processes and enabling the

introduction of new types of bonds between companies, suppliers and customers (Herman et al., 2015, p. 3.).

In contrast to such concepts as Computer Integrated Manufacturing, it does not assume the creation of enterprises in which computers and their systems eliminate people from production or logistics processes, but they will guarantee better working conditions for this person, through support from information systems (Orlitzky et al., pp. 19-21.).

Why, then, the implementation of technologies that facilitate entry into the economy 4.0 raises so many anxieties and controversies?

It seems that the basic reason for this is typical human fears connected with the need to acquire new skills and lack of knowledge about the conditions of functioning in the new economic reality. It cannot be concealed that the changes that await a modern employee are significant and will require from him to acquire new skills. It is certain that completely new professions will arise, and simultaneously, a total redefinition of the labour market will take place. Traditional forms of employment and work in industry will gradually be replaced by more flexible ones (Uber, TaskRabbit and similar platforms). The demand for project work, task based employment, work on demand and other flexible forms of employment will increase. At the same time, the demand for service area employees, including professional, will increase. Furthermore a number of industries (e.g. construction or renovation) will still need employees with not necessarily high level of education, but with a high level of practical skills. It can be said that changes won't be significant in practice, because even today similar trends can be observed on the labour market (Pascall, 2017). So where do the fears and uncertainties, or even resistance to orienting companies and economies towards economic solutions 4.0, come from? The following article will make an attempt to answer these questions.

## **2. The road from economy 1.0, to 4.0**

Managing is a process inextricably linked to the functioning of man in communities and his development. For millennia, it was based on entrepreneurship and human ingenuity, which were the source of economic success and advance. Even now, it can be said that these factors are still of fundamental importance, but their specificity changes. With the invention of the steam engine and the mechanization of production resulting from it, the world economy entered the era of industrialization. Today this period is defined as economy 1.0 (Kiepas, 2018, p. 49.).

The second stage of the development acceleration was the electrification, which replaced the steam technology, in other words the emergence of the economy 2.0. At the end of the sixties of the twentieth century, the world experienced another "revolution", which was digitization - thus began the development of the economy 3.0. Constantly developing modern computers have mastered all areas of manufacturing industry, began to be used on a large scale in planning and control processes, and above all, improved and boost the quality of the production process. Finally, they became part of everyday life of the inhabitants of highly developed countries, and later also of other parts of the world.

Rapid development of IT systems, creating networks and facilitating communication thanks to the creation and rapid modernization of the Internet as well as significant reduction of data storage costs made it possible to move from the 3.0 economy to the currently growing 4.0 (Furmanek, 2018, p. 59.).

This concept defines the processes consisting in the integration of intelligent machines and their systems and the introduction of changes in production processes and provision of services aimed at increasing production efficiency and introducing the possibility of flexible assortment changes, in order to direct to the customer an individualized offer which will strictly meet his needs (Jacobsen 2012, p. 16.).

Industry 4.0 concerns not only technology based on the concept of cyberphysical systems, but also new ways of working and the role of people in industry.

### **3. The essence of the economy 4.0**

Economy 4.0 is understood as a term that allows the combination of technology and the value added chain (collective term technologies and concepts of value chain) (Hermann et al., 2015, p. 13.). It assumes full computerization of traditional branches of industry and what is important, it shouldn't be seen as a revolutionizing solution for the existing realities of the functioning of enterprises. Rather, it should be perceived as an element of the evolution that has been ongoing for millennia, and which has accelerated the pace of change over the past 200 years (Maślanek, 2014). This view is supported by the fact that solutions of a typical economy 4.0, such as cloud computing technology, big data, Internet of Things and 3D printing, have been successfully used by many companies for many years and their use does not raise any concerns or objections of employees (Morrar et al., 2017, p. 15.).

At the moment it is an intelligent combination of many IT technologies used in enterprises and organizations from outside of the economy. Its basic assumptions include computerization of traditional sectors and branches of economy and gradual blurring of borders between individual enterprises (Almada-Lobo, 2016, p. 19.). As examples of the application of the fourth revolution, the most frequently indicated are autonomous vehicles, new materials (graphene) or advanced robots cooperating with people, as well as the aforementioned 3D printing (Schwab, 2016). The key solutions related to the functioning of this economy can also include intelligent intersection networks with which we meet every day driving cars around cities, or embedded systems, which include airbags mounted in cars and improving driving safety (Hermann et al., 2015, p. 17.).

The increasingly common application of the 4.0 economy solutions means that, on the one hand, more and more people stop noticing the changes taking place thanks to it, treating them as a natural element of modernization and improving the quality of people's lives. On the other hand, at the moment when the issues of reconstruction of production processes or service provision begin to be analyzed in companies in which same people work, there are many fears, uncertainties and even attempts of blocking these changes.

### **4. CSR in the economy 4.0**

Changes in technology were carried out simultaneously with transformations of the management process, in which new solutions were as revolutionary as changes in the processes of production and provision of services. First of all, the role of man in the system of work and management changed from a part of this system, a specific object of influence, to the entity participating in management and affecting the way the company functions. Man has become the most important element of the company's capital, an entity deciding about its

success or failure and determining the possibilities of its development in all functional areas (Ehnert, 2009, pp. 68-69).

New approaches to running a business also appeared, some even talk about the "new business philosophy" in which the economic interest and short-term profit generation cease to be the determinants of the company's operations. In addition to them, there is a need in the process of management to include general social good and care for the environment (Lee and Kim, 2012, p. 292.). This way guidelines resulting from sustainable development (SD) and corporate social responsibility (CSR) were included in the management process (Turner et al., 2018, p. 7.). Many researchers also talk about a completely new solution in the area of social responsibility, to which industry 4.0 should contribute significantly, namely the green management and green responsibility of the organization, related to environmental actions and its protection (Weng et al., 2015, p. 4998.).

Taking into account the CSR and SD guidelines in the decision-making processes and practical operation, companies which effectively compete in the market are also able to respond to the needs and expectations of the societies with which they co-exist. They also undertake initiatives for the natural environment that prevent its degradation and modification threatening the life and health of not only people, but also all living organisms (Renouard and Ezvan, 2018, p. 148).

CSR also allows effective combining of management, production and technology areas with activities which meet social needs. Therefore, it can be considered a kind of link between people and the economy, including the most modern 4.0 version (Renouard and Ezvan, 2018, p. 149).

Companies are also beginning to understand better that the essence of socially responsible activities is their integration with the business strategy and the company's policy, rather than bringing PR benefits to the company. Long-term activities based on social dialogue and a comprehensive approach to implemented CSR solutions serves economic stability and allows long-term development. It can be said that they open the door to the economy 4.0 and the possibilities of transformations enabling the acquisition of a competitive advantage gained from it (Zheng et al., 2014, p. 417-419.).

In turn, by observing the relations of companies with their social environment, more and more often efforts can be seen to give a responsible kind of character to the relations of companies with their external stakeholders on the one hand and incorporate CSR into production processes by introducing new terms of cooperation with subcontractors and suppliers awaiting them from which can be expect compliance with ethical and environmental requirements resulting from CSR standards (Cheng and Carrillo, 2012, p. 304.). In addition, they take steps to build a safe, effective and value-based work environment. Such activities contribute to the increase of trust in the enterprise in the social view, and also increase the acceptance of innovations, including solutions related to the introduction of the economy 4.0 without employees' worries about losing their jobs, and the local community to increase the nuisance of neighboring the company (Chang et al, 2011, p. 365.).

The issue of the ethical use of modern machines and the responsibility for their errors and incorrect work can be counted among the biggest problems related to the functioning of the economy 4.0. Therefore, according to some researchers, along with the popularization of industry 4.0, there will be changes in the approach to the CSR concept, there will be no talk of

responsibility, but co-responsibility or preventive responsibility, in which man and organization bear full responsibility for any irregularities resulting from work not theirs, but of the robots and information systems which they manage (Lee and Kim, 2012, p. 301.).

## 5. Conclusions

Summing up the changes in the economy resulting from the implementation of economy 4.0, which are occurring and will occur in the future, significant challenges for the managers of enterprises, employees and entire societies can be seen. They require learning new principles of functioning and running a business and at the same time are a prerequisite for the survival of enterprises on the market.

Their effectiveness can be strengthened by incorporating the principles of social responsibility and sustainable development into the strategy, which will give organizations the opportunity to shape completely new relationships with cooperators, suppliers and clients. At the same time, in the CSR solutions there will be completely new issues requiring conclusions, regulations and implementations, especially regarding co-responsibility and full protection of data of people cooperating with economic organizations. It is likely that the social and political pressure will increase for the implementation of comprehensive ecological solutions, and thus the importance of strategic socially responsible solutions will rise.

This means that the economy and industry 4.0 are not able to function effectively without respecting CSR principles, and social responsibility in the new model of the economy will gain in importance and rank.

## References

1. Almada-Lobo F. (2016), The Industry 4.0 Revolution and the Future of Manufacturing Execution Systems (MES), *Journal of Innovation Management*, 3:(4), pp. 16-21. [https://doi.org/10.24840/2183-0606\\_003.004\\_0003](https://doi.org/10.24840/2183-0606_003.004_0003)
2. Chang C-H. (2011), The influence of corporate environmental ethics on competitive advantage: the mediation role of green innovation, *Journal Business Ethics*, 104:(3), pp. 361–370. <https://doi.org/10.1080/10580530.2017.1254436>
3. Cheng L.C., Carrillo E. E. (2012), Assessing supplier performances under partnership in project-type procurement, *Industrial Management & Data Systems*, 112:(2), pp. 290-312. <https://doi.org/10.1108/02635571211204308>
4. Ehnert I. (2009), *Sustainable Human Resource Management. A Conceptual and Exploratory Analysis from a Paradox Perspective*. Physica-Verlag A Springer Company, New York.
5. Furmanek W. (2018), Najważniejsze idee czwartej rewolucji przemysłowej (industrie 4.0). *Dydaktyka Informatyki* 13:, pp. 55- 63. <https://doi.org/10.15584/di.2018.13.8>
6. Hermann M., Pentek T., Otto B. (2015), *Design Principles for Industries 4.0 Scenarios: A Literature Review*. Working Paper, no 01, pp. 2-16. <https://doi.org/10.1109/HICSS.2016.488>
8. Jacobsen J. (2011), *Sustainable Business and Industry: Designing and Operating for Social and Environmental Responsibility*, Milwaukee, WI: ASQ Quality Press, p. 16.
9. Kiepas A. (2018), Sustainable development with industry 4.0 in prospect. *Papers on Global Change* no 25, pp. 45-55. <https://doi.org/10.24425/igbp.2018.124891>
10. Lee K-H., Kim J-W. (2012), Green new product development and supplier involvement: strategic partnership for green innovation, *International Journal of Innovation and Sustainable Development*, 6:, pp. 290-304. <https://doi.org/10.1504/IJISD.2012.047841>
11. Maślanek J. (2014), Przemysł 4.0 - rewolucja czy ewolucja? [https://www.wnp.pl/artykuly/przemysl-4-0-rewolucja-czy-ewolucja,236764\\_0\\_0\\_0\\_0.html](https://www.wnp.pl/artykuly/przemysl-4-0-rewolucja-czy-ewolucja,236764_0_0_0_0.html) (1.07.2019)

12. Morrar R., Arman H., Mousa S. (2017), The Fourth Industrial Revolution (Industry 4.0): A Social Innovation Perspective, *Technology Innovation Management Review*, 7:(11), pp. 12-20.
11. Orlitzky M., Siegel D., Waldman D. (2011), Strategic corporate social responsibility and environmental sustainability, *Business & Society*, 50:(1), pp. 6-27. <https://doi.org/10.1177/0007650310394323>
12. Pascall T. (2017), Innovation and Industry 4.0. Disruption, April 19, <https://disruptionhub.com/innovation-industry-4-0> (3.11.2017)
13. Renouard C., Ezvan C. (2018), Corporate social responsibility towards human development: A capabilities framework, *Business Ethics A European Review*, 27:(2), pp. 144-155. <http://dx.doi.org/10.1111/beer.12181>
14. Schwab K. (2016), The Fourth Industrial Revolution, The World Economic Forum, <https://www.weforum.org/about/the-fourth-industrial-revolution-by-klaus-schwab> (1.07.2019)
15. Schwab K. (2018), The fourth industrial revolution (industry 4.0) A social innovation perspective, Vietnam Academy for Ethnic Minorities - Committee for Ethnic Minority Affairs, (*Tạp chí Nghiên cứu dân tộc*) pp. 92-98.
16. Turner M.R., McIntosh T., Reid S.W., Buckley M.R. (February 2018), Corporate implementation of socially controversial CSR initiatives: Implications for human resources management, *Human Resource Management Review*, pp. 1-12. <http://dx.doi.org/10.2478/vjbsd-2019-0002>
17. Weng H-H., Chen J-S., Chen P-C. (2015), Effects of green innovation on environmental and corporate performance: a stakeholder perspective, *Sustainability*, 7:, pp. 4997-5026. <https://doi.org/https://doi.org/10.3390/su7054997>
18. Zheng Q., Luo Y., Wang S.L. (2014), Moral degradation, business ethics, and corporate social responsibility in a transitional economy, *Journal Business Ethics*, 120:, pp. 405-421. <https://doi.org/10.1007/s10551-013-1668-4>

## ROLE OF DATA SECURITY POLICY AT HIGHER EDUCATION INSTITUTIONS IN THE LIGHT OF LEGISLATIVE CHANGES INTRODUCED BY THE GDPR

**Grzegorz CHMIELARZ**

*Częstochowa University of Technology, Częstochowa, Poland*

*E-mail: grzegorz.chmielarz@wz.pcz.pl*

### **Summary:**

**Purpose:** The paper concerns the issues of information and personal data security at higher education institutions in Poland. One of the major issues stressed by the author is the fact that it is vital to understand that the issue of information and data security, in all types of organisations, including universities is not a problem to be solved, but a holistic approach to the problem of personal data protection at all levels of organisational structure. This requires procedural solutions, which having been implemented in organisations are supposed to regulate and control both the technology used for data and information processing as well as behaviours of human beings who actively participate in information and data processing. One of the essential documents in this area that sets the principles to the manner of data and information processing in organisations is the data security policy. The author discusses in the paper the ambiguity of the term “data security policy” pointing out the difference between the general understanding of the term, which may result in making organisation more vulnerable to external threats to data security.

It is worth stressing that since 25th May 2018 the area of information and personal data protection in organisations that process personal data operates according to new regulations imposed by the new EU’s General Data Protection Regulations, commonly called GDPR. New provisions apply to all the organisations that process data in the territory of the European Union, regardless of their physical location, which significantly extends the range of the regulation’s application. Author’s particular attention is a new attitude to data protection policy that according to the GDPR has to be introduced in organisations, with particular stress on higher education institutions. In the empirical part the author presents the result of the research that was conducted at Polish universities, in which the survey participants evaluated the role of data protection policy before the GDPR became effective as well as expected changes in this area at universities.

**Design/methodology/approach:** The research was conducted among the employees of all levels of Polish universities, who within their professional duties process personal data. The data was gathered with the use of CAWI and PAPI methods. Having obtained the results they were in a subsequent stage compared with the results of another research on the same topic, conducted among the members of a purposefully selected expert group that included experts in the field of personal data and information management at universities.

**Findings:** As a result of the conducted research the role of data security policy has been determined in the old and new legislation, pointing out the differences in this scope being an outcome of GDPR introduction.

**Practical implications:** Identifying the main principles of data security policy and its role in the new legislation may prove beneficial not only to educational institutions in the area of data management, but all organisations that are obliged by law to process personal data and prove that the management process is conducted in accordance with law regulations.

**Keywords:** data protection, data protection policy, personal data security

## 1. Introduction

Personal data collection and processing have become so prevalent over the last decade that it has become generally accepted that users of the global network traded off their personal data in exchange for access to a number of services available via the Internet. Yet, there have been concerns as to the manner and extent of personal data being collected and utilised by organisations of all types. This obvious discrepancy between the concerns of Internet users and their online sharing behaviours can be attributed to several factors, such as bounded rationality, cognitive biases and heuristics, or social factors. One of the explanations to this situation can be so-called privacy calculus, which states that people perform a calculus of the costs, which in this case constitutes loss of privacy, and benefits, namely how they can benefit from information disclosure. Therefore, the decisions they make and behaviours that follow are an outcome of this calculus and are determined by the outcome of this trade-off (Mahmoodi et al., 2018). According to the law personal data can only be processed on condition that this process complies with the legislation in force. Legally defined powers that entail organisations to collect and use personal data require a framework within which all data-related processes are carried out. In the territory of the European Union the major and most recent law that governs the issues of data processing and protection is General Data Protection Regulation (GDPR), which was introduced on 25<sup>th</sup> May 2018. However, as most organisations, including universities have already implemented technological measures the guarantee proper information security management within their structures, there is one more, often more serious vulnerability to be addressed by them, namely the so-called human factor. Human weaknesses must not be underestimated as they can undermine many of the most sophisticated security mechanisms and intentionally or not, produce very much the same consequences (Abolhassan, 2017, p. 8). Therefore, all organisations processing personal data need a document that will determine rights and obligations of all the employees involved in data processing issues, which is the data protection policy.

The underlying objective of the paper is to analyse the issues related to data security management in organisations, with a particular attention paid to higher education institutions in Poland. The author points out the ambiguity of the term “data security policy” itself and addresses the new attitude to data protection management policy that according to the GDPR has to be adopted in organisations, including universities. In the empirical part the author presents the result of the research that was conducted at Polish universities, in which the survey participants evaluated the role of data protection policy prior the GDPR became effective as well as their expectations to the expected changes in this area. The results of the conducted survey and the information that has been included in the paper may constitute a valuable source of information on data protection policy implementation for all organisations, in the light of new legislation imposed by the EU, namely the General Data Protection Regulation (GDPR).

## 2. Research background

In an ideally managed data protection system in an organisation the existing system for information security management comprises such an effective set of counter measures, that *no* risk will be able to occur and disturb the information services, which means that such a system offers a complete protection for the information resources of an organisation. In this ideal situation an information security policy includes tools and procedures that secure all process in which information and data are utilised within an organisation. However, such an ideal state of affairs can never be achieved as it is impossible to protect completely all

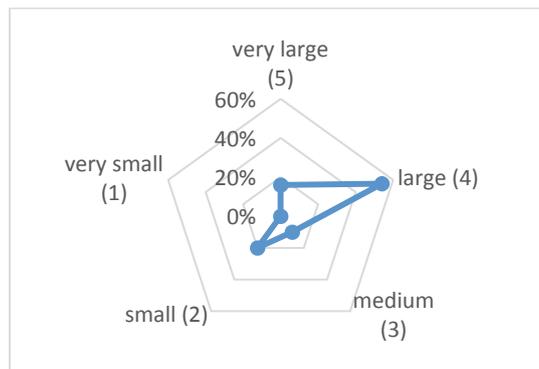
information services (von Solms, von Solms, & Caelli, 1993). Yet, the role of the data protection policy while striving for a perfect protection of information systems cannot be underestimated. Its underlying goal is to inform users, staff, and managers about essential requirements that concern protecting various organisational assets, which include people, hardware, and software resources, and data assets. The policy should specify the mechanisms that will enable to meet these requirements. Not less important is providing a baseline which will allow to acquire, configure, and audit computer systems and networks for compliance with the policy. This also allows to develop operational procedures and establish the principles of access control to various applications, systems, networks as well as define rules of physical controls and parameters ('Sec Policy | Online Safety & Privacy | Computer Security', n.d.). Yet, the focus on technical solutions frequently underestimates the fact that effectiveness of such systems also requires employee engagement and understanding of their utility (Hadlington, 2018). For IT systems humans are "malicious users" as their actions make these systems more exposed to threats. Two real problems for information and data security can be distinguished while looking at this problem domain from a cybersecurity chain perspective. These problems are: (i) insecure use, which as a consequence leads to many security updates, and (ii) intentional misuse, which in turn leads to continuous security patches. The fact is that both these problems are user-centred (Sharevski, Trowbridge, & Westbrook, 2018). Information security damages can result in small losses, but they can also lead to destruction of the entire information system. Also, the effects of various threats vary considerably. Some of them have impact on the confidentiality or integrity of data while others affect the availability of a system (Jouini, Rabai, & Aissa, 2014). Therefore, the role of the data protection policy needs to be stressed again as the results of research provide statistical evidence that the information security culture of employees who had been acquainted with the information security policy is significantly more positive when compared with employees who had not (Da Veiga, 2016).

Yet, it should be pointed out that the term data protection policy can be ambiguous at times. There are three main terms functioning in the area of data protection: personal data processing policy, security policy and data protection policy. The last one has been introduced by the GDPR resolution and generally has a similar meaning to the term "security policy", yet, the GDPR does not precisely define the content of this documentation nor formally require organisations to possess one. Still, the GDPR does impose on Data Processors an obligation to implement internal policies and more importantly an obligation rests on Data Processors to provide the evidence that proper organisational and technical measures have been implemented to ensure that personal data processing is conducted sticking to the letter of law. This can be best accomplished by maintaining the data protection policy that will contain most of the documents that were referred to as "security policy" in the old legislation. However, it needs to be stressed that this is a purely internal document that cannot be revealed to outside of an organisation. For these purposes "personal data processing policy" is used. It indicates the purpose, legal basis and scope of personal data processing by an organisation and provides details of data processing by a given entity to the interested individuals.

Presently, a need for the data protection policy in organisations of all types, including universities, seems to be even greater as the perpetrators whose goal is to gain unauthorised access to information resources of organisations have also changed their methods of attacks and attempt to reach employees of organisations who utilise in their professional duties IT products and services (Rocha Flores, Antonsen, & Ekstedt, 2014). The vast majority of these incidents resulted from the actions of internal users and trusted third parties, and most have been unintentional (Abidin, Nawawi, & Salin, 2019).

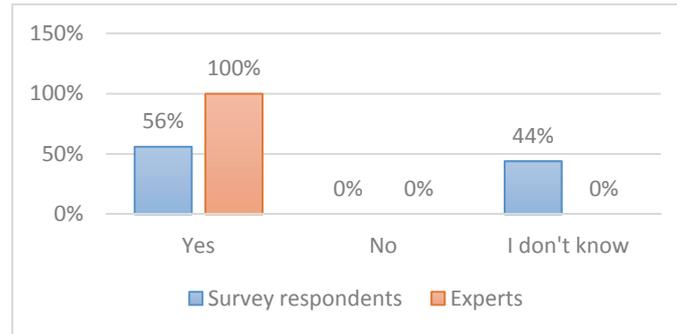
### 3. Research results and discussion

The research regarding information and personal data management at higher education institutions was conducted in two stages. The first stage covered the period from November 2017 to April 2018, the second stage took place in April-May 2018. Two methods were applied to collect responses from the employees of 83 higher education institutions located in Slaskie and Malopolskie Regions, who within their professional duties process information and personal data – CAWI (Computer Assisted Web Interview) and PAPI (Pen and Paper Interview) methods. As a result, replies were collected from 30 of the said universities, which allowed to draw conclusions on data and information management systems functioning at the investigated universities. The second stage of the research was directed at a group of selected experts in the area of information and personal data security at universities. The group included 7 experts – Data Protection Officers and IT System Administrators with extensive experience in the analysed domain. In the survey, its participants also evaluated the role of data protection policy on effectiveness of information and personal data management at higher education institutions. In the graphic form the responses of the first stage survey participants have been presented in Figure 1.



**Figure 1: Impact of implementing data protection policy on the effectiveness of information and personal data management – survey results**  
*Source: Own elaboration based on conducted research*

As presented in Figure 1 the survey respondents confirmed the importance of data protection policy for information and personal data management at higher education institutions. According to 54% of them implementation of such a policy had a large impact on effectiveness of information and data management at their universities, 16% of them admitted that this impact was very large and 10% of the surveyed stated that such an impact was medium. On the other hand, only 20% of the respondents claimed that the data protection policy functioning at their university had a small impact on the issues related to personal data and information security management. The importance of data protection policy for proper management of personal data by employees at all the levels of organisational structure at universities was also acknowledged by the expert group. In the opinion of the experts defining precisely tasks and responsibilities of persons who process personal data at all levels of information management structure improve control over information and personal data in the whole of the data security management structure at universities. This opinion was expressed by all the 7 experts (100%). Additionally, the members of both respondent groups were also asked to express their opinion on potential changes to the data protection policy driven by coming into force of the GDPR on 25 May 2018. The answers to this question by both groups of the respondents have been presented in the graphic form in Figure 2.



**Figure 2: Potential changes to data protection policy driven by GDPR becoming effective**  
*Source: Own elaboration based on conducted research*

As it can be observed in Figure 2 over a half of the participants of the first stage of the research (56%) expected changes to the data protection policy functioning at their universities whereas 44% of them did not possess knowledge in this respect. This state of affairs may be attributed to the fact that although the EU foresaw a transition period for the introduction of the GDPR, the awareness of university employees of the changes introduced by the new EU's legislation shortly before the new regulation became effective was relatively low. This in turn can be explained by the fact that intensification of trainings in the area of personal data protection for university employees took place in the months that directly preceded coming into force the GDPR. On the other hand, the expert group was totally convinced of the occurrence of such changes, which can be justified by the fact that members of the expert group – Data Protection Officers and IT System Administrators demonstrated a visibly higher level of knowledge regarding the changes to personal data processing principles being the consequence of the new regulation. The disparity in the level of knowledge between university employees processing personal data and the members of the expert group in fact constitutes an essential issue to be considered while developing data protection policies in all higher education institutions.

#### 4. Conclusion

As the role of information resources for the functioning of various types of organisations has been growing, the issue of ensuring a proper level of security for the said resources has become increasingly important. Both, the results of the literature query as well as the results of the conducted research unequivocally stress the importance of possessing by all organisations that process personal data proper policies in this respect. Despite the fact that the GDPR does not require organisations, including universities, to possess a formalised data protection policy, it seems highly advisable for each organisation to possess one. First of all, implementing the data protection policy is an essential element of all information security management systems, which an increasing number of universities begin to implement to protect their information resources. Also, which is equally important, the data protection policy implemented at a university allows to preserve compliance with the GDPR's requirements to provide evidence that all information and data is processed in accordance with the provisions of the regulation. Finally, given the amount of personal data that is processed every day by university employees, the data protection policy sets a framework of personal data handling for employees at all organisational levels, providing them with tools and means that should be applied in all the operations regarding personal data processing.

## References

1. Abidin, M. A. Z., Nawawi, A., & Salin, A. S. A. P. (2019). Customer data security and theft: A Malaysian organization's experience. *Information and Computer Security*, 27(1), 81–100. <https://doi.org/10.1108/ICS-04-2018-0043>
2. Abolhassan, F. (2017). Security: The Real Challenge for Digitalization. In F. Abolhassan (Ed.), *Cyber Security. Simply. Make it Happen.: Leveraging Digitization Through IT Security* (pp. 1–11). [https://doi.org/10.1007/978-3-319-46529-6\\_1](https://doi.org/10.1007/978-3-319-46529-6_1)
3. Da Veiga, A. (2016). Comparing the information security culture of employees who had read the information security policy and those who had not: Illustrated through an empirical study. *Information and Computer Security*, 24:(2), 139–151. <https://doi.org/10.1108/ICS-12-2015-0048>
4. da Veiga, A., & Martins, N. (2015). Improving the information security culture through monitoring and implementation actions illustrated through a case study. *Computers & Security*, 49, 162–176. <https://doi.org/10.1016/j.cose.2014.12.006>
5. Hadlington, L. (2018). *Employees Attitude Towards Cyber Security And Risky Online Behaviours: An Empirical Assessment In The United Kingdom*. <https://doi.org/10.5281/zenodo.1467909>
6. Jouini, M., Rabai, L. B. A., & Aissa, A. B. (2014). Classification of Security Threats in Information Systems. *Procedia Computer Science*, 32, 489–496. <https://doi.org/10.1016/j.procs.2014.05.452>
7. Mahmoodi, J., Čurdová, J., Henking, C., Kunz, M., Matić, K., Mohr, P., & Vovko, M. (2018). Internet Users' Valuation of Enhanced Data Protection on Social Media: Which Aspects of Privacy Are Worth the Most? *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.01516>
8. Rocha Flores, W., Antonsen, E., & Ekstedt, M. (2014). Information security knowledge sharing in organizations: Investigating the effect of behavioral information security governance and national culture. *Computers & Security*, 43, 90–110. <https://doi.org/10.1016/j.cose.2014.03.004>
9. Sec Policy Online Safety & Privacy | Computer Security. (n.d.). Retrieved 28 June 2019, from Scribd website: <https://www.scribd.com/document/38171608/Sec-Policy>
10. Sharevski, F., Trowbridge, A., & Westbrook, J. (2018). Novel approach for cybersecurity workforce development: A course in secure design. *2018 IEEE Integrated STEM Education Conference (ISEC)*, 175–180. <https://doi.org/10.1109/ISECon.2018.8340471>
11. von Solms, R., von Solms, S. H., & Caelli, W. J. (1993). A Model for Information Security Management. *Information Management & Computer Security*, 1:(3), pp. 12–17. <https://doi.org/10.1108/09685229310041893>

## IMPACT OF SENSES OF YOUNG GENERATION ON CONSUMER'S BEHAVIOUR (GENERATION Z)

*Andrej GÉCI*

*Slovak University of Agriculture, Faculty of Economics and Management, Nitra, Slovakia*

*E-mail: geci.andrej@gmail.com*

**Summary:** Consumer's behaviour is a very important and, above all, it is a key factor in the implementation of individual marketing tools. It is interesting to observe the special preferences of the buyers by which traders realize their next business steps. This behaviour is still a very unexplored area of social life for all of us. In individual consumer's behaviour research, it is very important to note, analyse and constantly seek answers to a few basic questions about purchasing - why, where, how, when and what customers buy. The main objective of the presented document is to evaluate the consumer's behaviour of the young generation in the food market (comparison of buying behaviour in several commodities). Primary data were processed on the basis of multiple author surveys that relate to different food market commodities. Surveys were conducted in a questionnaire, on various online platforms and in the Slovak Republic.

The young generation's consumer's behaviour was seen among several types of foods - sweet snacks, salty snacks, tea and milk. This document confirmed the different consumer's behaviour of the different food market commodities. For all of the above-mentioned commodities, young consumers decide on the basis of a particular food flavour when purchasing. However, price is the first factor that interests them when buying milk.

Consumers purchase food of daily consumption differently to purchasing products and goods that they do not consume at a given moment, but their purchase is the subject to a need in the close term.

We assume that the perception of the young generation is different to that of the older generation. Their buying habits are different. The young generation perceives buying by different factors as people of another generation do.

The paper is a part of the research project VEGA 1/0502/17 "Consumer personality and its impact on emotional behaviour and decision making", solved at the Department of Marketing and Trade, Faculty of Economics and Management, Slovak University of Agriculture in Nitra.

**Keywords:** consumer, consumer behaviour, young generation, food market, buying decision

### 1. Introduction

The main objective of the document is to evaluate the consumer behaviour of the young generation (Generation Z) in the food market. The primary task will be to find out how the consumer reports when choosing and purchasing selected commodities. The research was focused on the young generation, which is starting to focus on the food market. The sample was chosen on the basis that this segment of the population is influenced by different instruments and its tendency to operate in the selected market will be longer. From the economic point of view, the generation is the most interfering

## **2. Literature review**

Consumer behavior means the process of behaviour of individuals, groups and organizations in the market of goods and services (Kozelová et al., 2011). The main goal of consumers is to satisfy their needs and wishes (Nagyová, Berčík and Horská, 2014). The term consumer behaviour also includes the sale, purchase and use of the products and services themselves, through which traders know how to place individual products (Perner, 2016; Swait and Adamowicz, 2001). Other factors such as price, quality, brand and country of origin may also influence consumer choice (Kapsdorfer, 2008; Soars, 2009). Basic factors that affect consumers include their preferences through which consumers follow and decide (Guziy, Šedík and Horská, 2017). According to Strack, Werth and Deutsch (2006), the consumer is seen as an individual who buys goods and services for his own consumption. Liu, Pieniak and Verbeke (2013) define the consumer as a person who consumes goods and uses services that he gains in the market through his purchasing activity. Kaur and Singh (2017) argue that the consumer is a much broader term, it includes everything he buys and consumes. Russell et al. (2017) characterize the consumer as a person who identifies their needs and wishes, makes purchases and disposes of the product during the consumer process.

One of the basic criteria for consumer sharing is age - division by generation. The most important generation is the Z generation, whose main aspect is the widespread use of the Internet from a young age (Londhe, 2014). The members of this generation are considered very technologically savvy individuals. Part of their daily lives is the very frequent interaction through various social networks and websites (Cui et al., 2003).

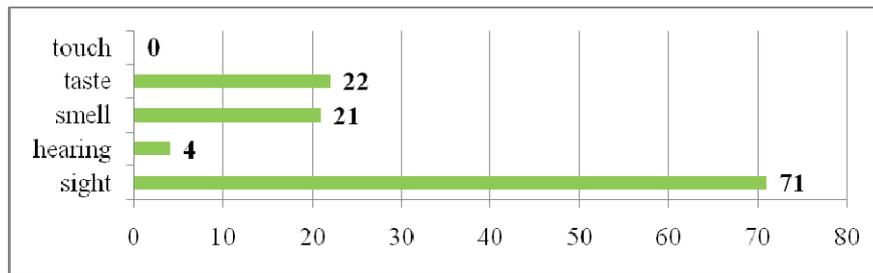
## **3. Methodology**

The presented document was a comparison of several author surveys. Surveys were conducted in a questionnaire, on various online platforms and in the Slovak Republic. Information gathering has taken place in various areas of the food industry. Specifically, they focused on the young generation - Generation Z. The main objective was to evaluate the impact of consumer behavior on selected commodities of the food market and the subsequent comparison of consumer behavior of the young generation. The aim of each questionnaire survey was to obtain a relevant number of answers to questions that were usually divided into two basic categories, demographic data and questions about already specific consumer's behaviour to a given food market commodity.

## **4. Results and discussion**

Consumer's behaviour monitoring is a very demanding and lengthy activity. Based on the experience so far, we have documented and compared the behavior of the young generation in the food market. We therefore assume that the majority of respondents will have the economic status of a student and that their highest level of education will be a secondary school.

The first commodity we decided to follow was sweet snacks, which are produced directly in the Slovak Republic. Data were collected from 118 respondents, with a majority (65%). The monthly income of young respondents ranged up to 500 €. Such results were expected. The following Figure 1 highlights the basic senses through which young people decide to buy sweet snacks.



**Figure 1: Sensory organs**  
 Source: Results of the research

Thus, the graph shows that the majority of young respondents are based on their vision (71%) when buying snacks. Taste ended on the second place (22%) and smell (21%) placed the third place. Based on the above mentioned, and based on the research of the *Dílčí výsledky výzkumu GA 402/02/0152*, we can say that vision is the most important sense of all the senses that affect the consumer's purchasing decision (Hultén, 2012; Bloch, 2008).

It happens many times that consumers carry out their shopping activity based on a shopping list. But what happens more often is that the content of the shopping basket is larger than their list. That is why we were interested in whether young people are buying food based on some senses. Most respondents (84%) clearly agreed that they buy some food influenced by some senses. "Responsible" consumers (16%) only follow the list when buying and do not take the senses into account when buying food. The following question was about spending money on snacks. Young people spent between 51 € and 100 € per month on sweet foods (53%). One quarter of those surveyed said their spending on this type of food is up to 50 €. The money spent was anticipated in advance as the survey was aimed at the younger generation.

Thus, the survey showed that young people are vision-oriented when buying sweet snacks. Taste took the second place, which is an essential part of the purchase. Generation Z often makes decisions based on the impulsive effect of some fundamental sense. Their monthly spending on sweet snacks is the largest, in the range from 51 € to 100 €.

The following commodity through which consumer's behaviour was identified was salty snacks. 160 young respondents took part in the survey, with a larger proportion of women (71%). In this survey, respondents' monthly income was broader. The survey shows that 26% of respondents have no income. This is due to the fact that the survey was mainly aimed on the younger generation. Young people are believed to be the majority of them, so their income is zero. The results were again expected as the survey was aimed on young people.

At the beginning of the survey we asked whether the respondents were buying salty snacks. The vast majority responded positively (96%). This fact was not surprising at all, because as people buy regular food, they also buy salty snacks. The interval for buying salty snacks is the most repeated weekly (44%). 49 respondents (32%) buy salty snacks occasionally. One of the three most popular places to buy salty snacks are supermarkets. On the second place, with almost 32% share, were hypermarkets and retail stores ended up last. Based on the results, we can say that most respondents buy salty snacks during normal food purchases.

We also dealt with the question on how the respondents choose salty snacks (Figure 2).



**Figure 2: How do people choose salty snacks**

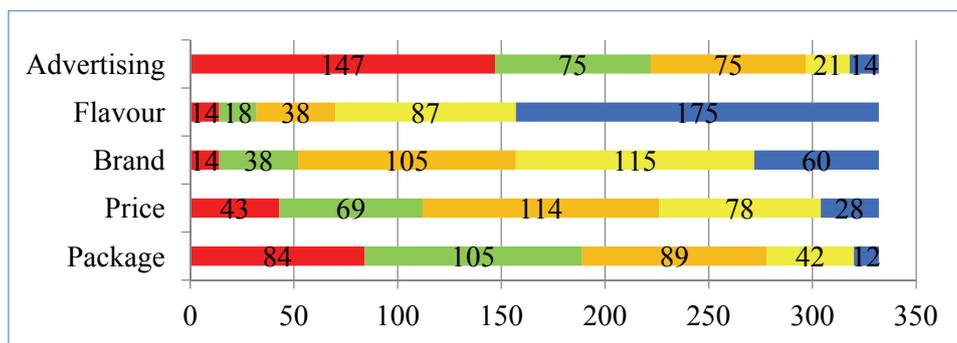
Source: Results of the research

Most of them agreed to choose them according to their favorite flavour (25%). The taste as one of the most important factors of choice was confirmed by a survey by Ventura and Mennella (2011). The prize, as one of the main attributes in the choice of food, took the second place. 20% of respondents decide according to the price. Price as one of the important selection factors was also confirmed in a survey by O'Neill and Lambert (2001). Last but not least, the quality and nutritional value of salt products was on the last place (10%).

The survey of salty snacks revealed a great popularity among the young generation. Most of them eat this type of food (96%), and weekly buying interval is the most popular. When choosing salty snacks, respondents most often follow the favorite flavour. On other places of decision was brand and the price of salty products.

Another observed survey was aimed on tea. In this area, too, we have explored the consumer's behaviour of the young generation. The survey was attended by 332 respondents, most of whom were female (64%). Young respondents' monthly income varied widely. Most (25%) respondents reported monthly income up to 150 €. Second place took the interval from 151 € to 300 € and another option was the interval from 501 € to 800 €. The results were again anticipated because the survey was aimed on the young generation (generation Z), which is mostly made up of students.

One of the most important issues was focused on selected factors affecting consumers when buying tea (Figure 3).



**Figure 3: Tea selection factors**

Source: Results of the research

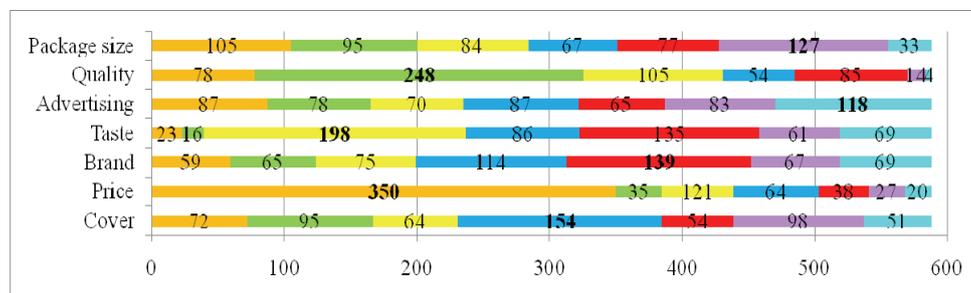
The individual factors were to be ordered by the respondents from 1 to 5, with the one being the least important factor and five being the most important factor. The graph clearly showed that the most preferred factor in buying tea is flavour. 27% of respondents decide according to

flavour. Very similar information was obtained through a survey by Eskine, Kacinik and Prinz (2011). On the second place, consumers chose advertising (22%). Furthermore, other places were taken by brand (18%), price (17%) and packaging (16%). In this case, the color of the packaging does not play a major role in the selection of a particular tea.

The following question was focused on the actual consumption of tea. Most respondents (86%) said they consumed tea, whether at regular intervals or occasionally. Only 48 respondents answered the question negatively.

This type of research has shown that the vast majority of respondents consume tea (86%). Respondents do not decide on a given food commodity according to advertising, packaging and price. The factor that decides when buying tea is the flavour and thus the specific type of tea.

The last area in which a Z-generation survey was conducted was one of the basic foods - milk. A total of 588 young respondents participated in the milk survey, most of whom were female again (62%). The monthly income was mainly up to 150€ (63%). Milk is a commodity that has been part of our shopping baskets since time immemorial. Until recently, milk was part of every person's life. That is why we have decided to focus the following questions on consumption and the factors that affect young people when buying milk. Regarding to the consumption and purchase of milk itself, 72% of respondents said they were eating and buying milk. Thus, 164 young respondents said they did not consume milk. In this case, we believe that it is mainly the belief that milk is not sought after by young people. The following question (Figure 4) deals with the individual factors that affect the consumer when buying milk. The respondents were to order the factors from 1 to 7, the one being the least important factor and the seven being the most important factor.



**Figure 4: Milk selection factors**  
*Source: Results of the research*

Thus, the graph above shows that the most important factor in buying milk is its price (26%). In this case, the most decisive is the price (Zhang and Breugelmans, 2012), as consumers have a large variety of milk to choose from. Quality ended on the second place (19%). With this factor, we could discuss whether the milk is purchased directly from the farmer, the producer or the milk bought from the store. In addition, respondents ranked among the decisive factors (15%), packaging (12%) and brand (10%). In terms of packaging, people prefer tetrapak milk packs. Some already buy milk exclusively in glass bottles or directly from milk dispensers.

The survey shows that the consumption of milk is still common (72%). However, we should be aware of the importance of milk in human food because, according to statistics, milk consumption is constantly decreasing. The factors that affect consumers most are price, quality and taste.

## 5. Conclusion

Based on the above surveys, we can confirm the different consumer behaviours of the various food market commodities. Concerning the purchase of sweet snacks, the most important sense of all senses was vision (60%), followed by taste (19%). Even in the other surveys examined, shopping based on a particular flavour was confirmed. According to taste, salty snacks are purchased by up to 25% of respondents. If we focus on tea consumption and its purchase, this survey also confirmed the purchase of tea based on taste (27%). The taste also dominated the individual factors involved in the purchase of protein bars. By having a large number of species, 26% of respondents decide to taste. If we compare all the previous surveys with the latest milk survey, we will find some inequalities in consumer behaviour. If the consumer buys milk, his first sight falls on the price of the milk itself (26%). Based on the above facts, the different consumer behavior of the young generation is confirmed. Consumers behave differently when buying different commodities. They buy food of daily consumption differently as they buy products and goods that do not consume at a given moment, but their purchase is subject to a need in the close term. We assume that the perception of the young generation is different from that of the older generation. Their buying habits are different. The young generation perceives buying by different factors as people of another generation.

## References

1. Bloch, M. 2008, Truth and sight: generalizing without universalizing. *Journal of the royal anthropological institute*, 14:(1), pp. 522-532. [doi.org/10.1111/j.1467-9655.2008.00490.x/full](https://doi.org/10.1111/j.1467-9655.2008.00490.x/full)
2. Cui, Y., Trent, S. E., Sullivan, M. P., Matiru, N. G. 2003, Cause-related marketing: How generation Y responds. *International Journal of Retail & Distribution*, 31:(6), pp. 310-320. [doi.org/10.1108/09590550310476012](https://doi.org/10.1108/09590550310476012)
3. Dílčí výsledky výzkumu GA 402/02/0152. *Ženské a mužské role v perspektivě spotřebního marketingu*. Katedra marketingu FPH. Vysoká škola ekonomická v Praze
4. Eskine, J. K., Kacinik, A. N., Prinz, J. J. 2011. A bad taste in the mouth: Gustatory disgust influences moral judgment. *Psychological science*, 22:(3), pp. 295-299. [doi.org/10.1177/0956797611398497](https://doi.org/10.1177/0956797611398497)
5. Guziy, S., Šedík, P., Horská, E. 2017, Comparative study of honey consumption in Slovakia and Russia. *Potravinárstvo*, vol. 11:(1), pp. 472-479. [doi.org/10.5219/784](https://doi.org/10.5219/784)
6. Hultén, B. 2012, Sensory cues and shoppers' touching behaviour: the case of IKEA. *International Journal of Retail & Distribution Management*, 40:(4), pp. 273-289. [doi.org/10.1108/09590551211211774](https://doi.org/10.1108/09590551211211774)
7. Kapsdorferová, Z. 2008, *Manažment kvality*. Nitra, Slovakia: SPU, 120 p. ISBN 978-80-552-0115-3
8. Kaur, N., Singh, P. D. 2017, RETRACTED: Deciphering the consumer behaviour facets of functional foods: A literature review. *Appetite*, 112:, pp. 167-187. [doi.org/10.1016/j.appet.2017.01.033](https://doi.org/10.1016/j.appet.2017.01.033)
9. Kozelová, D., Mura, L., Matejková, E., Lopašovský, L., Vietoris, V., Mendelová, A., Bezáková, M., Chreneková, M. 2011, Organic products, consumer behavior on market and European organic product market situation. *Potravinárstvo*, 5:(3), pp. 20-26. [doi.org/10.5219/96](https://doi.org/10.5219/96)
10. Liu, R., Pieniak, Z., Verbeke, W. 2013, Consumers' attitudes and behaviour towards safe food in China: A review. *Food Control*, 33:(1), pp. 93-104. [doi.org/10.1016/j.foodcont.2013.01.051](https://doi.org/10.1016/j.foodcont.2013.01.051)
11. Londhe Dr. B. R. 2014, Marketing Mix for Next Generation Marketing. *Procedia Economics and Finance*, 11:, pp. 335-340. [doi.org/10.1016/S2212-5671\(14\)00201-9](https://doi.org/10.1016/S2212-5671(14)00201-9)
12. Nagyová, L., Berčík, J., Horská, E. 2014, The efficiency, energy intensity and visual impact of the accent lighting in the retail grocery stores. *Potravinárstvo*, 8: (1), pp. 296-305. [doi.org/10.5219/398](https://doi.org/10.5219/398)

13. O'Neill, R. M., Lambert, D. R. 2001, The emotional side of price. *Psychology & Marketing*, 18:(3), pp. 217–237. [doi.org/10.1002/1520-6793\(200103\)18:3<217::AID-MAR1006>3.0.CO;2-M](https://doi.org/10.1002/1520-6793(200103)18:3<217::AID-MAR1006>3.0.CO;2-M)
14. Perner, L. 2016, *Consumer behavior: The psychology of marketing* [online] [cit. 14-04-2019] Available on: <https://www.consumerpsychologist.com/>
15. Russell, V. S., Young, W. C., Unsworth, L K., Robinson, Ch. 2017, Bringing habits and emotions into food waste behaviour. *Resources, Conservation and Recycling*, 125:, pp. 107-114. [doi.org/10.1016/j.resconrec.2017.06.007](https://doi.org/10.1016/j.resconrec.2017.06.007)
16. Soars, B. 2009, Driving sales through shoppers' sense of sound, sight, smell and touch. *International Journal of Retail & Distribution Management*, 37:(3), pp. 286-298. [doi.org/10.1108/09590550910941535](https://doi.org/10.1108/09590550910941535)
17. Strack, F., Werth, L., Deutsch, R. 2006, Reflective and impulsive determinants of consumer behavior. *Journal of consumer psychology*, 16:(3), pp. 250-216. [doi.org/10.1207/s15327663jcp1603\\_2](https://doi.org/10.1207/s15327663jcp1603_2)
18. Swait, J., Adamowicz, W. 2001, Choice environment, market complexity, and consumer behavior: A theoretical and empirical approach for incorporating decision complexity into models of consumer choice. *Organizational behavior and human decision processes*, 86:(2), pp. 141-167. [doi.org/10.1006/obhd.2000.2941](https://doi.org/10.1006/obhd.2000.2941)
19. Ventura, K. A., Mennella, A. J. 2011, Innate and learned preferences for sweet taste during childhood. *Clinical Nutrition and Metabolic Care*, 14:(4), pp. 379-384. DOI: 10.1097/MCO.0b013e328346df65
20. Zhang, J., Breugelmans, E. 2012, The impact of an Item-Based loyalty program on consumer purchase behavior. *Journal of marketing research*, 49:(1), p. 50-65. [doi.org/10.1509/jmr.09.0211](https://doi.org/10.1509/jmr.09.0211)

## KEY TECHNOLOGIES IN SUPPLY CHAIN MANAGEMENT

*Dariusz DUDEK*

*Częstochowa University of Technology, Częstochowa, Poland*

*E-mail: dariusz.dubek@wz.pcz.pl*

**Summary:** New technologies and modern solutions are developing at such a fast pace that enterprises are facing problems with their adaptation. The competition for attracting customers can be won by the companies that will be the first to implement key technologies and digitize their supply chains effectively. This paper presents the results of research on the use of new technologies in their supply chains. The typical logistics challenges were taken into account, and the characteristics of the key technologies that can contribute to solving these challenges were presented. Examples of practical implementations of modern technologies and their benefits to the supply chain were also presented. This paper aims to define how modern technologies can affect logistics enterprises and to identify key technologies to ensure full digitization of the supply chain. The survey allowed for outlining the current state of implementation of key technologies and prospects for the future. Entrepreneurs who do not start using new technologies in time will not be able to respond to customer needs. Enterprises that will be the first to implement them will gain a significant competitive advantage. The current state of implementation of key technologies is at a very low level. With the rapid pace of technology development, research will continue in the coming years.

**Keywords:** modern technologies, supply chain, digitization, management

### 1. Introduction

The environment of today's businesses is characterized by dynamic and diverse changes, creating unstable and unfavourable conditions for global supply chains (Scheibe, Blackhurst 2018, pp. 43-59, Smolağ, Lemańska-Majdzik 2017, p. 212). Furthermore, in the face of increasingly frequent cyber threats, the complexity of structures and processes in supply chains is significantly increasing (Polatidis, Pavlidis, Mouratidis 2018, pp. 74-82).

Polish enterprises have been using various modern tools and methods of supply chain management for a long time. The vast majority of managers (Report SIP 2016) have successfully used, among others, process optimization, quality management (Zero Defects, Six Sigma), lean management, supply chain management and demand-driven manufacturing. Nowadays, however, companies that fully automate their supply chain processes will have a real competitive advantage.

A dramatically changing market environment and global competition have resulted in more complex supply chain structures (Pigoń, Kot 2016, pp. 141-146). Supply chains are now globalized, cooperation between corporations has become more dynamic and the key to success is to understand customer needs and meet them (Kovács, Kot 2016, p. 119). Noteworthy are studies on the identification of the structure of key challenges in supply chain management and the practical significance of major challenges in this respect (Mentzer 2001, Chen, Paulraj 2004, pp. 131-163). Research conducted by G. Prockl (Prockl 2007) provided

valuable insights into the functioning of SCM and identification of key challenges that form the theoretical foundation of network structures in logistics.

## **2. Challenges and problems of the supply chain**

There is no doubt that the transport and logistics sector is undergoing major transitions. Never before in modern history have we seen such enormous economic, social, technological and environmental changes with such a strong impact on supply chain management (Ferne, Sparks, 2018; Kulej-Dudek, 2018; Kucęba et al., 2018). An analysis of the existing supply chains shows that new technologies are developing at such a fast pace that companies have great difficulty adapting them quickly to their business models (Kshetri, 2018, pp. 80-89). As many as 86% of supply chain digitization projects have failed to be completed. In many cases, the reasons for failures can be attributed to obsolete IT infrastructure, lack of network access in production and warehouse areas, and organizational limitations. However, the main problem is that investments are substantially dispersed and it is difficult to implement large-scale pilot projects (Capgemini, 2018). In order for supply chains to be successful in the digital revolution, enterprises need to prepare for this process actively by investing in organizational and human resources.

Supply chain digitization is a long and complex process that requires the previous reorganization of the procedures and activation of the mechanisms needed for its implementation. The success can be expected only in enterprises that adopt coherent and targeted strategies that include rationalization of current investments, involvement of employees, suppliers and distributors in the process of change, and continuous support for leaders.

## **3. Research process**

With the constant development of newer and newer technologies, the choice of a specific solution is becoming increasingly difficult. Many questions and doubts arise, e.g. What solutions should enterprises focus on in the short and long perspective? What technologies should enterprises use in their business practice? Which technologies are currently being implemented by enterprises? For this reason, the author attempted to identify key technologies that will allow for full digitization of the supply chain in the future.

Based on literature review, analyses of the latest market trends, assessment of maturity and potential impact of logistics solutions, the author identified the factors that have a significant effect on supply chain management. The factors were taken into account in a survey where managers of logistics enterprises were asked for their opinions.

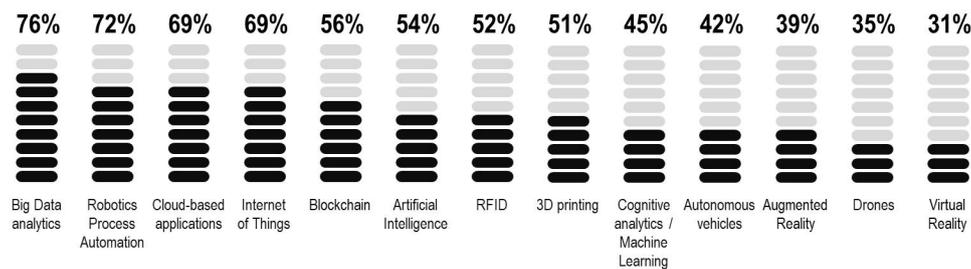
The purposive non-random sampling was used to select study participants among enterprises from the logistics sector. The database of businesses available at <https://panoramafirm.pl> was used to select the empirical population. On this basis, a research group of 209 companies surveyed was determined. CAWI internet surveys were used to collect research data and telephone interviews were conducted using the CATI method. Consequently, less than 53% of the responses collected were taken into account in the analysis (110 enterprises provided data for the surveys), due to inconsistencies or lack of some data.

#### 4. Research results

According to the survey, a vast majority of respondents (64%) believe that the level of technological development in their enterprises is at a high level, whereas 20% express the opposite opinion. About 18% of respondents said that this level is higher than in Western European countries, 7% said that it is much higher, and 5% of respondents said that Polish enterprises are much less technologically developed. The remaining part of respondents (70%) stated that it is at a similar level.

In the group of enterprises surveyed, 58% used solutions aimed at improving supply chains. Similar solutions are planned to be implemented by 16% of the entities. Furthermore, 26% of enterprises did not use and did not plan to implement any solutions aimed at improving the functioning of the supply chain in the near future.

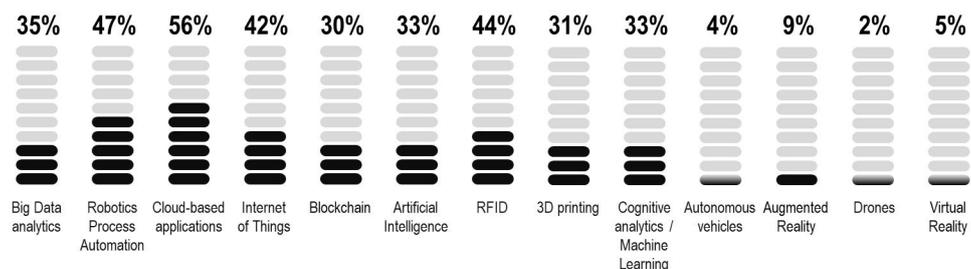
In the next question, managers were asked to assess the importance of individual technologies in the context of creating digital supply chains (*Figure 1*). The first three places mentioned by the respondents were occupied by such techniques as big data analytics (76%), robotics process automation (72%) and cloud-based applications (69%). The factors that had the least impact on the level of supply chain digitization were: the use of drones (35%), virtual reality (31%) and sharing economy platforms (29%).



**Figure 1: Which of these factors are most critical to the functioning of digital supply chains?**  
Source: author's own study

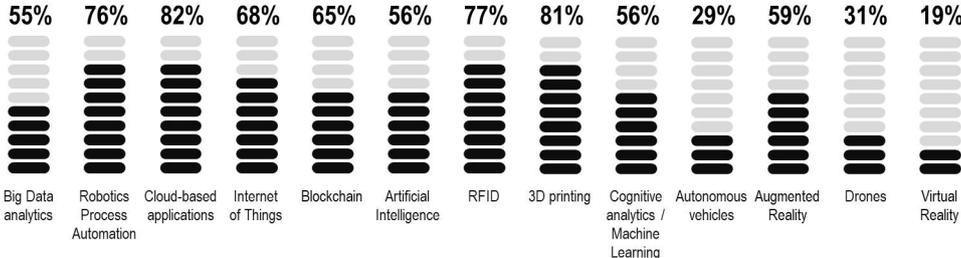
More than half of the enterprises studied intended to use cloud computing (56%), and only 35% would analyse big data sets within the next 5 years. Robotization and automation of processes would be used by only 47% of the entities, and the extended and virtual reality would be applied in less than 10%.

According to the respondents, Polish companies would use drones and autonomous vehicles only to a small extent (*Figure 2*).



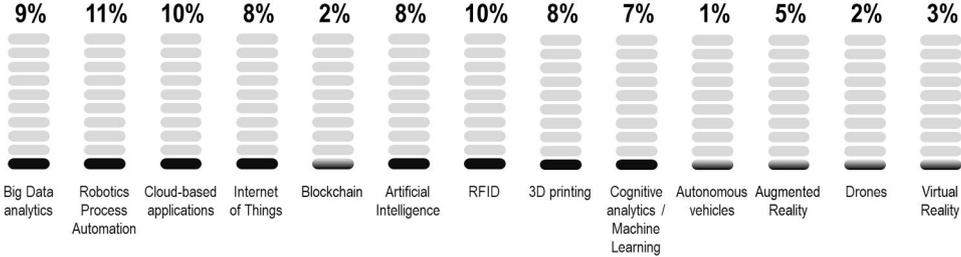
**Figure 2: What solutions does your company intend to use (within the next 5 years)?**  
Source: author's own study

The ability of enterprises to implement VR, autonomous vehicles and drones was rated extremely low. Furthermore, the enterprises evaluated the possibilities of implementing cloud applications, 3D printing, robotization and automation of processes, RFID, IoT and Blockchain technology very high (Figure 3). Although companies currently make little use of Blockchain technology, the prospect of its implementation seems very likely for most of them.



**Figure 3: How would you rate the enterprise's ability to implement individual technologies?**  
*Source: author's own study*

As can be seen from Figure 4, enterprises had marginally implemented supply chain technologies so far. Most of them were unable to implement these projects on a large scale. The vast majority of technologies already implemented are at an early stage of implementation and usually concern individual parts of the supply chain.



**Figure 4: At what stage of implementation in your enterprise are individual technologies?**  
*Source: author's own study*

Nearly three-fourths (72%) of the respondents believe that fully digital supply chains may emerge within the next 5 years. Furthermore, 9% of them believe that digitization of supply chains will take place within 12 months and 19% believe that this level will be reached in 10 years.

All respondents participating in the survey clearly stated that the implementation of modern technologies represents the key to full automation of supply chain processes and meeting customer needs. However, 26% of the enterprises surveyed do not intend to invest in the digitization of the supply chain in the coming years, mainly due to a lack of financial resources, adequately qualified staff, resistance to change and a long period of return on investment.

#### ***4.1. Selected applications of modern technologies and their impact on supply chain management***

More and more enterprises are willing to digitize their logistics chains. Enterprises that consistently digitise their supply chains can expect annual profit growth of 3.2% and revenue growth of 2.3% (McKinsey, 2018). Therefore, the benefits of supply chain digitization are tangible for businesses. They allow for savings, improvement in customer satisfaction and even implementation of a completely new business model. According to the DHL report, technologies help enterprises reduce costs, improve profitability, customer service and the efficiency of the entire supply chain. Furthermore, they contribute to better utilization of resources and significantly increase security (DHL Report, 2018).

The era of supply chain digitization has already begun for good. It can be already observed in business processes, starting from administration through operations to contracting. Nowadays, digitization is no longer about simple information and communication technologies or implementing integrated ERP management systems, but about developing completely new processes and business models that allow for integration throughout the supply chain (Tijan, Aksentijević, Ivanić, Jardas, 2019).

For example, Amazon is implementing a drone-based "Prime Air" program to deliver packages to customers in 30 minutes. (Amazon, 2016).

Modern technologies can be successfully introduced to track and reduce the lead time. Rogue Ales uses the Internet of Things (IoT) to deliver the highest quality ingredients to its breweries. The IoT-based solutions equipped in sensors collect real-time temperature and humidity data throughout the transport process, providing additional location data using GPS technology (Hullum, 2018).

A London-based organization uses similar solutions for building a digital supply chain. It utilized the Blockchain technology, artificial intelligence and advanced analytics to create a catch-to-consumer tracking platform. When a fish is caught, an RFID reader is attached and the information is added to the block register, ensuring transparency and resistance to manipulation throughout the supply chain (Capri, 2018).

Another example is Ford Motors Company. The company uses 3D printing to develop prototypes, which not only reduces the time needed to prepare the model, but also translates into significant savings (Christensen, Xu, Chai, Zhang, Fu, Huang, 2015, pp. 1047-1055).

Supply chain digitization is so fast and in so many aspects that it is difficult to keep up. Breakthrough technologies in the physical world integrate with the analysis of big data sets, RFID sensors, the Internet of Things, Blockchain technology and other applications available in the virtual world.

## **5. Conclusion**

Nowadays, supply chain digitization is one of the main value and growth opportunities for businesses.

In the future, solutions and technologies using real-time data will play a key role in digital supply chains. This will allow enterprises to adapt quickly and effectively to changing market conditions. This will ensure a quick response and will improve interactions with customers while increasing the revenues.

These key technologies still lack sufficient good practices on which enterprises can build their business models. Most technologies are still at a very early stage of maturity, making it very difficult for enterprises to choose the right solution. This is one of the reasons why so many supply chain digitization projects fail. However, many questions remain unanswered. Since these technologies are relatively new and still evolving, enterprises will implement different solutions to learn and build business models that are suitable for implementation on a mass scale. Therefore, the rate of development of digital supply chain will be evaluated using the number of implementations and mistakes used to draw the right conclusions.

Development of the necessary skills to ultimately transform business processes and models to create a fully-fledged digital supply chain is just a matter of time.

## References

1. Amazon (2016), <https://www.amazon.com/Amazon-Prime-Air/b?ie=UTF8&node=8037720011> (access: 26-02-2019).
2. Capgemini Research Institute (2018), *The digital supply chain's missing link: FOCUS*, <https://www.capgemini.com/research/the-digital-supply-chains-missing-link-focus> (access: 12-03-2019).
3. Capri, A., (2018), *How Blockchain Could Help End Modern Day Slavery In Asia's Exploitative Seafood Industry*, "Forbes", 14-02-2018, <https://www.forbes.com/sites/alexcapri/2018/02/14/how-blockchain-could-help-end-modern-day-slavery-in-asias-exploitative-seafood-industry/#270762d74b65> (access: 22-02-2019).
4. Chen, I. J., Paulraj, A. (2004), *Understanding supply chain management: critical research and a theoretical framework*, "Int. J. Prod. Res.", 42:, pp. 131-163.
5. Christensen, K., Xu, C., Chai, W., Zhang, Z., Fu, J., Huang, Y. (2015), *Freeform inkjet printing of cellular structures with bifurcations*. "Biotechnology and bioengineering", 112:(5), pp. 1047-1055.
6. DHL Report (2018), *Digitalization and the supply chain: Where are we and what's next? DHL Research brief*, [http://dhl.lookbookhq.com/ao\\_thought-leadership\\_digital-physical-1/research-report\\_digitalization-and-the-supply-chain](http://dhl.lookbookhq.com/ao_thought-leadership_digital-physical-1/research-report_digitalization-and-the-supply-chain) (access: 14-01-2019).
7. Fernie, J., Sparks, L. (eds.) (2018), *Logistics and retail management: emerging issues and new challenges in the retail supply chain*. Kogan Page Publishers.
8. Hullum, Ch. (2018), <https://blogs.intel.com/iot/2018/02/06/how-rogue-ales-makes-a-great-beer-from-wet-hops-clean-water-and-innovation/#gs.pvurrr> (access: 19-05-2019).
9. Kovács, G., & Kot, S. (2016), *New logistics and production trends as the effect of global economy changes*, "Polish Journal of Management Studies", 14, p. 119
10. Kshetri, N. (2018), *1 Blockchain's roles in meeting key supply chain management objectives*, "International Journal of Information Management", 39, pp. 80-89.
11. Kucęba, R., Zawada, M., Szajt, M., Kowalik, J. (2018), *Prosumer Energy as a Stimulator of Micro- Smart Grids Development - on the Consumer Side*, "IOP Conference Series: Earth and Environmental Science", 164:, doi: 10.1088/1755-1315/164/1/012003.
12. Kulej-Dudek E. (2018), *Environment and Community Involvement as Examples of CSR Pillars in Research in the SME Sector in Poland*, In: Soliman K. S. (ed.), *Innovation Management and Education Excellence Through Vision 2020*, pp. 3831-3840, International Business Information Management Association (IBIMA), Norristown.
13. McKinsey (2018), <https://www.mckinsey.com/business-functions/operations/our-insights/digital-transformation-raising-supply-chain-performance-to-new-levels>
14. Mentzer, J., (2001), *Supply Chain management*, Sage Publications, Inc.
15. Pigoń, Ł., Kot, S. (2016), *Improvement of Competencies Among Employees in Logistic Department as a Tool for Enterprise Efficiency Development*, In: Stefko R., Frankovsky M., Fedorko R. (ed.), *Management 2016. International Business and Management, Domestic*

- Particularities and Emerging Markets in the Light of Research*, pp. 141-146, Bookman s.r.o. for Faculty of Management, University of Presov in Presov.
16. Polatidis, N., Pavlidis, M., Mouratidis, H. (2018), *Cyber-attack path discovery in a dynamic supply chain maritime risk management system*, "Computer Standards & Interfaces", 56:, pp. 74-82.
  17. Prockl, G. (2007), *Logistik-Management im Spannungsfeld zwischen wissenschaftlicher Erklärung und praktischer Handlung*, "Deutscher Universitäts-Verlag/GWV Fachverlage GmbH", Wiesbaden, pp. 150-158.
  18. Report Smart Industry Poland (2016), <https://publikacje.siemens-info.com/pdf/123/Raport%20Smart%20Industry%20Polska%202016.pdf> (access: 26-04-2019).
  19. Scheibe, K. P., Blackhurst, J. (2018), *Supply chain disruption propagation: a systemic risk and normal accident theory perspective*. "International Journal of Production Research", 56:(1-2), pp. 43-59.
  20. Smolağ, K., Lemańska-Majdzik, A. 2017, Role and Importance of Fanpage in Promotion of Products and Services, In: Karasavoglou A., Polychronidou P., Perdiki F., (ed.) *The Economies of Balkan and Eastern Europe Countries in the Changed World*, pp. 211-224, KnE Social Sciences, Dubai, doi: 10.18502/kss.v1i2.658.
  21. Tijan, E., Aksentijević, S., Ivanić, K., & Jardas, M. (2019), *Blockchain Technology Implementation in Logistics*. "Sustainability", 11:(4), 1185.; doi:10.3390/su11041185

## EVALUATION OF CONSUMER BEHAVIOR IN THE MARKET OF SELECTED AGRICULTURAL COMMODITIES IN THE SLOVAK REPUBLIC AND THE RUSSIAN FEDERATION

*Tatiana EVTEEVA<sup>1</sup>, Snezhanna GUZIY<sup>2</sup>, Patrik ROVNY<sup>3</sup>*

*<sup>1, 3</sup> Slovak University of Agriculture, Nitra, Slovakia*

*<sup>2</sup> Russian Timiryazev State Agrarian University, Moscow*

*E-mail: tanyaevt@mail.ru*

**Summary:** The behavior of consumers in the agricultural market always has its own characteristics, unlike the markets of other groups of commodities. The basis of this work is the assessment of consumer behavior with the identification of consumer preferences in the potato market in the Russian Federation and the country of the European Union - the Slovak Republic. For more accurate market research of consumers in the survey format, there was a restriction of consumers' research in the Russian Federation in the central region of Russia (cities: Moscow, Tula, Kaluga, and Yaroslavl) and in Slovakia; data were used throughout the country. For this case, a questionnaire was specifically designed by the author under control of marketing departments in Russian State Agrarian University in Moscow and Slovak University of Agriculture in Nitra for consumers of potatoes, in order to identify their preferences and to further assessment and compare the results between the two countries. A total amount of respondents in international research is more than 500 persons. Then the results of the survey were applied in the special program Deductor Studio Academic version 5.0, developed by Russian programmers for processing various types of information, including marketing one. The results of the study allow agricultural organizations, farms and holdings in the studied countries to adjust their marketing strategy, taking into account all the features of consumer behavior in the studied agricultural market. Apart from that, the use of application programs in processing of marketing information allows to improve the quality and efficiency of the decision-making process.

**Key words:** consumer behaviour, desire, impulse products

### 1. Introduction

Research and evaluation of consumer behavior in the potato market is relevant for both the Slovak Republic and the Russian Federation, due to the fact that this market is specific and requires additional attention. Recently, there has been an increase in the consumption of potatoes and potato products, due to lower prices, affordability and consumer preferences, which has led to an increase in the production and import of potatoes in Russia and the Slovak Republic. In this regard, we want to conduct a study of consumer preferences in this market, so that agricultural organizations and farms can adjust their marketing strategy.

### 2. Literature review

Consumer behavior is the study of the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy needs and desires. (Solomon, 2014, p. 608) There are many consumers now and each of them is different in their own way and makes an independent choice, each should have its own strategy of

influence. Knowledge of consumer preferences greatly facilitates the process of managing consumer behavior. (Melikyan, 2012, p. 280).

Consumer behavior in the agricultural market in each country has its own characteristics, due to the fact, that marketing in the agro-industrial complex is characterized by complexity and a high degree of risk. This specificity is due to several reasons such as:

- the agricultural producer both a seller in the commodity markets and a commodity buyer offers of agricultural products are determined by the ratio of prices for it and the resources acquired;
- the impulse to increase the supply of products is scientific and technical progress;
- features of climatic and biological factors, fertility and structure of agricultural land, the geography of the economy;
- certain types of agricultural products are characterized by inelastic demand;
- the market price is the result of the interaction of aggregate supply and demand (Korolev et al., 2007, p. 424).

In addition to the characteristics of the agrarian market, which influence consumer behavior, other group of factors that directly affect consumers should be taken into account such as cultural, social (family, friends, labor, trade unions, religious community, etc.), personal (age, gender, lifestyle, work, wage, marital status, etc.), psychological (motivation, perception, attitudes, beliefs, etc.) groups. This question implies a comprehensive study of consumer behavior in the potato market in the Russian Federation and the Slovak Republic, but first we must assess the market in these countries.

Analysis of the potato and vegetable market in Russia and Europe, as in many countries, is a combination of exchange relations, through which food is bought and sold, and the interests of producers and consumers are balanced. Practice shows that these interests are contradictory since manufacturers are guided by the desire to maximize profits and meet the needs of consumers in high quality. As an object of analysis, the market for potatoes and vegetable products has the following characteristics: capacity, level of demand and supply balance, sales conditions. (Guzy, Ondreyovichova, 2015 p.54-55).

According to the results of the 2017 potato and vegetable market is characterized by a steady increase in prices, an increase in the volume of imports in relation to the same period of previous years. Total amount of potato is 25,5 million tons, average price 0,36 (1EUR=75RUB according to Russian Central Bank, June-October 2017). The main destination countries of Russian potato exports in 2016: Ukraine (volume - 125.0 thousand tons, share in total exports - 58.2%), Azerbaijan (86.2 thousand tons, 40.1%), Georgia (2.4 thousand tons, 1.1%), Uzbekistan (0.7 thousand tons, 0.3%). (ROSSTAT, 2017)

Concerning the situation in the Slovak potato market in the same period, according to the results of research potato sector in EU-28 total amount of potato is 53 million tons, the main producer was Germany (19,9%), Slovakia is on 23th place (0,3%). Average household price for potato per 1 kg was 0.51 EUR. Total amount of sailed potato in Slovakia is 7,1 thousand tons in 2016. (EUROSTAT, 2017).

For a more detailed study of the situation on the potato market, it is necessary to analyze and evaluate the behavior of consumers in selected countries, in order to give recommendations to agricultural enterprises, holdings, and farms that produce potatoes, for improving its marketing policy.

### 3. Methodology

To evaluate the behavior of potato consumers under the supervision of the Department of Marketing of the Russian State Agrarian University in Moscow and the Slovak University of Agriculture in Nitra, a questionnaire was developed for collecting marketing information among consumers in both Russia and Slovakia during 2015-2016.

The search for data was carried out by conducting marketing research on potato consumers by interviewing respondents. The study involved 550 people (in both countries) by means of private interview in retails in the period from 10:00 to 12:00 and from 16:00 to 18:00 on the day off and online survey in network.

Under the control of the Department of Economic Cybernetics of the Russian State Agrarian University in Moscow, the results were formed as data for download into the program of Russian programmers, Deductor Studio Academic, for analyzing business information, including the marketing, which contains a full range of statistical data operations.

In our case, to evaluate consumer behavior in the Deductor Studio Academic 5.0 program, we select the "Data Quality" handler.

*Purpose:* Data quality is one of the biggest challenges for business intelligence. Analytical solutions obtained from poor-quality data can have the next negative features:

- may be far from reality;
- distort the true picture of the investigated business processes;
- show false patterns, trends and relationships between the objects of study.

The consequence of this case may be the development of wrong management decisions that will damage the business or, as in our way, wrong evaluation the study of consumer behavior in general.

*Processing algorithm:* This "Data Quality" parameter includes both statistical operations such as arithmetic average, mode, median, f-criterion and t-student and criterion evaluation, data availability and necessary recommendations for further processing.

The arithmetic mean (or average)  $\bar{x}$ . The arithmetic mean is the most commonly used and readily understood measure of central tendency in a data set. In statistics, the term average refers to any of the measures of central tendency. The arithmetic mean of a set of observed data is defined as being equal to the sum of the numerical values of each and every observation divided by the total number of observations.

*Mode:* The mode of a set of data values is the value that appears most often. It is the value  $x$  at which its probability mass function takes its maximum value. In other words, the value is most likely to be sampled.

The median is the value separating the higher half from the lower half of a data sample (a population or a probability distribution). For a data set, it may be thought of as the "middle" value. For example, in the data set {1, 3, 3, 6, 7, 8, 9}, the median is 6, the fourth largest, and also the fourth smallest, number in the sample. For a continuous probability distribution, the median is the value such that a number is equally likely to fall above or below it.

Dispersion analyze statistical method for detecting the effect of individual factors on the results of an experiment, and for the subsequent planning of similar experiments, calculating Fisher criterion used to compare variances of the two variational series. (Shibalkin et al., 2004, p. 392)

#### 4. Results and Discussion

The next step after complex market analysis will be evaluation of the consumer behavior on the selected market in Russia and Slovakia.

For the consumer behavior research, it is necessary to apply specific software. In our case, we have chosen one appropriate program developed by Russian programmers called Deductor Studio Academic version 5.0.

In the "Data Quality" handler, the used next parameters: Age and How many kilo of potatoes you buy for 1 purchasing. (Table 1, Table 2)

**Table 1: Results of data quality evaluation in Russia**

Name	Average	Median	Mode	Summary
Age	40.2	45.0	23.3	Suitable
How many kg of potatoes do you buy for 1 purchase in the store	2.8	2.0	1.0	Suitable

*Source: calculated by authors*

**Table 2: Results of data quality evaluation in Slovakia**

Name	Average	Median	Mode	Summary
Age	33.83	25.0	25.0	Suitable
How much kg of potatoes do you buy for 1 purchase in the store	2.43	2.0	1.0	Suitable

*Source: calculated by authors*

The mode shows the most common value of the column. This means that respondents in the age of 20 to 25 years were most involved in this study. This is due to the time and day of the survey: according to these results, on the day off in the morning, young people (both students and workers) purchase potatoes. In both countries, the most common amount of potatoes bought per 1 trip to the store is 1 kg. This may be due to consumer preferences, need, financial, and physical possibility.

*Medium:* This is a generalizing characteristic of the set of individual values of a certain quantitative characteristic. The middle, being a function of a set of individual values, represents the whole value in one sense and reflects the general that is inherent in all its units. Thus, in Russia 45 years is the generalized age of respondents, and 2.0 kg is the generalized amount of potatoes that is bought for 1 trip to the store and in Slovakia 33.8 years is the generalized age of the respondents, and 2.0 kg is the generalized amount of potatoes bought for 1 trip to the store.

The next step of "Data Quality" handler is describing statistic results by means of forming common portrait of potato consumers.

*Russian common potato consumer portrait:* key comparison according to gender, marital status, visiting of shops, preferences in kinds of potato:

- 1 time in 2 weeks 94 married and having job men with income 300-600 EUR buy potatoes of domestic producers, among them 48 men choose unwashed potatoes packaged into a grid, for 23 men does not matter the appearance of the potato, 9 of them choose potatoes in bulk, 14 other men choose potatoes packaged into a grid.

- Among 196 married women having job and income 300-600 UR 23 choose unwashed potatoes in a package, 115 woman selects domestic washed unpackaged potatoes, 36 choose washed potatoes in a package and 12 women selects any unpackaged potatoes.
- 47 unmarried men and 34 unmarried women, which are students and with income to 300 EUR choose washed unpackaged potatoes. Once a month 12 married men buy washed potatoes in a package, 29 married women choose any (washed and unwashed) potato without package, 18 unmarried men buy unwashed potatoes and washed potatoes in a package, 16 unmarried women, 6 of whom selects unwashed potatoes without package, the other 10 choose any (washed and • unwashed) unpackaged potatoes.
- 31 married men having job and income to 300 EUR buy potatoes for 1 time a week and more often, 17 of which choose washed in a grid, and 14 men choose any (washed and unwashed) potatoes in a package, 78 married women choose any (washed and unwashed) potatoes without package, 21 unmarried women choose washed potatoes without package.
- Less than once a month, 12 married women with income over 600 EUR buy potatoes, they prefer washed in a package, 39 unmarried women buy any (washed and unwashed) potatoes packaged into a grid.

Table 3 contains a data of common portrait of consumer in Russia based on the research.

**Table 3: Common Russian potato consumer portrait**

Signs of assessment	Share
Female	68%
Family	67%
30-40 years	29%
Working	62%
1-3 family members	55%
2-3 kilo for one purchasing	50%
Purchasing once per week	41%
Supermarket	51%
Appearance, price	48%
White color of a peel	45%
Appearance - no matter	39%
Directions of use - it does not matter	61%
Unpackaged potatoes	47%
Domestic potatoes	93%
Doesn't know potato variety	91%
Doesn't read the package	70%
Doesn't not know potato suppliers	95%

Source: calculated by authors

*Slovak common potato consumer portrait:* key comparison according to age, marital status, amount of family members, amount of purchasing for one-time-visiting shop, preferences in kinds of potato:

- Less than once a month the married consumer having pension at the age of 50-60 years buy potatoes on average 1-2 kg presentation of the potato does not interest for them, they buy with the purpose for boiling potatoes.
- Unmarried consumers at the age of 30 with income over 600 EUR buy potatoes less than once a month, the size of their purchase is 2,33 kg (2-3 kg), for them the producing country is important.
- Once in 2 weeks, married consumers with income more than 600 EUR at the age of 35 buy potatoes for 3 kg of domestic production for frying and boiling, and unmarried

consumers at the age of 25 buy 1.5 kg of potatoes at a time for frying, consumers at the age of 60 buy potatoes for 1 kg for boiling.

- Less than once a month, consumers which are students with income to 300 EUR buy potatoes at the age of 22.5 years at a rate of 1 kg, they prefer packaged washed potatoes of domestic production.
- Once in a month unmarried consumers having job and income over 600 EUR buy potatoes at the age of 35 for 2 kg, prefer potatoes of domestic production, married consumers buy potatoes for 1-3 family members with a quantity of 3 kg once a week.

Table 4 contains a data of common portrait of consumer in Slovakia based on the research.

**Table 4: Common Slovak potato consumer portrait**

Signs of assessment	Share
Female	77%
Not married	63%
20-30 years	44%
Study	51%
3-4 family members	78%
1-3 kilo at a time	50%
More rare than 1 time a month	43%
Supermarket	68%
The main parameter: appearance, price	52%
Directions of use - it does not matter	71%
Packaged potatoes	47%
Domestic potatoes	80%
Doesn't read the package	84%
Doesn't know potato suppliers	99%

*Source: calculated by authors*

According to the dispersion analysis for consumer behavior data, the F-criterion is 20385, 8501 (Russia), and 20819.4581 (Slovakia). The regression equation looks like this:

$$\text{Russia: } Y = 0.34 + 0.19x,$$

$$\text{Slovakia: } Y = 0.34 + 0.06x,$$

which shows describing the dependence of purchasing a potato Y on the age X. In general, it must to be said that at every age year the purchase of potatoes for one trip to the store increases by 0.19 kg in Russia and by 0.06 in Slovakia.

Thus, a comprehensive study and evaluation of consumer behavior in the potato and vegetable market was conducted, a comparative analysis showed that consumers are influenced by a number of factors, such as age, place of residence and country, number of family members, budget, social status, preferences and tastes, traditions and way of life. Investigating consumer behavior is necessary and important because the basic idea is to track and identify new influencing factors.

## 5. Conclusion

It is important for marketing to identify how the consumer is aware of what products he needs, and why it is the one of that best meets his needs. Only, in this case, it is possible to count on the fact that such products can become a commodity.

Orientation to the usefulness of products requires in-depth knowledge of psychological, motivational factors that become decisive when purchasing goods.

Using the example of this study and evaluation of consumer behavior in the potato market in the Russian Federation and the Slovak Republic, we were able to find out what factors influence behavior, to one degree or another. For example, the overall indicators for assessing behavior: the choice and desire to buy potatoes is mainly due to the gender, age, income and marital status of consumers; in general, it can be said that it is important for both countries to buy potatoes from domestic producers and consumers always pay attention to the presentation of potatoes. However, there are differences. An objective evaluation showed that in the Russian Federation consumers buy potatoes more often than in the Slovak Republic. This is due to the population factor, income, traditions, lifestyle and habits.

The results of the study may be useful for agricultural organizations. Detailed information consumer preferences indicate to the producer, which potato varieties are more profitable to produce and sell. For marketers this information is useful for developing a new product, for example, to introduce a new packaging format for a specific consumer category, the retailers show what adjustments to make to the purchase of goods, for example, focus on imported products or purchase more goods that are domestic. The main idea of these researches is to conduct them more often and constantly update information, study consumer behavior for the benefit of the consumers themselves, marketing as a science and the agricultural business.

## References

1. Guzy S., Ondreyovichova M. (2015), Analysis of consumer preferences on the food market of Russia, *International Journal of Agriculture*, № 4, p.54-58, Moscow
2. Karpuzova V. I., Skripchenko E. N., Chernysheva K. V., Karpuzova N. V. (2015), Information systems and technologies in the management of agriculture, ed. BIBKOM, TRANSLOG, - 462 p., Moscow
3. Karpuzova V. I., Chernysheva K. V., Karpuzova N. V. (2013), Information systems and technologies in management. Analytical platform SAS Enterprise Guide House of the Russian State Agrarian University-Moscow Agricultural Academy named after K.A. Timiryazev, Moscow
4. Korolev Y. B., Korotnev V. D., Kochetova G. N., Nikiforova E. N. (2007), *Fundamentals of Marketing in Agribusiness*, ed. "Kolos", Moscow 424 p. ISBN 978-5-9532-0515-3.
5. Melikyan O. M. (2012), *Consumer behavior textbook 4th ed.* Moscow: Publishing and Trading Corporation "Dashkov and K", 280 p., Moscow
6. Solomon Michael (2014,) *Consumer Behavior: A European perspective*, ed. Pearson Paper, 608 p ISBN-10: 1292017414, ISBN-13:9781292017419.
7. Shibalkin A., Tarasova O., Shaikina O., Zinchenko A (2004), *Statistics, textbook ed.* "Kolos" p. 392, Moscow
8. Kleinová, K. (2013), Current situation and trends in marketing research. In: *Business management - practice and theory in the 21st century.* (p. 85-91), Nitra, SK: SUA in Nitra.
9. Nagyová, E., Horská, E., Kretter, A., Kubicová, E., Košičiarová, I., Récky, R., Berčík, J., Holienčinová, M. (2014), *Marketing.* Nitra, SK: SUA in Nitra
10. European Statistic Database 2015, [online] Retrieved March, 5 2017, [https://ec.europa.eu/eurostat/statistics-explained/index.php/The\\_EU\\_potato\\_sector\\_-\\_statistics\\_on\\_production,\\_prices\\_and\\_trade#Values\\_and\\_prices](https://ec.europa.eu/eurostat/statistics-explained/index.php/The_EU_potato_sector_-_statistics_on_production,_prices_and_trade#Values_and_prices)
11. Russian State Statistical database( Rosstat) 2017, [http://www.gks.ru/free\\_doc/doc\\_2016/cena\\_2016.pdf](http://www.gks.ru/free_doc/doc_2016/cena_2016.pdf)

## INHERITANCE OF AGRICULTURAL PROPERTY AS A POSSIBLE MEANS OF GENERATION CHANGE IN HUNGARY

*László KOVÁCS<sup>1</sup>, Zsolt ORLOVITS<sup>2</sup>*  
*<sup>1, 2</sup> Szent István University, Gödöllő, Hungary*  
*E-mail: kovacs.laszlo@gtk.szie.hu*

**Summary:** The priority of keeping agricultural properties in one hand arose early on in legal systems in Western Europe. The usual practice is that the farmer appoints a beneficiary, typically a direct descendant, who is subsequently trained and actively involved in managing the agricultural estate while the owner is still alive and active. Therefore, it hardly ever happens that the rules of intestate succession need to be applied; even if the owner eventually dies intestate, most legal systems acknowledge common law and the unwritten intentions of the legator.

It is still undecided how to regulate this issue in Hungary: there are important economic considerations to keep farms and agricultural lands intact, but there is no customary law or usual practice regarding this issue; in addition, drawing up a last will and testament is still not common.

Our study of international comparative analysis reveals that there is a wide range of ways and means to tackle the issue of the succession of agricultural properties. Some legal systems introduced a minimum plot size to prevent division into unmanageable units; others prescribe that plots or entire economic units, movable and immovable properties, need to be kept integral and intact.

Therefore, on one hand, the system in Hungary needs to guarantee the suitability of the beneficiary to manage the agricultural property satisfactorily; and on the other hand, it needs to draw up provisions for the compensation of the other legal successors. It is essential to set up an appraisal system that considers the beneficiary's intent to continue farming the agricultural land (as opposed to selling it at market value).

**Keywords:** succession of land and the related installations used for agricultural production, naming heirs, order of intestate succession

### 1. Introduction

“Changing of the guard” from the previous generation to the next has been an important issue in agriculture in several countries; succession being an aspect highly regulated by law. Incidentally, Hungary lags behind many Western European countries in general when succession of agricultural land and properties is considered, as there are no provisions and guarantees to facilitate keeping the integrity and seamless transition of an agricultural property, often built up as labour of a lifetime. On the other hand, several Western European countries apply special provisions for the succession of agricultural land and properties, thereby preventing the division of an operational and viable agricultural unit by legal successors.

### 2. Research Background

In most Western European countries, customary laws regulating the inheritance of agricultural property stem from the 17th or 18th century, when the necessity of keeping the integrity of the

land in tenure arose (Turner, Böttger, Wölfle, 2006). For instance, in Prussia, court-barons of the landlord appointed one of the descendants of a deceased serf as the heir of the land in tenure. The custom of appointing an heir continued after the emancipation of serfs when passing on freeholds to the next generation (Wöhrmann 2012). *Common laws and historical precedents* were subsequently codified in modern legislation, continuing the tradition of considering the unwritten intentions of the legator. In addition, very importantly, the emerging industrial and trading sectors absorbed the excess workforce, therefore, it was a viable solution that only one of the descendants inherited the freehold, whereas the others had to find alternative means to support themselves.

On the other hand, Hungary followed a different path, due to its different historical events. Industry was relatively underdeveloped and incapable of absorbing masses of landless peasants; in addition, at the same time, even nobility and landlords traditionally subdivided their estates amongst their male heirs. Consequently, an unusual pattern emerged in certain regions: families with only a single descendant, as there were no other means to avoid the subdivision of the agricultural estate into several plots.

### **3. Methodology**

Our study is a *comparative analysis*, as there are no separate laws in effect in Hungary regarding specifically the inheritance of agricultural property. However, there are some regulations already in place, such as the possibility to disclaim the inheritance, that may serve as starting point for possible complex legislation in the future. The heir, if not professionally engaged in agricultural production, may disclaim separately the inheritance of the land used for agricultural production and the related equipment, installations, livestock and equipment.

Countries that have specific legislation regarding agricultural property consider this important because the focus of the relevant laws is agricultural estates, not simply agricultural land. Our study concludes that the underlying principles of these regulations serve as possible examples of good practice for Hungarian legislators. Therefore, we focused on the practices in Switzerland (Wasserfallen 2017), Austria (Bäck 2012) and Germany (Turner, Böttger, Wölfle, 2006; Grimm 2010; Wöhrmann 2012), as these legal systems are historically closest to civil law, including inheritance law, in Hungary.

### **4. Results and discussion**

#### ***4.1. Changing ownership before the legator's death***

In many Western European countries, approximately two thirds of agricultural estates change ownership in the farmer's lifetime, in the form of a *transfer of ownership*.

A prerequisite of the transfer in certain states is the registration of the agricultural plots in the land registry as a single body of land, making physically separate entities and plots legally one unit. In addition, there is an inventory of other means and assets, such as buildings, machinery and livestock, which altogether form an economic entity. Another prerequisite of the transfer of ownership is that the agricultural farm is not part or property of a business, in which case the regulations regarding the transfer of a share of ownership in a business would apply.

The contract regulating the transfer of property needs to register the new owner, as well as the process and conditions of the transfer. Certain countries favour a gradual *transfer process regulated by law*. In such cases, the former owners create an internal unit to be managed

solely by the new owner, and at the same time, they are allowed to retain control and management of the remainder of the property for any duration or extent specified in advance in the contract.

In such cases, of course, an important point is the compensation of other legal successors who are excluded from the ownership of the agricultural estate. Several relevant points include (Garmissen, 2018):

- Do the successors have a lifelong legal requirement to support the legators (usually parents)?
- Do the successors undertake the continued operation of the agricultural estate for a limited period of time or is it a lifelong obligation?
- Is it taken into consideration that the successor may lose a profitable opportunity to sell the property, given his or her limited status to sell the property freely?

The transfer of ownership contract may outline the measures to satisfy the compulsory share of the other successors, or they may leave this obligation up to the regulations on *compulsory share* as laid down in civil law. In the first scenario, it is necessary to evaluate the estate for family purposes, which may be 25 to 30% lower than the market value. This serves as the basis for the compulsory share that the other successors are entitled to, in the form of a lump sum or to be paid in instalments (Turner, Böttger, Wölfle, 2006).

There are separate cases, however, when evaluation for family purposes is irrelevant. There is an increasing number of contracts in which the new owner is not a legal successor of the farmer, or is a descendant intending to discontinue farming in person and would rather lease out the land or transfer it into a business. It is important to note that in Western Europe, converting an agricultural estate into a business is allowed with certain limitations; however, the current regulations in Hungary do not allow for this arrangement.

In cases when there is no detailed contract drawn up regarding the transfer of the property, the payment of compulsory shares by the successor to the other descendants depends on the number of years from the transfer of the agricultural property to the death of the legator. The Civil Code in Hungary, similarly to the Bürgerliches Gesetzbuch in effect in Germany, outlines the following possibilities (Garmissen, 2018):

- In the case of contracts with maintenance obligation to the legator, it is possible to consider the market value of the property as the basis for calculation of compulsory shares, with deductions allowing for maintenance payments.
- In the case of a gift transfer from testator to successor, the basis of the compulsory shares is the value of the property in the ten years preceding the testator's death.
- Therefore, in these cases, the successors lose their claim on the compulsory share after two or ten years, respectively.

In certain countries, there are *high transfer fees* to be paid, which are an additional burden on top of the payments of compulsory shares to other successors, often resulting in taking out a *mortgage* on the property.

Another new trend is the formation of a *trust*, which is an option outlined in civil law. In such cases, an administrator becomes the new owner, with limitations stipulating that he must act in the best interests of the beneficiary, e.g. the minor descendants of the successor, in return for a fee. The beneficiary may demand the administrator to hand over the property or its revenues at a time or by the means stipulated in the contract. The estate forms a separate entity from the private property of the administrator, and may not form part of the administrator's estate in case he is deceased himself.

#### **4.2. Succession through probate proceedings**

As mentioned above, only a small percent of Western European farmers leave the issue of the succession of their estate merely to the legal system. Even in such cases, there is usually a last will and testament, naming a single heir to the agricultural estate. At the same time in Hungary, however, only 4% of legal proceedings involving inheritance included a last will and testament, and a further 7% included some form of contract between legators and successors. This status quo comes with great responsibility for legislators, since in the cases of dying intestate, the laws and regulations must take into account to presumed intentions of the legator. It is thought that the apparent absence of last wills and testaments is due to the widespread opinion that the current legal arrangements are fair and appropriate. Therefore, the question arises: if current civil laws are seemingly adequate, is it really imperative to introduce inheritance laws specific to agricultural estates, even though they are not part of our historical precedents, simply because they are in effect in Western Europe?

There are two important prerequisites for treating agricultural estates separately during the probate process. First of all, agricultural resources (land, equipment, livestock) must be clearly separate from the rest of the legator's property, which are regulated by general inheritance laws. In addition, the estate must be the personal property of the deceased (not transferred into a business, in which case yet different laws apply, which regulate the inheritance of shares in a business).

For example, in Switzerland, special regulations apply to small plots of land that are leased to outsiders and are not part of the estate itself at a given point (Wassefallen, 2017). In such cases, there is a registry drawn up and a list of plots forming the parts of the estate, ensuring that there is a single successor and the fragmentation of property is avoided.

In several countries, the legal arrangement allows for an *appointment procedure* (Grimm, 2010; Bäck 2012; Wasserfallen 2017). In case the owner of an agricultural estate dies intestate, the potential successors are ranked based on their professional and personal qualifications to manage the estate, and the highest ranking descendant is offered ownership of the undivided estate. In Hungary, it would be possible to delegate this responsibility to the notary who oversees the probate procedure, in cooperation with the government office in charge of agricultural registration. In case there is a suitable successor who is willing to take over the estate, he or she may request transfer of the property, with the obligation to settle with the other successors regarding their compulsory shares.

If the inheritance has other elements in addition to the agricultural property, the heirs may divide the estate, but only with regard to the assets of the estate, between them by an agreement concluded in the probate procedure. If an allocation agreement has been concluded, the estate shall be distributed under the legal title of succession, in accordance with the agreement. In such cases, the heir of the agricultural estate may receive a reduced share or none at all of the other elements of the legator's property.

In case there is no qualified heir, or none of them are willing to inherit and continue managing the estate, then the agricultural property becomes the joint property of the successors, with the obligation to keep its integrity, which means that they are not allowed to subdivide it amongst themselves. Possibilities include: one of the heirs operates the farm and pays rent to the other successors, or they lease the entire estate to another person or entity. A possible reason for such an arrangement is that the most qualified or most interested heir is still a minor or is considered unprepared to take over ownership and sole management of the farm for the time being, but intends to do so in the future. Of course, it is also an option for joint owners to sell

the property to an outsider who is willing to manage the entire farm and then subdivide the price received.

#### **4.3. Arrangements through a notary**

A notary may assist not only during the probate procedure but also regarding other issues connected to the inheritance of the agricultural estate. It is not compulsory to accept an inheritance; a person entitled to intestate succession may renounce his inheritance, wholly or partially, under a written contract concluded with the deceased, with or without compensation. The renunciation contract may appoint a beneficiary.

Another option is disposing of expected inheritance. Descendants of the testator may enter into a contract with each other on their expected inheritance even while the testator is alive. The contract shall be drawn up in writing, and it is not dependant on the approval of the testator.

An advantage of contracts drawn up with the assistance of a notary is that such contracts are deposited in the national registry of last wills and testaments; therefore, it is not going to get misplaced or overlooked during the probate process.

### **5. Conclusions**

Basically, there are two separate groups of farmers regarding the successful outcome of passing the estate from one generation to the next. "Procrastinators" lament the lack of regulations regarding inheritance of agricultural property. They are not planning the handover meticulously, so they trust the safety net provided by the state and legal procedures. It may be difficult to assign an heir, or the successors are concerned about real or imaginary conflicts arising when it comes to settling the compulsory shares. In contrast, "planners" think in broader perspectives and they already consider the needs of the next generation well ahead during the management of the estate, so they do not rely on regulations to outline how to proceed, especially if a business venture provides the framework for the agricultural estate.

It is also important to consider that most farmers in Hungary operate in the form of small-scale or family-run businesses that own the farm; in these cases, succession needs to consider the division of the assets and properties of a business (not just the agricultural plots or land) amongst the legal successors. However, there seems to be a serious intent from the state to allow the transfer of privately owned agricultural land and the entire agricultural estate into a "family-run agricultural business", under specific and strictly regulated circumstances. Such businesses may only have involvement or ownership by natural persons, close relatives, whereas legal persons and outside investors are excluded.

### **References**

1. Bäck E. (2012), *Anerben- und Höferecht* In: Norer R. (ed.), *Handbuch des Agrarrechts* pp. 717-734, Verlag Österreich, Wien
2. Garmissen B. (2018), *Hofübergaben im Lichte der sich wandelnden Agrarstruktur – Ein Praxisbericht*, In: Martínez J. (ed.), *Jahrbuch des Agrarrechts Band XIV*, pp. 11-20, Nomos, Baden-Baden
3. Grimm Ch. (2010), *Agrarrecht* C.H.Beck Verlag, München
4. Turner G., Böttger U., Wölfle A. (2006), *Agrarrecht* DLG-Verlag, Frankfurt am Main
5. Wasserfallen A. (2017), *Bäuerliches Bodenrecht*, In: Norer R. (ed.), *Handbuch zum Agrarrecht*, pp. 331-420, Stämpfli Verlag, Bern
6. Wöhrmann H. (2012), *Das Landwirtschaftserbrecht*, Wolters Kluwer, Köln

## TRUST, THE FACTOR AFFECTING FOOD CONSUMPTION APPEARANCE IN YOUNG INTELLECTUALS

*Fanni Ildikó FODOR<sup>1</sup>, Attila LAJOS<sup>2</sup>, Zsuzsanna NAÁR-TÓTH<sup>3</sup>*

*<sup>1, 2, 3</sup> Szent István University, Gödöllő, Hungary*

*E-mail: fodorfanni@gmail.com*

### **Summary:**

**Purpose:** Over the past years electronic media-mediated domestic press reports have become more and more common and their central message is that several supermarket chains and resellers repackaged foreign fruits or vegetables and resold them in Hungary as domestic product to local consumers at three to six times higher price. (An example of this happened in the first week of May 2019 when strawberries imported from Spain and Greece were repacked and resold as Hungarian domestic which caused great indignation among domestic consumers.) This example and similar cases further appreciate how to build and strengthen the confidence of domestic products in Hungarian consumers, especially in a product range where the provision of individual labels or information cannot be solved. In this case only consumer trust can persuade the consumer to carry out a purchase. Trust which is not a negligible factor in human relationships is also an important element of social capital. Furthermore, trust is the basis for all kinds of collaboration, organization and networking as well. Trust is predictable, risk-reducing, relationship-based and can be defined as a software resource placed in a constantly changing economic environment. Unfortunately lack of trust has serious consequences. In our research we would like to seek to find out how news and information about trust can influence young intellectuals in the media communication. Nowadays the media is indispensable and almost necessary. There are no people who would not get information about the different events through online communication or other communication channels. Our choice fell on young intellectuals because there is no longer one among them who would not use digital devices on a daily basis which would allows them to get online news about consumer confidence faster and more and more widely.

**Methodology:** We analyse how young intellectuals appreciate the possibilities of buying vegetables and fruits from the point of view of trust from the primary producer to the producer to the several hypermarkets in Hungary. This study is based on a quantitative survey and we used a questionnaire.

**Findings:** The focus of our research is on the strengths of the various purchases and the influence of this on Hungarian label for vegetables or fruits.

**Keywords:** consumer behaviour trust, domestic products, online communication, product label

### **1. Introduction**

According to the data of the Hungarian Central Statistical Office, in Hungary the annual per capita vegetable consumption was 52.4 kg in 2017, while in 2014 it was 49 kg. As a result of traditional Hungarian cuisine, potato, onion, brassicas, tomato and pepper are the vegetables most commonly consumed by Hungarians. With regard to fruit, in 2017 the annual consumption was 48.8 kg, while in 2014 it was 38.8 kg. Compared to previous years, fruit consumption increased in Hungary; the most popular fruits are apple, melon, banana, and citrus fruits. (KSH, 2019) This can be explained by the fact that healthy lifestyle has become

increasingly popular among young people. For the healthy functioning of human organism it is essential to eat food of sufficient quantity and quality. Several factors play a role in staying healthy, however, proper and balanced diet, and regular physical activity are of paramount importance. Consumers are primarily product-oriented, and, secondly, benefit-oriented, although these rational arguments are in decline these days. Consumers' primary objective is to keep themselves and their family healthy. In relation to health promotion, balanced diet may prevent the occurrence of various diseases (Szakály, 2011), and therefore one of the key tasks of nutrition marketing is to shape consumers' health behaviour. (Ádám, 2009)

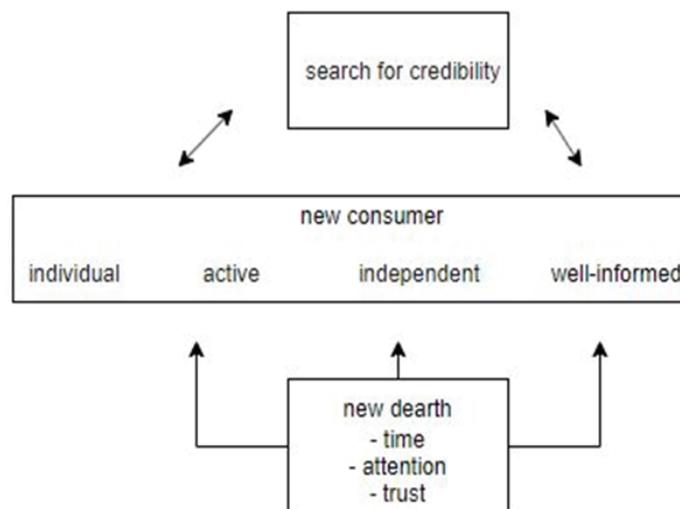
## **2. Literature review / Research Background**

Fruits and vegetables are energy sources, they contain a significant quantity of vitamins, thus their consumption is essential for a balanced diet. Due to their taste, many people still consider fruits as luxury goods. The transportation and sale of fruits and vegetables is a delicate process, and quality must prevail in consumer prices. In case of the sale of both vegetables and fruits varietal identity, freshness, dry and clean surface, appropriate size and maturity, uniform characteristic shape, wholeness, and appropriate taste and smell shall be ensured. Packaging materials in direct contact with food shall be clean and free of any foreign matter, in addition they should be clearly labelled with labels including the name or mark of the packer/distributor, the product's origin, sales description, variety and commercial type. (Buzás, 2007)

When purchasing food, consumers are going through a complex decision-making process, which has visible and invisible parts. Visible parts can be the various influencing stimuli, and the results of the purchase, however, the decision-making process itself is invisible. (Horváth, 2012)

Consumer behaviour is most strongly affected by cultural factors. From the time of birth, the individual embraces values and views through socialisation in the family and in various institutions. The members of each social class share similar norms regarding income, values and interests. The classes are different in their clothing, recreational activities and eating habits. Besides cultural factors, social factors have an impact on consumers' behaviour. Reference groups have an impact on the individual's behaviour; family is the most influential reference group, as the individual receives the instructions necessary to religious, economic and personal life from his/her parents. The individual becomes the member of several groups throughout the course of his/her life, where (s)he occupies roles and represents statuses. Purchasing decisions are affected by personal aspects such as age, profession, lifestyle, personality, self-image, and economic circumstances. Out of psychological factors motivation drives the individual to act as a need, and the satisfaction of this need results in the reduction of tensions. Perception depends on the personality and on the environment of the stimulus, however, drives motivated individuals to act. Consumers learn through actions, thus human behaviour is learned and therefore they build up own attitudes and beliefs in themselves which will impact their purchasing behaviour. However, it is very hard to change consumer attitudes. (Kotler, 2002)

On the basis of the model of Lewis and Bridger (2001), a new category of consumers appeared. These consumers consciously seek credible products, they are aware of the different forms of food consumption, they are able to take autonomous decisions, they are well-informed, their views have an impact on the people around them, and perhaps their most important characteristic is that they build on trust. (Szakály, 2011)



**Figure 1: Model of Lewis and Bridger (2001) on the characteristics of the new consumer**

*Source: edited by the author on the basis of Lewis and Bridger (2001)*

It is difficult to define young people as a target group, since a clear barrier needs to be drawn between childhood and adulthood on the basis of age, biology, psychology, sociology and law, which raises a number of problems. The income of young generation originates from various sources, such as monthly pocket money, scholarship, student loan, occasional employment, social assistance or own salary. Family values and financial background determine to a large extent what kinds of products they buy. They only purchase those fruit and vegetables that meet their needs. Households buy more and more consciously, thus they avoid purchasing transactions that might lead to food waste. (Aschemann-Witzel et al., 2017) Due to the close family relationships, consumers usually trust their family members' goodwill and opinion-forming power both in cases of food purchase and consumption. Korczynski (2000) defined trust as the conviction of individuals that the other person will not abuse their vulnerability. The basis of trust in families (just like in human relations) is that the other person will not do anything that would be to the detriment of the trusting person. (Tarnai, 2003) In the course of effective ATL and BTL marketing communication particular attention shall be paid to the areas of interest of young people such as active sports, mind-body balance, health, vegetarianism, eco- or organic-orientation, diets, body building. (Töröcsik, 2011) Young people with an own income assume responsibility primarily for themselves; they consume more than the average, since they try to follow the ideal of youth and they benefit from outdoors services. This target group is highly diverse, and they have an increased demand for specificity and exclusivity. (Fodor et al., 2012)

Eating as a cultural norm bears social importance in addition to the gastronomical sense. It is necessary to bear in mind the values and habits guiding customers during the purchasing process. Consumer ethnocentrism grants preference to domestic products, regardless of defined product characteristics. Consumers refuse import products in order to protect domestic markets, since buying import products is considered unpatriotic behaviour. (Fodor et al., 2012)

The significance of food quality and reliability has grown in case of the purchase of fruit and vegetables, just like in case of the other foodstuffs. (Szente, 2009) Consumers trust in the

quality of the various fruits and vegetables, and they expect their needs to be satisfied in this regard. Quality assessment depends on function of the given food's consumption. The essential function of foods is to provide subsistence, thus they satisfy a fundamental human need. (Lakner et al, 1998) Trust is essential in all aspects of life where interdependence, risk and uncertainty are present, just like between the sellers and the buyers of vegetables and fruit. (McKnight-Chervany, 2001) It is not enough to establish economic relations, they should be maintained at the same time. Sellers shall provide consumers confidence to consumers in themselves and their products. (Grönroos, 1999)

### **3. Methodology**

The importance of this research is confirmed by the relevance of the topic. In relation to the consumption of domestic fruit and vegetables there are many factors affecting consumer confidence, in particular, the influence of information. Consumers' confidence in domestic products should not only be gained; it should be maintained at the same time.

To show all this, a quantitative research has been prepared between March and May 2019, with the inclusion of 100 subjects, using random sampling; the questionnaires were tested on 20 subjects. The diversity of the sample is demonstrated by the age group and qualification of young intellectuals.

The research was carried out on the basis of a survey prepared using the Google survey maker and processing system. The first part of the questionnaire was for data on domestic fruit and vegetable consumption habits, while the second part concerned demographic and other data. The questionnaire was prepared based on the book "The Practice of Social Research" by Earl Babbie (Babbie, 2008). Finally, crosstab queries were created using SPSS software.

### **4. Results**

According to the first hypothesis, in case of the population examined in this research, young intellectuals between the age of 18 and 21 mostly use social media sites, such as Facebook, to obtain information.

On the basis of the results obtained using the SPSS software it can be said that the data analysed and the questions are significantly associated, therefore the results thus obtained can be evaluated. (The level of significance is 0.000, which is less than 0.005).

The data in Table 1 demonstrate that most people in the age group 18-21 (77.4%) obtain information on vegetable/fruit consumption through online vlogs (such as Youtube). In case of young intellectuals between the age of 22 and 25 there is no clear distinction in the indicator's value, as social media sites (e.g. Facebook) account for 25.0%, and online vlogs (Youtube) account for 21.9% of preferred channels. Regarding the age group 26-30 it may be observed, that almost half of this age group (40%) prefers social media sites (Facebook).

Unfortunately, among the data gathered in our survey no questionnaire replies were received for the categories of radio, online newsletters, and personal trainer as sources of information, therefore throughout the analysis of the results of our crosstab research these data were ignored and were not indicated in the data summary table.

The information received shows that our above hypothesis was not confirmed, as the target group included in the hypothesis (young intellectuals between the age of 18-21) instead of social media sites regard online vlogs as the most popular information channels.

**Table 1: Ways of obtaining information in the different age groups**

Age * Where do you usually get information on fruit / vegetable picking? Crosstabulation													
			Where do you usually get information on fruit / vegetable picking?										
			Daily news	Weekly news	TV	Web blogs	Online community sites (Facebook)	Doctor nutritionist	Informative books	Family	Friends	Online Vlogok (Youtube)	Total
Age	18-21	Count	0	0	0	2	5	0	0	0	0	24	31
			0,0%	0,0%	0,0%	6,5%	16,1%	0,0%	0,0%	0,0%	0,0%	77,4%	100,0%
			0,0%	0,0%	0,0%	16,7%	17,2%	0,0%	0,0%	0,0%	0,0%	77,4%	30,1%
	22-25	Count	0	2	2	6	8	3	0	3	1	7	32
			0,0%	6,3%	6,3%	18,8%	25,0%	9,4%	0,0%	9,4%	3,1%	21,9%	100,0%
			0,0%	100,0%	50,0%	50,0%	27,6%	60,0%	0,0%	25,0%	33,3%	22,6%	31,1%
	26-30	Count	3	0	2	4	16	2	2	9	2	0	40
			7,5%	0,0%	5,0%	10,0%	40,0%	5,0%	5,0%	22,5%	5,0%	0,0%	100,0%
			100,0%	0,0%	50,0%	33,3%	55,2%	40,0%	100,0%	75,0%	66,7%	0,0%	38,8%
Total		Count	3	2	4	12	29	5	2	12	3	31	103
			2,9%	1,9%	3,9%	11,7%	28,2%	4,9%	1,9%	11,7%	2,9%	30,1%	100,0%

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	67,981 <sup>a</sup>	18	,000
Likelihood Ratio	80,733	18	,000
Linear-by-Linear Association	21,410	1	,000
N of Valid Cases	103		

a. 24 cells (80,0%) have expected count less than 5. The minimum expected count is 1,00.

Source: edited by the author, 2019

According to our second hypothesis, vloggers/bloggers have the greatest impact on the choice of the population of interest for whom the most important is to buy domestic fruit/vegetables. (Table 2)

On the basis of the results obtained using the SPSS software it can be said that the data analysed and the questions are significantly associated, therefore the results thus obtained can be evaluated. (The level of significance is 0.000, which is less than 0.005).

Based on the data of our crosstab analysis, our hypothesis was confirmed. It is shown that in case of those who consider the most important to consume domestic fruit/vegetables (for 43.2% of them) the form of advertising used by vloggers/bloggers is having the greatest impact.

Among advertising categories radio as communication channel was not indicated by the respondents, and therefore it was ignored throughout the crosstab analysis.

**Table 2: Online blogs' and vlogs' impact on the purchase of domestic fruit/vegetables**

		Which advertising has the most impact on you?					Total	
		TV	Poster	Written Online	Online video	logger-vlog		
It is important to buy domestic vegetables / fruits	2	Count	0	0	0	2	0	2
			0,0%	0,0%	0,0%	100,0%	0,0%	100,0%
			0,0%	0,0%	0,0%	9,5%	0,0%	1,9%
	3	Count	0	3	4	0	0	7
			0,0%	42,9%	57,1%	0,0%	0,0%	100,0%
			0,0%	18,8%	19,0%	0,0%	0,0%	6,8%
	4	Count	0	5	2	8	9	24
			0,0%	20,8%	8,3%	33,3%	37,5%	100,0%
			0,0%	31,3%	9,5%	38,1%	30,0%	23,3%
	5	Count	9	4	7	8	5	33
			27,3%	12,1%	21,2%	24,2%	15,2%	100,0%
			60,0%	25,0%	33,3%	38,1%	16,7%	32,0%
	6	Count	6	4	8	3	16	37
			16,2%	10,8%	21,6%	8,1%	43,2%	100,0%
			40,0%	25,0%	38,1%	14,3%	53,3%	35,9%
	Total	Count	15	16	21	21	30	103
			14,6%	15,5%	20,4%	20,4%	29,1%	100,0%
			100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
<b>Symmetric Measures</b>								
		Value	Asymp. Std. Error <sup>a</sup>	Approx. T <sup>b</sup>	Approx. Sig.			
Nominal by Nominal	Phi	,629			,001			
	Cramer's V	,315			,001			
	Contingency Coefficient	,532			,001			
Ordinal by Ordinal	Gamma	,033	,103	,316	,752			
N of Valid Cases		103						
a. Not assuming the null hypothesis.								
b. Using the asymptotic standard error assuming the null hypothesis.								

Source: edited by the author, 2019

## 5. Discussion and Conclusion

Healthy diet and physical exercise are gaining new grounds among young intellectuals. The results of our research prove that the respondents care about nice, aesthetic appearance, appropriate ecological packaging, and freshness. Compared to previous years, Hungarian young intellectuals buy Hungarian products including fruit and vegetables more consciously. Due to the geographical location of Hungary, out of the vegetables grown in the country young people mostly buy tomato, onion, pepper and cucumber on the basis of our random sampling. As regards fruit, they usually buy apple, and out of seasonal fruits, watermelon. Furthermore, the most popular imported fruit is banana.

On the trust young people have in fruit and vegetables not only cultural, social and family values have an effect, but information appearing in the media as well. Young people like to be part of various groups, but at the same time they want to be unique. Consumer ethnocentrism consciously appears among young Hungarians, and this is likely to intensify in the years to come.

In the world of the Internet social media sites have the greatest effect on this age group, where they follow various influencers in their dressing and eating habits. In our first hypothesis we assumed that the age group 18-21 gets the most information affecting trust from social media sites (e.g. Facebook), however this was not confirmed, as our research proved that this age group now uses online vlogs to obtain information, and establishes its trust towards various fruit and vegetables on the basis of the different influencers' opinion. Our second hypothesis, that when buying domestic fruit and vegetables young people are the most impacted by vloggers and bloggers, was confirmed.

In summary, therefore, it can be said that through the use of online channels they not only reach young Hungarian intellectual consumers and catch their attention, but also have an impact on their consumption patterns, choices and trust regarding the consumption of various fruit and vegetables.

## References

1. Aschemann-Witzel J., Jensen J.H., Jensen M.H., Kulikovskaja V. (2017), *Consumer behaviour towards price-reduced suboptimal foods in the supermarket and the relation to food waste in households*, *Appetite*, Vol. 116, pp. 246-258, University of Sussex, Brighton, United Kingdom
2. Ádám D. (2009), *Ökológiai lábnyom, biológiai kapacitás és táplálkozás*. *Élelmezés*, Vol. 11, pp 28-29
3. Buzás G. (2007), *Zöldség-gyümölcs áruismeret*, Nemzeti Szakképzési és Felnőttképzési Intézet, pp. 50-65, Budapest
4. Earl B. (2008), *A társadalomtudományi kutatás gyakorlata*, pp 282-287, Balassi Kiadó, Budapest
5. Horváth Á. (2012), *A fogyasztói magatartás elméleti megközelítése* In.: Fodor M., Fürediné K.A., Horváth Á., Rácz G., (2012), *Fogyasztói magatartás*, Prospektop Nyomda, pp 19, 29, 65, Budapest
6. Grönroos C. (1999), *Relationship marketing: Challenges for the organization*, *Journal of Business Research*, 46, november, pp 327-335
7. Korczynski, M. (2000), *The political economy of trust*, *Journal of Management Studies*, Vol.37, No. 1.
8. Kotler P. (2002), *Marketing menedzsment*, KJK-KERSZÖV Jogi és Üzleti Kiadó Kft, 209-228 pp, Budapest
9. Központi Statisztikai Hivatal (2019), *Az egy főre jutó éves élelmiszer-fogyasztás mennyisége jövedelmi tizedek (decilisek), régiók és a települések típusa szerint*, [https://www.ksh.hu/docs/hun/xstadat/xstadat\\_eves/i\\_zhc023d.html?down=7848](https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_zhc023d.html?down=7848) (10-06-2019)
10. Lakner Z., Somogyi S., Horváth Zs. (1998), *Az élelmiszerminőség és a piac*, In: Horváth Á, Lakner Z, Lehota J, Sass P, Szabó E, Tomcsányi P, Totth G, *A marketing szerepe a minőségi fejlődés megvalósításában*, „Agro-21” Füzetek, 22, pp. 47-64.
11. Lewis D., Bridger D. (2001), *The soul of the new consumer*, Nicholas Brealey, pp 1-246, London
12. McKnight D. H., Chervany N. L. (2001), *Conceptualizing trust: a typology and e-commerce customer relationships model*, *Proceedings of the 34th Annual Hawaii International Conference on System Sciences*
13. Szakály Z. (2011), *Táplálkozásmarketing*, Mezőgazda Kiadó, pp 6, 23-24, Budapest
14. Szente V. (2009), *A bizalom megítélése az ökoélelmiszerek piacán*, *Élelmiszer, Táplálkozás és Marketing VI. évfolyam 1-2*, Kaposvári Egyetem
15. Tarnai M. (2003), *A bizalom szerepe a gazdasági kapcsolatokban*, In: Hunyady Gy, Székely M, *Gazdaságpszichológia*, Osiris Kiadó, p 677, Budapest
16. Töröcsik M. (2011), *Fogyasztói magatartás Insight, trendek, vásárlók*, Akadémiai Kiadó, pp 221-244, Budapest

## CONSUMER BEHAVIOR OF SELECTED GENERATIONS ON THE MILK MARKET

*Alexandra ANDOCSOVÁ*

*Slovak University of Agriculture, Nitra, Slovakia*

*E-mail: sasena.andocsova@gmail.com*

**Summary:** For decades milk and dairy products have been considered an essential part of the food pyramid, which was designed by nutritionists as a visual aid to find out what kinds of foods in what quantities a healthy individual's balanced diet should consist of. However, opinions on the benefit of milk consumption of other animal species differ. In general, in our geographic conditions, milk is considered to be a very important food component not only for children, but also for adults and the elderly. The main aim of this work is therefore to point out the differences in consumer behavior of selected generations in the milk market. Primary data were obtained from 331 respondents through a questionnaire survey from October 2018 to February 2019. The respondents answered 8 classificatory and 28 questions related to the topic of milk consumption that were subsequently analysed using statistical methods (Pearson's Chi-square test and Mann-Whitney U-test). Survey results have shown that consumers consider milk as part of a healthy diet (83.99%) and buy milk mainly for direct consumption (77.65%). Generation Y and baby boomers have similar patterns of milk consumption, but differentiate in their satisfaction with milk quality on the Slovak market, the impact of price and package size, and also in the frequency of milk purchase.

**Keywords:** baby boomers, consumer behavior, generation Y, milk

### 1. Introduction

Until the end of the 19th century, milk produced by animals was used only as a substitute for breast milk for children. It was rarely consumed by adult individuals. Cow milk (as food for adults) started to be popular in the US and Europe only in the late 20th century. In particular, the development of suitable forms of refrigeration and storage, as well as heat treatment and subsequent sudden cooling, helped prolong its consumption.

In Europe, milk with dairy products accounts for 10 to 15% of daily food energy intake. Nevertheless, today's views on their consumption are divergent, which is changing especially behaviour of younger consumers, who have easy access to news from the world of human nutrition and are trying to replace milk-based nutrients with other food sources. Therefore, the main objective of this work was to highlight the differences in consumer behavior of generation Y and baby boomers in the Slovak milk market.

### 2. Literature review

In Slovak Republic milk processing and consumption has more than a hundred-year tradition, but its consumption in the 21<sup>st</sup> century is declining (Kubicová, Kádeková, Dobák, 2014). Compared to other countries of the European Union, consumption is very low (Kurajdová, Táborecká-Petrovičová, Kaščáková, 2015), and it is also insufficient with regard to the recommended annual intake per capita set by the World Health Organization for 200 kg (average consumption of milk and dairy products ranges from 160 to 165 kg) (PS: PR, 2014).

The reasons for this decline are the increasing competition for consumers of all ages in the sale of sparkling beverages and alternative "dairy" beverages based on plants (Alvarez, 2009), health trends, concerns about allergens and claims about the health harmfulness of these products. (Institute of Food Technologists, 2015).

For many years traders and marketers have been using demographic and psychographic variables to identify target consumers to adjust marketing mix and increase sales (Kotler and Armstrong, 2011; Scardino, 2004; Horská et al., 2009). Due to the dynamic nature of the current market, understanding the target segment is a challenge in the long run. Consumers are now more diverse and it is more difficult to attract their attention than ever, because they require products and services that are "tailor-made" to their needs, values and lifestyle (Meredith and Schewe, 2002; Nagy et al., 2018).

The theory of generational cohorts says that people who were born in the same period share similar behavior and values. For this reason, based on similar purchasing habits they report as a group, they can be one segment that marketers can target (Quester et al., 2007, Jackson, Stoel and Brantley, 2010). Two particularly important consumer groups are Baby Boomers and Generation Y. Baby Boomers were born between 1946 and 1964 (Kumar and Lim, 2008). Today, this age category reaches the age of retirement, their children move from home and therefore have enough time and money again. Y generation was born between 1981 and 2000 (Ladhari, Gonthier, Lajante, 2019). These individuals grew up in a period of economic growth, boom of social media and television, disappearance of traditional values, promotion of internationalization with strong folk culture influences (Parment, 2011). It is a very well-informed cohort with the ability to quickly retrieve information and conduct its own research before making a purchasing decision (Wolburg and Pokryvczynski, 2001).

### **3. Methodology**

The main objective of this paper is to highlight the differences in consumer behavior of generation Y and baby boomers in the dairy market. These generations have been chosen for this research, as several studies suggest that these cohorts have unique buying behavior and generations definitions differ, making it difficult to compare two consecutive cohorts.

In order to meet the main objective, we conducted a questionnaire survey on the territory of Slovakia in the period from 16.10.2018 to 4.2.2019. We approached respondents in two age categories to compare their consumer behavior. The generation Y was addressed via social network Facebook and e-mail. Conversely, the baby boomers mostly filled the paper form of questionnaire, which was subsequently transformed into electronic form. These respondents answered 8 classification and then 26 questions on consumer behavior in the milk market.

The data obtained from 331 respondents were first organized into pivot tables, according to which they were graphically and subsequently described verbally. Each question that had a closed character was tested using Pearson's Chi-square test of good match to determine if there was a significant difference between answering the selected question and age of respondent. Among other things, we also used the Mann-Whitney U-Test to evaluate the differences between generations in the assessment of selected factors affecting respondents when buying milk.

In relation to the main goal, we have set the following scientific assumptions:

- we assume that the older generation consumes milk more often.
- We assume that age cohorts will have different milk spending.
- We expect baby boomers to eat more milk than Y.
- We assume a different assessment of selected factors by two age categories.

#### 4. Results and Discussion

Approximately equal shares of respondents (33%) consume milk daily or more times a week and 14.80% a few times a month. Milk was not part of the diet of 19.03%. This group highlighted the negative effects of milk on the human body. Looking at the monthly consumption of milk, lowest monthly consumption of generation Y was 1dc and the highest 7 liters. On average, this generation consumes 2.28 liters per person. Per month baby boomers drink from 5dc to 7 liters of milk with average value 2.4 liters. As indicated by respondents in previous open question, 82,78% consider their consumption sufficient and 17,22% insufficient. 82.78% of the total respondents (81.14% Y and 87.18% baby boomers) have a positive opinion on milk consumption. They justified their attitude as follows: it contains nutrients that are important for the healthy functioning of the human body (calcium, fatty acids, fats or iron), milk is also a food that feeds babies, so it must be suitable for adults too, it has healing effects on human body, the stomach can easily digest it and strengthen the immune system. The other 16.01% thought milk was not a suitable food for humans, because it clogs the body, descales bones and teeth and can contain dangerous bacteria.

The results of the survey showed that 84.89% of respondents provide milk to their household. 15.11% (especially men) do not buy milk, but this does not mean that these people do not consume it, milk can be provided by another individual who lives in one household with the respondent. The subject of the survey was also the periodicity of milk purchase. 36.56% buys milk as needed. About 5% less write milk on their shopping list just a few times a month and 27.49% a few times a week. Milk is purchased every day just by 4.53%. After calculating Pearson's Chi-square test, we found out that at a 5% deviation, there is a statistically proven difference in the frequency of milk purchase among selected generations, since p-value had value of 0.00097. From the purchase point of view (respondents could indicate more options), milk is mainly purchased in hypermarkets and supermarkets (77.95%), small stores owned by private owners (40.79%) and wholesale stores (30.51%), because they have a very dense network of stores, so these results are not surprising at all. Less used are dairy machines (9.97%), purchasing from farms (6.65%) and internet (0.3%). In the question asking about the monthly family expenses for milk, the interviewees had a choice of seven answer options. 10.86% generation Y spend to 5 €, 18.86% from 6 to 10 €, 19.43% from 11 to 15 €, 21.14% from 16 to 20 €, 7.42% from 21 to 25 €, 9.14% from 26 to 30 € and 13.14% above 30 €. The baby boomers' milk expenditure was similar in distribution: 8.97% to € 5, 24.36% from 6 to 10 €, 16.03% from 11 to 15 €, 20.51% from 16 to 20 €, 10, 90% from 21 to 25 €, 9.62% from 26 to 30 € and 9.62% spend more than 30 €. The monthly cost of milk increased with a higher number of people living in a common household. The average cost per liter of milk is 90 cents according to respondents born between 1946 and 1964 and 91 cents according to respondents born between 1981 and 2000. The major difference was in the most numerous answers. Generation Y reported as the most common answer 1€ and the generation of baby boomers 50 cents. This difference can be explained by the fact that almost all respondents of generation Y were economically active, but on the other hand, up to one third of the baby boomers were retired, which also significantly affected their income.

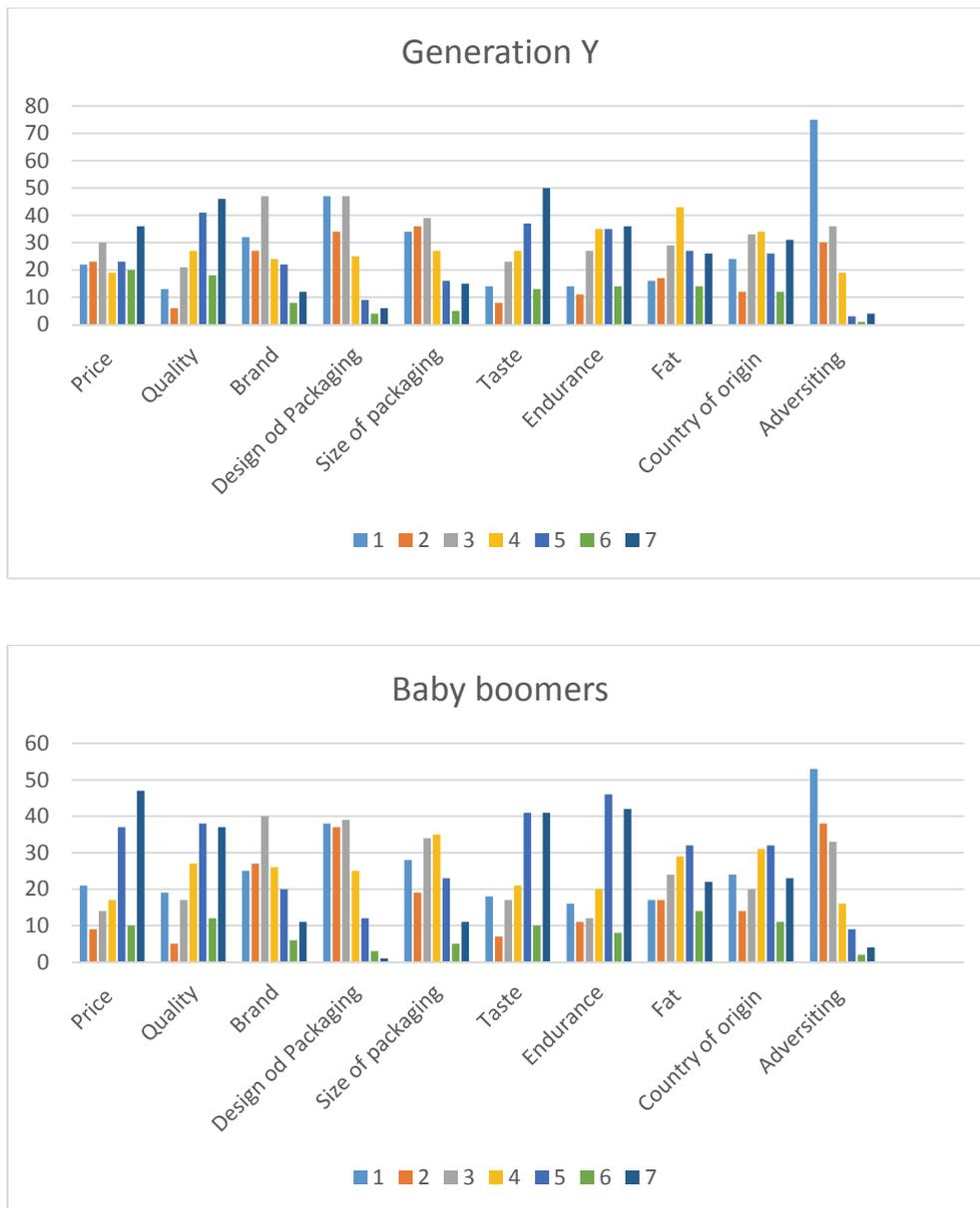
Arguments for buying milk were varied and the respondents could choose more options to answer, so we expressed the results as a share of all respondents. Majority (78.25%) uses milk for the purpose of further processing in the preparation of food and baking. Only one percent less (77.64%) consumes drink milk directly. 17.22% includes milk for its diet due to its health effects and 1.81% for its positive effects in the cosmetics industry. For another purpose (coffee additive or guest), milk has only 1.51% in household.

Several questions also asked about the characteristics of the most frequently purchased milk. 97.28% prefer cow's milk. The response "cow" was chosen by respondents with the highest frequency, perhaps because consumers can not find other types of milk on the shelves of small shops, supermarkets or wholesale stores. 1.81% chose goat's milk and less than 1% chose the option "other" and claimed that they prefer plant based milk. In terms of endurance, 75.83% preferred long-life milk, which can be consumed several months after filling if properly stored. Fresh milk, which contains more nutrients was preferred by 23.87%. The last option (dried milk) was chosen only by two respondents who were on maternity leave with their children. An important factor when choosing a milk is the proportion of fat. Again, the difference between the selected age cohorts is not significant, as half of the two groups prefer 1.5% milk and approximately 40% 3.5% milk. The other 10% were split between low fat, skimmed milk and farm milk for both age categories. The subject of the questionnaire form was also the type of packaging. The unambiguous winner was the tetrapak packaging (almost 80%), which does not increase the price and weight of milk significantly. Approximately 10% buy milk packed in plastic and glass bottles. 77.71% of generation Y and 73.72% of baby boomers choose milk produced in Slovakia. The remaining respondents prefer foreign milk.

Quality, taste and endurance have the strongest impact on generation Y. In general, this group of respondents decides based on the objective characteristics of milk and not on the marketing attributes (packaging, advertising) that have been assessed as minor (Figure 1). On the other hand, baby boomers, in addition to quality and taste, attach great importance to the price. All the selected factors were individually tested by the Mann-Whitney U test. With a 5% variation, generation Y and baby boomers attach different importance only to cost and size of the packaging.

The questionnaire survey also focused on the consumption of specific types of milk. 25% of younger respondents and 17% of the older generation were fans of flavoured milk. According to these respondents, the most popular flavours were chocolate and strawberry. Due to intolerance to lactose, sweeter taste and easier digestibility, 13.90% of respondents (11.43% of generation Y and 16.67% baby boomers) buy milk with added enzyme (lactase) known as lactofree milk.

Among other things, respondents also compared the quality of Slovak and foreign milk. Quality is a competitive advantage of Slovak milk according to 62.84%. The Likert scale was used to assess the satisfaction with milk quality on Slovak market. Up to three-quarters of respondents have a positive view on the issue. The neutral opinion was represented by 19.03% and the negative by 5.44%. As the responses between the generations differed, Pearson's Chi-square test of good match was used. Statistics  $\chi^2$  had value 10.88 and p-value was 0.027. Therefore, the result was significant at alpha 0.05.



**Figure 1: valuation of selected factors by generation Y and baby boomers**

## 5. Conclusion

When trying to characterize consumer behavior when buying milk, based on the results of the questionnaire survey we can state that 84.89% of the respondents purchase milk to their household, 36.56% buy milk into stock in the hypermarkets and supermarkets (77.95%) for cooking meals. Costs of generation Y range between 6 and 20 € and costs of baby boomers are comparable. Respondents, as the most frequently purchased milk, described milk produced by cows (97.28%), in Slovakia (77.71%), heat-treated to prolong consumption time (75.83%), with a 1.5% share of fat in tetrapak packaging (almost 80%). According to Pearson's Chi-square test, generation Y and baby boomers consume milk at the same frequency, but baby boomers consume on average more liters of milk per month. Expenditures on milk of both cohorts were also similar, but statistically there is a difference in the frequency of milk purchase. Looking at the factors influencing the decision-making of the respondents, the selected groups attached different importance only to the price and size of the packaging. There were not many differences among the selected age cohorts, and even those

found were not significant because milk is considered to be a basic foods in our geographical lengths.

Therefore, based on the above, retailers should highlight the positive effects of milk consumption on human health and the objective characteristics of milk to preoccupy consumers of all ages.

## References

1. Alvarez, V. (2009), *The Sensory Evaluation of Dairy Products* (2nd ed.). New York, MA: Springer
2. Horská, E. et al. (2009), *Medzinárodný marketing*. Nitra, MA:SPU Nitra
3. Institute of Food Technologists. (2015), Dairy Free Beverages Expand the Milk Aisle. Dostupné na: <http://www.ift.org/newsroom/news-releases/2015/february/18/dairy-free-beverages-expand-the-milk-aisle.aspx?fullsite=true>
4. Jackson, V., Stoel, L., & Brantley A. (2011, January), Mall attributes and shopping value: Differences by gender and generational cohort. *Journal of Retailing and Consumer Services*, 18 (1), 1-9. doi: 10.1016/j.jretconser.2010.08.002
5. Kotler, P., & Armstrong, G. (2011), *Principles of Marketing* (10th ed.). Upper Saddle River, NJ: Prentice Hall
6. Kubicová, L., Kádeková, Z., & Dobák, D. (2014), Trends in consumption of milk and dairy products in Slovakia after EU accession. *Polityki Europejskie, Finanse i Marketing*, 12 (61), 90-97
7. Kumar, A., & Lim, H. (2008), Age differences in mobile service perceptions: comparison of Generation Y and Baby Boomers. *Journal of Services Marketing*, 22 (7). 568-577 doi: 10.1108/08876040810909695
8. Kurajdová, K., Táborecká-Petrovičová, J., & Kaščáková, A. (2015), Factors Influencing Milk Consumption and Purchase Behavior – Evidence from Slovakia. *Procedia Economics and Finance*, 34, 573-580. doi: 10.1016/S2212-5671(15)01670-6
9. Ladhari, R., Gonthier, J., & Lajante, M. (2019), Generation Y and online fashion shopping: Orientations and profiles. *Journal of Retailing and Consumer Services*, 48, 113-121. doi: 10.1016/j.jretconser.2019.02.003
10. Meredith, G., & Schewe, C.D. (2002), *Defining Markets, Defining Moments: America's 7 Generational Cohorts, Their Shared Experiences and Why Businesses Should Care*. New York, MA: John Wiley & Sons
11. Nagyová, L., & et al. (2018), *Marketing I*. Nitra, MA: SPU Nitra
12. Parment, A. (2011), *Generation Y in Consumer and Labour Markets* (1st ed.). New York, MA: Routledge
13. PS:PR. (2014), Na Slovensku štartuje projekt na podporu spotreby mlieka a mliečnych výrobkov „Biele plus“. Dostupné na: <https://strategie.hnonline.sk/tlacove-spravy/784659-na-slovensku-startuje-projekt-na-podporu-spotreby-mlieka-a-mliecnych-vyrobkov-biele-plus>
14. Quester, P., Neal, C., Pettigrew, S., Grimmer, M., Davis, T., & Hawkins, D. (2007). *Consumer Behaviour: Implications for Marketing Strategy* (5th ed.). Sydney, MA: McGraw-Hill
15. Scardino, E. (2004), Target assortment taps into wider demographics. *DSN Retailing Today* , 43, 24
16. Wolburg, J.M., & Pokryvczynski, J. (2001), A psychographic analysis of Generation Y college students. *Journal of Advertising Research*, 41 (5), 33-52. doi: 10.2501/JAR-41-5-33-52

## THE INFLUENCE OF HOFSTEDE'S CULTURAL DIMENSIONS IN THE JORDANIAN WORKING ENVIRONMENT

*Houda ALEQEDAT*

*Szent István University, Gödöllő, Hungary*

*E-mail: hudaqedat@yahoo.com*

### **Summary:**

**Purpose:** This paper reviewing the literature on the influence of Hofstede's cultural dimensions (PDI), (IDV), (UAI), (MAS), (LTO), (IND) in the Jordanian working environment to recognise the obstacles of cultural and present proposal implementing of culture to improve Jordanian working environment.

**Design/methodology/approach:** This paper is a review paper reviewed periodicals, published articles from social science journals, and related studies, in order to shed light on the literature of application Hofstede's cultural dimensions in Jordan.

**Findings:** most of the studies conducting national culture indicate that there is an influence of culture on the Jordanian working environment. (Alkailani and Kumar, 2016) finds a positive effect of susceptibility to interpersonal influences on consumer innovativeness and found positive effects of the masculinity cultural dimension on this relationship. (Al-Harsh, 2008) finds that Jordanian commercial banks are characterized by high power distance and uncertainty avoidance (UAI), Employees tended to be collective in performance. Also to masculinity in performance and leadership. In addition, individuals don't have towards Long-term orientation in the future. Hofstede's framework had been studied and replicated by many researchers in different settings. In Jordan, Alkailani et al. (2012) replicate Hofstede's study and finds that there are similar scores for Jordanians on the dimensions of Masculinity and Individualism and a difference in the dimensions of uncertainty avoidance and power distance.

**Research limitations:** Lack of studies of the influence of culture on performance relate to developing countries especially in Jordan.

**Practical implications:** The paper recommended managerial implications depend on previous studies. The findings are important for businesses to encourage group influences in the workforce to increase the innovativeness culture. Adopting independent, decentralized and collective applications. Adopting strategic planning to overcome the high power distance index.

**Social implications:** This paper could be useful for the workforce in Jordanian organizations. This paper suggests changing the attitudes of negative cultures that adopted in Jordan. It is expected that if trends of culture change it may contribute significantly to improving the work environment and attract investments.

**Keywords:** Hofstede's cultural dimensions, Jordanian working environment, organisations

### **1. Introduction**

Culture is becoming an interesting issue these days. Different empirical study Hofstede's cultural dimension from various aspects. Culture varies across countries, therefore, culture plays an important role to identify the behavior and determine the values, attitudes of individual thus, influence on the commitment to the company. (Afanah et al., 2014) indicates that the cultural dimension affected the commitment of managers. (Sabri, 2012) indicates that

managers in organizations push by the family schemes. (Al-Harsh, 2008) differences in beliefs, values behavior of individuals lead to disparity in management performs. Therefore, the cultural system contains values and trends that affect mainly the management practices of individuals.

This paper reviewed the studies addressed cultural dimensions in Jordan to contribute and highlight the important role of culture in the organizations. As it is Knowable that Jordan is a developing country. Thus, according to Hofstede's rating, it is characterized by high power distance, high avoiding uncertainty, and high Masculinity, these orientations of culture could affect weakly on the working environment and cause a problem in attracting investments. Therefore, this paper sought to review the impact of Hofstede's cultural dimensions on the Jordanian working environment in order to recognize the obstacles of cultural and present proposal implementing of culture to improve the Jordanian working environment. The paper contributes to the existing literature to highlight the importance of culture and it is an influence on behavior of an individual in Jordanian companies and other aspects such as (employee's performance, corporate performance) in order to improve the workforce in the Jordanian organizations.

#### *Research Objectives*

The key objective of the paper is to review the influence of Hofstede's cultural dimensions in Jordan:

- a.) Exploring the role of cultural dimensions in Jordanian companies.
- b.) Exploring the awareness of the individual in companies about the importance of Hofstede's cultural dimensions.

#### *Research Questions*

The research will answer the key question: In a Jordanian context, how do Hofstede's cultural dimensions theory influence on Jordanian working environment.

#### *Significance/Justification*

This paper will contribute to literature to highlight the importance of culture in the working environment, especially in Jordan context in order to further studies in the future about the cultural dimensions and their impact on other aspects such as the impact of these dimensions on the corporate performance.

## **2. Literature review**

### ***Hofstede's framework Theory***

Literature defined Culture as the encoding of a cooperative attitude: it is part of our adaptation that we share with others (Hofstede, 1983). Culture is the values, actions, common standards (Schwartz, 1999). Culture is thoughtful category parents carry to their children.

Hofstede is considered a pioneer in adopting the culture. His theory the most important culture theory in the literature. Hofstede seeks to find solutions for companies' barriers by developing Hofstede cultural theory that considered a mean to communications across countries and help to identify the effect of culture on the behavior of individuals (Gent, 2014). The culture of society distinguishes between countries. Hofstede starts his research about the culture by conducting a survey on IMB staff companies, as a result, he developed the fourth cultural dimensions. Later he added the fifth dimension Long-term orientation vs. short-term (LTO) in 2010. Lastly, he developed the sixth dimension of Indulgence vs. restraint (IND).

### ***Hofstede's cultural dimensions***

Each Dimension score between (0-100). High grades mean a higher trend in the country for this dimension:

- a.) Power distance index (PDI): Degree of acceptance of the unequal distribution of social power within society.
- b.) Masculinity vs. Femininity (MAS: The division of roles between the sexes (Male) and (female) in society.
- c.) Individualism vs. collectivism (IDV): Collective societies people self-image "we". Individual societies, self-image "I"
- d.) Uncertainty avoidance (UAI): Extent to which individuals feel uncertain about the future.
- e.) Long-term orientation vs. short-term orientation (LTO): Way of thinking typical of cultures related to time. LTO society caring about the future, STO society caring about the past.
- f.) Indulgence vs. restraint (IND): Indulgent society caring about the satisfaction of needs. Restraint society rescinds meeting needs and cares about strict social standards.

### ***The importance of cultural dimensions***

The importance of culture addressed widely in the literature, for example:

- a.) Culture helps to understand the behavior in the future. Thus, managers could set up suitable policies to this behavior in order to help them to control individual behavior (Najia, 2013).
- b.) Further studies show that thoughtful of the cultural develop the commitment as a result leads to achieving the objectives (Afaneh et al., 2014).
- c.) Some studies refer to culture as a determination of the success of the organization or not (Balogh, 2015).
- d.) Cultures shape and influence the individuals (Alkailani et al., 2012).

### ***Previous studies***

There is a shortage of studies related to Hofstede's cultural dimensions in Jordan context. Especially related to the culture with other factors such as (employee's performance corporate performance,...). It is noticed there is some studies have been conducted but in general aspect looking at the impact of culture on the behavior of individuals or the work environment. For example (Al-Sarayrah et al., 2016; Al-Jaafreh et al., 2012; Rababah, 2015; Obeidat et al., 2012).

Reassessment of Hofstede's work on perceived leadership styles in Jordan, The researcher uses four cultural dimensions of individualism/collectivism, uncertainty avoidance, power distance, and masculinity-femininity as the independent variables and the dependent variables are the two leadership styles (task and people). The results show that Jordanian managers tends to be high (collectivism, avoidance of uncertainty, and masculinity) and low power distance. That means high avoidance of uncertainty the manager's focus on keeping business. Jordanian managers tend to be masculine and high avoid uncertainty this means that individuals follow the managers by providing them with missions. Furthermore, Jordanian managers tend to be collectivism by interesting in their employees and offer them the aims of the company and the way to achieve these aims. While the findings show that people's leadership style uncertainty positively correlated with avoidance and power distance. The study recommended understanding the behavior of employees by a re-examination the cultural theories. (Sabri, 2012)

Alkailani et al. (2012) conducted the latter recommendations where he revised Hofstede's cultural dimensions in Jordan by using Hofstede (VSM 94) to measure culture. The results show that the scores of Masculinity and Individualism are the same as Hofstede's rating Arab countries. But the scores of uncertainty avoidance and power distance are not the same as Hofstede's rating Arab countries. Depending on these results it should be to re-measures Hofstede's scores.

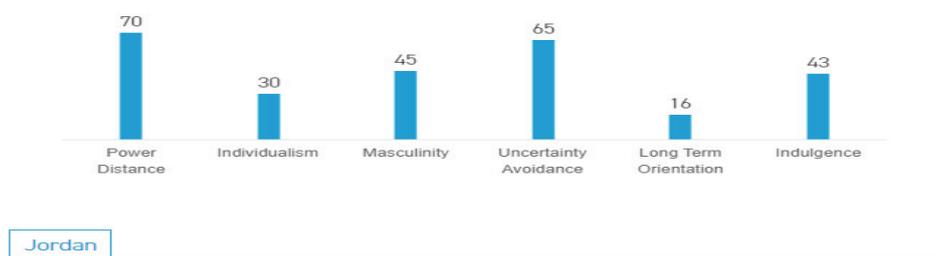
Assessment culture of management in the commercial banks in Jordan. He concludes that there is ignorance of the critical role of culture in Jordanian banks and the influence of this culture on the performance. (Waqfi, 2004)

Alkailani and Kumar (2016) conduct different aspects of the culture he conducted a study on the graduate students to examines the impact of exposure to individuals and cultural dimensions on innovativeness in Jordan. The study concludes that individual's influences positively correlated with innovativeness. The masculinity moderates this relationship. The study asserts about the important of collectivism that progresses the innovativeness. Regarding uncertainty avoidance, the results show there is no relationship.

Al-Harsh (2008) used Hofstede's cultural dimensions, namely Power Distance (PDI); Individualism (IDV); Uncertainty Avoidance (UAI); Masculinity (MAS); Long-term Orientation (LTO) to identify the general characteristics of the Jordanian commercial banks administration and to describe how these dimensions may influence the behaviours of individuals in Jordan. Results showed that Jordanian banks have high power distance, uncertainty avoidance, collectivism and masculinity. Employees prefer to be in short-term orientation. The study recommended to encourage decentralization and collectivism in work.

***Hofstede's cultural dimensions in Jordan***

Hofstede rating Arab countries under the same scores of dimensions (Alkailani et al., 2012). That characterized by high Power Distance (PDI) (80) and Uncertainty Avoidance (UAI) (68), Masculinity (52), Individualism (IDV) (38) which means there are collectivism cultures. Following (Figure 1) Indicate Hofstede cultural scores for Jordan based on the website of Hofstede.



***Figure 1: Jordan values for the 6 dimensions***

*Source: Hofstede insights website*

Following *Table 1* indicates a comparison between the results of re-examined studies of Hofstede's framework in Jordan and the original scores of Hofstede.

**Table 1: Comparison of results of re-examined studies in Jordan**

Dimension	Hofstede-Arab countries (1984, 2001, 2010) * (1980, 1997)**	Alkailani-2012 Jordan	Sabri, 2012
(PDI)	80	7.75	Low
(UAI)	68	110	High
(IDV)	38 collectivism	27.7 collectivism	Collectivism
(MAS)	53	51	High

Source: \*Sabri, 2012; \*\*Alkailani et al., 2012

From the table above it is notable that Sabri (2012) and Alkailani et al. (2012) confirmed that there are contracted results regarding power distance with Hofstede's framework scores. Alkailani et al. (2012) show that Jordan scores of Masculinity (51) and Individualism (27.7) this steady with Hofstede scores of Arab countries, while the uncertainty avoidance (110) and power distance (7.75) are different scores. Sabri (2012) indicates that Jordanian managers oriented to be very high (collectivism, avoidance of uncertainty, and masculinity) orientation and less orientation of power distance.

In conclusion, building on the discussion above the researcher noticed that there is almost no studies have been addressed the two of Hofstede's cultural dimensions (Long-term orientation vs. short-term orientation) (LTO) and (Indulgence vs. restraint) (IND) dimensions. Therefore, the future local studies must be conducted these dimensions to fill this gap.

### **3. Methodology**

This paper is a review paper. Reviewing different periodicals and Journals, focusing on Hofstede's cultural dimensions and their influence on the Jordanian working environment.

### **4. Results and Discussion**

There is a shortage of studies related to Hofstede's cultural dimensions in Jordan context. Especially related to the culture with other factors such as (employees performance corporate performance). This paper reviewed most of the local studies associated with Hofstede's cultural dimensions.

Jordan is a developing country. Thus, according to Hofstede's rating, it is characterized by high power distance, high avoiding uncertainty, and high Masculinity, these orientations of culture could affect weakly on the working environment and cause a problem in attracting investments. Therefore, this paper sought to review the impact of Hofstede's cultural dimensions on the Jordanian working environment in order to recognize the obstacles of cultural and present proposal implementing of culture to improve the Jordanian working environment.

The paper contributes to the existing literature to highlight the importance of Hofstede's cultural dimensions and their influence on the behavior of an individual in Jordanian companies. Further, the impact of these dimensions on (employee's performance, corporate performance, Economic).

The findings of the local studies show that:

- a.) Jordan characterized by high power distance, high avoiding uncertainty, collectivism, Feminine society, short-term orientation, restraint culture.
- b.) Jordan scores High power distance (70) which means hierarchical society and highly centralized. This result confirmed by Al-Harsh (2008). On the other hand, Afaneh et al. (2014), Sabri (2012) and Alkailani et al. (2012) indicate Jordanian managers tend to be low power distance. This result contradicts of Hofstede's findings (1984, 2001, 2010).
- c.) Jordan considered high avoiding uncertainty (65). That means people care to shape their life so they care about the rules, they faith in experts and efficiency and people-oriented to prepare (Alkailani et al., 2012). In addition, people work hard and tend to be busy, time is money in these cultures, and precision in time is the norm. This result confirmed by Al-Harsh (2008), Afaneh et al. (2014) and Sabri (2012). These results are consistent with Hofstede's findings (1984, 2001, 2010), where he indicates that the Arab country scored a high uncertainty avoidance (68).
- d.) Jordan is a collectivistic society (30), collectivism people are interested in the group's goals, association, and cooperation with these groups. Relationships between employer and employee like a family and decisions take into account the employee. As great loyalty to their jobs, due to employer restoring their loyalty by protecting them. These results are consistent with Hofstede's findings that indicate that the Arab countries tend to be collectivism cultures. This result confirmed by Alkailani et al. (2012), Al-Harsh (2008), Afaneh et al. (2014) and Sabri (2012). The previous results are consistent with Hofstede's findings that indicate that the Arab country collectivism cultures (38).
- e.) According to Masculinity Jordan scores moderate low degree (45) this means a Feminine society. These societies focusing on "working for life", where managers seek consensus, and people appreciate equality in their working lives. They do not care about status and there is no distinction between the role (Alkailani et al., 2012). These results contradict with Alkailani et al. (2012). Jordan is masculinity culture (51) which consistent with Afaneh et al. (2014), Sabri (2012), Al-Harsh (2008) and Hofstede classification for Arab cultures that characterized by masculinity society where distinguishes between the role of male and female. It means the Arab organization gives greater visibility to males at the expense of females, also, it gives males greater roles in leadership.
- f.) Jordan is a short-term orientation (16). That means Jordan is a strong normative culture. Caring about past and respect the tradition, prefer quick targets, not prefer to save for the future. This result confirmed by Al-Harsh (2008) and Muna (1980).
- g.) Finally, Jordan has restraint culture (43) which means they do not care about leisure time and control their satisfaction. People's actions are constrained by norms. Pessimism culture (Hofstede, 2010). The restraint society rescinds meeting needs (Oliveira, 2016).

Hofstede's framework has been re-measured by local studies (e.g. Alkailani et al., 2012) Finds that Jordanians Masculinity (51) and Individualism (27.7) which consistent with Hofstede scores, while the uncertainty avoidance (110) and power distance (7.75) are not consistent. (Sabri, 2012) finds that Jordanian managers tend to be very high (collectivism, avoidance of uncertainty, and masculinity) orientation and low orientation of power distance.

In conclusion, Alkailani et al. (2012) and Sabri (2012) assert that power distance scores are varying from Hofstede's scores. Alkailani et al. (2012) show that uncertainty avoidance scores expressively high degree (110) in Jordan and the power distance scores and expressively low degree (7.75).

## 5. Conclusions

This paper reviewed the studies addressed cultural dimensions in Jordan highlight the important role of culture in organizations. Hofstede's rating Arab countries by high power distance, high avoiding uncertainty, and high Masculinity. And since Jordan is a developing country. These orientations of culture could affect weakly on the working environment and cause a problem in attracting investments as the literature indicated.

Therefore, this paper pursued to review the impact of culture on Jordanian working environment in order to recognize the obstacles of cultural and provide the practical implications of culture to improve the workforce in Jordan. The paper contributes to the existing literature to highlight the importance of culture and it is an influence on behavior of an individual in Jordanian companies and other aspects such as (employee's performance, corporate performance). One of the limitations of paper the lack of local studies that addressed the influence of culture concerning the aspects mentioned above especially in Jordan.

The paper contributes to the existing literature by highlighting the importance of culture and its influence on the behavior of individuals in the Jordanian environment. Further, it suggested some managerial implications that important for businesses to encourage group influences in the workforce to increase the innovativeness culture. Such as adopting independent, decentralized and collective applications. Adopting strategic planning to overcome the high power distance index. In order to apply good managerial implications to enhance the performance of an individual or corporate performance. Such recommendations from review studies could improve the performance by adopted collective and decentralized applications, strategic planning.

Finally, depending on the previous studies that find there is the impact of culture on performance this paper proposes to change the attitudes of negative culture adopted in Jordan. It is expected that if trends of culture change it may contribute significantly to improving the work environment and attract investments.

## 6. Recommendations

Depending on the discussion above the researcher suggests conducting further local studies related to the influence of Hofstede's cultural dimensions on (employee's performance, corporate performance, Economic) in the Jordanian working environment for broadening the research results. Particularly, filling the gap regarding the Long-term orientation vs. short-term orientation (LTO) and Indulgence vs. restraint (IND) dimensions.

## References

1. Afaneh, J., Sanjuq, G., Khairreiddin, M., & Qaddoumi, J. (2014), Impact of cultural dimensions according to Hofstede model on organizational commitment of the middle management at Jordanian private universities. *European Journal of Business and Social Sciences*, 3:, pp. 129-146.
2. Al-Harsh, Nafez, Fayez (2008), Measurement and Characterization of management and regulation in the Jordanian Environment Based on Hofstede's Cultural Dimensions: "case study" in Jordanian commercial banks, *Jordanian Journal of Business Administration*, 4:(3)

3. Alkailani, M. and Kumar, R. (2016), Impacting innovativeness: The role of interpersonal influences and cultural dimensions on consumer innovativeness. *Journal of Strategic Innovation and Sustainability*, 11:(1), 62.
4. Alkailani, M., I. A. Azzam, I. Jordan, and A. B. Athamneh (2012), Replicating Hofstede in Jordan: Ungeneralized, Reevaluating the Jordanian Culture. *International Business Research*, 5:(4), pp. 71-80.
5. Balogh, L. (2015), Sport - Culture - Sports Culture. The influence of organisational psychological factors on the performance of sports teams and organisations. The Institute of Physical Education and Sports Science, Gyula Juhász Faculty of Education, University of Szeged.10.13140/RG.2.1.3637.5120.
6. Bullay Gent, E. M. van (2014), Using Hofstede's cultural dimensions to study the relationship between ICTs and the Dutch academic culture, Faculty of Humanities Theses (Master thesis), utrecht university.
7. Hofstede, G. (1983), The Cultural Relativity of Organizational Practices and Theories, *Journal of International Business Studies*, 14:(2), pp. 75-89.
8. Hofstede, G., Hofstede, G. J., Minkov, M. (2010), *Cultures and Organizations: Software of the Mind*, Third Edition Paperback
9. Muna, F. (1980), *The Arab Executives*. London, Mac Mill.
10. Najia, Danbari (2013), The role of organizational culture in controlling the behavior of the worker within the organization, University of Massila, Faculty of Arts and Social Sciences, Department of Sociology and Demography.
11. Sabri, H. (2012), Re-examination of Hofstede's Work Value Orientations on Perceived Leadership Styles in Jordan, *International Journal of Commerce and Management*, 22:(3), pp. 202-218.
12. Schwartz, S. (1999), A Theory of Cultural Values and Some Implications for Work. *Applied Psychology: An International Review*, 48:(1), pp. 23-47.
13. Waqfi, Ali Awad (2004), Development of the culture of the organization to improve institutional performance in the Jordanian commercial banks, unpublished Ph.D., Amman Arab University for Graduate Studies.

## WHY IS ENERGY EFFICIENCY A SIGNIFICANT FACTOR FOR LOCAL GOVERNMENTS AND HOUSEHOLDS?

**Tibor László CSEGÓDI**

*Szent István University, Gödöllő, Hungary*

*E-mail: csegodi.tibor.laszlo@gtk.szie.hu*

### **Summary:**

**Purpose:** Environmental and energy efficiency problems are determinative problems of our present. Each state has some energy efficiency potential; Hungary's energy saving potential by 2030 is greater than the EU27's average. In 2017, 32% of Hungary's energy needs came from domestic production and 68% from foreign markets. The inhabitants are the largest user of final (direct) energy, moreover buildings are responsible for approximately 40 percent of final energy consumption and 36 percent of CO<sub>2</sub> emissions in the EU.

**Approach:** The Energy Union strategy is based on the “energy efficiency first” principle. After 31 December 2020 all new buildings need to be close to zero energy. Therefore, financial support for the private sector is essential in this area. Household energy consumption has been increasing at an annual rate since 2015. Many owner-occupiers lack the necessary financial resources to improve the energy efficiency of their homes. The annual renovation rate of residential buildings varies significantly among Central-Eastern European countries. Local governments will have an important role in spreading environmentally conscious and energy efficient development methods.

**Findings (refer to analysis):** This study presents a short analysis of relevant legal requirements and statistical variables, like household's final energy consumption, or energy poverty in EU member states in order to show, energy efficiency is a hidden aid to achieve energy transition.

**Keywords:** energy efficiency and poverty, public and private buildings, legal requirements, energy intensity

### **1. Introduction**

According to the thought of a well-known climate scientist, John Gardner (State of the World, 2009) see global warming as breath taking opportunities disguised as insoluble problems. Environmental and energy efficiency problems are determinative problems of our present. There is a strong relationship between energy consumption and CO<sub>2</sub> emissions, apart from the depletion of the fossil energy sources, Hungary is highly dependent on them yet. Each state has some energy efficiency potential; the only question is how much they can use it. Hungary's energy saving potential in the middle-term (by 2020 and 2030) is greater than the EU27's average, and that households are by far the sector with the largest potential in Hungary (Ürge-Vorsatz et al., 2010). Energy efficiency has number of benefits such as such as macroeconomic development, public budget increase, enhanced health and wellbeing, industrial productivity and energy delivery improvements (IEA, 2016). Energy efficiency must be an important part of our life, but it is only a part of a higher “idea”, energy sustainability. According to World Energy Council's definition energy sustainability is based on three core dimensions, like energy security, energy equity and environmental sustainability (World Energy Council, 2016).

In 2017, 32% of Hungary's energy needs came from domestic production and 68% from foreign markets. The inhabitants are the largest user of final (direct) energy. Household energy costs have increased significantly from 2007 onwards, with housing maintenance spending accounting for the largest share of expenditure between 2010 and 2013. Then household energy prices fell by 12% in 2014 and by 2.9% in 2015, reducing household overheads. Finally, in 2017, households spent 1.6% more on housing and household energy in real terms than in the previous year (CSO, 2019). Households used 74% of the available energy for heating and cooling.

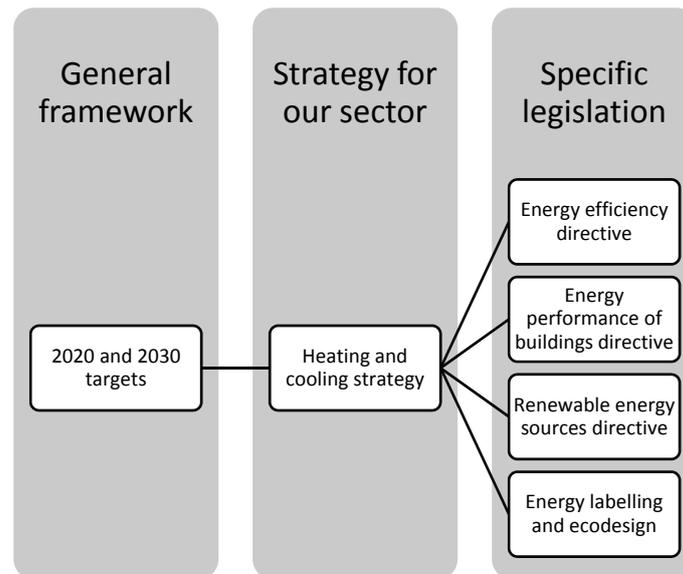
Buildings are responsible for approximately 40 percent of final energy consumption and 36 percent of CO<sub>2</sub> emissions in the EU (Szemző et al., 2019). The potential of efficiency measures that would achieve cost-efficient emission reductions, while reducing energy bills for households and increasing employment in the construction sector could be exploited more rapidly in some Member States (COM 285 final, 2019). The national standards in Central-Eastern European countries are close to those of other EU member states. National-level regulations do play an important role in boosting energy efficiency upgrades in private sector non-residential buildings (such as commercial, industrial and office buildings) (Szemző et al. 2019). The private sector is not able to finance these investments by itself, so it is important to support the energy efficiency improvements in the households by the state more and more predictably. Subsidies for the energy efficient renovation of residential buildings have been available in most countries of the Central-Eastern European region for the best part of the last two decades. However, from the early 2010s, European Union funding has become the main source of nearly all such subsidy schemes (Szemző et al., 2019). Financial support needs to be combined with technical support to help aggregate small scale projects into larger programmes which can drive down transaction costs and attract the private sector at scale.

## **2. Literature review**

### **2.1. Relevant legal obligations**

The Energy Union strategy is based on the “energy efficiency first” principle (*Figure 1*). In 2007 the European Council set the target of reducing greenhouse gas emissions by 20% till 2020, increasing the share of renewable energy sources to 20% and improving energy efficiency by 20% (Mellár 2015). The issue of improving energy efficiency has already emerged from the Fifth Action Program (1993-2002) adopted by the European Council and the Member States as "Towards Sustainability" (Bándi, 2011). The Seventh Action Program (2012-2020) set the target for the EU to move towards low carbon and resource efficiency using policy actions and instruments, thereby pushing the economy to a sustainable growth path by 2020. Directive 2012/27/EU of the European Parliament and of the Council on energy efficiency has set itself the fundamental objective of achieving a 20% energy saving by 2020 for Member States. This means better use of energy resources and a reduce the dependence on imports, which would make the European Union's economy more competitive and lower emissions of carbon dioxide and other pollutants as a result of lower energy consumption. The main purpose of Directive 2010/31/EU on the energy performance of buildings is to promote the improvement of buildings energy efficiency in the European Union. After 31 December 2020, the Directive requires that all new buildings need to be close to zero energy. For new buildings used or owned by public authorities, this deadline is 31 December 2018. In order to make our energy system safer and more sustainable, for example, significant energy efficiency investments are needed, most of which are expected to be carried out by the private sector. Therefore, financial support for the private sector is essential in this area. The European Council set in October 2014 an indicative target at the EU level of at least 27% for

improving energy efficiency in 2030. However, the 2020 energy efficiency targets are at risk as a result of increased energy consumption in recent years. Therefore, the aggregate assessment shows a substantial gap with the Union target levels of primary and final energy consumption of at least 32.5 % by 2030 (COM 285 final, 2019). In June 2018, the amended Energy Performance of Buildings Directive was published. The revised provisions entered into force in July 2018 and the member states have 20 months to transpose the directive into national legislation. This directive will further incorporate into regulation key building features like indoor air quality and ventilation and will encourage more technical solutions that provide holistic responses to the quality of the living environment.



**Figure 1: Energy efficiency targets and EU legislation in 2010s**  
 Source: European Partnership for Energy and the Environment, 2019

According to the European Commission's recommendation on the draft integrated National Energy and Climate Plan of Hungary covering the period 2021-2030 Hungary should further elaborate on the synergies between decarbonisation, the energy security and internal market dimensions with the energy efficiency first principle by explaining how energy efficiency contributes to the cost-effective delivery of the national goals of a competitive low-carbon economy. Substantially increase the ambition towards reducing both final and primary energy consumption in 2030 in view of the need to increase the level of efforts to reach the Union's 2030 energy efficiency target. Propose more ambitious policies and measures that would deliver additional energy savings by 2030.

## **2.2. From energy poverty to renovation – the problem is the same**

Energy efficiency as a problem has not only an environmental and social aspect (in a broader sense) in Hungary but another special aspect too. This is energy poverty, which as a social problem arose in 1970s and 1980s. According to the most common interpretation a household is in energy poverty if the adequate heating is a disproportionate burden, so more than a certain percent of household income is spent for energy bills (Fülöp et al., 2014). Energy poverty as a problem mainly affects elderly people living alone in smaller towns in countryside. 54-60% who lives in energy poverty are not poor in terms of income. Energy poverty still affects nearly 50 million people across the Union (COM 285 final, 2019).

In seven out of the eleven Central-Eastern European countries, the building sector accounts for a bigger share of total energy use than the European average, reaching 50 per cent in Estonia, Latvia and Hungary. In 2017, the share of households in total domestic energy use was 35%, almost the same as in 2016. The annual energy consumption of the population fluctuates mainly due to the winter weather. Household energy consumption has been increasing at an annual rate since 2015 (CSO, 2019). Many owner-occupiers lack the necessary financial resources to improve the energy efficiency of their homes, resulting in a high reliance on subsidies (Szemző et al., 2019). The market potential breaks down as: 37% thermal insulation, 23% replacement of windows, 13% more efficient heating and hot water systems and 27% instalment of renewable energy systems. The building stock in Central-Eastern European countries is relatively young (built mainly after 1946), meaning that a smaller proportion of the stock is subject to special requirements for historical buildings. Also, a high share of the building stock (both residential and public) is built with industrialised/prefabricated technology, making it suitable for energy efficiency renovation using standardised solutions (Szemző et al., 2019). The annual renovation rate of residential buildings varies significantly among Central-Eastern European countries. Government buildings are being renovated at a higher rate than residential buildings. This affects the use of European Union funding for energy efficiency.

According to researchers (Lányi, 2012; The Climate Paradox, 2007) local communities will have an essential role in prevention of climate change - this role will be much greater than what the central authorities would have - that is why it is justifiable to let them take a major role in the fight against climate change. Rural areas and local governments will have an important role in spreading environmentally conscious and energy efficient development methods, because the citizen's energy efficiency (and climate) awareness can be strengthened by local public institutions, mostly municipalities. Furthermore, identifying investment needs and funding sources is necessary for mobilising private investments in energy savings and growth of the energy efficiency services market. The final plans should further elaborate on the role of public bodies' buildings and explore the ways energy efficiency policies could address energy poverty. For the success of the EU's energy and climate plans, the social dimension must be integrated from the outset. This will help to ensure a socially fair, just transition, including in rural areas, and, eventually, social acceptance and public support for reform, for large-scale projects and breakthrough technologies (COM 285 final, 2019).

### **3. Methodology**

During the analysis, besides the literature research performing statistical tests is essential. Analysing data at country level (examining assorted indicators of current 28 European Union member states, from EUROSTAT database) ensure the required information will be available. The relevant research premises were there are a verifiable statistical relationship between energy consumption greenhouse gas intensity and household's final energy consumption. Furthermore, similar statistical relationship between household's final energy consumption and between the number of days and the temperature when the cooling of our home is warranted. Finally, it was necessary to look at all this in the light of the varying degrees of energy poverty in each European Union Member State.

The statistical variables included in this study are the following: population in energy poverty, the share of renewable energies in heating and cooling, gas and electricity prices, energy consumption greenhouse gas intensity and household's final energy consumption. Moreover

GDP per capita in PPS, and heating – cooling degree days. The variables are examined both from the year 2017 and from the interval 2010-2017.

Various kind of statistical methods were used in order to justify the research premises. In order to show the statistical relationship between the chosen variables Pearson’s correlation coefficients (and graphically simple scatter plots) were used. Then The observation units were categorized (countries – European Union member states), like Anglo-Saxon, Central and Eastern European (CEE), Continental, Mediterranean and Nordic countries, in order to do the one-way ANOVA. As post hoc test the Tukey honestly significant difference test, and to create country groups (in terms of all statistical variables) hierarchical cluster analysis method was applied.

#### 4. Results and discussion

From the research results the following ones were selected. The reason behind the selection is these variables form the basis of my research.

According to the Table 1 the SPSS software created two European country groups. Between 2010 and 2017 the energy consumption greenhouse gas intensity increased the least in the Nordic countries but increased in CEE and continental European countries the most. It cannot be stated the same for household’s final energy consumption (see Table 2).

**Table 1: Energy consumption greenhouse gas intensity, 2017/2010 in European Union member states (Tukey HSD test)**

European country-group	N	Subset for alpha = 0.05	
		1	2
Nordic countries	3	0,7636	
Anglo-Saxon countries	2	0,8993	0,8993
Mediterranean countries	6		0,9165
CEE countries	11		0,9168
Continental countries	6		0,9405
p-value		0,054	0,898

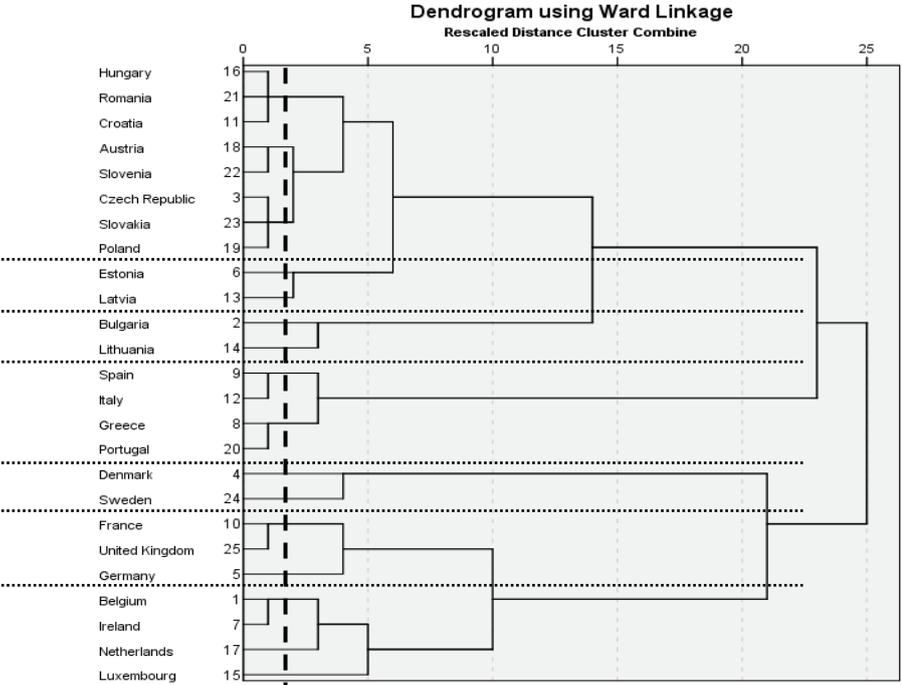
Source: own work, according to EUROSTAT database

**Table 2: Household’s final energy consumption, 2017/2010 in European Union member states (Tukey HSD test)**

European country-group	N	Subset for alpha = 0.05
		1
Anglo-Saxon countries	2	0,7995
Continental countries	6	0,9071
CEE countries	11	0,9194
Nordic countries	3	0,9414
Mediterranean countries	6	1,0059
p-value		0,059

Source: own work, according to EUROSTAT database

The dendrogram (see Figure 2) shades slightly the facts mentioned previously. Examining the formed country groups at distance 5 seems to be necessary. 7 country groups can be distinguished. Considering all statistical variables and data from the year 2017 Hungary is in a group with post-socialist countries (like Romania, Croatia or Poland) but with Austria too. Other established country groups (Mediterranean countries: Italy, Greece, Portugal, Spain; or Nordic countries: Denmark and Sweden) consider the group formation aspects which were defined previously.



**Figure 2: Dendrogram of European Union member states, according to data from 2017**  
*Source: own work, according to EUROSTAT database*

**5. Conclusion**

In Hungary, in the case of building energy modernization, the most significant investments with the highest saving potential are the most typical ones, which cover mainly thermal insulation of buildings, exchange of doors and windows and modernization of their heating. Developments mainly involved educational institutions, public office buildings and municipal offices and buildings. It can be said, once they have started in a good direction, municipal energy efficiency investments can serve as a good example for the residential sector investments, thereby further increasing the ability to meet our EU commitments by 2020. It should be an obligatory for local governments/municipalities to communicate very effectively their results in saving energy and energy costs due to their renovations to local citizens.

It can be stated that the follow-up of investments in energy efficiency is inadequate, so in many cases it is not possible to know exactly what energy and cost savings have been achieved for each investment. Regarding building energy improvements, complex investment is certainly advisable, as it can achieve the highest energy saving potential. This can result in a savings potential of around 50% to 60% with thermal insulation, door opening and heating upgrading. Renovations in buildings are largely dependent on the technical condition of the buildings, as they can reach a level, they are no longer touching but will be more economical

in their complete rebuilding. It is difficult to obtain savings from energy efficiency investments; this may be because their follow-up is very bad. It cannot be accurately stated that the amount of energy and thus energy cost saved as a result of the refurbishments, although in most cases the cost of energy expenditure itself was the most motivated development.

## References

1. Antal, Z. L. (2007), Interjú – A klímaparadoxon (Interview – The climate paradox). *Lélegzet*, Vol. 17.
2. Bándi Gy. (2011), *Környezetjog (Environmental Law)*, Osiris Kiadó, Budapest, Hungary
3. European Commission (SWD 267 final) (2019), Recommendation on the draft integrated National Energy and Climate Plan of Hungary covering the period 2021-2030 (Brussels, 18.6.2019)
4. European Commission (COM 285 final) (2019), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. United in delivering the Energy Union and Climate Action - Setting the foundations for a successful clean energy transition (Brussels, 18.6.2019)
5. European Partnership for Energy and the Environment - <https://www.epeeglobal.org/energy-efficiency/> (27.06.2019.)
6. EUROSTAT database - <https://ec.europa.eu/eurostat> (02.07.2019.)
7. Fülöp, O., Lehoczki-Krsjak, A. (2014), Energiaszegénység Magyarországon (Energy poverty in Hungary), *Statisztikai Szemle (Statistical Review)*, Vol. 92.
8. Hungary, 2018 (2019), Central Statistical Office, Budapest, p. 238.
9. International Energy Agency (2016), *Energy Efficiency Indicators Highlights*, Paris, France p. 154
10. Lányi, A. (2012), Fenntarthatóság és közpolitika (Sustainability and Politics). In Pánovics A. – Glied V. (ed.) *Cselekedj lokálisan! (Act locally!)*, Pécs: University of Pécs.
11. Mellár B. (2015), *Energiahatékonyság*. [http://www.europarl.europa.eu/atyourservice/hu/displayFtu.html?ftuId=FTU\\_5.7.3.html](http://www.europarl.europa.eu/atyourservice/hu/displayFtu.html?ftuId=FTU_5.7.3.html) (30.03.2016.)
12. State of the World (2009), *Into a Warming World*, The Worldwatch Institute, Washington
13. Szemző H., Gerőházi É., Gertheis A., Ámon A., Fülöp O., Magyar L. (2019), *The Energy Transition in Central and Eastern Europe – The business case for higher ambition*. Cambridge Institute for Sustainability Leadership and The Prince of Wales's Corporate Leaders Group, p. 32.
14. Ürge-Vorsatz, D., Arena, D., Tirado Herrero, S., Butcher, A. (2010), *Employment Impacts of a Large-Scale Deep Building Energy Retrofit Programme in Hungary*, CEU, Budapest, p. 158.
15. World Energy Council (2016), *World Energy Trilemma Index, Full report*, UK, p. 147

## PERCEPTION OF RUNNING A BUSINESS BY THE YOUNG GENERATION OF POLES

*Aleksandra PTAK*

*Częstochowa University of Technology, Częstochowa, Poland*

*E-mail: aleksandra.ptak@wz.pcz.pl*

**Summary:** From the beginning of history, management has been associated with entrepreneurship and entrepreneurs. Starting a business and business activities is free for everyone on equal terms with conditions prescribed by the law. Any natural person conducting business activity, that is characterized by economic activity within the meaning of the act of law, is an entrepreneur. Entrepreneurship is about the willingness and ability to take up and solve new problems, in a creative and innovative way, it is a trait of action aimed at ensuring rational and effective coordination of the company's economic resources. In practice, this concept is understood as the form of work or as the fourth factor of production (next to work, land and capital). Entrepreneurship is associated with hard work, determination in the pursuit of success and sacrifices. Acquiring the skills to manage the company becomes the first step to succeed.

**Purpose:** The paper presents basic issues related to running the business, and the genesis and essence of entrepreneurship. Attention is paid to what qualities and skills should be held by an entrepreneurial person. Since the development and promotion of entrepreneurship education in schools has been one of the key priorities of the European Union member states for years, the article also presents the results of the survey conducted in 33 countries belonging to the Eurydice network on entrepreneurship education. The paper is enriched by results of a study conducted among students of the Częstochowa University of Technology regarding their perception of doing business.

**Design/methodology/approach:** For the research, the author chose non-random sampling method – convenient sampling.

**Findings:** Information on respondents' professional activity, career planning, knowledge about starting own business and attitude to doing business, will be presented.

**Keywords:** business, entrepreneurship, career planning

### 1. Introduction

Entrepreneurship is of interest to many scientific disciplines, including economics, organization and management. Running a business is for many reasons very convenient form of professional life. The entrepreneur sets his own goals, working time, scope of activity, controls his own income by appropriately limiting investments, sets himself a vacation at a convenient time, etc. Independence offered by economic activity is of high risk, requires courage to make strategic decisions (Shepherd, Williams, Patzelt, 2015, p 18). At the beginning, the entrepreneur must demonstrate knowledge f. ex. in the field of taxation, project financing and creating facilities for his own company. World Entrepreneurship Report AWMAY 2013 (Amway, 2013), developed in cooperation with the Technical University of Munich, shows that more than two-thirds (70%) of Poles have a positive attitude towards self-employment. Respondents with university education show the most positive attitude towards entrepreneurship. Almost every fourth respondent in the world also sees the opportunity to

start the business. Unfortunately, despite such a positive attitude, this does not translate into the actual number of established enterprises. The biggest obstacle is the fear of failure.

## **2. The genesis and essence of entrepreneurship – literature review**

Entrepreneurship has existed since human emergence, but the importance of the term has evolved over the years. The term "entrepreneur" appeared in the economic literature at the turn of the 17th and 18th centuries. The first person who attempted to define the concept of entrepreneur and entrepreneurship was the French economist R. Cantillon. In 1775, he described entrepreneurship as hunting for bargains wherever local imbalances in the market could bring extraordinary profit (Bławat, 2003, p. 17). At the turn of the 19th and 20th centuries, entrepreneurship entered into the canon of economic considerations thanks to A. Marshall, who was the first to recognize the production organization (also known as production entrepreneurship) as the fourth factor in the economy - the entrepreneur makes such combinations of other factors of production, to increase the efficiency of their use or to obtain completely new, innovative solutions (Ravix, 2014, p. 66).

Currently, in the economic literature, entrepreneurship is most often identified with establishing and running the business. This applies to the establishment of small, family businesses as well as medium-sized enterprises (Liñán, Fayolle, 2015, p. 908). P. Drucker, believes that entrepreneurship is at the heart of the creation of the enterprise. It manifests itself in efficient and effective management, in adapting to changes taking place in the environment, as well as in taking risks. The economic expression of entrepreneurship is, according to him, the profit and development of the enterprise. R. Griffin is of a similar opinion, he claims that entrepreneurship is the process of organizing and running the business and taking related risks. In his opinion, it has a procedural character and is subject to the analysis of successive phenomena, which remains between them in a causal relation. A new approach to the discussed issue is the development of entrepreneurship in already existing companies, usually large ones, with a complex organizational structure (Griffin, 2008, p. 112). This type of entrepreneurship is referred to as intrapreneurship or corporate entrepreneurship, and the creator is considered to be G. Pinchot (Žur, 2007, p. 15). Currently, it is an important area of scientific reflection, showing how to balance corporate bureaucracy with innovative activities, enabling the preservation of competitive advantage. According to this approach, an entrepreneurial enterprise is the company which can perceive opportunities in the environment, has an impact on the emergence of new ideas and can implement them in practice.

### ***2.1. Features and skills of an entrepreneurial person***

The entrepreneurial persons undertake innovation-oriented activities that contribute to the development of the enterprise to a large extent. One of the main sources of innovation is observation of changes taking place in the market structure and their use. Innovative activities should be continuous, they cannot occur only during certain periods of time. They should also apply to all areas of the company's operation. Entrepreneurs should always think how to improve the operation of the company to be more effective. In addition to satisfying the needs of customers to the best extent, the ability to arouse the needs that the organization can satisfy and the client is unaware of them, is important (Łochnicka, 2016, p.33). Currently, competitors are racing in awakening customers' needs. Therefore, it is necessary to act in such a way that the company is the first to awaken a given need for clients. Entrepreneurial person should be honest in dealing with other people. This is very important feature from the point of view of the possibility of cooperation with others, thanks to which it can achieve its goals.

Such person should also have the skills to implement the tasks set before, the ability to establish and maintain contacts with other people and to shape favorable climate in the enterprise, the ability to diagnose the environment in which the enterprise operates, numerous problems that occur and creative skills of solving them (Tarnawa et al., 2014, p. 17).

The high variability of the external and internal conditions in which the company operates forces entrepreneurs to make decisions constantly. These are usually strategic decisions that have a decisive impact on its operation. Entrepreneurs have to be able and willing to make decisions. Because not everything is predictable, they must tolerate uncertainty, so they should not be afraid of risk. It is important to be able to take risks within reason, which is, one can take risks until the potential benefits of making decisions outweigh the losses it may cause. Decisions should be rational, meaning the best that can be taken under specific conditions. Entrepreneurial persons accomplish most of their goals by cooperating with others (McKeever, Jack, Anderson, 2015, p. 53). So one of their basic skills is the ability to motivate employees. They must have such an impact on employees that they behave according to their expectations (Cornelissen et al., 2015, p. 5). In addition to exerting influence, they should be able to encourage employees to work by following the principles of motivation and using motivational tools tailored to the employee's needs. It is about creating conditions for the employees to act so they can use their ideas that can be beneficial for the company.

## ***2.2. Teaching entrepreneurship in schools in Europe - results of the report***

In the years 2014/2015, a report was prepared, that took into account the latest European trends in entrepreneurship education in primary, secondary and vocational schools. Information was collected in 33 countries belonging to the Eurydice network (Eurydice, 2016). 38 education systems were analyzed. According to the findings of the report, eleven of them had in 2014/15 a separate strategy devoted to entrepreneurship education, and eighteen had a strategy covering the development of entrepreneurship. Nine countries did not have any national strategies on entrepreneurship. Based on the collected data, authors of the report analyzed four strategic goals: civic activity, social entrepreneurship, creation of new enterprises and increasing employment opportunities. Twenty countries refer to at least three of the above-mentioned goals in their strategies. As the results of the report indicate, separate social entrepreneurship strategy have: Belgium, Estonia, Finland, Wales, Bosnia and Herzegovina, Montenegro, Macedonia and Norway. The strategy for education, training and/or youth have: Bulgaria, Austria, Poland, Slovenia and Turkey.

Different learning outcomes relating to entrepreneurship (attitudes, skills and knowledge) are included in the curricula of European schools to a very different degree (Fayolle, Gailly, 2015, p. 81). Only fifteen countries declare a comprehensive set of learning outcomes in the field of entrepreneurship. Lack of comprehensive training results in the field of entrepreneurship can be considered as one of the main obstacles to the development of effective and high quality education in this field. Inclusion of learning outcomes in the assessment process is also an important determinant of the place of teaching entrepreneurship in school programs.

In the years 2014/15, entrepreneurship was included in the set of compulsory subjects in primary schools in fourteen countries. Only seven education systems contain elements of compulsory entrepreneurship education for prospective teachers, and only one provides compulsory education in this area for all candidates for the profession.

### 3. Methodology and research results

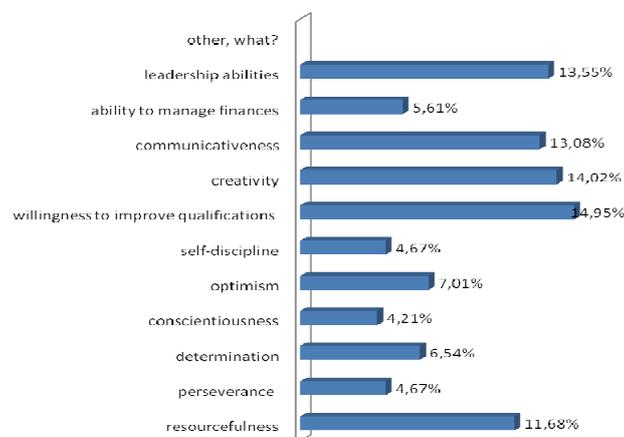
The research on perception of young Poles on doing business, was conducted among students of Czestochowa University of Technology from April to June 2019. For conducting the study the author chose convenient sampling.

The questionnaire in total consisted of 9 questions. The first three of them were about the sex, age and the studies degree of the respondents. Other questions were related to knowledge on entrepreneurship and knowledge related to running the business, as well as what qualities should be an entrepreneurial person and whether respondents are considering running a business.

It was one-off survey, the questionnaire was in a form of paper, and it was handed over to fill by the respondents. All the survey questions were closed questions, six of them were questions of a single choice and three were questions of multiple choice (up to 3 answers). All of received questionnaires were filled out correctly.

The survey was conducted on a group of  $n = 214$  students of three fields of study at the age of 18 to 48 years. They all were students of 1st degree, studying in full-time (166 respondents) and part-time (48 respondents). It was a one-off survey, it involved 70 women and 144 men. The questionnaire had a form of paper, and it was handed over to fill the respondents in the classroom, all the survey questions were closed questions of a single choice.

Figure 1 shows features that according to respondents characterize entrepreneurial people the most.



*Figure 1: What features should have an entrepreneurial person?*

As shown in Figure 1, the highest percentage of respondents choose willingness to improve qualifications (14,95%), creativity (14,02%) and leadership abilities (13,55%). The least answers were obtained by conscientiousness (4,21% of responses received), self-discipline and perseverance, both 4,67%.

The next question of the questionnaire concerned issue as to whether the respondents believe entrepreneurship can be learned or not. According to the responses received, as much as 52% of respondents are of the opinion that entrepreneurship can be learned, while 30% believe that one cannot learn it 18% of students have no opinion about it.

In the next question, students were asked to choose the main advantages of running their own company. The main advantages, according to respondents, are independence from the boss (19,6%), employment security (18,2%), ability to implement own ideas (15,5%) and possibility of obtaining additional income (15%). The least significant advantages of running own business were transforming passion or hobby into a source of income (4,7%), possibility of self-development and self-realization (12,6%) and work whenever, wherever and with whom they want (14%). One person choose answer "other" but did not write what she/he meant by choosing this answer.

The next question concerned the main disadvantages which, in the opinion of the respondents, are associated with starting and running own business. According to given responses, the most often chosen disadvantages were: big responsibility (17,76%), financial issues (17,29%), bureaucracy (15,42%), often irregular income and fear of failure, both 13,55%. Other student responses were: lack of idea for the company (10,75%), lack of sufficient knowledge about starting the business (9,81%). Fore respondents are of the opinion that starting own business has no disadvantages.

Since the respondents were both young people, right after high school and also students of part-time studies, whose age was up to 48 years, the next question was whether are among them people who run business activity. According to given answers, among the group of respondents, there was no one who runs own business.

The last question of the survey concerned whether the respondents plan to start their own business in the future or not. 43% of respondents believe that in the future they would like to work on their own account, 47% of them do not plan to set up own business. The remaining 10% of respondents have no opinion about running own business.

#### **4. Conclusion**

The education system in Poland has had its first years of experience related to the introduction and improvement of entrepreneurial education. This education, together with the acquisition of appropriate skills and shaping attitudes, has a significant impact on the entrepreneurial behavior of the society, and thus on the country's economic development. In secondary schools, a compulsory subject – „basis of entrepreneurship” is conducted, and the offer of academic centers in the areas of economic programs and specializations is constantly at a very high level. In recent years, there is a tendency to increase interest in entrepreneurship among high school and university students (Siegel, Wright, 2015, p. 585). All this constitutes the appropriate basis for the transformation towards the society characterized by knowledge, skills and entrepreneurial attitudes at a level congruent to the ever-evolving free market economy.

According to the research results, students have a positive approach to doing business, despite the fact that none of the persons surveyed is conducting business activity, which may result from their young age, almost half of them declared their willingness to start a business in the future. Answers obtained on the remaining questions suggest that the people who took part in the study realize what is involved in running the business, are able to define the advantages and disadvantages of running such activity, they can indicate the characteristics that entrepreneurial individuals should characterize. In the conducted survey, only in relation to two questions respondents have chosen answer "I have no opinion" (this option was able to be displaced in any question 4-9). This seems to indicate the general knowledge about entrepreneurship. On the other hand, on the basis of the author's own experience, one may be

tempted to say, that such a state of affairs may result from the young age of the respondents and their perception of the world ("everything can be done") and also lack of experience and knowledge about problems related to starting or running the business and most importantly about what keeps the company on the market.

## References

1. Amway (2013), światowy raport o przedsiębiorczości, [http://networkmagazyn.pl/swiatowy\\_raport\\_o\\_przedsiębiorczosci\\_amway\\_%202013](http://networkmagazyn.pl/swiatowy_raport_o_przedsiębiorczosci_amway_%202013) (access date: 12.05.2019)
2. Bławat F. (2003), *Przedsiębiorca w teorii przedsiębiorczości i praktyce małych firm*, Gdańskie Towarzystwo Naukowe, Gdańsk
3. Cornelissen J.P., Durand R., Fiss P.C., Lammers J.C., Vaara E. (2015), Putting Communication Front and Center in Institutional Theory and Analysis, *Academy of Management Review* Vol. 40, No. 1, <https://doi.org/10.5465/amr.2014.0381>
4. European Commission/EACEA/Eurydice, (2016), *Entrepreneurship Education at School in Europe. Eurydice Report*. Luxembourg: Publications Office of the European Union, doi:10.2797/875134
5. Fayolle A., Gailly B. (2015), The Impact of Entrepreneurship Education on Entrepreneurial Attitudes and Intention: Hysteresis and Persistence, *Journal of Small Business Management*, 53:(1), pp. 75-93., <http://dx.doi.org/10.1111/jsbm.12065>
6. Griffin R.W. (2008), *Fundamentals on Management*, Houghton Mifflin Company, Boston, New York
7. Liñán, F. & Fayolle, A. (2015), A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda, *International Entrepreneurship and Management Journal*, 11:(4), pp. 907-933., <https://doi.org/10.1007/s11365-015-0356-5>
8. Łochnicka D. (2016), *Przedsiębiorczość pracownicza i jej wpływ na efektywność organizacji*, Wydawnictwo Uniwersytetu Łódzkiego
9. McKeever E., Jack S., Anderson A. (2015), Embedded entrepreneurship in the creative reconstruction of place, *Journal of Business Venturing*, 30:(1), pp. 50-65, <https://doi.org/10.1016/j.jbusvent.2014.07.002>
10. Ravix J. L (2014), Localization, innovation and entrepreneurship: an appraisal of the analytical impact of Marshall's notion of industrial atmosphere, *Journal of Innovation Economics & Management*, vol. 2, no 14, pp. 63-81.
11. Shepherd D. A., Williams T. A., Patzelt H. (2015), Thinking About Entrepreneurial Decision Making: Review and Research Agenda. *Journal of Management*, 41:(1), pp. 11-46. <https://doi.org/10.1177/0149206314541153>
12. Siegel D.S., Wright M. (2015), Academic Entrepreneurship: Time for a Rethink? *British Journal of Management*, 26:(4), pp. 582-595., <https://doi.org/10.1111/1467-8551.12116>
13. Tarnawa A., Zadura-Lichočka P., Zbierowski P., Nieć M. (2014), *Global Entrepreneurship Monitor Poland. Report 2013*, Polska Agencja Rozwoju Przedsiębiorczości, Warszawa
14. Żur A. (2007), *Intraprzedsiębiorczość jako innowacyjna koncepcja zarządzania*, [w:] *Prace z zakresu przedsiębiorczości i innowacji*, red. A. Stabryła, Wydawnictwo Akademii Ekonomicznej w Krakowie, Kraków

## THE IMPACT OF SOCIAL CAPITAL ON THE QUALITY OF WORKPLACE ENVIRONMENT IN THE EUROPEAN UNION

*Igor BORISOV<sup>1</sup>, Szergej VINOGRADOV<sup>2</sup>*  
*<sup>1, 2</sup> Szent István University, Gödöllő, Hungary*  
*E-mail: igorgborisov@yandex.ru*

### **Summary:**

**Purpose:** The quality of the work environment must take into account the challenges of the digitalization era. This means a strong demand to encourage creativity, decision-making and other elements of human-oriented relationships between management and employees. Therefore, the overall goal of this study is to examine the impact of social capital on the workplace environment in the European Union. More specifically, the current research addressed the following hypotheses: social capital is associated with 1) organizational trust; 2) a significant negative effect on aggressiveness and social toxicity of the working environment; 3) the creativity of employees. Also, an analysis of differences between public and private sectors in the indicators of the workplace environment has been conducted.

**Design/methodology/approach:** To achieve our research aims, secondary data analysis was conducted, using the European Social Survey (ESS), World Values Survey (WVS), European Working Conditions Survey (EWCS). Analysis of variance, cluster analysis, correlation analysis, and factor analysis were estimated to address the hypotheses.

**Findings/limitations:** Results indicated a significant relationship between the elements of social capital and workplace environment for anyone factor examined. The strengths of this study include large sample size, high response rate, prospective study design, and statistical control for a number of potential and already known confounding factors. Several limitations of this research related to the scales of variables were also identified in practical work. For example, in the same reports, part of the scales could be binary, and the other could contain five levels on the Likert scale. In order to maintain the accuracy and uniformity of certain groups of indicators, some of the questions had to be abandoned.

**Practical implications:** Based on these results, this study includes implications for practice as well as recommendations for future research. The implications of the new findings are also discussed. The findings of this research have made several contributions to the literature and can be of use to policymakers in both developed and developing countries.

**Keywords:** creativity, innovation, social capital, organizational trust, workplace environment, public and private sectors

### **1. Introduction**

Process of changes and revolutions at the today society is fast and quick in which it's future different theories on economics have made a revolution in organizational performance during the past decade. This revolution has affected traditional capital forms such as constructions and types of equipment. These intangible capitals have a great role in the development and growth of an organization. We are not aware of any direct research with precise questions covering this topic. Therefore, first of all, on the basis of existing works, we tried to make a score on the basis of mosaic statements presented in the European Working Conditions Survey, and the European Social Survey.

## 2. Research Background

Modern organizations are obsessed with innovation. It seems to us that managerial environment helps to find a balance between the interests of the organization, represented by innovation, and, on the other hand, the interests of employees, represented by the degree of their satisfaction. The main reason for innovativeness is whether the internal environment that management creates motivates employees to engage in innovation (Alpkan et al., 2010; Dorenbosch et al., 2005). A relationship between the organization and the employee characterized by support and trust is important for innovative work behaviour (Scott, Bruce 1994). Management with ineffective and detrimental leadership behaviour, termed as toxic, destructive, or tyrannical leadership, has an adverse impact, not only on the organization but also on the well-being of the employees (Chukwura, 2016). Conversely, through trust-building and recognition management can get participation from employees are innovation (Burroughs et al., 2011; Pieterse et al., 2010).

The job satisfaction, as defined by Lock (cited in Gruneberg, 1979, p. 3), is a pleasurable positive emotional state as a result of work appraisal from one's job experiences. Researchers have found positive linkages between general workplace attitudes and individual performance outcomes (Iaffaldano, Muchinsky, 1985). One implication is that changes in management practices that increase employee satisfaction may increase business outcomes, including profit (Harter, et al., 2002). Employees satisfaction can enhance productivity and organizational performance (Cropanzano et al., 1993). Deeper job satisfaction is positively related to, for instance, employee motivation, performance, and pro-social work behaviour (Ilies et al., 2009; Judge et al., 2001).

At the same time, the satisfaction of smart and complex work is much greater. In this regard, for example, employees working in innovation-oriented cultures have been found to demonstrate higher levels of satisfaction and commitment (Quinn, Spreitzer, 1991).

The existence of social trust is the most important foundation of trust and the first step for interpersonal relations. Social researchers are increasingly using a trust to explain various levels of cooperation evidenced in differing social and political environments (Navickas et al., 2014). In order for people to cooperate to achieve their goals, they need not only to know one another but also to trust each other so that they will not exploit or cheat in their relationship and can expect truly to benefit from their cooperation (Field, 2003). Trust, defined as the willingness to be vulnerable based on positive expectations regarding the intentions of another party (Mayer et al., 1995; Rousseau et al., 1998), is of critical importance for organizations. Trust can be horizontal between an individual and their team members or vertical between an individual member and their supervisor (Mayer et al., 1995; Schoorman et al., 2007). Without trust, their behaviour shifts towards self-protection (Colquitt et al., 2011). The norm of reciprocity allows for individuals to be more trusting of, and committed to, one another (Cropanzano, Mitchell, 2005). Trust maintains social exchange (Konovsky, Pugh, 1994) and can affect the relationship between behaviour and performance (Homans, 1958). In line with Scott and Bruce (1994), among others, the trust conditions individual innovative work behaviour aimed at improving workplace performance.

Job autonomy, closely related to trust, can be an antecedent to individual entrepreneurial behavior (De Jong et al., 2015). When employees trust their team colleagues and supervisors, they are more likely to engage in risk-taking and innovative behavior aimed at exceeding task demands (Mayer et al., 1995).

According to our idea management may create a psychologically safe organizational environment with regard to innovative work behavior to apply personal-orientation mechanisms. Thus, the empirical researchers have examined environmental characteristics that can affect creativity at work (Oldham, Cummings, 1996). An organizational environment characterized by autonomy provides employees with the necessary decision latitude for the development of new innovative ideas (Janssen, Van Yperen, 2004).

Differences between the public and the private sector are well documented in the literature (e.g., Boyne, 2002; Van der Wal et al., 2008). A major difference is that while the purpose of the public sector is to provide services to citizens, the private sector aims mostly at maximizing financial gain (Ghobadian et al., 2007). Even in a crisis occurs, Public sector, follows special laws and regulations ensuring the stability of the personnel. That is why in most EU countries, public sector careers are becomes considered as more secure than careers in private companies in recent years (Habanik et al., 2018). Although considerable similarities between the sectors do exist (e.g., in structure, client orientation, heterogeneity of outcomes, managerial techniques, and performance measurement), differences have always fascinated researchers seeking to identify the uniqueness of each sector.

### ***Hypotheses***

Based on reviewing the literature we shall make the following assumptions:

H1: There are significant differences between the public and private sectors in the indicators of the workplace environment.

Elements of social capital are associated with:

H2: organizational trust;

H3: aggressiveness and social toxicity of the working environment;

H4: the creativity of employees.

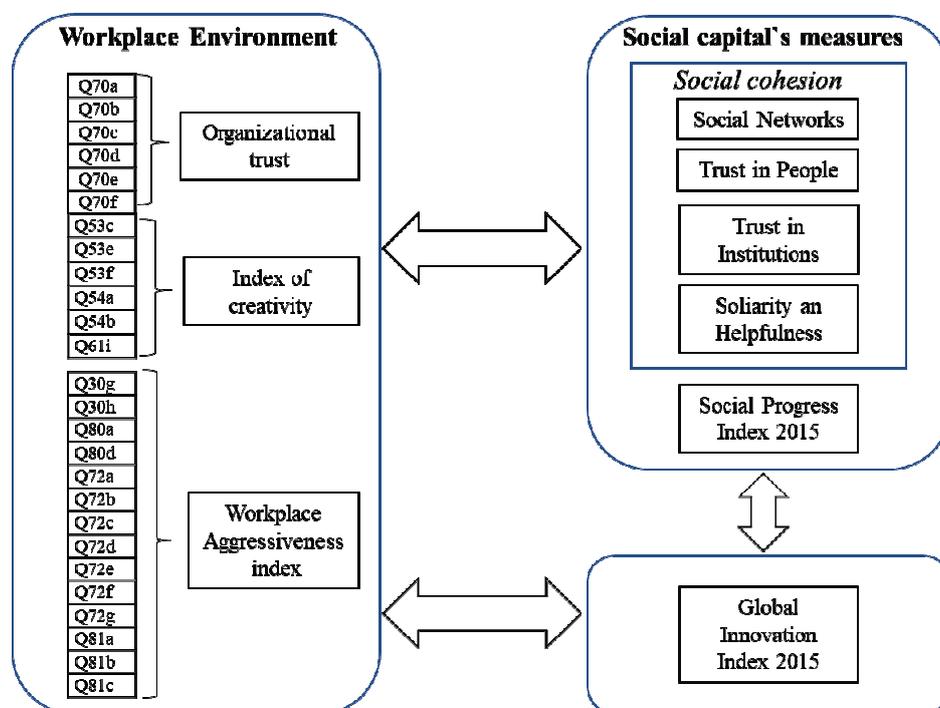
## **3. Materials and methods**

To achieve our research aims, secondary data analysis was conducted, using the European Social Survey (ESS), World Values Survey (WVS), European Working Conditions Survey (EWCS), Social Progress Index, and the Global Innovation Index.

For measuring each element of the workplace environment (creativity, organizational trust, aggressiveness, and social toxicity) was selected the characterizing statements from the questionnaire of the sixth wave (2015) of the EWCS database. Based on these responses to the allegations, a factor analysis (principal component analysis) has conducted. The statements have been grouped into scores for the creativity, organizational trust, aggressiveness, and social toxicity respectively according to the structure are listed in Annex 1. The values were normalized into a range of 0 to 1 (0= strongly disagree, never, no; 1= strongly agree, always, yes). Additionally, the internal consistency among items (statements) in the case of each score was measured by Cronbach's alpha.

The European Social Survey (ESS) data from Round 8 (collected in 2016) were used for creating the score of Social Cohesion for comparing the levels of Social Cohesion are released. An individual-level Social Cohesion measure was created according to the conception of Dragolov et al. (2013). A country-level score of Social Cohesion was calculated as a mean of the respondents' Social Cohesion measures. Factor analysis was applied to create the scores of the sub-dimensions of Social Cohesion in the case if the number of indicators was bigger than one.

Data from the Social Progress Index and the Global Innovation Index were obtained in a ready form (secondary data) from open sources. Data were analyzed by IBM SPSS Statistics 25 statistical software package. A research model is presented in Figure 1.



**Figure 1: Research model: The relationship among the factors of the workplace environment, the innovation performance and the elements of social capital**  
 Source: authors' construction

#### 4. Results

In this section, the authors review the results of hypothesis testing.

(H1): The results of Mann-Whitney U tests (Table 1) showed significant differences between the public and private sectors in the indicators of the workplace environment.

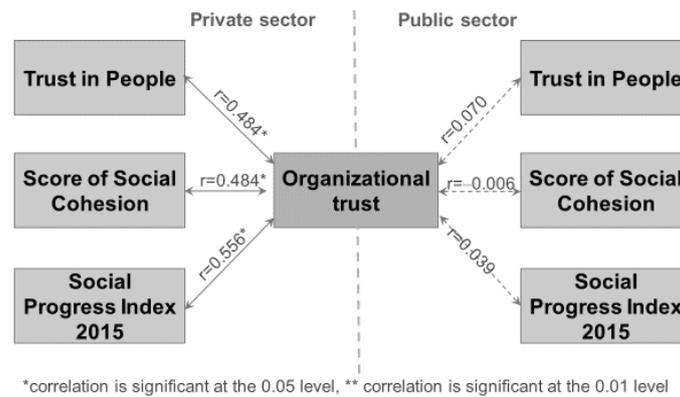
**Table 1: Differences between average values of factors affecting the quality of workplace environment in private and public sectors**

Scores/indexes	Median (SD)		Mann -Whitney U	Z	p-value
	private sector	public sector			
Organizational trust [0,1]	0.75 (0.19)	0.74 (0.19)	68527752.0	- 4.619	p<0.01
Creativity index [0,1]	0.68 (0.29)	0.77 (0.25)	66000980.5	-22.900	p<0.01
Workplace Aggressiveness Index [0,1]	0.05 (0.08)	0.08 (0.09)	64703552.0	-27.184	p<0.01

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

While the level of organizational trust is significantly higher in private sector, the levels of creativity and workplace aggressiveness are higher in public sector.

(H2): Figure 2 shows the relationship among the measures of social capital and the level of organizational trust.



**Figure 2: Relationship between organizational trust and measures of Social capital**  
 Source: authors' calculations based on the microdata of the sixth (2015) EWCS

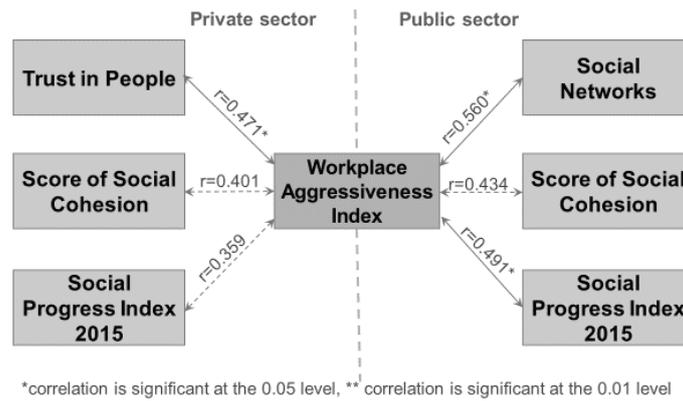
Only in private sector the measures of social capital were mostly correlated with the level of organizational trust. The value of the Pearson's linear correlation coefficient between trust in people, score of social cohesion, social progress index and the level of organizational trust in private sector equals to  $r_1=0.484$ ,  $r_2=0.484$ ,  $r_3=0.556$  respectively (Figure 2). The same pairs in the public sector do not show significant correlation. It can be concluded that the measures of social capital have a significant positive effect on organizational trust only in the private sector. Thus, the hypothesis is partially confirmed.

(H3): The results of correlation analysis (Figure 3) showed moderate positive relationship between trust in people and the level of aggressiveness and social toxicity of the working environment in private sector. In the case of private sector no significant relationship was confirmed between the level of social capital, measured by the score of social cohesion and the social progress index, and the workplace aggressiveness.

Against our expectations, it was identified positive moderate correlation ( $r=0.560$ ,  $p=0.016$ ) between the strength of social networks and the level of workplace aggressiveness in public sector. A significant positive moderate correlation ( $r=0.491$ ,  $p=0.039$ ) was also found between social progress index and the level of social toxicity of the workplace for public sector.

A number of studies advance possible explanations for this phenomenon. The innovative behaviour introduced two negative interpersonal work consequences (Yuan, Woodman, 2010). Through efficiency improvement, innovative work behaviour increased work-related conflicts and decreased general job satisfaction (Cheng et al., 2010; Shalley et al. 2000). In general, people do not like change. Therefore, the prospects of organizational change can lead to some negative emotions among employees, such as the level of tension or disagreement in relationships (Avermaete et al., 2003).

In any case, these findings appeared to provide rejection for Hypothesis 3.

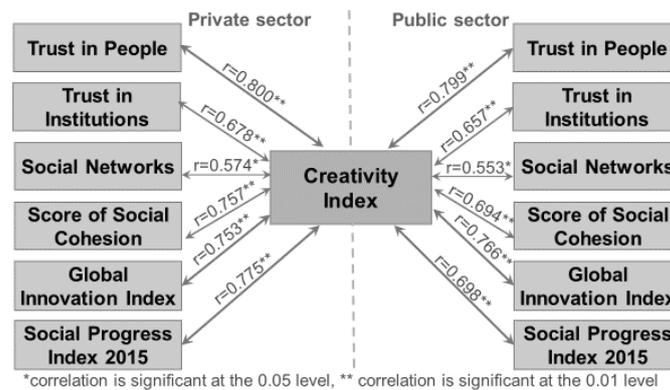


**Figure 3: Relationship between aggressiveness and social toxicity of the working environment and measures of social capital**

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

(H4): The results of correlation analysis (Figure 4) showed a moderate/moderate-strong/strong positive relationship between measures of social capital and creativity of employees, both in private and public sector.

The strongest correlation has been found between trust in people and workplace creativity. The strength of social networks showed the weakest (moderate) correlation with employees' creativity in workplace.



**Figure 4: Relationship between measures of social capital and creativity of employees**

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

The hypothesis that the strength of social capital influences employees' creativity in the workplace has been confirmed.

## Conclusion

Base on the results gained from the test of the research model, it was shown that social capital can have a significant effect on the workplace environment. It means that the by social capital functionality and exploitation of employees would grow higher and creativity would be generated.

All three elements of the working environment showed significant differences in both the public and private sectors.

The present study has investigated the significant effect of the level of social capital on the organizational trust. However, it turned out that this is only true for the private sector.

One important inconsistency that has emerged. We were expecting that the elements of social capital are associated with a significant negative effect on aggressiveness and social toxicity of the working environment. The opposite has been proved.

All six measures of social capital showed positive relationship with the creativity index. Among them, social trust has the strongest positive effect ( $r=0.800$  in the private sector, and  $r=0.799$  in the public sector) on the creativity of employees. These results are consistent with Fukuyama (2001), Chung and Jackson (2011).

We hope this study helps to integrate the diverse literature on social capital and provides guidance for researchers who are interested in disentangling the specific vs. broad effects of his elements on employees' work lives.

## References

1. Alpkhan L., Bulut C., Gunday G., Ulusoy G., Kilic K. (2010), *Organizational support for intrapreneurship and its interaction with human capital to enhance innovative performance*. Management decision, 48:(5), pp. 732-755. (<https://doi.org/10.1108/00251741011043902>)
2. Avermaete T., Viaene J., Morgan E.J., Crawford N. (2003), *Determinants of innovation in small food firms*. European journal of innovation management, 6:(1), pp. 8-17. (<https://doi.org/10.1108/14601060310459163>)
3. Borisov I., Vinogradov S. (2018), *The Role of Social Cohesion in Social and Economic Processes*, In: Illés B.C. (ed.), *Proceedings of the International Conference "Business & Management Sciences: New Challenges in Theory & Practice"*, pp. 521-530, SZIU, Godollo.
4. Boyne G. A. (2002), *Public and private management: what's the difference?* Journal of management studies, 39:(1), pp. 97-122. (<https://doi.org/10.1111/1467-6486.00284>)
5. Burroughs J.E., Dahl D.W., Moreau C.P., Chattopadhyay A., Gorn, G.J. (2011), *Facilitating and rewarding creativity during new product development*. Journal of Marketing, 75:(4), pp. 53-67. (<https://doi.org/10.1509/jmkg.75.4.53>)
6. Cheng C. F., Lai M. K., Wu W. Y. (2010), *Exploring the impact of innovation strategy on R&D employees' job satisfaction: a mathematical model and empirical research*. Technovation, 30:(7-8), pp. 459-470. (<https://doi.org/10.1016/j.technovation.2010.03.006>)
7. Chukwura F. A. (2016), *The Impact of Selected Leadership Styles and Behaviors on Employee Motivation and Job Satisfaction* (Doctoral dissertation, University of Maryland University College).
8. Chung Y., Jackson S. E. (2011), *Co-worker trust and knowledge creation: A multilevel analysis*. Jnl. of Trust Research, 1:(1), pp. 65-83. (<https://doi.org/10.1080/21515581.2011.552425>)
9. Colquitt J.A., LePine J.A., Zapata C.P., Wild R. E. (2011), *Trust in typical and high-reliability contexts: Building and reacting to trust among firefighters*. Academy of Management Journal, 54:(5), pp. 999-1015. (<https://doi.org/10.5465/amj.2006.0241>)
10. Cropanzano R., Mitchell M. S. (2005), *Social exchange theory: An interdisciplinary review*. Journal of management, 31:(6), pp. 874-900. (<https://doi.org/10.1177/0149206305279602>)
11. Cropanzano R., James K., Konovsky M. A. (1993), *Dispositional affectivity as a predictor of work attitudes and job performance*. Journal of Organizational Behavior, 14:(6), pp. 595-606. (<https://doi.org/10.1002/job.4030140609>)
12. De Jong J. P., Parker S. K., Wennekers S., Wu C. H. (2015), *Entrepreneurial behavior in organizations: does job design matter?* Entrepreneurship Theory and Practice, 39:(4), pp. 981-995. (<https://doi.org/10.1111/etap.12084>)

13. Dorenbosch L., Engen M.L.V., Verhagen M. (2005), *On-the-job innovation: The impact of job design and human resource management through production ownership*. Creativity and innovation management, 14:(2), pp. 129-141. (<https://doi.org/10.1111/j.1476-8691.2005.00333.x>)
14. Dragolov G., Ignác Z., Lorenz J., Delhey J., Boehnke K. (2013), *Social Cohesion Radar Measuring Common Ground: An international Comparison of Social Cohesion Methods Report*.
15. Eurofound (2017), *European Working Conditions Surveys (EWCS)* <https://www.eurofound.europa.eu/surveys/european-working-conditions-surveys> (Accessed: 21 May 2019)
16. Field J. (2003), *Social Capital*. NY: Routledge
17. Fukuyama F. (2001), *Social capital, civil society and development*. Third world quarterly, 22:(1), pp. 7-20. (<https://doi.org/10.1080/713701144>)
18. Ghobadian A., Gallear D., Viney H., O'Regan N. (2007), *Public sector performance improvement through private sector management practices: a satisfactory solution?* International Journal of Business Performance Management, 9:(4), pp. 363-379. (<https://doi.org/10.1504/IJBPM.2007.013360>)
19. Gruneberg M. M. (1979), *Understanding job satisfaction* (p. 63). London: Macmillan.
20. Habánik J., Martošová A., Gullerová M. (2018), *Motivation of public sector employees*. Social & Economic Review, 16:(4)
21. Harter J. K., Schmidt F. L., Hayes T. L. (2002), *Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis*. Journal of applied psychology, 87:(2), 268. (<http://dx.doi.org/10.1037/0021-9010.87.2.268>)
22. Homans G. C. (1958), *Social behavior as exchange*. American journal of sociology, 63:(6), pp. 597-606. (<http://dx.doi.org/10.1086/222355>)
23. Iaffaldano M. T., Muchinsky P. M. (1985), *Job satisfaction and job performance: A meta-analysis*. Psychological bulletin, 97:(2), 251. (<http://dx.doi.org/10.1037/0033-2909.97.2.251>)
24. Iliés R., Fulmer I. S., Spitzmuller M., Johnson M. D. (2009), *Personality and citizenship behavior: The mediating role of job satisfaction*. Journal of Applied Psychology, 94:(4), 945. (<https://doi.org/10.1037/a0013329>)
25. Janssen O., Van Yperen N. W. (2004), *Employees' goal orientations, the quality of leader-member exchange, and the outcomes of job performance and job satisfaction*. Academy of management journal, 47:(3), pp. 368-384. (<https://doi.org/10.5465/20159587>)
26. Judge T.A., Thoresen C.J., Bono J.E., Patton G.K. (2001), *The job satisfaction–job performance relationship: A qualitative and quantitative review*. Psychological bulletin, 127:(3), 376. (<http://dx.doi.org/10.1037/0033-2909.127.3.376>)
27. Konovsky M. A., Pugh S. D. (1994), *Citizenship behavior and social exchange*. Academy of management journal, 37:(3), pp. 656-669. (<https://doi.org/10.5465/256704>)
28. Lorenz E., Lundvall B. Å. (2010), *Accounting for Creativity in the European Union: A multi-level analysis of individual competence, labour market structure, and systems of education and training*. Cambridge Journal of Economics, 35:(2), pp. 269-294. (<https://doi.org/10.1093/cje/beq014>)
29. Makó C., Illéssy M., Borbély A. (2018), *Creative workers in Europe: is it a reserve of the 'Would-Be Entrepreneurs'? A cross country comparison*, In: Dallago B., Tortia E. (eds.), *Entrepreneurship and Local Economic Development*, pp. 204-225, Routledge.
30. Mayer R.C., Davis J.H., Schoorman F.D. (1995), *An integrative model of organizational trust*. Academy of management review, 20:(3), pp. 709-734. (<https://dx.doi.org/10.2307/258792>)
31. Navickas V., Skackauskiene I., Navikaite A. (2014), *Theoretical investigation of trust in small and medium sized enterprises*. Business: Theory and Practice/Verslas: Teorija ir Praktika, 15:(2), pp. 160-169. (<https://doi.org/10.3846/btp.2014.16>)
32. Oldham G.R., Cummings A. (1996), *Employee creativity: Personal and contextual factors at work*. Academy of management journal, 39:(3), pp. 607-634. (<https://doi.org/10.5465/256657>)
33. Pieterse A.N., Van Knippenberg D., Schippers M., Stam, D. (2010), *Transformational and transactional leadership and innovative behavior: The moderating role of psychological empowerment*. Journal of organizational behavior, 31:(4), pp. 609-623. (<https://doi.org/10.1002/job.650>)

34. Quinn R.E., Spreitzer G.M. (1991), *The psychometrics of the competing values culture instrument and an analysis of the impact of organizational culture on quality of life*, In: Woodman R.W., Pasmore W.A. (eds.), *Research in Organizational Change and Development*, 5:, pp. 115-142., JAI Press, Greenwich.
35. Rousseau D.M., Sitkin S.B., Burt R.S., Camerer C. (1998), *Not so different after all: A cross-discipline view of trust*. *Academy of management review*, 23:(3), pp. 393-404. (<https://doi.org/10.5465/amr.1998.926617>)
36. Schoorman F.D., Mayer R.C., Davis J.H. (2007), *An integrative model of organizational trust: Past, present, and future*. *Academy of Management Review*, 32:(2), pp. 344-354. (<https://doi.org/10.5465/amr.2007.24348410>)
37. Scott S.G., Bruce R.A. (1994), *Determinants of innovative behavior: A path model of individual innovation in the workplace*. *Academy of management journal*, 37:(3), pp. 580-607. (<https://doi.org/10.5465/256701>)
38. Shalley C.E., Gilson L.L., Blum T.C. (2000), *Matching creativity requirements and the work environment: Effects on satisfaction and intentions to leave*. *Academy of management journal*, 43:(2), pp. 215-223. (<http://dx.doi.org/10.2307/1556378>)
39. Van der Wal Z., De Graaf G., Lasthuizen K. (2008), *What's valued most? Similarities and differences between the organizational values of the public and private sector*. *Public administration*, 86:(2), pp. 465-482. (<https://doi.org/10.1111/j.1467-9299.2008.00719.x>)
40. Yuan F., Woodman R.W. (2010), *Innovative behavior in the workplace: The role of performance and image outcome expectations*. *Academy of management journal*, 53:(2), pp. 323-342. (<http://dx.doi.org/10.5465/AMJ.2010.49388995>)

## Annex 1

We selected the following components of the 'organizational trust' dimension (five-level Likert items: 1= strongly agree, 5= strongly disagree):

*Q70a - Employees are appreciated when they have done a good job; Q70b - The management trusts the employees to do their work well; Q70c - Conflicts are resolved in a fair way; Q70d - The work is distributed fairly; Q70e - There is good cooperation between you and your colleagues; Q70f - In general, employees trust management.*

In order to characterize the main attributes of a creative workplace, we used the following six binary variables<sup>3</sup> based on Lorenz-Lundvall (2010), Makó et al. (2018):

*[Generally, does your main paid job involve...]*

*Q53c - Solving unforeseen problems on your own; Q53e - Complex tasks; Q53f - Learning new things; Q54a - Your order of tasks; Q54b - Your methods of work.*

*[Select the response which best describes your work situation]*

*Q61i - You are able to apply your own ideas in your work.*

In order to characterize the main attributes of a negative social and psychological factors, we used the following 'Workplace aggressiveness index' based on the following questions and items:

*Please tell me, using the same scale, does your main paid job involve...? (seven-level Likert items: 1= all of the time, 7= never) Q30g - Handling angry clients, customers, patients etc.; Q30h - Being in situations that are emotionally disturbing for you*

*Over the last month, during the course of your work have you been subjected to any of the following? (Yes-No) Q80a - Verbal abuse; Q80d - Humiliating behaviours.*

*Over the past 12 months at work, have you been subjected personally to any of the following? (Yes-No) Q72a - Age discrimination; Q72b - Discrimination linked to race, ethnic background or colour; Q72c - Discrimination linked to nationality; Q72d - Discrimination on the basis of your sex; Q72e - Discrimination linked to religion; Q72f - Discrimination linked to disability; Q72g - Discrimination linked to sexual orientation.*

*Over the last month, during the course of your work have you been subjected to any of the following? (Yes-No) Q81a - Physical violence; Q81b - Sexual harassment; Q81c - Bullying.*

---

<sup>3</sup> A binary variable transformed from a five-level ordinal scale, as follows: 'Almost always' and 'Often' were recoded into 'yes'; 'sometimes', 'rarely', and 'almost never' were recoded into 'no'.

## COLLECTIVE DISPUTE RESOLUTION PROCEDURE AS AN INTEGRAL PART OF INDUSTRIAL RELATION IN POLAND

*Leszek CICHOBŁAZIŃSKI*

*Częstochowa University of Technology, Częstochowa, Poland*

*E-mail: leszek.cichoblazinski@wz.pcz.pl*

**Summary:** Presented paper is focused on the issue of resolving collective disputes, i.e. conflicts between labour unions and employers.

Collective dispute is the basic form of institutionalizing the conflict between employer and employees on the basis of Polish legislation. It was introduced by Polish legislation at the beginning of the system transformation period. The institution of a collective dispute is to regulate labour conflicts arising between employer and employees represented by labour unions. Due to that the course of a conflict can be controlled. The collective dispute procedure introduced by the law consists of several stages. Mediation is one of them and the parties to the dispute are legally obliged to participate if they cannot reach an agreement by themselves. Thus, the need to initiate the mediation procedure occurs when previous attempts to resolve the conflict fail.

**Keywords:** collective disputes, industrial relations, industrial conflict, mediations, trade unions

### 1. Introduction

The entire process of a collective dispute will be analyzed, with a special emphasis on one of its stages, namely mediation. It is understood as a process of agreeing on interests and making decisions between representatives of conflicted employees and employers with the participation of a third party, the mediator. This subject matter is presented from the mediator's perspective. The main research problem is - what actions should the mediator take to reach an agreement? Should the choice of these actions depend on the characteristics of the conflict existing at the beginning of the dispute, which are beyond mediator's influence?

There are no similar mediations. Every labour conflict is different and every time the mediator faces a new task. However it is important for the mediator to identify the basic variables affecting the efficiency and effectiveness of a mediation.

The cognitive objective of this study is to examine the role of mediation in collective disputes in the management of organizational conflicts.

The application purpose of the study is to create a model of an effective mediation that could be used by mediators in their efforts to solve collective labour disputes (Timming, 2009)

### 2. Research Background

Collective labor relations are regulated by collective labor law. There is no legal definition of collective labor relations. Generally speaking, they are about collective rather than individual representation of employees' interests. The entities of collective labor law are primarily trade

unions and employers. In both cases, these are legal persons, not natural persons, even if the employer is a specific person who is e.g. the owner of the company.

What is the subject of collective labor law? First of all, it regulates the activities of trade unions and the rights of the workplace employees. This law also regulates the functioning of employers' organizations, the settlement of collective disputes and the creation of autonomous labor law norms, such as collective labor agreements, remuneration regulations, labor regulations, etc. These norms are called autonomous because they are not created by the legislative organs of the state but directly by the parties to the employment relationship whose interests are represented collectively.

The general idea of collective labor law is the collective representation of employees interests. This is mainly due to the fact that the workplace is a social system and many aspects of its functioning are of a group nature, secondly, employer's bargaining power in comparison with individual employees is usually much stronger. This imbalance is reduced by the collective representation of employee interests and only trade unions are entitled to do so.

### ***Collective disputes resolution***

Further on, one aspect of collective labor relations will be analyzed, namely resolution of collective disputes. The issues discussed so far have only been seen from a legal perspective, but from the management point of view it is important to understand how conflict resolution between trade unions and the employer affect making key decisions in the organization. Conflicts between employers and employees are a natural component of industrial relations (Bylok and Cichobłaziński, 2014). Their course and resolution is regulated by the state, which is one of the main players of the market economy. Appropriate legal provisions serve this purpose, as they somehow civilize the process of agreeing on interests between the most important actors of industrial relations in a market economy (Cichobłaziński, 2015; Cichobłaziński and Soares-Filho, 2018).

It should be emphasized at the outset that the institution of collective dispute has a very strong legitimacy in Polish legislation, as it is mentioned in the Constitution. "In Polish legislation, the issue of negotiations with the participation of a trade union organization is directly referred to in the Polish Constitution of April 2, 1997 19. On the basis of the linguistic interpretation of art. 59 clause 3 of the Polish Constitution, trade unions, employers and their organizations have the right to participate in resolving a collective dispute at the negotiation stage. (...) Article 59 para. 2 of the Polish Constitution refers to the concept of collective dispute. Unlike collective bargaining agreements and other agreements, it does not specify that trade unions, employers and their organizations have the right to institute and conduct collective disputes, but they only have the right to negotiate, <in particular to resolve collective disputes> ." (Jarota, 2014)

Different solutions are used in individual European Union countries. The most important differences relate to the level at which collective disputes are resolved. The Anglo-Saxon approach in which the collective bargaining theater is an enterprise and an approach that can be found, for example, in Germany, where collective disputes are resolved at an industry level. In Poland, the first solution was adopted, as a result of which parties to the collective dispute may be the employer in a specific enterprise and trade unions operating on its territory. Each of these solutions has its advantages and disadvantages. The industry level is more favorable for the trade union side, as it has a much greater bargaining power on an industry scale, and the conflict is outside the enterprise. On the other hand, however, such

conflicts usually cover the whole country and are of a deep nature, which is sometimes manifested in large demonstrations taking place in many locations at the same time. The Anglo-Saxon solution atomizes the conflict and limits it to one company or institution. In this situation, the conflict does not take on a national scale, but often the actual decision-maker is outside the enterprise, for example in the group's headquarters operating in another country, or it is the ownership body (e.g. local government) in the case of public institutions (Kloc, 2012).

### **3. Methodology**

The empirical part of the research will be based on the analysis of case studies of mediation in collective disputes, where the author of this text acted as a mediator.

The mediator, being the third party to the negotiations, faces the task of directing negotiations in a manner that enables the parties to reach an agreement. There is a number of conditions for an effective mediation (Bylok and Cichobłaziński, 2015). They will be the subject of the following study, as there is a need to develop a model of an effective mediation (Martinez-Pecino et al., 2008)

### **4. Results - Case Study**

The conflict arose in a coal mine in southern Poland. The mediator was informed and designated by the Ministry of Labor and Social Policy. The problem that triggered the conflict was the distribution of the social fund. The social fund is part of the company's budget for employees, but is not paid directly to them. Deducted from employees' income, it can be distributed as loans for the renovation of a house or apartment, funds for holiday trips or subsidies (funds transferred to employees without the need of a refund). The company's president and representatives of all trade unions decide on how to distribute the fund's resources.

In this case, an agreement had been reached already, but one of the trade unions rejected it and decided to re-negotiate. The problem was whether it was possible to withdraw money for loans and distribute it to employees. If the money were transferred to employees on a split basis instead of loan basis, they would not have to be returned. The trade union held a referendum among employees who supported union's proposal.

The first meeting was held with the company's president, who invited legal advisor and vice president for financial matters to participate in the talks. They acknowledged that the conflict was caused by the smallest and at the same time the least influential of all six trade unions in the company. The company's president described the referendum as illegal and carried out in a way that voters would provide the answers expected by the union. The employer and his team described the methods used by the trade union as tactical actions, as a result of which the union gained popularity and influence among employees. It looked like a typical union strategy - attempting to undermine the employer's credibility.

Justifying the rejection of trade union demands, the employer stated that "the previous agreement was reached in cooperation with all unions."

Then the mediator met with trade unions who were invited by phone by the employer. This meeting took place in a large conference room that could seat about a hundred people, also serving as a place for rescue operations.

Trade union representatives provided two arguments why the social fund should be renegotiated. First of all - the referendum showed that this is what employees want. Secondly, the old agreement was unfair and not in the interests of the employees. Money from the loan fund had to be returned and the company gained from the interests charged on the loans. What is more, this fund was designed solely for people renovating their apartments or houses. The trade union believed that the fund should be equally divided among all employees of the company, without the need of returning.

The mediator asked trade unions the following questions:

1. An agreement was reached by all trade unions of the company. Why was your union the only one that opposed?

Answer: We don't know why we are the only ones, besides, we are not interested. We do not pay attention to what is happening in other trade unions. Results of the referendum are the most important for us.

2. How do you respond to the opposition of an employer who claims that the referendum was not carried out in accordance with the law?

Answer: There is always a reason to criticize us.

### ***Three-way session***

It was held in the same conference room. The tables were arranged in the shape of the letter "U". The parties took their places opposite to each other. The mediator was asked to take the place at the head of the table, where the board usually sat, also during rescue operations. This placement was a visible sign that the parties to the conflict agreed to mediator's participation in the talks. The mediator began by explaining his role and presenting the basic principles of mediation. Then both parties presented their positions. After a long discussion and exchange of views, the mediator decided that the opinion presented by the management board was better justified. Despite of that, trade unions remained at their position.

The mediator asked the parties for a break, which they gladly agreed for. During the break, trade union representatives remained in the conference room, while management board representatives moved to the president's office. The mediator moved from one place to another talking with the parties. Trade union representatives talked to the company's lawyer. At an informal meeting, the lawyer found a common language with the trade union and convinced them to the company's position.

After a break, the negotiating atmosphere definitely improved and the parties quickly reached an agreement. Trade union understood two main issues: firstly - the measures they were fighting for were not real money (they understood this during the break); secondly, the agreement could not be changed without the participation of other trade unions. If any changes to the previous agreement are to be made, they should wait for the meeting with all the unions. That last point was included in the minutes of the agreement drawn up after closing of the mediation session.

It was a classic example of a solution that allowed one of the parties to a conflict to save the face - in this case it was a trade union. The total mediation time was about 6 hours.

## 5. Discussion

To sum up, the following questions should be asked:

1. What was the cause of the conflict?
2. Why has this conflict not been resolved beforehand between the parties?
3. What did they need a mediator for?
4. How has the conflict grown into a "collective dispute"?

Answers:

1. Insufficient understanding of economic issues by trade unions.
2. The official cause of the dispute reported by the unions was the division of the social fund, but in fact it was lack of knowledge on its functioning.
3. The mediator created the conditions for an agreement, to which the parties led independently, without mediator's direct participation.
4. Poor communication between management and trade unions.
5. Other observations. Each time trade union members did not understand the questions, they answered in the negative.

This is one of the few examples of mediation that does not directly address pay issues. However, the union indirectly tried to get "live cash" that would increase their salaries.

## 6. Conclusion

The collective dispute procedure presented above was introduced in 1991 and it has already over 25 years. It was prepared for the transformation period and was intended to protect this process against excessive trade union claims. Today, however, Polish economy is basically a fully market-based one and consultations are underway regarding amendments to the Act. One example of the proposed changes is the definition of employer. This change seems to be a necessity due to the way how international corporations operate, where fundamental decisions regarding matters falling within the scope of a collective dispute are taken far beyond the enterprise operating in Poland, and where management is the employer according to the understanding of the current Act. This is only one example, because all the issues go beyond the goal assumed in this study.

## References

1. Broński, W., Jarota, M. (2015), Rokowania w rozwiązywaniu sporów zbiorowych, *Roczniki Nauk Prawnych* Tom XXV, No 3
2. Bylok, F., Cichobłaziński, L. (2014), Mediation in Collective Dispute Resolution as an Example of Organizational Conflict Management - Case of Poland, 10th European Conference on Management Leadership and Governance, ECMLG
3. Bylok, F., Cichobłaziński, L. (2015), An Anthropological Approach to Organizational Research: Based on Industrial Conflicts and Consumer Behaviour, 14th European Conference on Research Methodology for Business and Management Studies, ECRM

4. Cichobłaziński, L. (2015), The role of collective dispute resolution in the management of industrial relations as a tool of economic policy: the case of Poland, 13<sup>th</sup> International Scientific Conference “Economic Policy in the European Union Member Countries”, September 2-4, 2015, Karolinka, Czech Republic, Conference Proceedings, Technical University Ostrava, Ostrava [https://www.ekf.vsb.cz/export/sites/ekf/hpveu/.content/galerie-dokumentu/2015-proceedings/05\\_Cichoblazinski.pdf](https://www.ekf.vsb.cz/export/sites/ekf/hpveu/.content/galerie-dokumentu/2015-proceedings/05_Cichoblazinski.pdf) (4.10.2016).
5. Cichobłaziński, L. (2010), Mediacje w sporach zbiorowych, Wydawnictwo Politechniki Częstochowskiej, Częstochowa
6. Cichobłaziński, L., Soares-Filho, S. (2018), Mediation in collective disputes as a tool of industrial conflict management – case of Poland and Brazil, *Polish Journal of Management Studies* 2018; 18 (1): 83-93.
7. Jarota, M. (2014), Rozwiązywanie sporów zbiorowych w Polsce – problemy polskich regulacji prawnych w kontekście regulacji europejskich, [W:] *Rozwiązywanie sytuacji konfliktowych w wymiarze jednostkowym i społecznym*, Red. M. Plucińska, Wydawnictwo Naukowe Wydziału Nauk Społecznych Uniwersytetu im. Adama Mickiewicza w Poznaniu, Poznań
8. Kloc, K. (2012), *Rozwiązywanie sporów zbiorowych w Unii Europejskiej ze szczególnym uwzględnieniem roli alternatywnych metod rozwiązywania konfliktów (koncyliacji, mediacji i arbitrażu)*, Pracodawcy RP, Warszawa
9. Kodeks pracy, dział XI Układy zbiorowe pracy. Ustawa z dnia 26 czerwca 1974 r. (z późniejszymi zmianami).
10. *Martinez-Pecino, R., Francisco, L., Medina, F.J., Euwema, M.C. (2008), Effectiveness of Mediation Strategies in Collective Bargaining, Industrial Relations, A Journal of Economy and Society, Vol. 47, No.3, pp. 480-495.*
11. Męcina, J. (2009), Dialog społeczny na poziomie zakładu pracy - ocena funkcjonowania poszczególnych obszarów w stosunkach pracy, [in:] *Dialog społeczny na poziomie zakładu pracy. Między zasadami a realiami*, ed. J. Męcina, Ministerstwo Pracy i Polityki Społecznej, Warszawa
12. Timming, A. R. (2009), Trust in Cross-national Labour Relations: A Case Study of an Anglo-Dutch European Works Council. *European Sociological Review*, Volume 25, Issue 4, August, pp. 505–516.
13. Ustawa z dnia 23 maja 1991 r. o rozwiązywaniu sporów zbiorowych, *Journal of Law of Republic of Poland* 1991 vol. 55.

## USE OF MARKETING TOOLS IN RETAIL SHOPS SELLING LOCAL AND FRESH PRODUCTS

*Marek PETRIĽÁK<sup>1</sup>, Erik JANŠTO<sup>2</sup>*

*Slovak University of Agriculture, Nitra, Slovakia*

E-mail: m.petrilak93@gmail.com

### **Summary:**

**Purpose:** The use of marketing tools is important in every area of business. An exception are not farms or businesses that sell fresh, processed food products of nature. Market success cannot only be achieved by using some marketing mix tools. It is necessary to use a combination of tools and strategies that can ensure sustainability and success in a market that is oversaturated by foreign products of lower price.

**Design/methodology/approach:** Data collection was visited by a total of 94 specialized shops, where we collected data through controlled interviews directly with the operators or owners of the shops under review.

**Findings:** Based on the results of the research, we can say that businesses that offer local, fresh products make more use of online customer communication tools, either through a web site or a Facebook page that support paid advertising for up to 1/3 of the cases. Surprisingly, the use of regional newspapers is surprising, but we can assume that targeting an older generation that is not able to use modern technology has an effective impact.

**Practical implications:** The most effective tools in the sample of our survey are offline environment tools: regional newspapers, mailbox-based leaflets or store leaflets. In the online environment: communication by using the website and Facebook ads.

Effective use of online tools, such as regular communication and update of information supported by targeted advertising and search engine optimization, can have an impact on raising awareness of fresh product offerings, and this can lead to increased interest in local products. In an online environment, it is important that an enterprise or agency that manages these activities is able to set the targeting of the region's population properly.

**Keywords:** local marketing, marketing tools, local business, local products, digital marketing

### **1. Introduction**

Food industry stakeholders need to be coordinated and have an opinion to achieve sustainable production and consumption (Govindan, 2018). Food choices that are acceptable to individuals are increasingly taking place in a context where food industry and food retailers have a significant impact on accessibility (Kearney, 2010). Local foods or foods from the region are concepts that should designate a specific group of foods. However, no concept is legally anchored. In general, local foods are defined as those that have been obtained and processed near the point of sale or final consumption and are not transported over long distances. Products are often produced and processed by local people from local raw materials, possibly using local energy sources (Guth, 2006). Given the fact that there is no official definition of a local product, it is difficult for the consumer to determine when it is a local product and when not and there is no guarantee that the product will meet expectations (Feldmann, Cleveland, 2014). As reported by Procházka's study on the definition of local, this term is most often defined by a distance of 16-48 km, sometimes up to 160 km from the production site. The distances depend on the size of the state, for example, in the United

Kingdom the locality is within a radius of 50 - 60 km, in the United States it is up to 160 km (Procházková, 2013). The World Food Sovereignty Movement has already stated in 2007 that it sees food sovereignty as a priority, mainly due to the local and national economy, with a focus on local producers for food production, distribution and consumption based on environmental, social and economic sustainability (predajzdvora.sk, 2019). There are different kinds of local product sales. Local products are sold through retail chains that have a strong market position, but they still do not provide manufacturers and processors with favorable supplier-business conditions. There are also short supply chain systems, such as yard sale, box sales system, direct farm sales, farm market sales and ultimately local farm operations that are directly owned by processors or act as an additional link in the food chain.

### ***Local retail stores***

These shops are one of the possibilities of selling local food. These outlets can be located directly on farms as a form of direct sales of their own products. In Slovakia, this form of sale is very popular. Another option is to shop in cities that offer products mostly from local farmers such as: fruits, vegetables, bread, milk and dairy products and others (La Trobe, 2002). There are several retail chains in Slovakia that offer "local / farm food", but it is important to note that this term is not precisely defined in legislation. The most famous are the shops: Starý otec - is a grocery store network that aims to offer its customers exclusively Slovak food and food in Slovakia, actually produced, not just packaged. The retail network has an opinion that wants to support Slovak food. Starý otec knows that Slovak manufacturers do not have strong marketing departments as foreign trade chains, and therefore try to help their manufacturers to gain wider awareness and new customers through their stores. That is why they have built on small and medium-sized suppliers - they think they are traditional carriers of quality. Their aim is not to produce and sell thousands of pieces - they prefer to stay in smaller but better quality. For many, it is a matter of several generations who are proud to continue working their ancestors (www.staryotec.sk, 2019). Farmfoods - Slovak farmers who have decided to engage their 10 separate farms in the common concept of the short farm supply chain FARMFOODS. They build their own stores of EXCEPTIONAL FOODS from our fields, stalls, food establishments. They bring both traditional and unconventional, but more original products from Slovak raw materials, which are sold directly in their established establishments, which are being built throughout Slovakia (www.farmfoods.sk, 2019). Other local stores such as Kraj, Jožko Farmárík and Our Court, which sell products manufactured in Slovakia with higher value, quality or freshness, must be aware of the importance of using marketing tools. Promotion of stores and their products is also recognized by the stone farmer's shops, which have a strong brand they have built with the help of effectively set up local marketing. Territorial or local marketing means an institutionalized process of promoting communication between the seller and the buyer, through which the positive changes in a particular territory are flexibly realized (Rumpel, 2003). One of the main goals of this marketing is to improve the image of the region itself or its operations, which is limited to a certain territory (Rumpel, Boruta, Slach, 2011). One of the effective forms of this type of marketing is advertising, which companies are trying to inform the consumer that offer some kind of range that can meet the needs of consumers. Advertising is thus defined as a suitable marketing communication tool that serves to communicate, inform or influence, regardless of the message's content (Otepka, 2007). Since it is more difficult for small farms to compete with large companies or large-scale farms that are able to produce goods much cheaper, local marketing gives manufacturers and retailers the opportunity to gain a key advantage in promoting their brand because their traditional products can be distinguished from other brands. The main goal of local marketing is to reach local, loyal customers who are willing to spend a little more money on food and are interested in where food comes from. Efficient

local marketing for small businesses is a mix of online marketing and offline marketing. Online communication includes tools such as search engine optimization (website optimization for local web searches to make websites appear primarily at regional level) and social media advertising where a large number of potential customers reside. In offline communications should not miss participating in festivals and local markets that offer farm products.

## 2. Methodology

Based on the assumption that stone farmer's shops do not use or use mainly traditional tools of marketing communication, we conducted a survey in the whole of Slovakia. Data collection was visited by a total of 94 farmers' shops, where we collected data through controlled interviews directly with the operators or owners of the shops under review. The aim of the survey was to find out the use of marketing tools at selected retail farm stores that offered products from Slovak manufacturers. The research was carried out in the second half of 2018 and divided into two parts, in the first part we investigated the use of marketing tools of individual operations and in the second part we found out the interest in using the services of a marketing expert or a marketer who specializes in agriculture and food.

## 3. Discussion

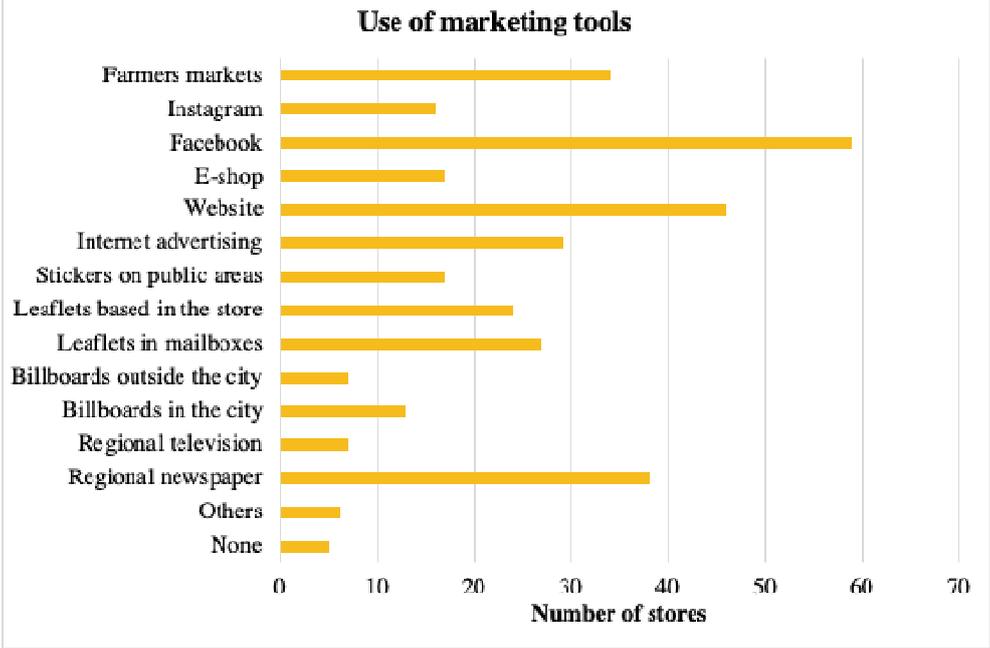
Research has identified 94 stores offering fresh farm products. Most stores we have identified within the Nitra region, which were identified to 34 stores of this type which represents nearly 1/3 of all sales stores. The Trnava region, which ranked second in the number of identified stores, operates 21 stores, followed by the Trenčín Region (10), Banská Bystrica Region (9). At the last place are 3 regions which have been identified 4 stores. Based on the results we assume that there are more farm stores in the western part of the Slovak Republic than in the east of the country due to higher income of the inhabitants, who can afford to buy more expensive products at regular intervals, which allows to run these stores.



**Figure 1: The region, where the stores are located**

Source: own processing, 2019

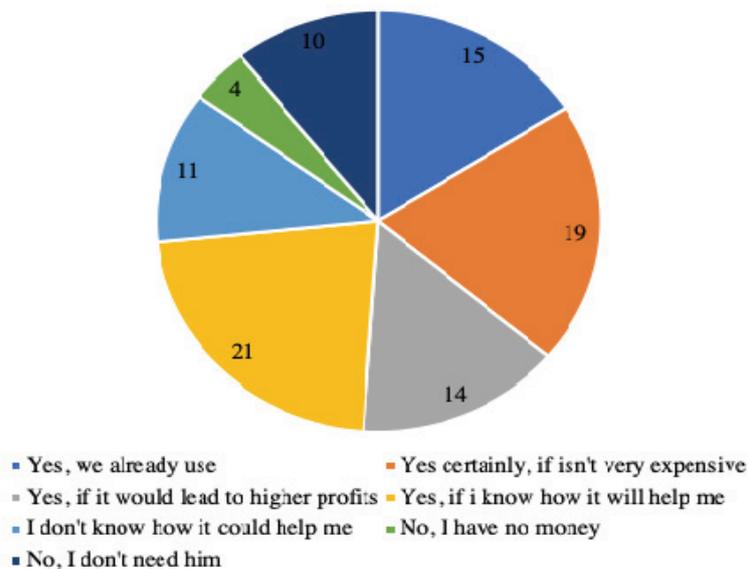
Before data collection, we predicted the use of predominantly traditional forms of promotion, such as leaflets based in the store (24), leaflets in mailboxes (27), billboards in the city (13) and billboards outside the city (7), as can be seen in the analysis of the use of these traditional instruments are used by almost every third store. Regional newspapers are often used to promote a store, with up to 38 sales using this form of promotion. These results may point to the fact that these tools are an effective form of promotion for stores or those that use these tools have not yet switched to using modern marketing communication tools. The website runs up to 46 stores, and up to 59 stores manage the Facebook page on which online advertising services are used by either Facebook Ads or Google Ads, and this is due to the modernization and competitiveness of local farm stores.



**Figure 2: Use of marketing tools**  
*Source: own processing, 2019*

Nowadays, foreign trade chains have a strong position on the Slovak market, which implies their dominant market share. Foreign business chains have marketing departments and sufficient funding to deliver the desired results in communicating and influencing consumers. This situation requires the same deployment and use of small business marketing activities that offer the same or similar product range. The results of the controlled interviews have shown that only 15 stone retailers use an external marketing expert to provide them with offline and online communications. Up to 54 stores would be willing to use the services provided by a marketing agency or a marketing specialist. However, the negative result is that 32 stores do not know how the use of services by an external agency would help them.

**The possibility of using a marketing expert**



**Figure 3: Possibilities of using a marketing expert**

Source: own processing, 2019

#### 4. Conclusion

Based on the research results, we can conclude that companies that offer local, fresh produce, use greater tools online communication with customers, either via the website or Facebook page, which until almost 1/3 of cases supported by paid advertising. The surprising result is the use of regional newspapers, but we can assume that the targeting of the older generation, which is unable to use modern technology has an effective impact. On the other hand using local marketing in the offline environment as regional newspapers, mailbox-based leaflets or leaflets in the store are very effective tools. If businesses use a combination of offline and online tools within local marketing, they can get customers who are willing to pay more for quality and freshness. The use of offline tools has an effective impact: 1. leaflets with discounted products, or coupons for discounted percentages, 2. advertising in regional newspapers aimed at the older generation (visualization of traditions or domestic products), and 3. billboards at the edges of cities that communicate opening hours or a constant offer of fresh products. Effective use of online tools, such as regular communication and update of information supported by targeted advertising and search engine optimization, can have an impact on raising awareness of fresh product offerings, and this can lead to increased interest in local products. In an online environment, it is important that an enterprise or agency that manages these activities is able to set the targeting of the region's population properly.

#### **Acknowledgement**

*The paper is a part of the research project APVV-16-0244 "Qualitative factors affecting the production and consumption of milk and cheese", solved at the Department of Marketing and Trade, Faculty of Economics and Management, Slovak University of Agriculture in Nitra.*

## References

1. Farmfoods. In farmfoods.sk [online]. [access date: 21.04.2019]. < <https://www.farmfoods.sk/onas-menu>
2. Feldmann, Corinna a Ulrich HAMM. Consumers' perceptions and preferences for local food: A review. *Food Quality and Preference* [online]. 2014, 40, pp. 152–164. ISSN 0950-3293. doi:10.1016/j.foodqual.2014.09.014
3. Guthová, Zuzana. Trhy s místními produkty – šance pro stabilizaci venkova. Marketing regionálních produktů [online]. 2006 [access date: 20.04.2019]. <<http://trznice.novnos.cz/images/marketing.pdf>>
4. Kneafsey, Moya - Venn, Laura - schmutz, Ulrich, et al. 2013. Short food supply chains and local food systems in the EU. A state of play of their socio-economic characteristics. *JRC Scientific and Policy Reports. Joint Research Centre Institute for Prospective Technological Studies, European Commission*. 2013. <doi:10.2791/88784>.
5. La robe, Helen. Local food, future directions [online]. 2002 [access date: 20.04.2019]. < [https://www.foe.co.uk/sites/default/files/downloads/local\\_food\\_directions.pdf](https://www.foe.co.uk/sites/default/files/downloads/local_food_directions.pdf)>
6. Otepka, P. – habán, M.: Vidiecky turizmus a agroturizmus. Nitra : NOI, 2007. Pelsmacker, P. – geuens, M. – bergh, J.: Marketingová komunikace. Praha : Grada Publishing, 2003.
7. Potravinová zvrchovanosť. In predajzdvara.sk [online]. [access date: 20.04.2019]. < <http://www.predajzdvara.sk/>>.
8. Procházková, K., Novotná B.. Environmentální význam lokálních a sezónních potravin: příručka k projektu Věda do škol. Praha: Univerzita Karlova v Praze, Pedagogická fakulta, 2013. ISBN 978-80-7290-764-9.
9. Rumpel, P., (ed.). Regionální marketing v rozvoji rurálních periferních regionů: certifikovaná metodika. Ostrava: Centrum městského a regionálního managementu, Ostravská univerzita, 2011, pp. 57 ISBN 978-80-7368-904-9.
10. Rumpel, Petr. Teritoriální marketing jako koncept lokálního a regionálního rozvoje. Vyd. 1. Ostrava: Ostravská univerzita, 2003, pp. 57 Systém celoživotního vzdělávání Moravskoslezska. ISBN 80-704-2957-7.
11. Starý otec. In staryotec.sk [online]. [access date: 21.04.2019]. <<https://www.staryotec.sk/sk/stranka/o-starom-otcovi>>
12. Cleveland, David.A., Müller, Nora. M. Tranovich, et al. 2014. Local food hubs for alternative food systems: A case study from Santa Barbara County, California. *J. Rural Stud.* 2014. pp. 26–36 <doi.org/10.1016/j.jrurstud.2014.03.008>.
13. Govindan Kannan. 2018. Sustainable consumption and production in the food supply chain: A conceptual framework, *International Journal of Production Economics*, Volume 195, 2018, <doi.org/10.1016/j.ijpe.2017.03.003>.
14. Gyimóthy, Szilvia. 2017. The reinvention of terroir in Danish food place promotion. *European Planning Studies*, 25(7). 2017. pp. 1200-1216 <doi:10.1080/09654313.2017.1281229>.
15. Kearney, John. 2010. Food consumption trends and drivers. *Philosophical transactions of the royal society B: biological sciences*, 2010, pp. 365 <doi.org/10.1098/rstb.2010.0149>.

## EVALUATION OF FACTORS THAT DETERMINE DEVELOPMENT OF COMMERCIAL ENTITIES IN THE ONLINE SHOPPING SEGMENT

**Robert KUCEBA<sup>1</sup>, Izabela CHAT<sup>2</sup>**

<sup>1,2</sup> *Częstochowa University of Technology, Częstochowa, Poland*

*E-mail: robertk@zim.pcz.czest.pl*

**Summary:** Electronic business – e-business that comprises all business processes that are conducted electronically has changed the face of the competition worldwide. E-business undoubtedly means speed, innovativeness and also a new way of creating the organisation's value. Thanks to it, new empowered virtual “entities” have developed, such as: e-partnerships, virtual consumer communities, virtual sales teams. The paradigm of the client's role has changed. In the transformation triggered by the diffusion of IT technologies clients ceased to be merely a purchaser, consumer, recipient of values in the form of final products or services. They have become partners, counsellors, co-workers, whose knowledge, information are important in all economic entities that create value chains of final products or services, where market transactions occur. The goal of the paper is to evaluate the determinants that stimulate the operations of business entities in the retail online shopping segment – on the side of the seller. In the first part of the paper its authors attempt to define retail online sales as an e-commerce segment in the chain of creating the final product or service value – in the seller-customer relationship. Based on own research, in the second part of the paper, the authors evaluate the determinants that stimulate the operations of business entities in the retail online sales segment. In the portfolio of determinants, with reference to the subject matter of the research, the following ones have been distinguished: marketing, sources of competitive advantage, price basket and online customer servicing.

**Purpose:** The aim of the article is to compare the determinants of retail sales diffusion of their classification.

**Design/methodology/approach:** The research has been conducted with the use of a survey questionnaire addressed to the owners or managers of investigated shops that conduct retail online sales. Each of the respondents evaluated in Likert scale (1-5) the distinguished determinants of business entities activity in the online segment.

**Findings:** In the paper the following determinants of retail online shopping have been distinguished: operations of business entities, customer service, marketing ones, competitive advantage and price basket fixing. The factor that influences price basket fixing constitute the needs and preferences of retail customers.

**Keywords:** retail online shopping, e-commerce, virtual environment

### 1. Introduction

Electronic business – defined in the literature on the subject as e-business comprises all business processes performed in an electronic manner, especially on the Internet. E-business is changing the face of competition, both in the context of competitive advantage as well as position and potential of economic organisations. E-business is not only related to IT technological innovations, but it also includes product ones (digital and digitalised products), marketing ones (new forms of promotion, distribution and introducing flexible price baskets) and organisational ones (virtual organisational structures) (Mazurek, 2013, p. 873). Such innovativeness stimulates the new manner of value creation in organisations. Empowered

virtual “entities”, such as: e-partnerships, virtual consumer communities, virtual sales teams have an impact on a spread of new markets, some of them being international or global ones. The paradigm of a client has evolved. The transformation driven by a widespread application of IT technologies (Mathwick, Malhotra, Rigdon, 2002, pp. 55-60). has caused that clients are becoming more than simply purchasers, consumers or receivers of values in the form of ultimate products or services. They also become partners, counsellors and collaborators, whose knowledge and information are relevant in all the economic entities that create value chains of ultimate products and services, where market transactions occur. It should be stressed here that in the virtual environment consumers frequently expand their role by co-creation of products and services – their values, and thus becoming a prosumer. Presently, the e-business portfolio includes various business models: B2B, B2C, B2A and their various configurations. However, electronic commerce is frequently distinguished in the literature on the subject.

### ***1. 1. Retail online shopping as a segment of electronic commerce***

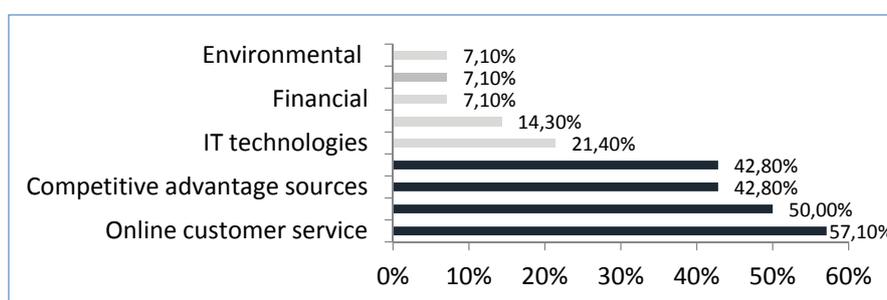
While defining electronic commerce in the subject scope specified in the present paper’s title, it seems appropriate to recall the definition by the World Trade Organisation (WTO). The WTO defines electronic commerce not only as a form of transactions conducted on the Internet, but also as stages of value creation with regard to the offered product or service, considering the following: production, advertising, marketing, flexible pricing, distribution, sale, transactions via teleinformatic networks (Chmielarz , Zborowski, Szumski, 2011). With reference to this definition, a value chain of products or services is created in the virtual environment, which considers the created binary relationships between sellers and customers, but also relationships of this nature between these entities and producers, suppliers or distributors. The cognitive focus in the present paper concerns identifying the determinants of retail online shopping development. Retail online shopping is an e-commerce segment, which provides customers with a possibility to purchase goods or services from the seller with the use of electronic devices and software. The importance of this segment is confirmed by global retail online sale as well as the volume and number of transactions conducted online. According to the recent statistics summaries in this area presented by „The Statistics Portal Statista”, in 2017 global retail online sales as a percent of retail sales within 3 years (2015-2017) grew by 2.8%. In 2017 it amounted to 10.2% whereas it is forecast that in 2021 its share in the total global retail market will reach the level of 17.5% (The Statistics Portal Statista). This growth will be justified by an increase in the informatic maturity of the society, not limited to young generations only. A growth in the share of retail online sales is also predicted to occur in developing countries, where an intense economic development has been observed for merely two decades (Hosting Facts. 77). In turn, the global volume of online transactions on the retail market, which can be conditionally considered equivalent to the global volume of sales, according to „The Statistics Postal Statista” amounted to USD 2.3 trillion in 2017 (The Statistics Portal Statista).

Considering the abovementioned indexes that justify a dynamic development of the retail online shopping segment, in the present paper its authors have focused their attention on identifying heterogeneous determinants of this segment’s development.

## **2. Assessment of selected determinants**

The research sample was selected based on the statistics periodical *Hosting Facts – 77 Online Shopping Statistics for 2018* (The Statistics Portal Statista), which in a global perspective describes contemporary global preferences of consumers related to products purchased within

retail online shopping. The statistics show that the most popular online purchases include fashion products, electronic equipment and groceries. The research covered three primary areas: measuring the volume of online sales, identifying supply chains and measuring determinants that play a decisive role in conducting economic activity in the virtual environment (Feindt, Jeffcoate, Chappell, 2002, pp. 51–62). In particular, with reference to the subject matter of the paper specified in its title, its authors have focused on the third stage of research – measuring the determinants that play a decisive role in conducting economic activity in the virtual environment. The following groups of determinants have been distinguished in the determinant portfolio of economic entities operations in the retail online shopping segment: customer online service, marketing ones, competitive advantage sources, flexible price baskets, availability of IT technology. Also, the ones that are in line with the important contemporary concept – “sustainable development”: economic ones, environmental ones and social ones. In this respect the respondents were able to give multiple answers. The distinguished groups of determinants and assigned percentages have been summarised in Figure 1.

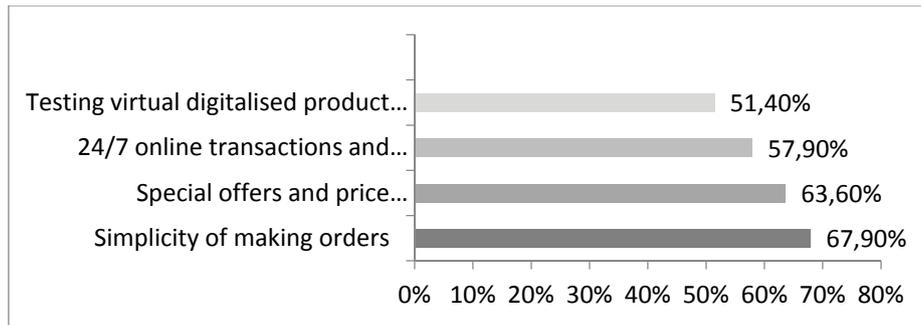


**Figure 1: Determinants of economic entities operations in the retail online shopping segment**  
 Source: own elaboration (One respondent could select max. 3 groups of determinants.)

Based on the comparative analysis of the results summarised in Figure 1 one can observe that the most relevant factors that favour economic entities operations in the retail online shopping segment include first of all: online customer service, winning and retaining customers through marketing actions, query of competitive advantages sources and managing the product price basket. The analysis of economic entities determinants in the retail online shopping segment demonstrates that all of them are directly associated with maintain close relationships with customers (Mazurek, 2013, s, 875). Pre- and after-sale relations also play a vital role. Retail online customers shall be perceived not as product purchasers, but also as collaborators, whose opinions are relevant while creating online sales strategies.

The determined percentage indicators of the identified determinants constituted a foundation for distinguishing significant, in the opinion of the respondents, determinants such as: customer service 57.10%, marketing ones 50.00%, competitive advantage sources 42.80% as well as a possibility to flexibly fix the price basket 42.80%. It should be stressed here that contemporary entities of retail online shopping consider IT technologies to be tools/instruments of conducting online activity. However, this is no longer a determinant of their activation of this type of operation (21.43%).

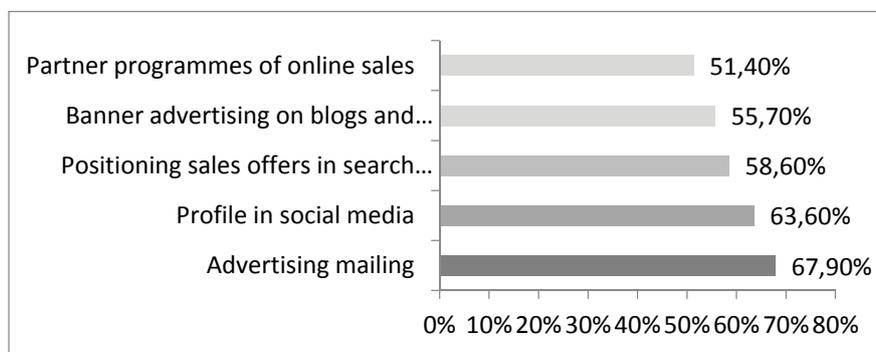
In the further parts of the present paper, in the groups of distinguished determinants, its authors have assessed compound determinants. First, an assessment has been conducted with reference to the compounds of the determinant, customer service (Figure 2).



**Figure 2: Determinants of customer service – retail online shopping segment**  
 Source: own elaboration (N<sub>%</sub>>50%)

While analysing the obtained results the investigation has demonstrated that the most important factors in this case turned out to be: simplicity of making orders – 67.9%, special offers and online price negotiations for regular customers – 63.6%, round-the-clock online transactions and online assistance – 57.9%, testing virtual, digitalised product simulators (VR and video content technologies) – 51.4%. As demonstrated in Figure 2, in the context of customer service the most significant factor is to adjust product search engines to preferences of customers. An important advantage of regular customer servicing – the retail online shopping segment – are also special offers as well as a possibility to negotiate prices with the use of multimedia communicators. Owners of virtual commercial entities, in order to meet high expectations, offer their clients round-the-clock assistance as well as 24/7 sales, and make available online simulators that enable online tests of products. Virtual reality (VR) or video content allow for real-time presentation of products.

In the next step, based on Figure 3, the authors have presented the compounds of the marketing determinant.

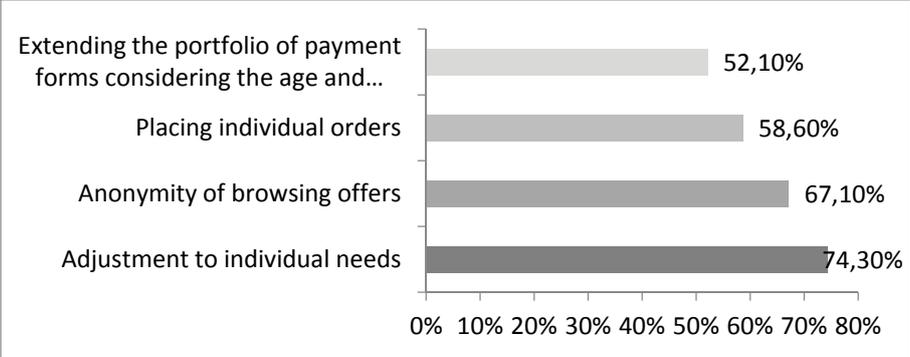


**Figure 3: Marketing determinants – retail online shopping segment**  
 Source: Own elaboration (N<sub>%</sub>>50%)

The obtained results, presented in Figure 3, allow to observe that the most significant marketing determinant in the retail online shopping segment is advertising mailing (67.9%). It creates the greatest chance of reaching the client in a shortest way, with a personalised message, in order to communicate the details of an offer. Another vital determinant in the retail online shopping activity is running a corporate profile (fanpage) in social media (63.6%). The presence in social media is a must for many industries. Although Facebook dominates in this area, still a large number of companies, striving at being noticed, set up an account on Twitter, Pinterest or Instagram, as all of them offer a wide range of marketing opportunities. The remaining marketing determinants include positioning online offers in

search engines (58.6%), banner advertising on blogs and commercial instagrams (55.7%) and partner programmes of online sales (51.4%).

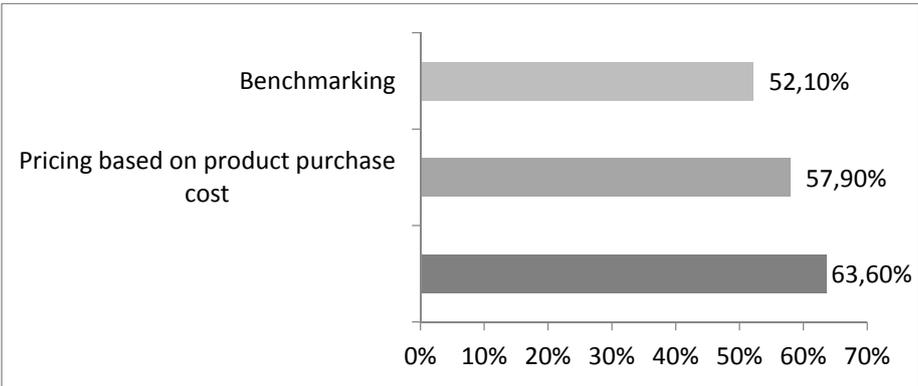
In Figure 4 the authors have summarised the compounds of the competitive advantage determinant in the retail online shopping segment.



**Figure 4: Competitive advantage determinants – retail online shopping segment**  
 Source: own elaboration (N<sub>%</sub>>50%)

While analysing the determinants of the competitive advantage and customer service determinants one can observe their convergence. As far as factors of the competitive advantage are concerned in the retail online shopping segment, the respondents most frequently indicated the ability of adjusting products to individual needs of customers (74.3%). The second vital factor of the competitive advantage is anonymity of executed offers (67.1%) as well as the ability to place individual orders online (58.6%). In turn, another important determinant of the competitive advantage indicated by the respondents in last stage of purchases “form of making payment” - Shopping Cart Abandonment, is extending the portfolio of payment forms considering the age and cultural diversity (52.1%). Payments made via the Internet comprise financial operations made remotely, not only with the use of a direct debit, but also using payment cards or through electronic payments operators.

In Figure 5 the authors have distinguished the compounds of the determinant – fixing the product price cart in the retail online shopping segment.



**Figure 5: Determinants of fixing product price cart – retail online shopping segment**  
 Source: own elaboration (N<sub>%</sub>>50%)

While analysing the obtained results it can be concluded that the dominant determinant as far as price cart fixing is concerned, in the retail online shopping, is pricing the products based on the research of perceived by customers value of a given product – brand strength (63.6%).

### 3. Conclusion

The retail online sales market is a dynamically developing segment of electronic commerce. Presently, determinants of this segment's development are not made dependent by owners of online shops on access to IT technologies. The focus concerns a flexible adjustment in the virtual environment to changing needs of final customers and changing competitive perspective on the contemporary markets of retail goods and services. In the present paper its authors have made an attempt to synthetically summarise not only multifaceted determinants of retail online sales, but also their compounds.

### REFERENCES

1. Chmielarz W., Zborowski M., Szumski O. (2011), *Kompleksowe metody ewaluacji jakości serwisów internetowych*, Wydawnictwo Naukowe Wydziału Zarządzania Uniwersytetu Warszawskiego, Warszawa (in Polish).
2. Feindt S., Jeffcoate J., Chappell C. (2002), *Identifying Success Factors for Rapid Growth in SME E-commerce. Small Business Economics. August*, Volume 19, Issue 1, pp. 51–62.
3. Hosting Facts. 77 Online Shopping Statistics for 2018, <https://hostingfacts.com/online-shopping-statistics/> (access date: 6.06.2019).
4. Mathwick, C., Malhotra N. K., Rigdon E. (2002), *The effect of dynamic retail experiences on experimental perceptions of value; an internet and catalog comparison*, "Journal of Retailing", No. 1, Vol. 78, pp. 55-60.
5. Mazurek G. (2013), *Wirtualizacja marketingu – konceptualizacja*, Wirtualizacja: problemy, wyzwania, skutki, Zacher L., POLTEXT, Warszawa (in Polish).
6. The Statiscs Portal „Statista”. Worldwide e-commerce share of retail sales 2015-2021 <https://www.statista.com/statistics/534123/e-commerce-share-of-retail-sales-worldwide/> (access date: 2.06.2019).

## INFLUENCE OF PERSONIFIED MANAGEMENT ON ORGANIZATION OF MANAGERIAL WORK IN SLOVAKIA

*Alexandra FILOVÁ<sup>1</sup>, Veronika HRDÁ<sup>2</sup>*

*<sup>1, 2</sup> Slovak University of Agriculture, Nitra, Slovakia*

*E-mail: veronika.hrda@uniag.sk*

**Summary:** The objective of the paper is to find out, what type of personality prevails among employees and whether personality type of a manager on various levels of organization structure influences their leadership style. The authors concentrated especially on the analysis of Likert's leadership styles (exploative - authoritative, benevolent - authoritative, consultative and participative). The authors found, to what extent the managers have different attitude to the managerial organization, whereas the authors focused on leadership, based on their personality type. Within the research, the authors used questionnaire, containing personal details questions, and other 15 questions focused on organization of managerial work and so called MBTI – test to find the personality type, dividing people into 16 types of personality. Primary data was processed by descriptive statistics, non-parametrical statistical – mathematical methods, like Kruskal-Wallis test. The results of the research show that there is a significant difference between individual selected groups of managers. Because of that we can state that personified management has a significant influence on managerial environment in companies and it can significantly help managers in the field of self- assessment and in better approach to employees.

**Purpose:** The objective of the paper is to refer to the importance of specified and original attitude of managers to their subordinates, employees, companions etc. We specifically present a paper focused on analysis of classical and Likert's leadership styles considering personality type of a manager.

**Design/methodology/approach:** The paper deals with a research realised since 2011 and is still ongoing. The research includes a personality typology test, commonly known as MBTI test and a questionnaire with queries for managers and employees connected with everyday activities in a company and outside. Primary data gained from the given tools are statistically evaluated by methods of descriptive statistics, Jonckheere-Terpstra test, Mann–Whitney U test and procedure of Steel - Dwass - Critchlow - Fligner.

**Findings:** The research led the authors to findings on what type of personality most or least prevails among individual types of employees on different levels of organization. The authors subsequently used the results of the research for comparison of managerial organization in leadership and made a conclusion that there is a significant difference among the specific individual groups.

**Research limitations:** The given research is a part of extensive research focused on personified management within specific parts of managerial work organization.

**Practical implications:** Personified management widely ranges among applied managerial activities. The paper refers to specific features of managerial work which can be classified and evaluated by personified management. Moreover, they can be predicted and therefore very effectively used in practice of managers on all levels of companies' organization.

**Keywords:** management, leadership styles, MBTI test, levels of management

## 1. Introduction

The paper deals with so called personified management and with possibilities of its utilization in practice. It is relatively new approach in the field of management and human resource management. The authors have an ongoing interest in this field of management and they have performed a vast and detailed research, results of which are given in the paper below. It is an odd and specific research, in which obtaining data of employees' personality types on various work positions (from a psychological point of view) is connected with finding managerial style, organizing, leadership style etc. (from the perspective of human resource management). We are not aware of the fact that this kind of research has been realized and knowledge from the paper are exceptional in the given field of the research.

The objective of the paper is divided into two relatively individual goals, which are formulated in the form of the following questions:

1. What type of personality mostly prevails among employees?
2. Does a personality type of managers (on various levels of organization structure) have influence on their leadership style?

## 2. Literature review / Research Background

Human resources are the base of all the organizations. As (Sassaman – Dalal – Calvo, 2019) state „Organizational personality inferences are the human-like attributes individuals ascribe to organizations. Extant research has shown that individuals reliably distinguish organizations on these traits and these inferences influence individuals' judgments of organizations.“

One of the most frequent methods of finding a personality type is so called MBTI test. (Sample, 2018) writes „The Myers-Briggs Type Indicator (MBTI) is a trusted and widely used personality assessment, having extensive applications in curriculum development and research in the organizational sciences, including public affairs education. The MBTI is a reliable and valid assessment of personality that identifies four cognitive processes, eight dichotomous preferences, and 16 distinct personality types and may be applied to a variety of topics of interest in public affairs education, including curriculum development and classroom instruction, student career and occupational counselling, and for researching of issues and problems in public agencies and non- profit organizations.“

To define leadership is a complicated issue. As (Grimm, 2010) states „Leadership is a complex entity, composed of numerous definitions and qualities that describe successful leaders. Furthermore, leaders use many different approaches to achieve their objectives.“ (Raelin, 2011) adds „Leadership as Practice relates much more to “where”, “how” and “why” the leadership at work is being organized and carried out, than to “whom” is offering views to others to perform the work. Leadership as Practice also analyses the coordination effort among participants that choose, through their own rules, to accomplish a distinct result; it takes into consideration what people can perform together, instead of what the person thinks or does. This area is also concerned with the way leadership emerges and develops through daily experience“

### **3. Methodology**

To fulfil the above mentioned objectives, we performed a research, beginning in 2011 and its realization lasts up to now. The paper introduces partial results and many questions, are still not absolutely answered. Nevertheless, up to this date we can state, that knowledge gained by the research are very interesting and even now, their utterness is sufficiently high.

During the research we addressed 131 companies of various types, sizes, time of their existence on the market, entrepreneurial focus etc. operating in Slovakia. In these companies we addressed 913 respondents altogether, out of which 467 of them held a managerial position (87 top managers, 143 middle managers and 237 lowest managers). The selection was done randomly. Even though we hardly ever met with willingness of the employees, and the company, to cooperate on this kind of research. It was therefore necessary to proceed to available selection.

Regarding the above mentioned objectives, it was necessary to perform the research by two relatively individual parts:

1. Questionnaire
2. MBTI – test

After gaining primary data from the questionnaire and MBTI test we proceeded to their evaluation by various mathematical – statistical methods. We especially used various descriptive characteristics of gained data (average values, median, modus, characteristics of position and so on). We consequently used non – parametrical statistical methods to confirm the scientific questions. Non – parametrical tests were selected, because the gained data did not have normal division of probability. In the paper we specifically used absolute and relative multiplicities of examined characters and Kruskal–Wallis test to confirm the second question, or the second objective.

#### ***3.1. Questionnaire***

As the research is realized in companies, it was crucial to divide the questionnaires into numerous types according to work position of the respondents, who took part in the research, in the organization hierarchy of the company. The questionnaires were divided in 2, or 3 types:

- In micro and small companies, i.e. in companies up to 50 employees we used 2 types of questionnaires (questionnaires for managers and for employees without managerial position).
- In middle and big companies, i.e. in companies with the number of employees of 50 and more, we used 3 types of questionnaires (questionnaires for top management, for middle management and the lowest management as well as for the employees working without managerial position).

The reason for this kind of arrangement of the research was the fact that within previous research we had realized that it is not possible to ask all the employees the same questions. If we used only one type of the questionnaire we would not reach complete answers to our questions, in which we were interested, or the results would be too out of focus. Despite of using various types of questionnaires, they all corresponded together and the questions had a similar character but we paid attention to the nature of work, education, experience etc. of the respondents.

The questionnaires were divided in three parts.

- In the first part we asked the basic information about the respondent, like sex, age of the employee, number of worked years, education and so on (7 closed questions altogether).
- In the second part we asked questions, regarding the selected topic. These were questions focused on leadership style, using Likert's leadership styles (exploative - authoritative, benevolent - authoritative, consultative and participative). (10 scale questions and 5 closed questions)
- The last part, the third one, concentrated on the opinions and suggestions of employees to improve the managerial style, leadership and approach in the companies. (5 scale questions and 2 open questions)

### 3.2. MBTI – test

In this part, which is considered to be as the hardest one, as for realization, we asked respondents 70 bipolar questions, according to the standards of MBTI test. The standards divide people into 16 personality types based on 4 dimensions, which are stated in the Figure 1.

NF Valuing	Possible				NT Visioning
	ENFJ	INFJ	INTJ	ENTJ	
Personal	ENFP	INFP	INTP	ENTP	Logical
	ESFP	ISFP	ISTP	ESTP	
SF Relating	Present				ST Directing
	ESFJ	ISFJ	ISTJ	ESTJ	

Note: Introversion (I) – Extroversion (E), Sensing (S) – Intuition (N), Thinking (T) – Feeling (F), Judging (J) – Perceiving (P)

**Figure 1: Individual personality types according to the MBTI test**

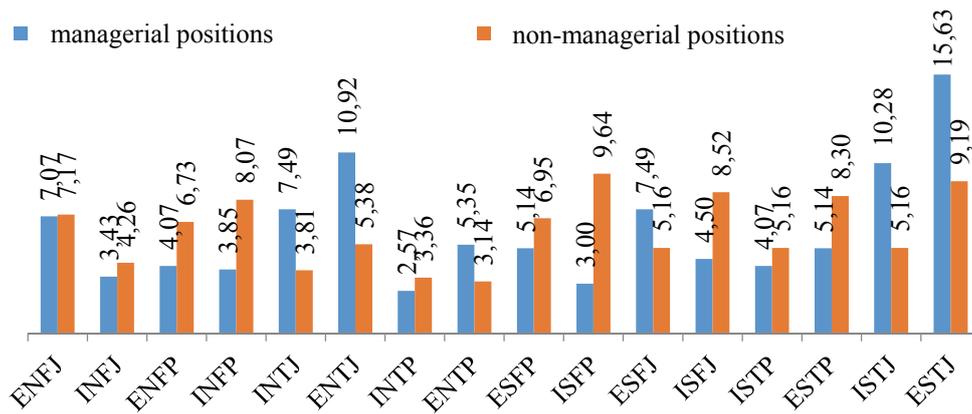
Source: own elaboration based on (1)

Regarding multiplicities in individual groups of personality types (see picture 1) we proceeded to flattening number of groups to four, they are:

- **Group NF Valuing** personality types: ENFJ, INFJ, ENFP, INFP
- **Group NT Visioning** personality types: INTJ, ENTJ, INTP, ENTP
- **Group SF Relating** personality types: ESFP, ISFP, ESFJ and ISFJ
- **Group ST Directing** personality types: ISTP, ESTP, ISTJ and ESTJ

## 4. Results

At the beginning of the paper we state the basic descriptive characteristics for better understanding of the selection set of the research. As mentioned above, 913 employees, took part in the research, out of which 467 of them were employees on managerial positions (managers) and 492 of them were employees without managerial position (employees).



**Figure 2: Division of personality types in % according to MBTI among respondents who took part in the research**  
 Source: own elaboration

Percentage representation of individual personality types is given in the picture 2, showing that the highest share of 15,63% (73 respondents) of the managers have ESTJ personality type. Among the employees dominate personalities with personality type of ISFP, creating 9,64% (43 respondents). On the other hand, the lowest value 2,57% (12 respondents) is created by the managers with personality type of INTP. Regarding employees, the lowest value is 3,14% (14 respondents) of the personality type of ENTP.

The following Table 1 shows detailed selection set of respondents who took part in the research. We can clearly see detailed answer to the first scientific question in the form of absolute and relative multiplicities in individual dimensions of the MBTI test.

**Table 1: Division of personality types according to individual dimensions of the MBTI test in absolute and relative values among respondents who took part in the research**

I. dimension	managers		employees		sum
	extroversion (E)	284	60,81%	232	
introversion (I)	183		214		397
II. dimension	managers		employees		sum
	sensing (S)	258	55,25%	259	
intuition (N)	209		187		396
III. dimension	managers		employees		sum
	thinking (T)	287	61,46%	194	
feeling (F)	180		252	56,50%	432
IV. dimension	managers		employees		sum
	judging( J)	312	66,81%	217	
perceiving (P)	155		229	51,35%	384

Source: own elaboration

In the following part we will answer the scientific question as well as the second objective: Does personality type of managers (on various levels of organization structure) have influence on leadership style?

Managerial styles were divided into 4 groups of Likert's leadership styles. Respondents, the employees, on various levels of managerial positions, answered the questions of the second

part of the questionnaire (see description in the part of Methodology, Questionnaire) and according to their answers we placed them into the following groups of leadership styles and management of people:

- **Exploative - authoritative** – the managers are highly authoritative and do not trust subordinates. Decision-making is made exclusively on the top of the management. Communication is determined by orders, top to bottom. Tough discipline is required within performance of orders.
- **Benevolent - authoritative** – authoritative part still prevails but some competences of decision-making are delegated. A specific communication is possible, top to bottom, because the manager is interested in some opinions and ideas of the subordinates and therefore these are tolerated.
- **Consultative** – the manager trusts subordinates to specific amount, but not fully. Managers usually try to use the opinions and ideas of subordinates. Specific decisions are delegated to lower positions. Mutual communication is applied.
- **Participative** – the manager fully trusts subordinates. It manifests in a huge participation and providing vast autonomy in decision-making processes on lower organization levels. Mutual communication is supported among managers.

Absolute and relative multiplicities of individual managerial styles for all the respondents on managerial positions are given in Table 2.

**Table 2: Multiplicities of sorting character of style and managerial style of employees on managerial positions**

	multiplicities	
	absolute	relative
<b>exploative-authoritative</b>	42	8,99 %
<b>benevolent-authoritative</b>	137	29,34 %
<b>consultative</b>	175	37,47 %
<b>participative</b>	113	24,20 %

*Source: own elaboration*

Absolute multiplicities of individual managerial styles for individual groups (top management and middle management, or the lowest management) of respondents on managerial positions are given in the table 3.

**Table 3: Multiplicities of sorting character of style and managerial style of employees on managerial positions of the top management and middle management, or the lowest management**

	level of management		
	top	middle	lowest
<b>exploative-authoritative</b>	15	8	19
<b>benevolent-authoritative</b>	62	53	22
<b>consultative</b>	64	88	23
<b>participative</b>	23	59	31

*Source: own elaboration*

As there are more than two groups, we will statistically use evaluation by Kruskal-Wallis test, hypothesis of which are as follows:

- $H_0$  : groups come from the same population
- $H_1$  : groups do not come from the same population

The following three tables 4, 5 and 6 show the results of Kruskal-Wallis test for all the three analysed levels of management, i.e. top management, middle and lowest management.

**Table 4: Result of Kruskal-Wallis test within finding influence of personality type on managerial style within employees on the top level of management**

Groups of personality types	Asymp. Sig.	Monte Carlo Sig.		
		Sig.	99% Confidence Interval	
			Lower Bound	Upper Bound
NF Valuing	0,027	0,023 <sup>c</sup>	0,018	0,028
NT Visioning	0,038	0,033 <sup>c</sup>	0,029	0,037
SF Relating	0,049	0,041 <sup>c</sup>	0,036	0,046
ST Directing	0,021	0,023 <sup>c</sup>	0,019	0,026

<sup>c</sup> Based on 10000 sampled tables with starting seed 2000000

Source: own elaboration

**Table 5: Result of Kruskal-Wallis test within finding influence of personality type on managerial style within employees on middle level of management**

Groups of personality types	Asymp. Sig.	Monte Carlo Sig.		
		Sig.	99% Confidence Interval	
			Lower Bound	Upper Bound
NF Valuing	0,043	0,039	0,034	0,044
NT Visioning	0,034	0,018	0,014	0,022
SF Relating	0,039	0,032	0,028	0,036
ST Directing	0,051	0,043	0,038	0,048

<sup>c</sup> Based on 10000 sampled tables with starting seed 2000000

Source: own elaboration

**Table 6: Result of Kruskal-Wallis test within finding influence of personality type on managerial style within employees on the lowest of management**

Groups of personality types	Asymp. Sig.	Monte Carlo Sig.		
		Sig.	99% Confidence Interval	
			Lower Bound	Upper Bound
NF Valuing	0,072	0,065	0,060	0,070
NT Visioning	0,082	0,075	0,071	0,079
SF Relating	0,059	0,050	0,046	0,054
ST Directing	0,061	0,053	0,048	0,58

<sup>c</sup> Based on 10000 sampled tables with starting seed 2000000

Source: own elaboration

## 5. Conclusion

The highest share of 15,63% (73 respondents) of employees on managerial positions have a personality type of ESTJ. Among the employees without managerial position, there are people with personality type of ISFP dominating, creating 9,64% (43 respondents).

From the results given above (table 4, 5 and 6) it is clear that the question 2 can be answered as follows:

- Personality type has statistically significant influence on the significance level of 0,05, on managerial style of managers on the top management positions.
- Personality type has statistically significant influence on the significance level of 0,05, on managerial style of managers on the middle management positions.
- Personality type does not have statistically significant influence on the significance level of 0,05, on managerial style of managers on the lowest management positions.

## References

1. Quenk, N. L. (2009), *Essentials of Myers-Briggs Type Indicator Assessment*, New Jersey: John Wiley & Sons, p. 195, ISBN 978-04-705-0418-5
2. Grimm, J. W. (2010), *Effective Leadership: Making the Difference*, *Journal of Emergency Nursing*, 36:(1), pp. 74-77.
3. Raelin, J. (2011), *From leadership-as-practice to leaderful practice*, *Leadership*, 7:(2), pp. 195-211.
4. Sassaman, L., Dalal, D. K. and Calvo, A. J. (2019), *How much weight do organizational personality inferences have on judgments of organizations?*, *Journal of Research Personality*, 79:
5. Samle, J. (2018), *A Review of the Myers-Briggs Type Indicator in Public Affairs Education*, *Journal of Public Affairs Education*, 23:(4), pp. 979-992.
6. Pacáková, V. et al. (2009), *Statistical methods for economists*, Bratislava: Iura Edition, p. 411, ISBN 978-80-80782-84-9
7. Budíková, M. – Králová, M. – Mariš, B. (2010), *Manual of basic statistical methods*, Praha: Grada Publishing, p. 272, ISBN 978-80-247-3243-5

## THE ROLE OF STRATEGIC COMMUNICATION AT THE MUSEUM: THE CASE OF ŠIAULIAI MUSEUM

*Gintarė KULBECKIENĖ<sup>1</sup>, Nijolė LITEVKIENĖ<sup>2</sup>*

*<sup>1,2</sup> Šiauliai Stage College, Faculty of Business and Technologies, Šiauliai, Lithuania  
E-mail: g.kulbeckiene@svako.lt*

### **Summary:**

**Purpose:** This article deals with strategic communication in the museum's activities, finding out how strategic communication is assessed by Šiauliai Museum employees. The following research objectives are raised: to reveal the conception and essence of strategic communication; to find out the role of strategic communication and the management process in the activities of Šiauliai Museum; to investigate the role of strategic communication in the museum's activities, based on the case of Šiauliai Museum.

**Approach:** analysis and synthesis of scientific literature; comparative analysis, qualitative research.

**Findings:** The comparative content analysis of documents demonstrated that strategic communication at Šiauliai Museum was planned while preparing annual activity plans containing projected activity areas with respective planned goals, projected deadlines and responsible persons. The management of this museum points out that the essence of developing the strategic communication plan is dual: distribution of work (planning) and justification of unplanned actions. Managers mostly relate improvement of strategic communication at the museum with strengthening of relationships with the community. Employees relate successful implementation of strategic communication at the museum with preparation of the effective strategic communication plan.

**Keywords:** employees, management, museum, planning, strategic communication

### **1. Introduction**

#### ***Relevance of the topic***

Traditionally, museums have mostly focused on acquisition of exhibits, their conservation, scientific research and investigation of exposition objects; i.e., they were orientated to a small group of people related by the same cultural interests and pedagogical activities. According to P. Bantimaroudis et al. (2010), museums were closed subjects orientated to objects and isolated from the environment. However, museums are facing new challenges in the modern knowledge and information society, encouraging fundamental changes in these institutions.

In this article, it is considered essential to analyze the museum's activities in the strategic communication context, finding out how modern museums are able to plan and manage their communicative process, make use of the opportunities provided by public relations in order to establish closer interaction with target audiences. According to J. Bradbourne (2001), it is namely strategic communication that has quite significant influence on the museum management process in both internal and external communication. It can be stated that it is expedient for the museum to plan its activities, employing the opportunities provided by strategic communication, in order to attract as many visitors as possible, competing with other organizations offering various leisure time services.

### ***Research problem***

Earlier, the museum would draw all attention to the management of objects; therefore, strategic communication was not an important element for the museum, as the establishment and development of public relations was not essential. However, it is important to find out how museums assess the importance of strategic communication in their activities today. The said context presupposes the problem of this research, which is expressed by the following problem questions: Why is strategic communication treated as one of the most important resources at the museum? What capabilities does the museum have for strategic management of communication? Why will strategic communication become increasingly more important in museum activities in order to attract as many visitors as possible to museums?

The research object is strategic communication of the museum.

The research aim is to analyze the role of strategic communication at the museum.

### ***Research objectives:***

1. To find out the role of strategic communication and management process in Šiauliai Museum activities.
2. To identify the influence of strategic communication on museum activities, based on the case of Šiauliai Museum.

### ***Research methods and instruments:***

1. Analysis and synthesis of scientific literature.
2. Comparative analysis.
3. Qualitative research (interview).

## **2. Literature Review**

It is revealed that in recent decades, the importance of strategic communication and public relations at the museum dramatically increased. It is noted that communication at the museum was mostly studied from the marketing perspective. However, there has not been particularly much scientific research on this topic in both foreign countries and Lithuania. You can trace a dotted line of research works that mention the importance of strategic communication at the museum.

Foreign scientists provide the following insights into the role of strategic communication at the museum: van den Bosch (2004) emphasizes the importance of strategic communication at the cultural institution, Capriotti (2010) highlights that strategic communication can help museums to make respective decisions on various issues regarding their future activities, Hooper-Greenhill (2000) follows the view that strategic communication plays a particularly important role in the modern museum activity, creating a two-way relationship with the target audience. In his opinion, earlier communication at this cultural institution was perceived in a much narrower way: just as the means of communicating and disseminating knowledge.

In most recent research, foreign authors Tzortzi (2014), Dulek and Campbell (2015) emphasize the importance of analyzing museum visitors' needs. Lithuanian scholar Šuminas (2014) also emphasizes the need for change at the museum, which in market economy conditions becomes such cultural institution that has to solve the issue of survival, thinking how to attract as many visitors as possible, adapting to their needs.

### 3. Methodology

#### *Qualitative semi-structured interview method*

Based on Bhattacharjee (2012, p. 87), the interview is a personalized form of material collection, when the researcher discusses the issues of the analysed topic with the informant face to face. The use of this type of method is referred to as a time-consuming and intense process requiring the researcher's abilities to persuade and encourage collaboration (Bhattacharjee, 2012, p. 87). As to the semi-structured interview, Berg (2011, p. 70-71) states that this method encompasses the combination of pre-prepared questions and special sub-topics, when questions are often asked following the agreed system, but the researcher, taking into account the course of research and informants' responses, can redirect the topic into an unexpected direction.

To conduct the interviews with the management of Šiauliai Museum, two heads of the institution were selected as informants: one occupies the position of the deputy director for museology and the other is the head of the public relations department (encoded as I1 and I2). Employing this method, it was sought to find out a deeper attitude of the persons holding managerial positions to the topic under discussion, to identify the institution's problem areas and to foresee the directions for improvement of strategic communication. The interviews were conducted on May 18<sup>th</sup> and 20<sup>th</sup>, 2019. The conversations were recorded with a dictaphone, later the material was reheard, transcribed and analyzed.

#### *Structure of research instrumentation*

The interview questionnaire consists of 9 open-ended questions divided into four sub-themes: 1) "Communication resources at Šiauliai Museum" (Questions 1-2); 2) "Scientific research at Šiauliai Museum" (3-5 questions); 3) "Planning of strategic communication at Šiauliai Museum" (questions 6-7) and 4) "Implementation of strategic communication at Šiauliai Museum" (questions 8-9).

### 4. Results

#### *Attitude of Šiauliai Museum's management to strategic communication at the museum*

The results of the content analysis of interviews disclosed the process of preparing and implementing the strategic communication plan at the museum. The distinguished category *Preparation and implementation of the strategic communication plan* reflects the museum management's attitude to the process of preparation and implementation of the strategic communication plan at this cultural institution. The essence of this category lies in two main subcategories: *Preparation of the strategic communication plan* and *Monitoring of the strategic communication plan* (Table 1).

**Table 1: Preparation and implementation of the strategic communication plan at the museum**

Category	Subcategory	Confirmatory statement
Preparation and implementation of the strategic communication plan	Preparation of the strategic communication plan	"Every department prepares those strategic communication plans from its position, actions related to the department's activities, then meetings take place <...>." (I1)
	Monitoring of the strategic communication plan	"Usually that strategic communication plan is reviewed twice a year, how we are there, whether everything is being implemented and, based on that, we make some evaluations." (I2)

Source: compiled by authors, based on research data.

As to the process of preparing and implementing the strategic communication plan at the museum, the museum employees distinguish two aspects: preparation and monitoring of the strategic communication plan. This is confirmed by the statements of the investigated persons: “Every department prepares those strategic communication plans from its position, actions related to the department’s activities, then meetings take place <...>”; “Usually that strategic communication plan is reviewed twice a year, how we are there, whether everything is being implemented and, based on that, we make some evaluations.”

To sum up, it can be stated that the process of preparing and implementing the strategic communication plan at Šiauliai *Aušra* Museum takes place in two stages: first, the strategic communication plan is prepared and then, its monitoring is carried out. It can be assumed that the process of preparation and implementation of the strategic communication plan at this museum conforms to the theoretical approaches for preparation and implementation of the strategic communication plan.

The results of the content analysis of interviews highlighted the importance of the strategic communication plan for this cultural institution. The distinguished category *The significance of the strategic communication plan for the institution* reflects the museum’s approach to the significance of the strategic communication plan at Šiauliai *Aušra* Museum. The essence of this category is outlined by subcategories: *Work distribution (planning)* and *Unplanned actions* (Table 2).

**Table 2: The significance of the strategic communication plan for the institution**

Category	Subcategory	Confirmatory statement
The significance of the strategic communication plan	Work distribution (planning)	“<...> this plan is necessary for good functioning not only of the department but also of the museum, you can strategize and set works in advance <...>.” (I2)
	Justification of unplanned actions	“<...> even unplanned things must be justified, why we do that. And there are a lot of those unplanned things.”(I1)

Source: compiled by authors, based on research data.

The interviewed museum managers emphasize that preparation of the strategic communication plan at the museum helps to distribute and/or plan works (“<...> this plan is necessary for good functioning not only of the department but also of the museum, you can strategize and set works in advance <...>”) as well as to justify the unplanned actions that often arise in the museum’s activities “<...> even unplanned things must be justified, why we do that. And there are a lot of those unplanned things.”).

In summary, it can be stated that the essence of the strategic communication plan at the museum is dual: work distribution (planning) and justification of unplanned actions. It can be assumed that the strategic communication plan at the museum is particularly needed to justify and explain unplanned actions, because it is not possible to plan all possible works at this cultural organization accurately.

During the qualitative study, Šiauliai *Aušra* Museum’s managers were asked to express their opinion on the ways of improving the institution’s activity in the strategic communication area so that the museum operates more successfully and effectively. The category *Improvement of strategic communication* (Table 3) was distinguished.

**Table 3: Improvement of strategic communication at the museum**

Category	Subcategory	Confirmatory statement
Improvement of strategic communication	Strengthening of relations with the community	“<...> to strengthen relations with the local community, national minorities, the education community; if schools are active here, students and the university, colleges, that is, higher education institutions, are quite passive.” (I1)
	Implementation of novelties	“<...> we are looking for some new ways, therefore, we include in that plan things going on in the society and enabling us to get in touch with the society.” (I2)
	Solution of the problem of accommodation in the city	“We are also facing problems that tourists cannot book rooms in the hotel. Straightaway, tourist groups, single tourists fall away <...>.” (I1).

Source: compiled by authors, based on research data.

Speaking about improvement of the institution’s activity in the strategic communication area, museum’s managers see three key trends of strategic communication improvement (three sub-categories are distinguished):

- strengthening of relations with the community “<...> to strengthen relations with the local community, national minorities, the education community; if schools are active here, students and the university, colleges, that is, higher education institutions, are quite passive.”);
- Implementation of novelties (“<...> we are looking for some new ways, therefore, we include in that plan things going on in the society and enabling us to get in touch with the society.”);
- Solution of the problem of accommodation in the city (“We are also facing problems that tourists cannot book rooms in the hotel. Straightaway, tourist groups, single tourists fall away <...>.”).

In summary, it can be stated that improvement of strategic communication at the museum is most closely related to strengthening of relationships with the community; i.e., seeking to ensure as many services to the visitors as possible and this way attract more target audiences. The said context presupposes the idea of the museum’s striving to meet visitors’ needs as much as possible. However, attention is also drawn to implementation of innovations and solution of the problem of accommodation in the city, which are among important constituents of strategic communication, also contributing to the improvement of strategic communication at Šiauliai Museum.

It can be assumed that strategic communication at the museum not only promotes implementation of innovations in museum activities but also performs a social function: helps to solve the problems of accommodation in the city, promoting the growth of tourist flows in and outside the city.

## 5. Results and discussion

The latest theoretical trends in the field of museology (mainly in the field of critical museology) (Tzortzi, 2014; Dulek, Campbell, 2015) show modernization of the museums’ role in the society in which they should be treated as important cultural actors. Museums become relevant actors in the dissemination of culture, assessing them in the context of two major environmental levels: as actors in the dissemination of culture in the context of national

and international culture and historical heritage, knowledge and trends; and as actors in the dissemination of culture in the context of publicizing and promotion of local cultural and historical heritage. It can be stated that the field of museum activity is fundamentally changing; i.e., the information function delegated to museums is replaced with the function of the museum as a leisure venue, this way transferring from the information function to the target function delegated to modern museums.

Based on the responses of research participants, it was identified that the improvement of strategic communication at Šiauliai Museum is most closely related to strengthening of relations with the community; i.e., seeking to ensure as many services as possible to visitors and this way attract more target audiences. The said context presupposes the idea of the Šiauliai Museum's striving to satisfy visitors' needs as much as possible. However, attention is also drawn to implementation of novelties and solution of the accommodation problem in the city as important constituents of strategic communication, which also contribute to improvement of strategic communication at Šiauliai Museum. This way, the museum takes on a new challenge – seeks to establish closer communicative relationship with the public, expanding the circle of the target audience, and at the same time, to contribute to the community's progress (Lin, 2006). It can be stated that today, the mission of modern museums is fundamentally changing – they become objects of knowledge and leisure.

It is noticed that the possibility of people's choice to spend their spare time indoors forces museums to compete not only with other museums but also with other leisure entities (shopping centres, amusement parks, etc.), which offer various leisure spending forms, using well pre-prepared strategic communications tools. Therefore, it is important for museums to become one of the attraction centres to spend free time. As the museum management model is changing, in the opinion of Falk (2009, 20 p.) "most museums seek to attract and serve as many visitors as possible". Therefore, it can be stated that communication between the museum and society is becoming increasingly more important, like the museums' striving to exhibit, maintain and constantly update collections.

## **6. Conclusion**

Strategic communication should be defined as management in both internal and external communication system of the organization, which helps to improve the image of the museum as the organization and to establish long-term relationships with the society. The use of the possibilities provided by strategic communication enables museums to more actively publicize their activities in the society, establish contacts with various target audiences, using various information and communication technologies, and promote users' need to permanently visit the museum.

Strategic communication helps Šiauliai Museum to attract more visitors, retain employees and effectively collaborate with local communities and the general public. It turned out that successful implementation of the corporate strategy of the organization required museum management to properly coordinate museum resources by implementing respective strategies and applying effective strategic communication models based on the coherence between external and internal communication.

Strategic communication at Šiauliai Museum is planned by preparing the museum's annual activity plans projecting activity fields with their respective planned goals, deadlines and responsible persons. The management of Šiauliai Museum indicated that the essence of the

strategic communication plan in the museum was dual: work distribution (planning) and justification of unplanned actions. Managers mostly relate improvement of strategic communication at the museum with strengthening of relationships with the community. Šiauliai Museum employees distinguished special events at the museum and advertising as the main tools of strategic communication, which are most often used in museum activities in order to strengthen external communication. Employees relate successful implementation of strategic communication at the museum to preparation of the effective strategic communication plan.

## References

1. Bantimaroudis P., Zyglidopoulos S., Symeou P. (2010), *Greek Museum Media Visibility and Museum Visitation: An Exploration of Cultural Agenda Setting*, „Journal of Communication”, 60:(4) pp. 743-757.  
<http://onlinelibrary.wiley.com/doi/10.1111/j.1460-2466.2010.01512.x/abstract;jsessionid=2B32DBFB163CF614BF7D42973CC32B1B.f04t02?deniedAccessCustomisedMessage=&userIsAuthenticated=false> (access: 14-03-2019)
2. Berg L. B. (2011), *Qualitative Research Methods for the Social Sciences*, London, Allyn & Bacon, A Pearson Education Company, [https://mthoyibi.files.wordpress.com/2011/05/qualitative-research-methods-for-the-social-sciences\\_\\_bruce-l-berg-2001.pdf](https://mthoyibi.files.wordpress.com/2011/05/qualitative-research-methods-for-the-social-sciences__bruce-l-berg-2001.pdf) (access: 03-04-2019)
3. Bhattacharjee A. (2012), *Social Science Research: Principles, Methods and Practices*, Florida, University of South Florida  
[http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1002&context=oa\\_textbooks](http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1002&context=oa_textbooks) (access: 19-03-2019).
4. Bosch van den A. (2004), *Museums Constructing a Public Culture in the Global Age*, „Third Text”, number 19, volume 1, pp. 81-89, EBSCO Database (access: 19-03-2019)
5. Bradbourne J. (2001), *A New Strategic Approach to the Museum and its Relationship to Society*, „Museum Management and Curatorship”, 19:(1), pp. 75-84.  
<http://www.tandfonline.com/doi/abs/10.1080/09647770100701901?journalCode=rmmc20#preview> (access: 14-03-2019).
6. Capriotti P. (2010), *Museums' communication in small and medium-sized cities*, „Corporate Communications: an International Journal”, 15:(3), pp. 281-298.  
<http://www.emeraldinsight.com/toc/ccij/15/3> (access: 23-03-2019)
7. Dulek R.E., Campbell K.S. (2015), *On the Dark Side of Strategic Communication*, „International Journal of Business Communication”, 52:(1), pp. 122-142.  
<http://www.sagepub.com/journalsPermissions.nav> (access: 23-03-2019)
8. Falk J. (2009), *Identity and the museum visitor experience*, Walnut Creek (USA), Left Cost Press,  
[http://www.kulturstyrelsen.dk/fileadmin/user\\_upload/dokumenter/KS/institutioner/museer/Indsatso mraader/Brugerundersogelse/Artikler/John\\_Falk\\_Understanding\\_museum\\_visitors\\_\\_motivations\\_\\_and\\_learning.pdf](http://www.kulturstyrelsen.dk/fileadmin/user_upload/dokumenter/KS/institutioner/museer/Indsatso mraader/Brugerundersogelse/Artikler/John_Falk_Understanding_museum_visitors__motivations__and_learning.pdf) (access: 14-03-2019)
9. Hooper-Greenhill E. (2000), *Changing Values in the Art Museum: rethinking communication and learning*, „International Journal of Heritage Studies”, number 6, volume 1, pp. 9-31.  
<http://libra.msra.cn/Publication/42578005/changing-values-in-the-art-museum-rethinking-communication-and-learning> (access: 19-03-2019)
10. Lin Y. (2006), *Leisure-A function of museums? The Taiwan perspective*, „Museum Management and Curatorship”, 21:(4), pp. 302-316, EBSCO Database (access: 19-03-2019)
11. Tzortzi K. (2014), *Movement in museums: mediating between museum intent and visitor Experience*, „Museum Management and Curatorship”, 29:(4), pp. 327-348.  
<http://dx.doi.org/10.1080/09647775.2014.939844> (access: 19-03-2019).

## “ONE BELT ONE ROAD” – A SITUATION ANALYSIS OF CHINA AND HUNGARY

*Saadi Ahmad SHAHBAZ<sup>1</sup>, Anna DUNAY<sup>2</sup>*

*<sup>1,2</sup> Szent István University, Gödöllő, Hungary*

*E-mail: sp13rpm451@vcomsats.edu.pk*

### **Summary:**

**Purpose:** The aim of the study was to give insight into the Belt and Road Initiative, as a main internationalization program of China with the European countries, particularly with Hungary. For the analysis of the present situation, the past, current and future trading trends between China and Hungary were explored, and the opportunities and next steps for better economic options and better bilateral and multilateral trading mechanism were summarized.

**Design/methodology/approach:** The paper is based on a desk research: a wide literature review and analysis was conducted. For this research are PESTEL analysis, was conducted.

**Findings:** China is Hungary's fourth largest trading partner. Meanwhile, Hungary is China's third largest trading partner in Central and Eastern Europe. „The Eastern opening” Hungarian government policy coincides with „The Belt and Road” policy of China at geographical and target levels. Until 2017, China's stock of direct investment in Hungary was \$330 million. China revised and improved the laws for the Administration of overseas Investment. Recently, taxable incomes related to the place of business shall be determined under the rules applicable to resident companies.

After 2013, China's Trade-to-GDP ratio has declined. This is mainly due to the relatively stable situation of total imports and exports, while the growth rate of GDP increased, resulting in a smaller coefficient. On other hand, trade protectionism in European countries has gradually risen. Under the mode of modern logistics integration, a more stable contractual relationship with sales enterprises may be established. In the future, it is necessary to further strengthen the cooperation mechanism at the bilateral government level, actively build a bilateral economic and trade cooperation service platform, remove trade barriers; promote the pace of cooperation in key areas. The paper describes the situation of relationship of the two countries in a systematic method using PESTEL analysis.

**Keywords:** Belt and Road Initiative, China-Hungary relationship, PESTEL, investment

### **1. Introduction and Research Background**

The economic relationship between China and Europe dates back to ancient times, when China and Europe were linked together for thousands years through the old Silk Road. Nowadays, after a long break, this relationship is opened again through China's New Silk Road project, the One Belt, One Road initiative.

China's The Belt and Road Initiative (The Belt and Road or One Belt One Road) is the broadened name of „Silk Road Economic Belt” and „21st Century Maritime Silk Road”. The Belt is the Chinese proposal to interlink the countries and economies of the Eurasian continent with different projects by coordinating national and regional development plans. By the this intercontinental cooperation transport networks and markets are to be expanded and connected, Eurasian production capacity may be developed, the transit of goods, capital, energy, raw materials, information, people and culture may be expanded. According to the

plans substantial investments in roadworks, railways, maritime and aerial infrastructure are to be built (Ghiassy and Zhou, 2017).

The main objectives of the initiative are to build a unified large market by widening both international and domestic markets, through cultural exchange and integration, which may connect countries and cultures along the ancient Silk Road in a modernised way, by mutual trust and cooperation of member nations.

In September and October of 2013, Chinese President Xi Jinping proposed the construction of the „New Silk Road Economic Belt” and the „21st Century Maritime Silk Road” respectively. This is a major strategic measure adopted by Chinese leaders to promote China’s opening and its campaigns for its harmonious regional development (Dumitrescu, 2015).

The Belt and Road fully relies on the existing bilateral and multilateral mechanisms between China and the countries concerned. By the help of the existing and effective platform for regional cooperation, China aims to

- use the historical symbols of the ancient Silk Road,
- motivate peaceful development,
- develop active economic partnerships with countries along the Belt and Road and
- jointly build a community of interests on political mutual trust, economic integration and cultural inclusion (Zoukoui, 2014).

China is Hungary’s fourth largest trading partner. Meanwhile, Hungary is China’s third largest trading partner in Central and Eastern Europe (CEE region). In 2010, the Hungarian government decided to strengthen its trading partners with the East, known as „The Eastern opening” policy. This policy coincides with „The Belt and Road” policy at geographical and target levels. Hungary is among the most important trading and business partners in the CEE region (Szunomár and Peragovics, 2019).

The Silk Road was an ancient land-based commercial and trade route that originated in ancient China and connected Asia, Africa, and Europe. Its original function was to transport silk, porcelain, and other goods produced in ancient China. Later, it became the main way of communication between the East and the West in many aspects, such as economy, politics, culture and so on (Yang, 2019).

## **2. Methodology**

By a wide desk research using documents and statistical data, a situation analysis was conducted using PESTEL analysis. As the One Belt One Road initiative is built on economic, social and environmental pillars, all the factors (political, economic, social, technological, environmental and legal factors) were discussed and analysed. For gathering relevant information, international and Chinese literature sources, official documents and website information were used, applying the following keywords and topics for search: One belt One Road, Silk Road, China trade, China and CEE, Belt and Road Initiative.

## **3. Results and Discussion**

For a detailed situation analysis, a PESTEL analysis method was conducted to describe the different factors which may influence and affect the successful implementation of the measures of One Belt One Road initiative.

### ***Political factors***

China is Hungary's fourth largest trading partner. Hungary is also China's third largest trading partner in Central and Eastern Europe. In 2010, the Hungarian Government decided to strengthen ties with its trading partners in the East, known as the „Eastern Opening” policy. Hungary was the first European country to sign a document with China on jointly promoting „The Belt and Road” construction cooperation, the first country to launch the „Belt and Road” working group mechanism with China, the first central and eastern European country to set up an office of the China Tourism Administration (Szunomár and Peragovics, 2019). On May 13, 2017, Chinese President Xi Jinping met with Hungarian Prime Minister Orbán, who came to China to attend the „The Belt and Road” summit, and together issued a joint statement on the comprehensive establishment of a strategic partnership.

Go Out Policy is China's strategy to encourage its enterprises to invest overseas. Most nations favour attracting inward foreign investment, and support outward foreign investment only passively. China attaches importance to both inward and outward foreign investment. The Go Out Policy (also referred to as the Going Global Strategy) was an effort initiated in 1999 by the Chinese government to promote Chinese investments abroad (Cheng, 2018).

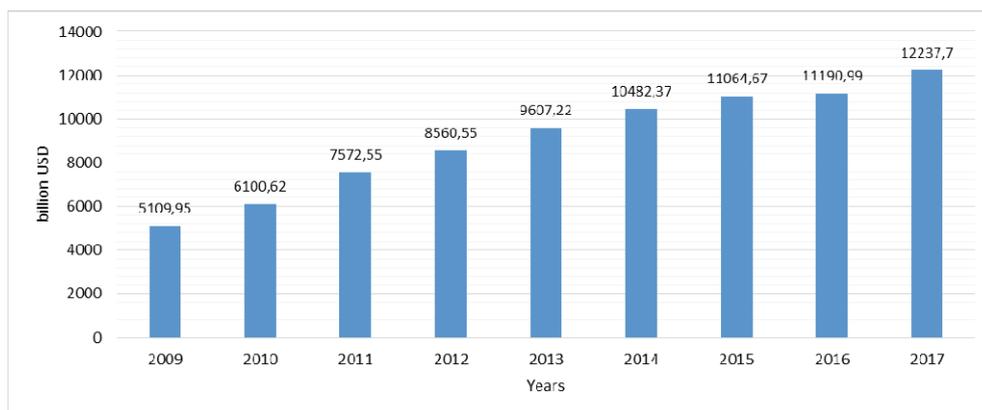
The programs launched so far by the Chinese Government have goals in:

- Increasing Chinese Direct Foreign Investment (FDI)
- Pursuing product diversification
- Improving the level and quality of the projects
- Expanding financial channels with respect to the national market
- Promoting brand recognition of Chinese companies in EU and US markets.

### ***Economic factors***

China remains one of the fastest growing economy and the main contributor to global economic growth in the world. The annual production surplus of China is 800-900 billion USD, which means that China is the world's 16<sup>th</sup> largest economy. China's economy is becoming more dominant in Asia, the next three largest national economies after China are Japan, India and South Korea, whose joint economic performance in 2016 (8,000 billion USD) is only 65.3% of the total Chinese economy.

The GDP in China was worth 12237.70 billion US dollars in 2017 (Figure 1), the GDP value of China represents nearly 20% of the world economy (Yang, 2019).



***Figure 1: GDP of China***

*Source: own edit based on data from [www.tradingeconomics.com](http://www.tradingeconomics.com)*

In China, the economy continues to develop rapidly, and foreign exchange reserves continue to increase. From Figure 2, foreign Exchange Reserves in China averaged 1 013 826.48 USD Million from 1980 until 2019, reaching an all-time high of almost 4 000 000 Million USD in 2014.



**Figure 2: Chinese foreign investment (million USD)**

Source: own edit based on data from [www.tradingeconomics.com](http://www.tradingeconomics.com)

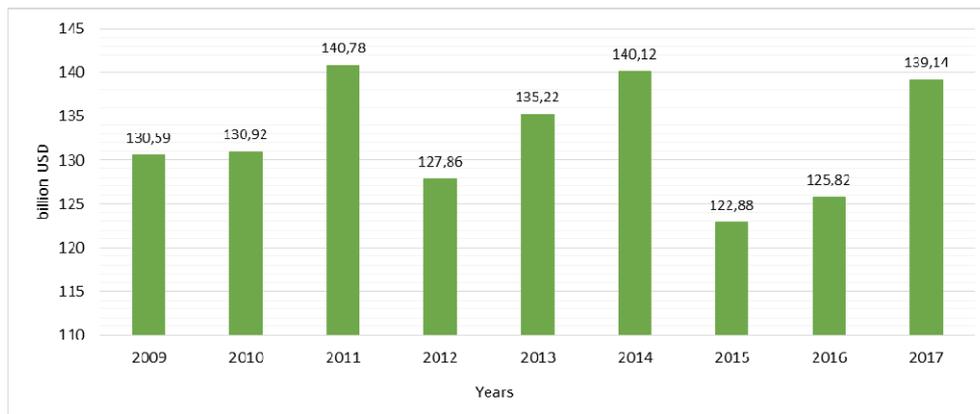
The Chinese Government – under pressure from changes in foreign exchange rates – is considering allowing domestic investors to use the RMB (yuan, the Chinese currency) to invest overseas in an effort to energize offshore RMB .

Offshore yuan is allowed to trade freely on foreign currency markets. Therefore, expanding foreign investment can not only reduce the pressure, but also help to promote China's economic restructuring and upgrading. The domestic environmental capacity has reached the limit, forcing many domestic enterprises to turn to overseas to open up the market. Since the BRICS Development Bank and the Asian Infrastructure Investment Bank proposed by China have been established, they are able to promote effectively the Chinese enterprises to go out and invest abroad.

China is a big manufacturing country, the problem of overcapacity is becoming more and more obvious, resulting in a great waste of resources and a great negative effect on economic operation. The transfer of excess capacity overseas is an effective way, which is also the practical experience and practice of most industrialized countries. This will be the policy orientation of the Chinese government in future.

The FDI of China in the Central Eastern European region was mostly manifested in Hungary: more than 80% of the total Chinese capital flow was invested in Hungary (Matura, 2017). Later other countries of the region became important destinations of capital, but Hungary kept its preferred place for Chinese investments (Chen, 2012).

GDP in Hungary was worth 139.14 billion US dollars in 2017. The GDP value of Hungary represents 0.22% of the world economy. GDP Growth Rate in Hungary averaged 0.61% from 1995 until 2018.



**Figure 3: GDP of Hungary**

Source: own edit based on data from [www. tradingeconomics.com](http://www.tradingeconomics.com)

Hungary continues to be one of the leading nations in Central and Eastern Europe for attracting foreign direct investment: the inward FDI in the country was 119.8 billion USD in 2015, while Hungary invests more than 50 billion USD abroad. As of 2015, the key trading partners of Hungary were Germany, Austria, Romania, Slovakia, France, Italy, Poland and the Czech Republic. Major industries include food processing, pharmaceuticals, motor vehicles, information technology, chemicals, metallurgy, machinery, electrical goods, and tourism (Szunomár et al., 2014).

### ***Social factors***

Economic globalization is mostly manifested in the free flow and optimal allocation of capital, technology, information, goods and services, so that the economies of all countries depend on each other and influence each other, therefore social factors and attitudes of the society will play an increasingly important role.

Economic globalization brings new opportunities to China and Hungary, but it will also bring challenges. By participating in the international division of labour, international exchanges and cooperation, the social forces the capabilities of the Chinese society should be improved to narrow the gap with developed countries. „The Belt and Road” initiative is not a simple economic development, but a multi-fields cooperation. The Belt and Road”, takes the lead in moving forward, which is not only the inheritance and dissemination of the spirit of the ancient Silk Road, but also it is through cultural exchanges to enhance the attractiveness of „The Belt and Road”. This is a road of mutual respect and trust, a road of win-win cooperation and a road of cultural mutual learning (Liu, 2014).

Hungary has Chinese-Hungarian Bilingual Primary, Secondary and High Schools and three Confucius Institutes, namely in Budapest, in Miskolc and in Szeged, which are all cities with the greatest universities. Confucius Institute, a non-profit educational institution, is mainly committed to the development of the Chinese language and the Chinese language around the world. These educational lines could give a basis of Chinese and Hungarian speaking future employees as well as it could be an alternative option for the families of the Chinese investors or employees working and living in Hungary.

### ***Technological factors***

China has considerable advantages in infrastructure construction. Infrastructure is critical to development and can fully unleash the creativity of enterprises. Based on international practice, the return on infrastructure investments are relatively stable. At present, many

infrastructures in developed countries need to be upgraded on a global scale, while developing countries urgently need to expand infrastructures (McCaleb and Szunomár, 2017). According to the Asian Development Bank, Asian countries will need \$730 billion a year in infrastructure investment by 2020. It includes not only railways and highways, but also oil and gas pipelines, power channels, airports, water supply systems, bridges, communications and other infrastructure. In one hand, it can solve the problem of domestic overcapacity to a certain extent; on the other hand, it can promote local economic development and employment.

China has high-speed railway technology. High-speed rail developed rapidly in China over the past 15 years with substantial funding from the Chinese government, especially the economic stimulus program during the Great Recession. The cost of air transportation is higher than that of land transportation. If the high-speed railways between different countries will be built, the land transportation time of Eurasia can be reduced. The transportation cost can be reduced at the same time. Moreover, connecting Asian and European countries along the Silk Road and building a commodity transport networks can promote the economic development and cultural exchanges of various countries.

For example, because of The Belt and Road's cooperation, China helped build the Hungarian-Serbian railway. The Hungarian-Serbian railway runs 350 kilometres from Budapest, the capital of Hungary, to Belgrade, the capital of Serbia. It is about 166 kilometres in Hungary and 184 kilometres in Serbia. The project is an electrified mixed passenger and freight railway, with a design that top speed is 200 kilometres per hour. The construction period is two years. After completion and opening to traffic, the running time between the two places will be reduced from the current eight hours to less than three hours (Liu, 2014, Yang, 2019).

As a landmark project of China-Central and Eastern European cooperation, the construction of the Hungarian-Serbia railway conforms to the complementary interests of both sides. China's railway construction has developed rapidly in the past 30 years. The relevant equipment, technology, and construction experience have become more and more mature, especially after strengthening cooperation with emerging market countries. What's more, further improving the quality of equipment and the level of service has obvious cost-effective advantages.

### ***Environmental factors***

Hungary is the largest investment destination in Central and Eastern Europe with China. It is bordered by the most developed EU integration market in Western Europe and the western Asia region, which is rich in natural resources. Hungary has unique geographical advantages, which may be the main motivating factors in investments into tourism and hospitality sector and also transporting facilities.

### ***Legal factors***

In order to promote the facilitation of overseas investment, China issued a series of management measures and catalogues for overseas investment (Mergers and Acquisitions) in 2014, which greatly simplified the examination and approval procedures for foreign investment from Chinese companies. It also further simplifies the regulatory process, making it easy for Chinese investors to foreign lands. China revised and improved the laws for the Administration of overseas Investment, implemented them on October 6 in 2014. Its main bright spot is to establish a management model for overseas investment, which is based on filing as the main and approval as the auxiliary. 99% of the projects that need to be approved

have been cancelled and the international negative list management model has been introduced. M&A loan provisions will provide more convenience and benefits for Chinese enterprises while adjusting and solving the problem of domestic business standards in line with international standards (Cheng, 2018).

With the liberalization of Foreign Exchange Act in 2001, full current account convertibility and nearly full capital account convertibility were introduced. Hungarian companies carrying on economic activities may freely exchange HUF for foreign currency. Foreign companies and individuals may open convertible foreign currency accounts as well as HUF accounts in Hungarian banks. Short-term and long-term loans can be granted freely by foreigners to Hungarian companies. Foreigners can invest into existing Hungarian companies or may set up their own companies without any restriction. Foreign financial contributions must be paid in a convertible currency or as contribution in kind.

Recently, taxable incomes related to the place of business shall be determined under the rules applicable to resident companies.

#### **4. Conclusion**

The construction of One Belt One Road aims to promote the free flow of economic elements, the efficient allocation of resources and the deep integration of markets, thus, it promotes the coordination of economic policies among the countries along the route and carries out regional cooperation on a larger scale at a higher level. Countries will work together to build an open, balanced and inclusive regional economic cooperation framework. As the terminal of the Silk Road, Europe is not only an important target market for the construction of Belt and Road, but also Europe's reaction and attitude will affect the public opinions and treatment of one belt and one road in the international community.

Hungary was among the first cooperating partners of this initiative, and plays an important role in further cooperation. By focusing on the elements of the macroenvironment, this paper introduced the political, economic, social, technological environmental and legal factors, which describe the present circumstances and influence the future development and implementation of the measures of One Belt One Road initiative.

#### **References**

1. Chen, X. (2012), Trade and economic cooperation between China and CEE countries. Working Paper Series on European studies, Institute of European Studies, Chinese Academy of Social Sciences, Vol. 6, No. 2
2. Cheng, Y. (2018), Public Opinions on the Belt and Road Initiative: A Cross-Cultural Study. In: Cheng, Y., Song, L., Huang, L. (eds) *The Belt & Road Initiative in the Global Arena*. Palgrave Macmillan, Singapore
3. Dumitrescu, G. C. (2015), Central and Eastern European Countries Focus on the Silk Road Economic Belt. *Global Economic Observer*, Institute for World Economy of the Romanian Academy, 3:(1), pp 186-197.
4. Ghiasy, R., Zhou, J. (2017), *The Silk Road Economic Belt. Considering security implications and EU–China cooperation prospects*. Stockholm International Peace Research Institute, Solna, Sweden
5. Liu, Z (2014), Central and Eastern Europe in building the Silk Road Economic Belt, "Institute of European Studies, Chinese Academy of Social Sciences, Working Paper Series on European Studies, Vol. 8, No. 3. doi: /10.2298/MEDJP1503184Z

6. Matura T. (2017), Chinese Investment in Hungary: Few Results but Great Expectations. pp. 75-79. In: Seaman, J., Huotari, M., Otero-Iglesias, M. (eds.) (2017), Chinese Investment in Europe. A Country-Level Approach. French Institute of International Relations, Elcano Royal Institute, Mercator Institute for China Studies
7. McCaleb, A., Szunomár, Á. (2017), Chinese foreign direct investment in Central and Eastern Europe: an institutional perspective. In: Drahekoupil, J. (ed.): Chinese Investment in Europe: Corporate Strategies and Labour Relations. European Trade Union Institute. Brussels. pp. 121–140.
8. Szunomár, Á. Peragovics, T. (2019), Hungary: An assessment of Chinese-Hungarian economic relations. In: Kramer, Zack (ed.) Comparative Analysis of the Approach Towards China., Centre for Economic and Regional Studies, pp. 2-7.
9. Szunomár, A., Völgyi, K., Matura T. (2014), Chinese investments and financial engagement in Hungary. Institute of World Economics, Centre for Economic and Regional Studies, Hungarian Academy of Sciences, Budapest, 24 p.
10. [www.tradingeconomics.com](http://www.tradingeconomics.com) (Access: 02-20-2019)
11. Yang, Z. (2019), Trade relation between China and Hungary under “The Belt And Road Initiative ” Thesis. Szent Istvan University, Gödöllő
12. Zoukui, L. (2014), The Role of Central and Eastern Europe in Building of Silk Road Economic Belt, China Institute of International Studies  
Available at: <http://ies.cass.cn/english/publication/ot/201703/P020170314330552524410.pdf>  
(Access: 02-03-2019)

## MEAT ANALOGUES AS PROTEIN SOURCES

*Anikó KOVÁCS<sup>1</sup>, András TÓTH<sup>1,2</sup>, Anna DUNAY<sup>2</sup>, Csaba Bálint ILLÉS<sup>2</sup>,  
András BITTSÁNSZKY<sup>1</sup>*

<sup>1</sup> *InDeRe Institute for Food System Research and Innovation Nonprofit Ltd, Budapest, Hungary*

<sup>2</sup> *Szent István University, Gödöllő, Hungary*

*E-mail: aniko.kovacs@indere.hu*

### **Summary:**

**Purpose:** The indirect environmental effects of food production processes are less known problems, however food factories are among the main contributors to environmental impacts such as climate change, land use problems, soil deterioration, water and air pollution and greenhouse effects. The dietary recommendations related to food products are often incomplete because they ignore the indirect environmental effect of food production, i.e. the ecological footprints of the different food products.

The purpose of this research is to reveal and compare of scientific and societal reputation of the topics of meat analogues and artificial meats, which products might be possible solutions the food-related environmental threats and problems.

**Design/Methodology:** This research is based on desk research, conducted through a bibliography analysis. Search engines were used with selected characteristics and keywords and Scopus system was used for scientific results and Google for general results. Data were evaluated between 2009-2019.

**Findings:** Results show increasing trends in the reputation of meat analogues and artificial meats. In the further steps of the research, researchers will go deeper into the bibliography analysis and not only the number of search results, but also the content of the researches and publications will be put into the focus.

**Keywords:** meat analogues, protein source, cultured meat, artificial meat

### **1. Introduction**

Present food system is a significant contributor to climate change as a result of land use changes, deterioration of soils, pollution of freshwater resources and the intensive use of fertilizers with nitrogen and phosphorus content, conventional – industry-like – agricultural production, etc. All of these processes are responsible for climate change. According to forecasts, the environmental impact of food systems may increase by 50-90% until 2050 if interventions will not occur. As livestock sector is considered as one of the main emission sources, it is now widely accepted that reducing meat consumption and consuming plant-based foods can significantly reduce greenhouse gas emissions. In order to achieve the global climate protection goals, it is necessary to change people's eating habits and to reduce or replace the meat content of our food.

Nevertheless, in the process of meat replacement (for which cereals or legumes are usually used as raw material), the appropriate protein intake of consumers must be ensured, and, in addition, the quality and level of consumer experience (taste, flavour, tenderness, etc. of the products) must be maintained. The production of meat analogues requires water, textured vegetable protein, non-textured protein, spices, flavourings, fat, binder agent and colouring agent. The main ingredient of meat alternatives is plant protein. The protein properties depend

on the types (chemical composition, amino acid sequence, secondary and higher structure) and existing conditions such as pH, temperature, ionic strength, etc., therefore several methods can be used for production of meat analogues.

## **2. Literature review / Research Background**

The indirect effect of processes associated with food production are less known to the environment however the food production and food factories are among the main contributors to environmental impacts such as climate change, land use, water and air pollution and greenhouse effect. In our days it is an accepted fact that the reduction of meat consumption and the increase of plant-based food may reduce the emission of greenhouse gases (Poore and Nemecek, 2018). Tuomisto et al. (2018) showed that from three dietary types (healthy US, healthy Mediterranean healthy vegetarian), the vegetarian diet places a 42-84% lower burden on the environment. The dietary recommendations are often incomplete because they ignore the indirect environmental effect of food production.

The number of foodservice units free from animal origin is increasing, and more and more vegetarian and vegan restaurants are opened and special cookbooks are published. The reason for choosing a vegan diet can be

- animal related (ethics, animal welfare),
- environmental (shortage of resources, environmental sustainability, greenhouse effect),
- health motivation (personal well-being, disease prevention),
- religious.

The importance of animal welfare and environmental reasons are justified by the fact that 45% of the EU economy comes from animal-based farming, is also supporting the environmental reasons (Janssen et al., 2016). Papier et al. (2019) showed that vegans and vegetarians are at lower risk of obesity, ischemic heart disease, diverticulitis, cataracts, the onset of some cancers, non-alcoholic fatty liver, coronary artery disease, and stroke compared to meat consumers.

In order to reduce global land use, reduce environmental use and protect the environment, the consumption of animal products (mainly meat) must be decreased. Solutions for meat replacement can be the consumption of plant based meat analogues, laboratory-produced meat (cultured meat or in vitro meat), or insects (Alexander et al., 2017).

In the course of meat substitution an important objective is to provide the appropriate nutrient level but it is also important to keep the consumers' satisfaction by providing good taste and texture.

According to a European survey (in high-income vs. middle/low-income countries), the acceptance of meat substitutes showed high level results. The greatest acceptance was measured in middle/low-income countries, including Hungary (over 50% of respondents would try) (de Boer and Aiking, 2018).

Since consumer preferences are also influenced by the price, therefore meat substitutes can be good alternatives as they can be cheaper so they are more accessible to the public.

Meat replacement must ensure appropriate protein intake, meanwhile the level consumer experience (taste, flavour, tenderness, etc.) must be maintained. Their production requires water, textured vegetable protein, non-textured protein, spices, flavourings, fat, binder agent and colouring agent (Carsten et al., 2019; CBInsight, 2019).

The main requirements and characteristics of meat substitutes are summarized in Table 1.

**Table 1: Characteristics of meat substitute products with high added value**

Enjoyable	meat-like enjoyment value taste, texture, appearance appropriate alternative for meat products
Functional	multifunctional ready-to-eat easy to prepare
Safe and reliable	GMO-free allergen free natural ingredients without additives
Nutritious	high protein and fibre content well-integrated proteins well combined amino acid content
Sustainable	produced by local (European) producers environment-friendly production and processing small ecologic footprint less land use

*Source: own compilation*

The main ingredient of meat alternatives is plant protein. This protein is extracted by various methods, resulting protein powder. The protein powder can be classified as protein isolates, or protein concentrates or textured protein. Isolate is the purest source of protein however, the other alternatives can be also useful. The protein properties such as water and oil retention capacity, solubility, emulsification, foaming, gelation etc., depend on the type (chemical composition, amino acid sequence, secondary and higher structure) and conditions such as pH, temperature, ionic strength, etc. They can change the protein structure and consequently its functionality (Kyriakopoulou, Dekkers and van der Goot, 2019). Therefore, several methods can be used for production of meat analogues.

Plant-based meat analogues have been produced mainly by soy-based product (tempeh, tofu) or wheat gluten, but nowadays more and more plant varieties are involved for this purpose. Thus, meat analogues can be produced from wheat, corn, rice, barley, oats, sorghum, soybeans, beans, chickpeas, lentils, lupines, peas, etc.

Animal husbandry, and forage production are responsible for 18% of greenhouse gas emissions, exceeding transportation or industry. The energy consumption of protein production is as follows: 1 kg of protein requires 1300 MJ in case of beef, 590 MJ in case pork and 30 MJ in case soybean. According to FAO/WHO data, it is assumed that the biological value of soy protein is the same as that of beef protein.

According to Anderson et al. (1995) the replacement of animal protein with soy, could reduce cholesterol and LDL cholesterol by 10%. This requires 20-50 g of soy protein per day.

### **3. Methodology**

Two search engines were used for this research Google and Scopus. Results from Google search return the global reputation of the topic while Scopus hits show the reputation in scientific community.

Characteristic keywords were applied for search engines such as “meat analogue” or “artificial meat” or “cultured meat”. While for the meaning of “artificial meat” and “cultured meat” is the same the results were evaluated together with OR operator. Only the results between January 2009 and May 2019 were evaluated.

#### 4. Results and Discussion

Meat analogues or meat replacements are products that are completely made of plant-based inputs, but their sensory features are similar to meat, they can offer a good enjoyment value for the consumers, in this case they differ from such classic vegan meat replacements like tofu, mushroom, seitan etc.

Artificial or cultured is a special meat produced by in vitro cell culture of animal cells, instead of the meat of slaughtered animals. The production process of these products is special; it was evolved in recent years and represents meat that is created through exponential cell growth in bioreactors. The result is a special type of meat which is identical to conventionally produced meat. Until now, only the public and private tasting processes of various prototypes are finished, no commercial products are sold yet (Carsten et al., 2019).

We conducted a keyword-based search for both terms, in order to define the frequency of these keywords in the professional and academic literature sources.

##### ***Keyword “meat analogue”***

The results of the search show the increasing trend of using the examined keywords in both – scientific and not-scientific – search engines. Table 2 summarizes the search results for the keyword “meat analogue” in using Google and Scopus database as search engines.

***Table 2: Number of search results of keyword “meat analogue” using Google and Scopus search engines between 2009-2019***

<b>Year</b>	<b>Google</b>	<b>Scopus</b>
2019	27 200	17
2018	25 400	15
2017	16 100	13
2016	12 700	7
2015	9 360	5
2014	7 970	5
2013	6 320	4
2012	3 900	2
2011	3 030	3
2010	1 610	4
2009	1 260	7

*Source: own compilation*

The search engine hits show increasing trends in reputation both in scientific and general society. With Scopus system, it is possible to evaluate the reputation of the scientific papers through citation information.

The most highly cited work is from Friedman and Jürgens (2000) with 374 citations however, the actual topic of this paper is not meat analogues. Another really highly cited meat analogue papers are from Lin et al. (2000) with 91 citations and Asgar et al. (2010) with 78 citations.

### **Keyword "artificial meat" OR "cultured meat"**

The next search was related to keyword "artificial meat" OR "cultured meat", i.e. meat produced by in vitro cell culture of animal cells, instead of the meat of slaughtered animals. Search results are summarized by Table 3.

**Table 3: Number of search results of keywords "artificial meat" OR "cultured meat" using Google and Scopus search engines between 2009-2019**

<b>Year</b>	<b>Google</b>	<b>Scopus</b>
2019	26 700	20
2018	24 000	21
2017	14 600	16
2016	10900	3
2015	8 170	20
2014	7 350	7
2013	5 320	11
2012	3 710	7
2011	2 950	4
2010	1 670	2
2009	1 240	0

*Source: own compilation*

The production process of these products is very special, the result is a special meat which is identical to conventionally produced meat. Until now, only the public and private tastings of various prototypes has been finished, no commercial products are sold yet (Carsten et al., 2019).

The trend is increasing constantly in society and science. Most cited works are from Tuomisto and Teixeira De Mattos (2011) (129 citation), Post (2012) (97 citation) and Hopkins and Dacey (2008) (77 citation).

However, meat analogue products are accessible on the market, artificial meat exist nowadays only in laboratories and further research is necessary to develop vendible and consumable product.

## **5. Conclusion**

The reputation of meat analogues are constantly increasing and this trend probably will continue. It is almost impossible to make forecasts about the future of these special groups of food products and to assess whether one of these products, meat substitutes of plant-origin or cultured meat or even both will reduce the significance of the conventional meat industry. It may depend on the input materials of their production, the product features, consumers' acceptance and also the ethics and sustainability of production. Both products may generate innovative ideas and innovation driven enterprises. It may depend on the input materials of their production, the product features and consumers' acceptance. Moreover, – as it was confirmed by results of Szakály et al. (2017) – environmental consciousness, ethical factors, sustainability of production and health consciousness are also driving forces of consumers' choices which also may affect the future of meat analogues. Both product types (plant-origin meat substitutes and cultured meats) may generate innovative ideas and may be the initial point of innovation driven enterprises.

However the development of artificial meat product needs further extensive research, its reputation is the same as meat analogues that are already on the market.

The further steps of the research are aimed to explore the main food safety and dietary questions of the meat analogues and the processes how these new food products may be used in the food market and in the catering sector.

### ***Acknowledgement***

The project was supported by National Research Development and Innovation Office (Grant No: 2018-1.1.1-MKI-2018-00179). A. J. Tóth was supported by New National Program for Excellence by the Hungarian Ministry of Human Capacities – UNKP.

### **References**

1. Alexander, P. et al. (2017), Could consumption of insects, cultured meat or imitation meat reduce global agricultural land use? *Global Food Security*, Elsevier B.V., 15 (April), pp. 22-32. DOI: 10.1016/j.gfs.2017.04.001
2. Anderson, J. W., Johnstone, B. M. and Cook-Newell, M. E. (1995), Meta-Analysis of the Effects of Soy Protein Intake on Serum Lipids. *New England Journal of Medicine*, 333:(5), pp. 276-282. DOI: 10.1056/NEJM199508033330502
3. Asgar, M. A. et al. (2010), Nonmeat protein alternatives as meat extenders and meat analogs. *Comprehensive Reviews in Food Science and Food Safety*, 9:(5), pp. 513-529. DOI: 10.1111/j.1541-4337.2010.00124.x
4. Carsten, G. et al. (2019), How Will Cultured Meat and Meat Alternatives Disrupt the Agricultural and Food Industry? At Kearney, Available at: <https://www.atkearney.com/retail/article/?/a/how-will-cultured-meat-and-meat-alternatives-disrupt-the-agricultural-and-food-industry> (Access: 2019-10-20)
5. CBInsight (2019), Our Meatless Future: How The \$90B Global Meat Market Gets Disrupted. Available at: <https://www.cbinsights.com/research/future-of-meat-industrial-farming/> (Access: 2019-10-20)
6. de Boer, J. and Aiking, H. (2018), Prospects for pro-environmental protein consumption in Europe: Cultural, culinary, economic and psychological factors. *Appetite*, 121, pp. 29-40. DOI: 10.1016/j.appet.2017.10.042
7. Friedman, M. and Jürgens, H. S. (2000), Effect of pH on the stability of plant phenolic compounds. *Journal of Agricultural and Food Chemistry*, 48:(6), pp. 2101-2110. DOI: 10.1021/jf990489j
8. Hopkins, P. D. and Dacey, A. (2008), Vegetarian meat: Could technology save animals and satisfy meat eaters? *Journal of Agricultural and Environmental Ethics*, 21:(6), pp. 579-596. DOI: 10.1007/s10806-008-9110-0
9. Janssen, M. et al. (2016), Motives of consumers following a vegan diet and their attitudes towards animal agriculture. *Appetite*, Elsevier Ltd, 105, pp. 643-651. DOI: 10.1016/j.appet.2016.06.039
10. Kyriakopoulou, K., Dekkers, B. and van der Goot, A. J. (2019), Plant-Based Meat Analogues, Sustainable Meat Production and Processing. Elsevier Inc. DOI: 10.1016/b978-0-12-814874-7.00006-7
11. Lin, S., Huff, H. E. and Hsieh, F. (2000), Texture and chemical characteristics of soy protein meat analog extruded at high moisture. *Journal of Food Science*, 65:(2), pp. 264-269. DOI: 10.1111/j.1365-2621.2000.tb15991.x
12. Papier et al. (2019), Comparison of Major Protein-Source Foods and Other Food Groups in Meat-Eaters and Non-Meat-Eaters in the EPIC-Oxford Cohort. *Nutrients*, 11:(4), p. 824. DOI: 10.3390/nu11040824
13. Poore, J. and Nemecek, T. (2018), Reducing food's environmental impacts through producers and consumers. *Science*, 360:(6392), pp. 987-992. DOI: 10.1126/science.aaq0216
14. Post, M. J. (2012), Cultured meat from stem cells: Challenges and prospects. *Meat Science*, 92:(3), pp. 297–301. DOI: 10.1016/j.meatsci.2012.04.008

15. Szakály, Z., Popp, J., Kontor, E., Kovács, S., Pető, K. and Jasák, H. (2017), Attitudes of the Lifestyle of Health and Sustainability Segment in Hungary. *Sustainability*, 9:(10), 1763, DOI: 10.3390/su9101763
16. Tuomisto, H. L. (2018), Importance of considering environmental sustainability in dietary guidelines. *The Lancet Planetary Health*, 2:(8), pp. e331–e332. DOI: 10.1016/s2542-5196(18)30174-8
17. Tuomisto, H. L. and Teixeira De Mattos, M. J. (2011), Environmental impacts of cultured meat production. *Environmental Science and Technology*, 45:(14), pp. 6117-6123. DOI: 10.1021/es200130u

## THE ROLE OF SOCIAL MEDIA IN THE SOCIAL RESPONSIBILITY IN SYRIA EVIDENCE FROM BANK BEMO SAUDI FRANCI

*Victoria KHNOUF<sup>1</sup>, Majd KHOUDARI<sup>2</sup>, Ahmad JURATLI<sup>3</sup>, Samir ZAIEN<sup>4</sup>*

<sup>1</sup> Arab International University, Damascus, Syria

<sup>2</sup> Higher Institute of Business Administration, Damascus, Syria

<sup>3,4</sup> Szent István University, Gödöllő, Hungary

E-mail: v-khnouf@aiu.edu.sy

### **Summary:**

**Purpose:** The study aims to identify the role of social media in CSR in order to assist the companies in Syria to play their role in CSR.

**Design:** The study relied on descriptive analytical method based on two tools (Direct observation of the Profile of BEMO Bank, then a questionnaire distributed to a sample of 265 customers and social media users). The first largest Syrian Business working on the concept of corporate social responsibility in Syria is Bank Bemo Saudi Fransi (BBSF). The study's aim is to identify the impact of social media (Facebook, Instagram and YouTube) on the social responsibility, in order to examine the extent of the Bank's ability to illustrate its programs and activities, which included four axes:

Employment and resettlement, Awareness to the development of services provided to the internal and external Public, Building Trust in the Bank, Paying attention to the environment and the sustainable development, social contributions as well as attracting more investors.

**Finding:** Through these social responsibilities and activities programs, it is found that through social media means to support the positioning of the Bank and its positive reputation and its impact on the customer's behavior towards the activities on the social media. The study also illustrates the strong and the dynamic interaction with the audience through comments and the Social Network page.

**Research Limitations:** Despite of sanctions in Syria not all required statistical data from Facebook was available.

**Social implication:** The study was about the CSR in Syria which has a good influence on society to encourage other companies to play their role in this section.

**Keywords:** Social Media, CSR: Corporate social responsibilities, positioning, reputation

### **1. Introduction**

The new era of the internet is led now by the social media websites provides companies with new alternatives in the field of CSR communication with many potential benefits but also has its risks. As a result, companies are increasingly concerned about the impact of the use of special media websites for interactive CSR communication on their reputation.

Companies can use online social networks to discuss CSR topics and activities (Krätzig & Warren-Kretzschmar, 2014), but users can also employ them to express the complaints and negative impressions they have about the Company, thus producing a very damaging form of advertising (Einwiller & Steilen, 2014). Furthermore, poor online social networks' interactivity can produce a bad image and a bad reputation. For example, stakeholders are very active in online social networks during crisis and the main comments are focused on company's crisis responsibility and few are related to problem solution or rational analysis of

the causes of the incident. A little interest in engaging with the stakeholders, for example fostering emotional support through online social networks, decreases corporate reputation as in the case study showed by Yin, Feng, & Wang (2015).

Due to the fact that the social media has an influential role on companies, and the public, this case study was selected to further explore the type of relationship that exists between the social media and the private sector. It will shed light on the way the social media perceive, prioritize and cover issues related to Corporate Social Responsibility (CSR). It will also address some of the challenges faced by the social media sector and provide some recommendations that will hopefully inspire all stakeholders to work more cohesively together to contribute to Syrian's socio-economic development.

## **2. Literature review**

In this century the range of services offered on the Internet and the use of social media websites has increased exponentially. Unlike websites, these networks allow greater ease of access to dialogue and communication among users. This is the age of nest internet, which offers companies a number of possibilities in their management of CSR communication and dialogue with their stakeholders. Nest Internet refers to applications that promote contents generated by the user, the sharing of those contents and their collaborative creation (Coombs, 2012, p. 10.). The social media stand out among these applications as one of the main founding elements of this new generation known as Web 2.0 (Vinke, 2011, p. 5.). Social media are based on web and mobile technology media that allow the creation and exchange of contents generated by the user as well as social interaction and communication (Burkhardt, 2009, p. 8.). These include online social networks, blogs, localization services, video sharing sites, etc.

Online social networks being the ones that have undergone the greatest growth in popularity (Vinke, 2011, p. 9.). Online social networks are web services that enable users to build a public or semi-public profile within certain limits or conditions of privacy that vary from one extent to another depending on the social network. The main function that they offer is that of connecting you with other users in order to share information and to see contacts with other profiles, while yours can also been seen by others. Some of the advantages offered by these networks include their worldwide popularity, the low cost involved in implementing them, instantaneous communication, the ease with which real-time measurements can be made, etc. (Yin, Feng & Wang, 2015, p. 7.).

## **3. Methodology**

Two methodologies were doing in this research, the first is direct observation by watching all the social media pages related to BBSF and counting what related to our research, second is questionnaire that was designed after studying a number of theoretical and field studies and studies in this subject or topics close to it. It also benefited from the theoretical side of the study in the formulation of the paragraphs of the questionnaire in the first place.

The data collection tool was then verified. The researchers distributed it online to the study members. The researchers relied on collecting data and information on two sources: books, periodicals and previous Arab and foreign studies that dealt with the subject and the questionnaire which prepared to collect the data from the sample. The researchers benefited from the literature of the study and the previous studies in addition to benefiting from the

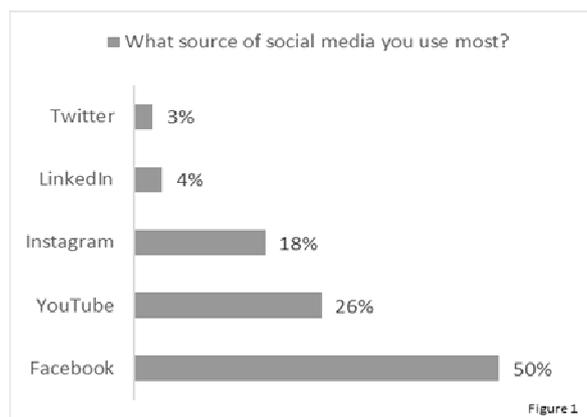
experience and specialization. The tool was considered to be comprehensive of the questions and variables of the study. The questionnaire included sex, age and five open questions, and 14 questions describe the hypothesis.

Each of these paragraphs is measured by the five-dimensional Likert scale to determine the importance of each paragraph of the questionnaire. The five-point scale corresponds with the respondents' ability to give precise answers to the appropriate option of the five options presented by this measure. Strongly agree (5) grades, agree (4), None (3), Disagree (2) and Strongly disagree (1).

#### 4. Results

After the questionnaire was distributed to the research sample, the answers to the SPSS program were analyzed in order to analyze the results.

Figure 1 shows the distribution of the social networking pages of the research sample. The first question showed that 50% of the study sample uses Facebook while 26% use YouTube, Instagram has 18% and LinkedIn and twitter have 3%. On this basis, to study the behavior of the social networking pages of the BBSF, Facebook, YouTube and Instagram will use for our current study.

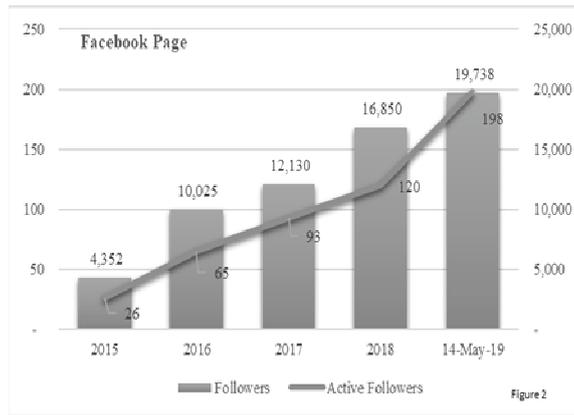


**Figure 1: Q1: What source of social media you use most?**  
*Source: self-made*

#### **Facebook Page**

Figure 2 shows the distribution of Facebook followers according to whether they are active or not.

As we can see during 2015 the number of the Facebook followers were 4.3 thousand but 26 followers only are active (make like and write comments) in the page (0.5% of all followers), the number has increased during 2016 to 10 thousand followers with 65 active followers (0.64%) even in 2017 the number of the active followers was about 7% of all page followers meanwhile 1% of the facebook page are active followers but the followers of the page has increased to 77.9% than it was in 2015.

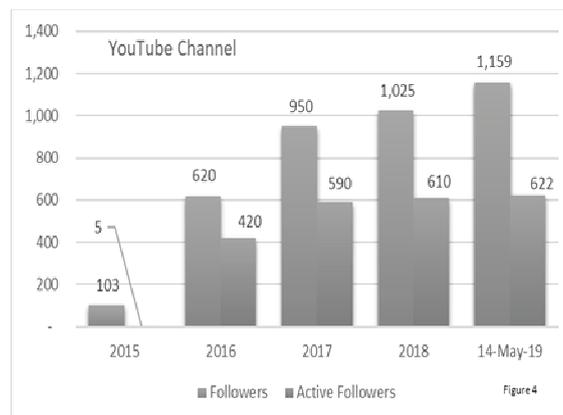


**Figure 2: Facebook Page**  
Source: self-made

For the CSR post we can notice that in 2014 about 12% of the post were about CSR and 20% of the CSR posts are with response, the number has increased till 2018 which was about 67% of the all 126 posts on the Facebook page are about CSR with 69% with response. till 05/14/2019 about 68% of 35 posts were about CSR with 92% are with responses.

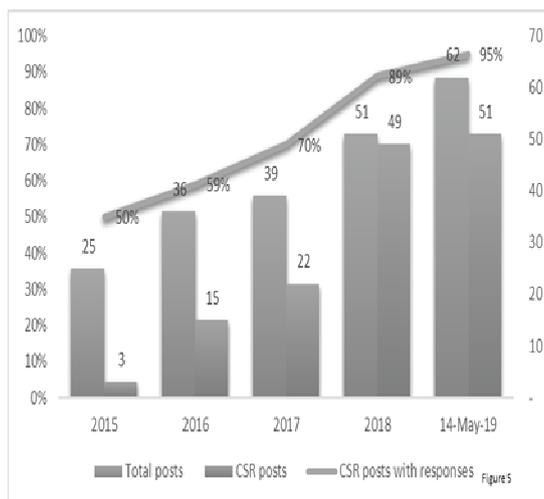
### **YouTube Channel**

Figure 3 shows the distribution of YouTube subscribe according to whether they are active or not.



**Figure 3: YouTube Channel**  
Source: self-made

As we can see during 2015 the number of the YouTube subscribes were 103 but 5subscribesonly are active (make like and write comments) in the page (4.8% of all subscribes), the number has increased during 2016 to 620subscriberswith 420 active subscribe (67%) even in 2017 the number of the active subscribes have decreased to 62% of all page subscribe meanwhile 53% of the YouTube channel are active subscribe but the subscribes of the page has increased to 91.1% than it was in 2015.



**Figure 4: YouTube Channel's CSR Posts**  
Source: self-made

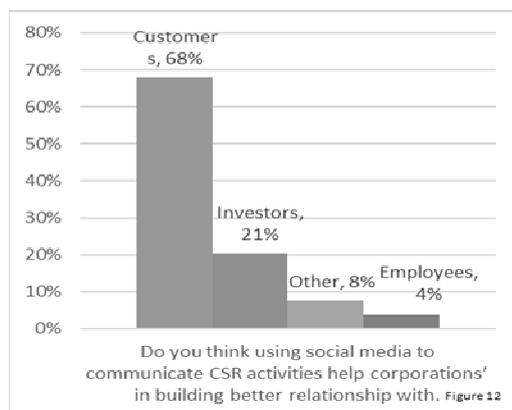
For the CSR post we can notice that in 2014 about 12% of the post were about CSR and 50% of the CSR posts are with response, the number has increased till 2018 which was about 96% of the all 51 posts on the YouTube Channel are about CSR with 89% with response.

Till 05/14/2019 about 82% of 62 posts were about CSR with 95% are with responses as a result of the increase in the Bank's activities in general.

The respondents of the questionnaire represented different fields of studies: social sciences were the most dominant with 82%, medical science 4%, technical science 1% while other studies were represented by 13%. According to the place of living outside of Syria was represented by 31%, residents from Damascus were represented by 64%, and other Governorates by 5%.

The majority of the sample ages are between 25-35 years, 36%. The 56% of the sample are female, while those who enter the social media pages more than 4 times are about 78% of the sample, 63% of the sample are BBSF Clients.

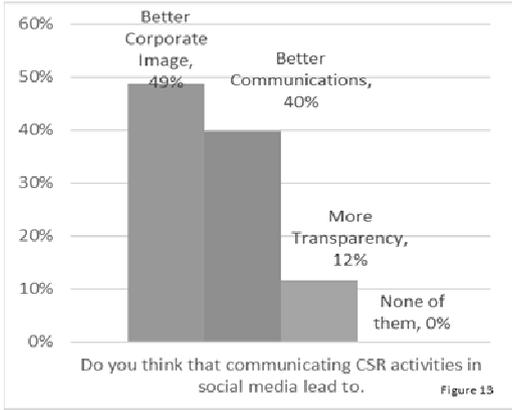
As we noticed from Figure 5, 68% of the sample thinks that using social media to communicate CSR activities help corporations in building better relationship with customer and 21% with investors but 4% thinking they build better relationship with employees.



**Figure 5: Q12**  
Source: self-made

As we noticed from Figure 5, 68% of the sample thinks that using social media to communicate CSR activities help corporations in building better relationship with customer and 21% with investors but 4% thinking they build better relationship with employees.

And 49% of the sample think that communicating CSR activities in social media lead to better corporate image and 40% think lead to better communications but 12% think it lead more transparency (Figure 6).



**Figure 6: Q13**  
*Source: self-made*

In order to determine the direction of the sample, one sample T test was used as shown in Table 1. As we can see from Table 1, the mean of the answers of the first question is 4.6410 and it's above 3 which means most of the sample think and agree that companies should engage stakeholder to paying attention to the environment and the sustainable development through social media and but the mean of the second question was about 4 which is less than the first question of the agreement degree but still above 3 and that lead us to that social media is a better forum to communicate CSR initiatives than other traditional communication channels in the point of view of the sample.

**Table 1: Sample T test**

One-Sample T Test						
	N	Mean	Std. Deviation	Std. Error Mean	t	Sig. (2-tailed)
Do you think companies should engage stakeholder to paying attention to the environment and the sustainable development through social media?	78	4.6410	.55769	.06315	25.988	.000
Do you think social media is a better forum to communicate CSR initiatives than other traditional communication channels?	78	4.0641	.85796	.09714	10.954	.000
Do you agree of important of the use of social media for corporations to communicate their CSR activities and development of services provided to the internal and external Public?	78	4.8205	.38624	.04373	41.627	.000
Are you likely to trust a company whose CSR activities are publicized on social media?	78	4.8205	.38624	.04373	41.627	.000
Are you more likely to buy products from a company whose CSR activities are communicated on social media?	78	4.8077	.39666	.04491	40.248	.000
Are you more likely to work for a company whose CSR activities are communicated on social media?	78	4.8333	.37509	.04247	43.167	.000
Are you more likely to invest in a company whose CSR activities are communicated on social media?	78	4.8462	.36314	.04112	44.900	.000
What do you think of BBSF's CSR activities?	78	4.8205	.38624	.04373	41.627	.000
What do you think of BBSF's Social Media activities?	78	4.8205	.38624	.04373	41.627	.000
What do you think of BBSF's posts on Social Media?	78	4.8077	.39666	.04491	40.248	.000
What do you think of BBSF's interactions on Social Media?	78	4.8333	.37509	.04247	43.167	.000

Source: Self-made

However, all the degree of the agree of the answers are in the same level because the mean was around 4.8 for the next eight questions with std. deviation around 0.3 and that show us that there is no variance between the answers of the sample.

And as we can notice in the previous table that all T's are positive and the sig degree is less than 0.05 which means that most of the sample are agree of the questions of the questionnaire.

## 5. Conclusion

Online social networks offer companies a good solution to corporations to communicate their CSR activities and development of services provided to the internal and external Public. They allow to interact with stakeholders in CSR issues in a two-way communication approach. However, in the past companies had little interest in interacting with stakeholders in CSR issues. Therefore, it becomes necessary to analyse whether today companies are addressing CSR communication through online social networks or not and, if so, whether they are doing it correctly using an interactive approach. With that approach, the audience are likely to trust

and more likely to buy products and work for or invest in a company whose CSR activities are publicized on social media.

However, using social media to communicate CSR activities help corporations in building better relationship with customer and lead to better corporate image.

In this paper, we have demonstrated that BBSF is doing a great job in CSR activities, Social Media activities and have an interest posts on Social Media and make a good interaction on Social Media with the followers and their accounts has been increased during last five years specially when it's related to CSR posts.

Finally, the Facebook is more frequently used on Syria to communicate CSR issues than other social media websites

## References

1. Burkhardt, P. (2009), *Social software trends in business: (Vol. 1)*. Pennsylvania: Information Science. Retrieved from <http://dx.doi.org/10.4018/978-1-60566-060-8>
2. Coombs, W. (2012), *Crisis communication—planning, managing, and responding*. Los Angeles: Sage
3. Einwiller, S. & Steilen, S. (2014), Handling complaints on social network sites—An analysis of complaints and complaint responses on facebook and twitter pages of large US companies. *Public Relations Review*, 195-204.
4. Krätzig, S. & Warren-Kretzschmar, B. (2014), Sing interactive web tools in environmental planning to improve communication about sustainable development Sustainability. *International Journal of Marketing*, 6, 236-250. Retrieved from <http://dx.doi.org/10.3390/su6010236>
5. Vinke, N. (2011), 'Green Tweets': Communicating corporate responsibility through social media. *Social Media for Social Purposes Conference*, pp. 10-15., Copenhagen: Copenhagen Business School
6. Yin, J., Feng, J. & Wang, Y. (2015), Social media and multinational corporations' corporate social responsibility in China: The case of Conocophillips oil spill incident. *IEEE*, pp. 135-153.

## INDUSTRY 4.0 CHALLENGES AND OPPORTUNITIES AND CONSULTING ANSWERS TO THEM

**Csaba SZUDA**

*Clarion Hungary Elektronikai Kft., Nagykáta, Hungary*

*E-mail: csaba.szuda@faurecia.com*

### **Summary:**

The term industry 4.0 refers to the fourth generation of industrial revolution, which is an ever closer link between information technology and automation, and thus a period of profound change in production methods. However, there are a number of factors that may be needed to operate machines that are increasingly taking over from human resources. According to survey data, 10% of the surveyed companies can be classified as digital champions, two-thirds of them have just started their digital travel. Based on these, it is easy to see that from a consultancy point of view this is a market opportunity that is definitely worth exploiting. It is of crucial importance to develop the right strategy and develop the right skills to adapt to the changed circumstances and to exploit the potential of the digital world. All this brings significant changes in the organization, processes and culture.

**Purpose:** I present a possible advisory approach to the companies that start their digital travel, then make suggestions for successful digital transformation.

**Design/methodology/approach:** In the paper, I introduced the basic concepts of industry 4.0 systems and the related consulting techniques, and I also examined the legal regulation of activities.

**Findings:** Every company is unique, as is the realization of industry 4.0. We need to find solutions where the company and its customers create value, we need to know exactly how we work and where we are, what are our possibilities. Top management should understand that digitalisation is increasingly an effective tool for competitive advantage, and these opportunities should be counted as, say, other direct investments in production.

**Practical implications:** I have formulated a possible complex transition schedule that will help companies and include key elements that can be used to define and customize an efficient system that meets industry 4.0 requirements to meet the specific needs of the company.

**Keywords:** Industry 4.0, digitalization, consulting

### **1. Introduction and Literature review**

Western civilization has gone through three industrial revolutions so far, after steam engines, assembly belts and automatization, there is now a whole new fourth industrial revolution. The latest industrial revolution is about integrating physical machines and objects into an information network, integrating the real economy into a single, huge, intelligent information system. Industry 4.0 is a concept that responds to the challenges of the recent revolution, primarily through the complete digitalisation of industrial processes. But it is not only about the take-up of technology, but also about the paradigm shift in business processes.

My topic selection was motivated by the fact that my workplace, an automotive electronics manufacturing company, is very interested in opening up to Industry 4.0, which is always a fundamental issue to make the transition from our own resources or even with the help of

consultants. It follows that the selection of a consultant is based on how, on what basis, what competencies the consultant should possess, since such a complex system requires not only "classical" consultancy competencies, but also a high level of digital knowledge and system organization skills (Gross et al., 2013; Blahó et al., 2015).

The PwC (PricewaterhouseCoopers) 2018 Global Digital Operation Study (PwC, 2018) compiles the results of a survey of 26 countries across industry 4.0. The participating companies were divided into 4 groups, Digital Novices, Digital Followers, Digital Innovators and Digital Champions. According to the survey data, for a well-functioning system, four subsystems can be identified: Customer Solutions, Operations, Technology, and People. Successful operation of Industry 4.0 requires the operation of all 4 subsystems.

According to the survey data, 10% of the companies surveyed can be classified as digital champions, with two thirds just starting their digital journey. Based on these, it is easy to see that from a consulting point of view, this is a market opportunity that is definitely worth exploring.

It is worthwhile for companies starting their digital journey to start with a health check and be sure to find out where they want to go (Gross and Poór, 2008). Buying machines is easy, nowadays it is also systems, but in my opinion, one of the basic principles of industry 4.0 is that different machines and subsystems work as a whole and provide value to the customer and the company. But one important thing to keep in mind is that people are central to the digital transformation. Every company that wants to be a successful digital champion needs a comprehensive digital strategy that supports digital transformation and cultural change. Moreover, understanding the new advancement of customers; their new habits, needs and behaviour is also vital to understand their best collaboration and communication methods (Sader et al., 2019).

A consulting firm can do a lot to help the company recognize the importance of the human side, develop elements of a human strategy that covers competencies, propose innovative organizational forms, propose new work techniques, and develop a digital approach to customers and expectations. I am thinking of the changes that are the driving force behind the digital corporate culture, customer demand is the engine of product delivery, behind a flat, quick-decision organization that is productive, innovative and tries to break down its limits. It does so by understanding new trends in the markets, with a high degree of adaptability and cooperation.

## **2. Results**

At the technology level, there are some basic elements that the consultant must also be aware of, as companies operating under Industry 4.0 employ almost 100% of these systems, but for digital beginners, for example, there is a system for preventive maintenance or an integrated supply chain management.

These systems include:

- Integrated supply chain management
- Preventive maintenance of equipment
- Production planning and execution system
- Industry 4.0-integrated Quality Management Systems
- Industrial IoT

- Advanced robotics
- Digital Brother - A virtual equivalent of a physical factory that facilitates planning, scheduling and product development, along with many others.

A possible advisory approach for companies starting their digital journey is:

- Assess the current situation and identify possible areas for improvement.
- In this phase, we need to assess what the company's value proposition to customers is, its operational capabilities, its technological capabilities, and not least its people's expertise and experience. It is very important that in this phase, "don't lie to yourself", this can also be helped by an outside expert, avoiding the damage that organizational blindness can cause.
- Develop a system vision and value proposition.
- It is at this stage that products and services are positioned and how and through which channels we deliver them to the customer.
- Conceptual design of the system and development of strategic partnership.

In any case, the industry sees the future as a further strengthening of digitalisation, and continues to count on the specific knowledge of the consulting industry, as this innovative digitalisation field is gaining experience that the company itself does not need to acquire but build on their own processes and operations.

Digitization permeates our lives and our work. It is radically changing value creation, revolutionizing the economy and companies. We are connecting more and more data, bringing new services, products and business models to life. Business processes will also remain intact. Industry 4.0, networked production, enables complete reorganization of value chains and significant changes to business models. This should be taken into account when developing a digital strategy.

The transition to a digital future has a huge impact on all companies, regardless of industry. It is crucial to succeed in developing the right strategy and developing the right skills to adapt to changing circumstances and take advantage of the opportunities offered by the digital world. All of this brings about significant changes in the organization, processes and culture of the company.

However, most companies do not know how to go about digitization. There are probably many projects on the subject already, many new developments are underway, but unfortunately, these initiatives very often do not form a coherent program.

Companies are advised to consider digitalisation opportunities as a strategic element and opportunity and, even with the help of a strategic advisor, develop their medium-term programs, otherwise digitalisation will soon face resistance from senior management, which will have a direct consequence of resource scarcity (Sturdy, 2011).

The importance of human resources and competences cannot be emphasized enough, as the spread of new technologies such as artificial intelligence, IoT, sensor technology – i.e. digital transformation - requires the emergence of new types of professionals from higher education institutions. Institutions should develop a training structure that provides usable, up-to-date knowledge and production of engineers who are knowledgeable and able to use new technologies, such as optional specializations that are essential for the development of self-propelled vehicles. Singapore, for example, has launched a Skills Future training program,

spearheaded by Minister Koh Poh Koon, who has articulated the key role of human resources in the development of industry 4.0: "Successful industry 4.0 is only possible with worker 4.0." Moreover, companies need to define their internal practices improvement objectives, such as quality objectives, standards and practices. It is not enough to utilize technology to fulfil customers' needs, but also to satisfy people inside the company by providing comfortable and supportive working environment (Sader et al., 2019). Before any innovation, the standardization is required to make stable the working environment. Only stable processes can be efficiently improved. It increases the stability of the production and the companies' output as well (Vajna-Tangl, 2017).

It is advisable for consultants to develop a complex consultancy roadmap to help companies implement digital transformation. It is worth splitting this consulting schedule into parts or milestones, on the one hand because of the different levels of development of the companies and on the other hand the individual elements can be sold individually or smaller units can be customized.

### **3. Conclusions**

Based on literature sources (PwC, 2016 and 2018; EC, 2016; Siemens, 2016) and own professional experiences, I have formulated a possible complex consultancy schedule that will help companies and include key elements that can be used to define and customize an efficient system that meets industry 4.0 requirements as well as the specific needs of the company.

A crucial point of this schedule is to assess the opportunities for digitization as a strategic element and opportunity for future processes. Companies must define where they want to go, what is their value proposition to customers, how they integrate customers and suppliers into the supply chain.

In parallel with these steps, an objective self-assessment shall be conducted by assessing the company's capabilities, technology capabilities and, not least, people's expertise and experience need to be assessed. Preferably, these two phases can be combined and correspond to the design phase.

The following four proposals support the implementation phase, as their presence or absence will fundamentally influence the proper implementation of the digital transformation project:

1. *Knowledge and Career Plan* – Competence Development, Identification of Key Jobs and Activities, Identification of New Positions and Responsibilities, and Identification of Competencies and Qualifications Associated with them.
2. *Relations with Educational Institutions, Dual Training* – Digitalisation is based on information technology, so the industry needs to collaborate with ITs. Digitization does not end there with the installation of robots in the factory, because by the time the first robots are installed, full control will be digital, so it is important to entrust the IT industry with these new tools and new technologies. Thinking should not be only about the tools, but also the way data is handled, a key strategic question for companies is how they can process, protect and use their data to increase their competitiveness. And one of the biggest tasks of our time is that most of the automotive developments are based on intelligent and autonomous transport technologies, with driver support, navigation and parking systems every day.

It should be noted, that many Hungarian universities have recognized the importance of this and are trying to open up new courses to the changed needs, but companies are not necessarily aware of them. A counsellor can help with this as well as providing dual training is needed.

3. *Mid-term Strategic Investment Management* – how new technologies can be integrated with existing environments and assets. A serious professional task, since industry 4.0 does not have a single set of rules or standards that fix the technical framework, improperly selected integration tools and software can very easily can be a waste of money, which, as we speak of factory-wide operation, results in huge loss costs.
4. *Innovation as a core element of operation* – continuous improvement, which stops not staying in place but lagging behind. Exercises and thinking to date must be fundamentally new, perhaps one of the most difficult tasks.

As a final conclusion: each company is unique, as is the realization of Industry 4.0. We need to find solutions that create value for the company and its customers, we need to know exactly how we operate and where we stand and what our opportunities are. Senior management needs to understand that digitalisation is increasingly becoming an effective tool for competitive advantage and that these opportunities need to be counted on as well as, say, other investments directly linked to production. In this case, companies will be helped by digitization, not only on the expenditure side but also on the revenue side.

## References

1. Blahó A., Czakó E., Poór J (ed.) (2015), International Management. Akadémiai Publishing House, Budapest.
2. EC (2016), The Future of Work, 2016, Available at: [http://ec.europa.eu/epsc/publications/strategic-notes/future-work\\_en](http://ec.europa.eu/epsc/publications/strategic-notes/future-work_en) (access: 10-09-2019)
3. Gross A., Holzblatt M., Javalgi R., Poór J., Solymossy E. (2013), Professional Occupations, Knowledge-Driven Firms, and Entrepreneurship: A National and Regional Analysis. *Business Economics*, 48:(4), pp. 246-259.
4. Gross A., Poor J. (2008), The Global Management Consulting Sector. *Business Economics*, Vol 43, October, pp. 69-78.
5. PwC (2016), Global Industry 4.0 Survey, PwC, 2016. Available at: <https://www.pwc.com/gx/en/industries/industries-4.0/landing-page/industry-4.0-building-your-digital-enterprise-april-2016.pdf> (access: 10-09-2019)
6. PwC (2018), Global Digital Operations Study 2018, Available at: <https://www.pwc.com/gx/en/industries/industry-4-0.html> (access: 10-09-2019)
7. Sader, S., Husti, I. and Daróczy, M. (2019), Industry 4.0 as a Key Enabler toward Successful Implementation of Total Quality Management Practices, *Periodica Polytechnica Social and Management Sciences*, 27:(2), pp. 131-140. <https://doi.org/10.3311/PPso.12675>
8. Siemens (2016), Digitization Situation, Available at: [https://w5.siemens.com/web/hu/hu/.../GKID\\_Siemens\\_digitalizacio\\_sajto2.pdf](https://w5.siemens.com/web/hu/hu/.../GKID_Siemens_digitalizacio_sajto2.pdf) (access: 10-09-2019)
9. Sturdy A. (2011), Consultancy's Consequences? Critical Assessment of Management Consultancy's Impact on Management. *British Journal of Management*, Vol. 22, pp. 517-530.
10. Vajna I.,Tangl A. (2017), The lean effect of the 5S and standard work development in different automated machine process standardization, Management and Organization, Concepts, Tools and Applications. In: Illés, B. Cs.; Nowicka-Skowron, M.; Horská, E.; Dunay, A. (eds.) Management and Organization: Concepts, Tools and Applications. Pearson, Harlow, UK, pp. 67-74, DOI: 10.18515/DBEM.M2017.n02.ch06

## ECONOMICS IMPACTS OF AFRICAN SWINE FEVER ON PIG FARMING

*Viktor SZILI<sup>1</sup>, Anna DUNAY<sup>2</sup>*

<sup>1</sup> *Szent István University, Doctoral School of Management and Business Administration*

<sup>2</sup> *Szent István University, Gödöllő, Hungary*

*E-mail: viktor896@gmail.com*

### **Summary:**

African swine fever (ASF) is a contagious and fatal disease of pigs, which does not have any vaccination, treatments. Therefore, the only solution of stopping its spread is to slaughter those pig populations which are affected, to formulate quarantine for suspected animals and to manage the situation by special measures. The impacts of the disease are serious in economic, social and political aspects as well. Those countries that are affected, may face serious problems by losing their markets, which may cause future impacts on the rural communities and the whole pig farming sectors. The main objective of our article is to summarize the facts about the epidemic in the EU and in Hungary. In the further steps of the research, the quantitative analysis of the situation will be conducted by model calculations by which the financial impacts of the spread of this disease may be predicted.

**Keywords:** African swine fever, ASF, domestic pigs, epidemic, prevention

### **1. Introduction**

African swine fever (henceforth: ASF) is a dangerous disease, its virus causes haemorrhagic fever with a high mortality rate in domestic pigs, resulting significant economic losses in affected areas (EFSA, 2010; EFSA, 2014a). At present, there is no vaccination, no medicine and no treatments against this viral disease, the main sources of infections are wild boars; the transmitting agents are soft ticks, dead animal carcasses, animals, which survived the illness, and transporting vehicles (Gallardo et al., 2015).

The European outbreak of the ASF was in 2007, when the virus arrived a Black Sea harbour in Georgia. In 2014, the infection reached the European Union (EU), where it still expands its territory. The disease affects domestic pigs and wild boar of all ages (Chenais et al., 2019).

The ASF situation in Eastern Europe represents a constant risk of ASF entry into EU member states, especially at those routes, which cannot be controlled, for example wild boar movements, illegal movement of animals and animal products and movements of contaminated vehicles (Sánchez-Vizcaíno et al., 2013).

Field observations indicated at the outbreaks of ASF, the pig mortality rate could be low and the transmission of the disease may occur at different rates as a result of host animal characteristics or the level of animal husbandry (Khomenko et al., 2013; Guinat et al., 2014) There is no effective treatment or vaccine available so disease control shall be based on strict quarantine restrictions and measures (Callaway, 2012).

According to the European Food Safety Authority (EFSA) African swine fever has become a major concern for the European Union's veterinary authorities. Due to the lack of treatments and vaccination, the only option of disease control is the mass culling of healthy pigs. This

slaughter, the disposal of carcasses and the management of animal waste are associated with high costs and cause deep financial and social problems for the farmers (Capua and Monti, 2019)

## **2. Literature review / Research Background**

The epidemic started in Georgia in 2007 (Rowlands et al., 2008), and most probably originated from improper disposal of infected pork from a ship at the Black Sea harbour (Beltrán et al., 2018).

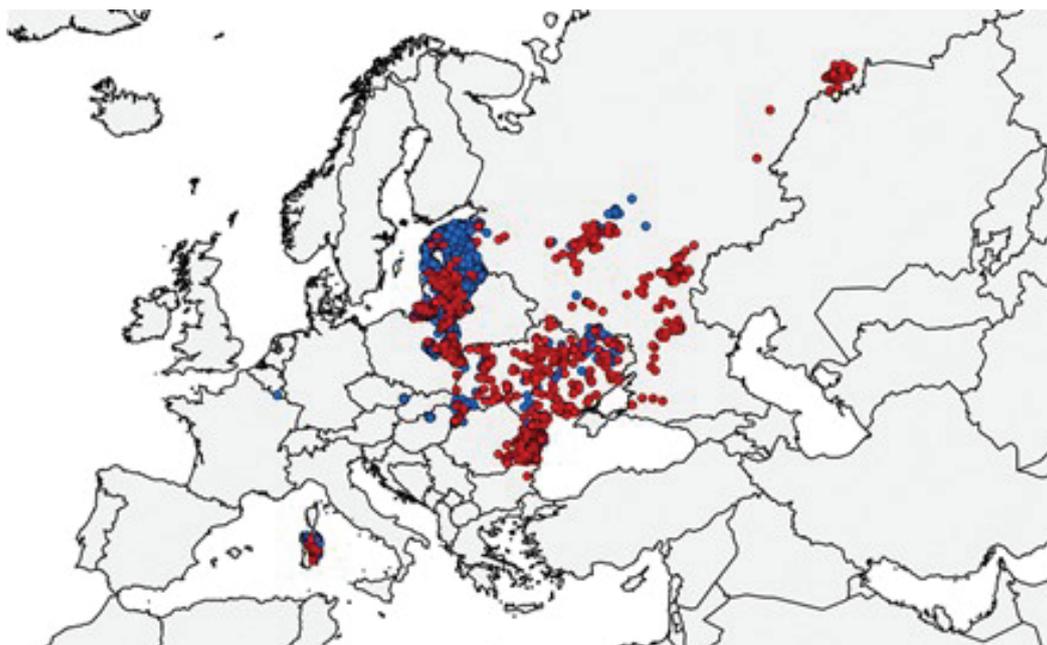
From Georgia the virus spread through the Caucasus Mountains and the Russian Federation where the disease became endemic (Gogin et al., 2013, Sánchez-Vizcaíno et al., 2013).

In July 2012, ASF was reported from Ukraine and in June 2013, it was notified by Belarus (EFSA, 2014b). In January 2014, the disease reached the eastern borders of the EU, when the first cases of infected wild boar were reported from Lithuania, in February from Poland and in June and September Latvia and Estonia also indicated the first cases of ASF (EFSA AHAW, 2015).

In the Baltic States and Poland, the disease became endemic in the wild boar populations (Pejsak et al., 2014). Meanwhile, the sporadic outbreaks in domestic pig population were controlled efficiently, and the extensive secondary spread was prevented (Cortinas Abrahantes et al., 2017).

The ASF arrived at Moldova in September 2016, and then it was notified in June 2017 in the Czech Republic, in Romania in July 2017 and in Hungary, and Bulgaria, in April and August 2018 respectively (OiE, 2018). A recurrence of the disease in wild boars has been reported in Belgium in September 2018, in 2019 from Slovakia, and at the very beginning of 2020 from Serbia and the Northern regions of Greece (OiE, 2020).

Numbers showed a drastic growth: in 2014, 2015 and 2016 four countries (Lithuania, Latvia, Estonia, Poland ) has notifications of the disease, in total 40, 42 and 48 domestic pigs and 264, 1639 and 2300 wild boars respectively. In 2017, the disease was detected in two more countries, Czech Republic and Romania, the total number of notifications in the six countries were 124 domestic pigs and 3855 wild boars. In 2018, three more countries (Hungary, Bulgaria, Belgium) notified the disease, the number of infected domestic pigs increased to 1123 and of wild boars to 4024. In total in the discussed years 12082 wild boars and 1377 domestic pigs (from which 954 occurred in Romania) were infected in these countries of Central and Eastern Europe (Chenais, 2019).



Legend: Red = domestic pig, Blue = wild boar

**Figure 1: Notifications of cases in wild boar population and outbreaks in domestic pigs in the EU (based on data of 2017-2018)**

Source: based on Chenais et al. (2019) p. 2.

To assess the severity of the disease, King et al (2011) applied a clinical score (CS) system, i.e. a list of ten clinical signs to be defined (Table 1).

**Table 1: The guidelines of clinical score (CS) system for ASF**

1	Temperature : <39 = 0, 39.0 < to < 39.5= 1, 39.5 ≤ to < 40 = 2, 40.0 to ≤ 40.5 = 3, 40.6 ≤ 41 = 4, >41 = 5
2	Inappitence : Reduced eating (1), Only picking at food (4), Not eating (6)
3	Recumbence : Lethargic (1), Get up only when touched (2), Slow to get up when touched (4), Remain recumbent when touched (6)
4	Skin Haemorrhage : Haemorrhagic areas on ears and body (1), Generalised haemorrhage all over body (3)
5	Joint Swelling : a joint swelling (1), Severe swelling with difficulty walking (4)
6	Laboured breathing and/or coughing (1), Severe (3)
7	Ocular discharge (1),(gummed up eyes)
8	Diarrhoea (1), Bloody Diarrhoea (4)
9	Blood in Urine (4)
10	Vomiting (4)

Source: Own Summary based on King et al. (2011)

Otte et al. (2004) highlighted the complexity of impacts of diseases: at farm level and social/environmental level. Farm level impacts (i.e. impacts on farm incomes) are related to market demand effects (drop in domestic prices, reduced exports and more strict controls by importing countries) and market supply effects (increasing prices, reduced volume of domestic supply, reduced production level or increased production costs. Social costs are represented by financial effects (increased financial costs) and by externalities, such as food insecurity, health concerns and environmental degradation (Otte et al., 2004).

ASF has economic, social, psychological, and medical impacts. Economic impact is related to the players of the livestock industry, agriculture, food industry, trade, and rural tourism as well (Chenais, 2017).

The negative impact on livestock industry is substantial, as all infected animals must be slaughtered, and the mortality rate is approximately of 100% in the acute form of the disease, which represent a total loss for both individual breeders and stock farms. Agricultural sector is also affected negatively through the decline of feed demand as a result of the decrease of domestic pigs. Companies of food industry are also involved in this crisis, as they must find new suppliers for pork meat if the consumers' demand for pork products remains unchanged. Export of pork meat and pork products decreases because importing country dont want to let ASF into their food chain. Finally, rural tourism is also negatively affected in areas where ASF is notified, because players of the rural tourism industry offer mostly local foods or raw products (Stancu, 2018).

### **3. Methodology**

For analysing the present situation of ASF in Hungary and the neighbouring countries, an exploratory literature review was conducted using different literature sources. Most of the discussed and analysed papers are available in important international databases (WoS, PubMed, Scopus), for the searching process the following keywords were used. African swine fever, Eastern Europe, impacts, outbreak, ASF prevention, ASF prevention, Most of the discussed literature sources focused on the outbreak steps of the disease and the clinical description of the disease and anti-eradication processes. The number of articles dealing with the economic and social impacts of the disease was relatively less.

Based on the findings of the articles and the existing rules and regulations (laid down in Ministry regulation No. 98/2003 of the Ministry of Agriculture and Rural Development) related to the measures to be taken in case of the outbreak of ASF disease, a conceptual model was formulated in order to explore the economic impacts of ASF in Hungarian pig farms. In the further steps of the research, model calculations are to be conducted based on the experiences and data of the ASF outbreak in Poland, using the following databases:

- Farm Accountancy Data Network sectoral and farm-level databases
- Database of the Hungarian Central Statistical Office
- Database of Market Price Information System
- Price data of the European Commission
- Database of Agricultural Statistics Information System.

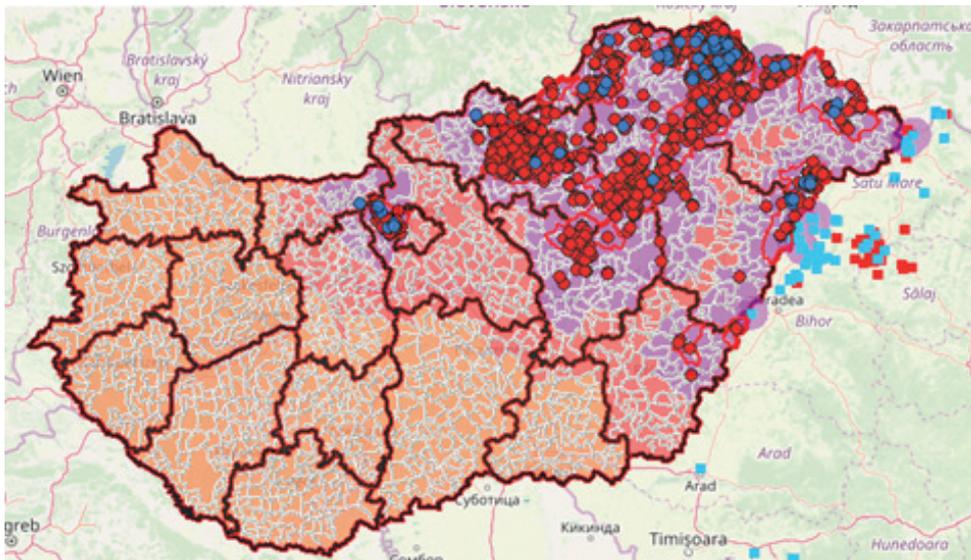
### **4. Results and discussion**

When ASF was detected for the first time in Hungary, the prevention measures were started immediately based on the rules and regulations laid down in Ministry regulation No. 98/2003. (VIII. 22.) of the Ministry of Agriculture and Rural Development. These rules define the measures to be taken in order to stop the eradication of the disease and the zones to be formulated e.g. zones with low, average and high risk (Battay et al., 2018a, 2018b). In Hungary, the first infected wild boar was notified in April 2018, their number increased quickly and reached 1000 in one year and by November 2019 this number exceeded 1600 according to the official data of the World Organisation for Animal Health (OIE) and the National Food Chain Safety Office of Hungary (NÉBIH). Although there is a strong presence of ASF in wild boar population in Hungary, the disease was not detected among the domestic

pig population. Presently there are four area types according to their risk: restricted area, infected area, area with high risk, area with average risk. At the beginning of 2020, seven counties of Hungary were in the list of restricted area: Szabolcs- Szatmár-Bereg, Hajdú-Bihar, Békés, Borsod-Abaúj-Zemplén, Heves, Jász-Nagykun-Szolnok, and Pest County. Komárom-Esztergom and Fejér Counties are infected areas, and some parts of Bács-Kiskun and Csongrád Counties are among areas with high risk (Battay et al., 2019).

Figure 2 shows the infected area of Hungary. Dark green lines represent the county borders, light red lines represent the borders of restricted areas, and lilac colour represents the contaminated areas.

Blue and red signs represent the infected wild boars, blue signs represent new cases while red represent the previous cases of ASF. The map shows the situation of October of 2019.



**Figure 2: ASF map of Hungary in October of 2019**

Source: [https://www.agroinform.hu/data/cikk/4/1408/cikk\\_41408/asp\\_orszag.jpg](https://www.agroinform.hu/data/cikk/4/1408/cikk_41408/asp_orszag.jpg)

The disease may bring direct and indirect economic losses and further deep social and environmental problems as well. Our planned research focuses on the producers' level, i.e. the players of the pig sector.

Producers' losses may appear in different forms. Firstly, the whole pig herd shall be slaughtered in case of infection, secondly, the reduced level of export will bring an imbalanced situation in the domestic pig demand, therefore prices will decrease and farmers will lose a high proportion of their production value. Thirdly, infected areas will turn to be restricted areas and transportation of animals will be prohibited, therefore farms will stand empty and will bring capacity problems for the farmers.

### ***Losses due to price reduction***

After the ASF outbreak in April 2018, several non-EU countries stopped the import of pork meat and pork products from Hungary, among others, our main partners from Asia, namely China, Japan, Taiwan and South Korea, which represented 40% of our pork meat export in 2016 and 31% in 2017. Presently, 15 countries announced restrictions against Hungarian pork products and additional 8 countries allow the import only from those regions where infections were not detected. According to the calculations with the relevant prices, Hungarian

producers had approximately 1.665 million EUR loss due to the lost imports, but at that time, the lost export markets could be substituted by the increased demand of Romania.

### ***Losses due to empty pig farms***

According to the rules and regulations, after the outbreak of ASF a protection zone with 3 km radius and a surveillance zone with 10 km radius should be formulated around the farms where infected animals were notified. The inbound and outbound transportation of pigs from these zones is prohibited, which may bring the closure of pig production in these areas. The losses due to standing empty equal with the farm's fixed costs and their income per unit.

### ***Losses due to slaughter and the destruction of carcasses***

As in case of notification of the disease, the whole pig population must be slaughtered, farmers would lose their total revenues, and additional costs of destruction would also appear. According to the regulations, after the outbreak of the disease and the slaughter of all animals, the farms should be empty for additional 40 days which will bring the additional costs of the abovementioned empty farms. These losses may be increased by the possible re-infections.

## **5. Conclusion**

ASF represents a high risk all across the European Union, but the most sensitive countries are in Central and Eastern Europe. The rules and regulations are in effect in all countries, which may stop or restrict the eradication of the disease to other countries, but these measures bring serious losses for the pig farmers and the related rural communities. Our paper summarized the history of the disease from the beginnings until today, and it called attention for the main economic impacts at sectoral and farm level. In the further steps of our research, the real losses will be predicted using different databases, and the forecasts are to be made based on the experiences of the Polish pig sector.

### ***Acknowledgements***

The research is supported by the ÚNKP-19-3-I-SZIE-49 New National Excellence Program of the Ministry for Innovation and Technology.

## **References**

1. Battay M., Dobos A., Illés B. Cs., Ózsvári L. (2018a): Az afrikai sertéspestis hatása a hazai vadgazdálkodásra. In: Illés, Bálint Csaba (szerk.) Proceedings of the International Conference "Business and Management Sciences: New Challenges in Theory And Practice" / "Gazdálkodás- és szervezéstudomány: Új kihívások az elméletben és gyakorlatban" nemzetközi tudományos konferencia tanulmánykötete : Volume II / II. kötet. Szent István Egyetemi Kiadó, Gödöllő pp. 583-588.
2. Battay M., Dobos A., Illés B. Cs., Ózsvári L. (2019): Az afrikai sertéspestis gazdasági hatásai Észak-Kelet Pest és Nógrád megye vadgazdálkodására, különös tekintettel a klasszikus sertéspestissel kapcsolatos korábbi tapasztalatokra. *Magyar Állatorvosok Lapja*, 141:(1), pp. 39-46.
3. Battay M., Marosán M., Illés B. Cs., Ózsvári L. (2018b): Az afrikai sertéspestis elleni védekezés jogi keretei. XXXVII. Óvári Tudományos Napok, Fenntartható agrárium és környezet szekció. Mosonmagyaróvár november 9-10.
4. Beltrán-Alcrudo D., Lubroth J., Depner K. and De La Rocque S. (2018): EMPRES watch. African swine fever in the Caucasus. Available at: [http://www.fao.org/docs/eims/upload/242232/ew\\_caucasus\\_apr08.pdf](http://www.fao.org/docs/eims/upload/242232/ew_caucasus_apr08.pdf) 2018.16 Accessed: 10.12.2019)

5. Callaway E. (2012): Pig fever sweeps across Russia. *Nature*, 488, pp. 565-566. DOI: 10.1038/488565a
6. Capua I., Monti, M. (2019): African swine fever could cause EU rift. *Nature*, 566, p. 326. DOI: 10.1038/d41586-019-00621-z
7. Chenais, E., Boqvist, S., Emanuelson, U., von Brömssen, E., Ouma, E., Aliro, T., Masembe, C., Stahl, K. and Sternberg-Lewerin, S. (2017): Quantitative assessment of social and economic impact of African swine fever outbreaks in northern Uganda. *Preventive Veterinary Medicine*, 144, pp. 134-148.
8. Chenais E., Depner K., Guberti V., Dietze K., Viltrop A. and Stahl, K. (2019): Epidemiological considerations on African swine fever in Europe 2014–2018. *Porcine Health Management*, 5, 6 DOI:10.1186/s40813-018-0109-2
9. Cortinas Abrahantes J., Gogin A., Richardson J., Gervelmeyer A. (2017): Scientific report on epidemiological analyses on African swine fever in the Baltic countries and Poland. *EFSA Journal*, 15(3):4732-73. DOI: 10.2903/j.efsa.2017.473.
10. EFSA AHAW Panel (EFSA Panel on Animal Health and Welfare). Scientific opinion on African swine fever. *EFSA J.* 2015;13(7):4163–92. doi: 10.2903/j.efsa.2015.4163.
11. EFSA (2010): EFSA-Panel: Scientific opinion on African swine fever. *EFSA J2010*, 8:1556.
12. EFSA (2014a): EFSA-Panel: Scientific opinion on African swine fever. *EFSA J2014*, 12:3628.
13. EFSA (2014b): Evaluation of possible mitigation measures to prevent introduction and spread of African swine fever virus through wild boar. *EFSA Journal*, 12(3):3616-23. DOI: 10.2903/j.efsa.2014.36
14. Gallardo C., Nieto R., Soler A., Pelayo V., Fernández-Pinero J., Markowska-Daniel I., Pridotkas G., Nurmoja I., Granta R., Simón A., Pérez C., Martín E., Fernández-Pacheco P. and Arias, M. (2015): Assessment of African swine fever diagnostic techniques as a response to the epidemic outbreaks in eastern European Union countries: How to improve surveillance and control programs. *Journal of Clinical Microbiology*, 53, pp. 2555-2565.
15. Gogin A., Gerasimov V., Malogolovkin A. and Kolbasov D. (2013): African swine fever in the North Caucasus region and the Russian Federation in years 2007-2012. *Virus Research*, 173(1), pp. 198-203. DOI: 10.1016/j.virusres.2012.12.007
16. Guinat C., Reis A. L., Netherton C. L., Goatley L., Pfeiffer D. U. and Dixon L. (2014): Dynamics of African swine fever virus shedding and excretion in domestic pigs infected by intramuscular inoculation and contact transmission. *Veterinary Research*, 45:93. DOI:10.1186/s13567-014-0093-8
17. Khomenko S., Beltrán-Alcrudo D., Rozstalnyy A., Gogin A., Kolbasov D., Pinto J., Lubroth J. and Martin V. (2013): African swine fever in the Russian federation: risk factors for Europe and beyond. *EMPRES Watch*, 28:1-14.
18. King K., Chapman D., Argilaguet J. M., Fishbourne E., Hutet E., Cariolet R., Hutchings G., Oura C. A., Netherton C. L. and Moffat K. (2014): Protection of European domestic pigs from virulent African isolates of African swine fever virus by experimental immunisation. *Vaccine*, 29:4593-4600. DOI: 10.1016/j.vaccine.2011.04.052
19. OIE (World Organisation for Animal Health) (2018): African Swine Fever (ASF) Report N°1:2016–2018(04/10/2018) Available at: [https://www.oie.int/fileadmin/Home/eng/Animal\\_Health\\_in\\_the\\_World/docs/pdf/Disease\\_cards/Report\\_1\\_Global\\_situation\\_of ASF\\_Updated\\_191018.pdf](https://www.oie.int/fileadmin/Home/eng/Animal_Health_in_the_World/docs/pdf/Disease_cards/Report_1_Global_situation_of ASF_Updated_191018.pdf)
20. OIE (World Organisation for Animal Health) (2020): African Swine Fever (ASF) Report N°37:January 31–February 13, 2020. Available at: [https://www.oie.int/fileadmin/Home/eng/Animal\\_Health\\_in\\_the\\_World/docs/pdf/Disease\\_cards/ASF/Report\\_37\\_Current\\_situation\\_of ASF.pdf](https://www.oie.int/fileadmin/Home/eng/Animal_Health_in_the_World/docs/pdf/Disease_cards/ASF/Report_37_Current_situation_of ASF.pdf)
21. Otte M. J., Nugent R. and McLeod A. (2004): Transboundary Animal Diseases: Assessment of socio-economic impacts and institutional responses, Livestock Policy Discussion Paper No. 9. Food and Agriculture Organization Livestock Information and Policy Branch
22. Pejsak Z., Truszczynski M., Niemczuk K., Kozak E. and Markowska-Daniel I. (2014): Epidemiology of African swine fever in Poland since the detection of the first case. *Polish Journal of Veterinary Sciences*, 17:(4), pp. 665-672. DOI: 10.2478/pjvs-2014-0097

23. Rowlands R. J., Michaud V., Heath L., Hutchings G., Oura C., Vosloo W., Dwarka R., Onashvili T., Albina E. and Dixon L. K. (2008): African swine fever virus isolate, Georgia, 2007. *Emerging Infectious Diseases*, 14:(12), pp. 1870-1874. DOI: 10.3201/eid1412.080591
24. Sánchez-Vizcaíno J. M., Mur L. and Martínez-López B. (2013): African swine fever (ASF): Five years around Europe. *Veterinary Microbiology*, 165:(1-2), pp. 45-50.  
DOI: 10.1016/j.vetmic.2012.11.030
25. Stancu, A. (2018): ASF evolution and its economic impact in Europe over the past decade. *The USV Annals of Economics and Public Administration*, 18:(2/28), pp. 18-27.

## RESTRUCTURING THE LIBYAN ECONOMY WITH AVAILABLE AND UNEXPLOITED RESOURCES OF THE TOURISM SECTOR

*Ali ALAMMARI<sup>1</sup>, Abdussalam Ashour KHALIF<sup>2</sup>, Amina A. M. DAROUGI<sup>3</sup>*

<sup>1, 2</sup> *Szent István University, Gödöllő, Hungary*

<sup>3</sup> *Eötvös Loránd University, Budapest, Hungary*

*E-mail: alammari@yaho.com*

### **Summary:**

**Purpose:** Tourism is an important sector of national economy in most countries of the world and tourism services bring significant money and attract a huge number of tourists. An exception is Libya, as the main pillar of the economy and the main source of income is oil and natural gas. There is a lack of interest of the state in improvements of the tourism and hospitality industry, although this sector would have locally available sources which could be exploited as sources of income and employment improvements, like in the neighbouring countries, Egypt and Tunisia.

**Design/methodology/approach:** Based on a wide document analysis, literature review and secondary data collection from different available databases, a situation analysis is done. The limitations of the secondary research are derived from the lack of official statistical data, as due to the revolution and the changing political environment the reliable official Libyan data are missing. Therefore, the data are available from different reports of world organizations and the statements are based on the experiences of the authors.

**Findings:** Libya has all the features to be a good touristic destination therefore the tourist sector should be promoted and improved. The main problem is the present unsafe political situation and the lack of services in the tourism and hospitality sector. A main strategy of the state should be to revive the economy by allowing the establishment of medium and small working in the tourism industry, which could increase the GDP and decrease the unemployment rate, which is very serious in the young generation.

**Keywords:** economy, Libya, tourism, unemployment

### **1. Introduction and Research Background**

Tourism is today one of the most important economic and social sectors in the world. Tourism plays a key role in reviving the national economy; it is a tool to achieve balanced development and to avoid the imbalances of national economy such as inflation and unemployment. Tourism sector one of the sectors that can contribute to achieving a steady growth in GDP, which plays a prominent role in the development of countries and the creation of jobs and a source of income for the country of hard currency. It also attracts domestic and foreign private investments.

Investing in tourism development will inevitably lead to an increase in demand for the product of tourism, will generate an increase in tourism traffic, which in turn will lead to a similar increase in tourism expenditure. By these processes, the country's economy may achieve the main goal and objective of increasing the size of the country's income from foreign exchange as a result of tourists spending (Alammari et al., 2016, Alammari et al., 2017).

Alnawas and Hemsley-Brown (2019) proved that hotel performance is assessed indirectly, via customer relationship capability, branding capability and service innovation capability, and the quality of services. Providing quality is the responsibility of the human resource, namely the managers or the owners, which should be a main motivating factor in each sectors and different companies in their business development processes (Illés et al., 2017).

Libya is not among the widely chosen touristic destinations, although the country's geographical and touristic values are excellent. The main the reasons of the unfavourable situation are the absence of services such as airlines, hotels, tourism programmes, local transport (Elkrghli and Elgimati, 2013). Due to the political instability and the previous and present weak governmental interest in the tourism sector it is to be considered as a weak point of the country (Khalifa, 2010, Naama et al., 2008, Lafferty and Yousef, 2015, Elkrghli, 2016, Alammari et al., 2017).

## **2. Methodology**

Paper is a result of a desk research using secondary data which were gathered from international statistics databases of World Tourism Organization, UNESCO, and international public economic databases.

Paper itself is a descriptive work, outlining the tourism potential of Libya and providing the situation analysis of Libya based on real data.

The limitations of the secondary research are derived from the lack of official statistical data, as due to the revolution and the changing political environment the reliable official Libyan data are missing. Therefore, the data are available from different reports of world organizations and the statements reflect the experiences of the authors.

## **3. Results and Discussion**

### ***3.1. The importance of the tourism sector in the development of the Libyan economy***

Tourism in Libya could be one of the most promising sectors, as Libya is the cradle of civilization and has the ingredients tourist variety is subject of history, archaeology, cultural heritage, natural ingredients, making it a tourist country distinct. All these ingredients give Libya great opportunity to be one of the key countries in the tourism industry in the Arab region, but it remains dependent on the flow of large investments in this sector.

Nevertheless, the employment in Libya is mostly represented by the state owned sectors (mainly oil industry and government-led administrative sectors). The Minister of Labour revealed that the government sector is witnessing a functional decline, and the number of employees in the country is about 1.8 million employees (Libyan population in 2016 is 6,375 million). There is a big imbalance in the employment policy, and that the ministry has formed an executive committee to study opportunities for integration with the private sector to provide the largest number of job opportunities for Libyan youth. In its annual report for 2017, the Audit Bureau stated that the government sector suffers from overcrowding, despite the success in reducing the number of employees who have duplication of work. (<https://www.libyaakhbar.com/libya-news/666238.html>).

Libya has a very special situation, as the main pillar of the economy and the main source of income is oil and natural gas. There is a lack of interest of the state in improvements of the

tourism and hospitality industry, although this sector would have locally available sources which could be exploited as sources of income and employment improvements, like in the neighbouring countries, Egypt and Tunisia.

Besides safety problems, which is the main barrier of Libya as a tourism destination, the second most important problem of Libya’s tourism sector is the lack of appropriate accommodation facilities for foreign tourists (Alammari et al., 2019), although accommodation opportunities and human resource of hotels and tourism services are considered as a critical point of hospitality industry (Lafferty and Youssef, 2015).

**3.2. Comparison between Egypt, Libya and Tunisia in the tourism sector**

The importance of the tourism sector in Libya is rather low, especially when it is compared to its neighbouring countries and other countries in the Northern African region. When taking a sight into the UNESCO World Heritage List, it can be seen that Libya has many historical sites and archaeological attractions, which are almost unknown for the wide international public, and which are endangered (Table 1).

**Table 1: World Heritage sites in North African countries**

Libya	Tunisia	Egypt
Archaeological Site of Cyrene	Amphitheatre of El Jem	Abu Mena
Archaeological Site of Leptis Magna	Archaeological Site of Carthage	Ancient Thebes with its Necropolis
Archaeological Site of Sabratha	Medina of Tunis	Historic Cairo
Rock-Art Sites of Tadrart Acacus	Punic Town of Kerkuane and its Necropolis	Memphis and its Necropolis, Pyramid Fields from Giza to Dahshur
Old Town of Ghadamès	Kairouan	Nubian Monuments from Abu Simbel to Philae
	Medina of Sousse	Saint Catherine Area
	Dougga / Thugga	

Legend: grey boxes are on the List of World heritage in Danger  
 Source: own compilation based on data at <http://whc.unesco.org/en/list/>

As it is seen, there are important historical places in Libya which are almost unknown for the wide public, and their number is almost the same when compared with the two most frequent tourism destination countries in North Africa. Moreover, the long seaside and the special desert tourism sites may represent attractions for the international tourists.

The numbers of Figure 1 show the weak numbers of the tourism industry of Libya. As it may be seen from the diagram, there are no available data before 2004 and after 2008. It has two main reasons, in one hand, the government focused only the oil industry and left Libya almost closed for the tourists before the political crisis, and on the other hand, there is no opportunity for improving the tourism under the present unsafe political conditions. Available data from the period between 2004 and 2008 show the very small number of arrivals. From the data of the other two countries, the negative impact of the Arab Spring and the crisis period may be seen clearly, and both countries, Egypt and Tunisia still have not reached its recovery from the crisis.



**Figure 1: International tourism, number of arrivals (million persons) in Egypt, Tunisia and Libya**  
 Source: World Tourism Organization, Yearbook of Tourism Statistics (2018)

When analysing the receipts generated by international tourism, we can see the same picture. Very weak income was generated by the tourism industry in Libya when compared to the other two countries.

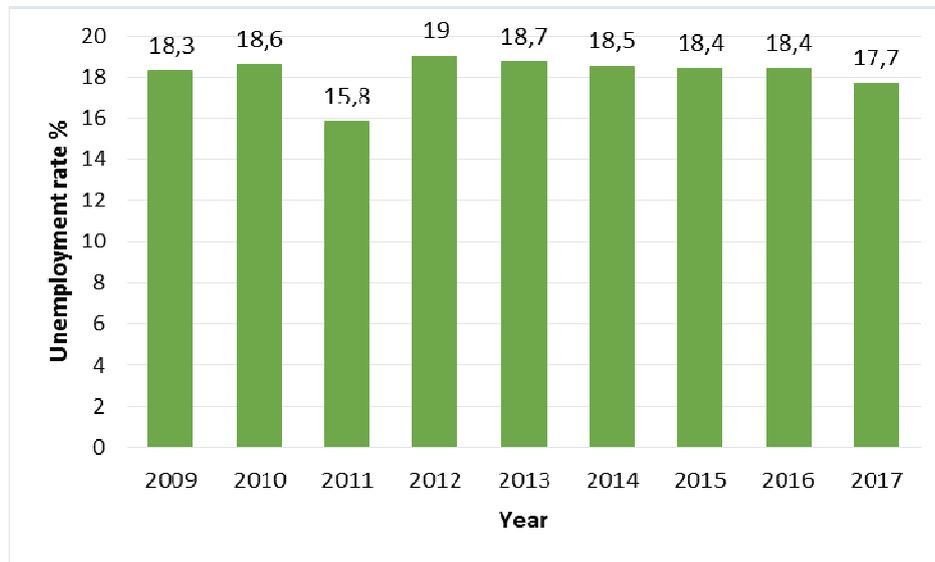
The data also depict that tourism generated revenues have been stopped since the Arab spring in Libya, although the two other countries could present decreasing, but still visible results (Figure 2). Its main reason is the unbalanced level of safety, and the still not finished political stabilization of the country. Another reason for unsafe conditions is continuous flow of asylum seekers from Sub-Saharan African countries, whose targeted destination is Europe, but they plan to leave the African continent trough Libyan ports.



**Figure 2: International tourism, receipts (Billion USD)**  
 Source: World Tourism Organization, Yearbook of Tourism Statistics (2018)

### 3.3. Unemployment in Libya

Libya still suffers from high unemployment (Figure 3), particularly among young people. Young people with university degree show a 20 percent unemployment rate.



**Figure 3: Unemployment in Libya (2009-2017)**

Source: own construction using data from <https://ar.tradingeconomics.com/libya/unemployment-rate>

Since tourism is a labour intensive activity, tourism sector could play an important role in reducing unemployment in Libya. Besides educated workers, who are able to speak languages and who could work in the hotel and hospitality industry, there are other beneficiaries and possible employees in tourism-related industries such as retailers of souvenirs, work staff in restaurants, producers of handcrafts, transport service providers, etc. (Ali, 2013).

Since the Libyan uprising in 2011, the Libyan economy has experienced a critical. Investors are anxious about the political situation and Social situation in the country as violence and strikes have been very common since the revolution (Masoud, 2013).

The recovery of Libyan economy depends heavily on the governments measures in order to manage the tourism crisis together with tourism authorities. All stakeholders of tourism industry should adopt an efficient strategy to recover from the revolution related crisis, because the tourism industry is very sensitive and depends heavily on security and political stability (Ali, 2013).

### 4. Conclusions and recommendations

The comparison between the contribution of the tourism sector in Egypt and Tunisia compared to Libya has been achieved through the introduction of cultural heritage, participation in international tourism conferences, and the establishment of tourist conferences and tourism promotion in these countries.

In Libya, the operators of this sector did not care to promote the tourism sector to contribute to the development of the economy, which led to an increase in the unemployment rate, the lack of infrastructure and lack of interest in cultural heritage in relation to the archaeological sites. This latter fact reasoned that the UNESCO put the Libyan sites on the list of places at risk. The lack of technical knowledge and weak programs and development systems, not

significant promotional programs of tourism promotion, the lack of interest in infrastructure, especially in the tourist attractions, also lack of administrative competencies to run this sector require for a strategic policy to promote and develop it to contribute to economic growth.

Main suggestions and recommendation are the following. The main task is creating confidence in Libya by guarantying political stability, and hence the safety and security of tourism experts, investors, companies, organizations and tourists. It should be followed by developing a vision and a development plan for the tourism sector that meets the consent of the citizens and matches the values, possibilities and needs of the country, and then the necessary administrative and quality assurance systems shall be developed for a planned and coherent operation of the tourism sector.

Many infrastructural developments are also needed, for example:

- developing modern and high quality civic, transportation and telecommunication infrastructure in and around tourist areas,
- educating citizens about Libya's cultural heritage and raising awareness among Libyans of the potentials of the tourism sector
- implementing conservation and rehabilitation projects to reverse any damage that has occurred in the past (environmental clean-up, endangered plant/animal species protection, archaeological and intellectual heritage conservation etc.)
- using the country's vast economic resources to create a unique and high-quality tourist experience at a competitive price.

It is also very important to identify potential consumers and targeting them efficiently through multiple channels. For these activities it is important to build massive cooperation with the representatives of media, to cooperate with private tourism agencies, as small companies may react more quickly to any changes. It is also important to explore the possible markets, by surveying possible guests about their knowledge, ideas and desires about visiting Libya.

## References

1. Alammari, A., Ashour, K. A., Dunay, A. (2017). Tourism in Libya – Barriers of Development. In: Kiglics, N. (ed.) II. Turizmus és Biztonság Nemzetközi Tudományos Konferencia, Tanulmánykötet, Pannon Egyetem, Nagykanizsa, Hungary, pp. 415-422.
2. Alammari, A., Khalif, A. A., Othman, G. (2016). The importance of SMEs in Libyan tourism sector pp. 45-60., In: Bylok, F., Tangl, A. (eds.) The role of management functions in successful enterprise performance. Agroinform Kiadó, Budapest
3. Alammari, A., Darougi, A., Dunay, A. (2019), Tourism sector in Libya – A situation analysis. *Acta Oeconomica Universitatis Selye*, 8:(1), pp. 7-20.
4. Ali H.A. (2013), Libyan Tourism and Rescuing Strategy. *Global Journal of Management and Business Research Accounting and Auditing*, 13:(3) pp. 30-34.
5. Alnawas, I., Hemsley-Brown, J. (2019) Market orientation and hotel performance: investigating the role of high-order marketing capabilities. *International Journal of Contemporary Hospitality Management*, <https://doi.org/10.1108/IJCHM-07-2018-0564>
6. Elkrggli, S. (2016). The Impact of Libyan Political Conflict (2013/2016) on Businesses' Marketing Performances: The Case of Tourism SMEs. *Advances In Global Business Research*, 13:(1), pp. 109-124.
7. Elkrggli, S., Elgimati, Y. (2013). The Libyan consumer behavior attitudes towards goods and services during the 17th of February Revolution 2011: The case of Libyan families in the Eastern liberated regions. *Review of Social Studies, Law and Psychology*, 7:(1), pp. 6-18.

8. Illés B. Cs., Szuda Cs., Dunay A. (2017), Quality and management – tools for continuous and systematic improvement of processes. In: Illés, B. Cs.; Nowicka-Skowron, M.; Horská, E.; Dunay, A. (eds.) *Management and Organization : Concepts, Tools and Applications*. Pearson, Harlow, UK, pp. 99-108. doi: 10.18515/dBEM.M2017.n02.ch08
9. Khalifa, A. E. O. (2010), *Destination Libya: Developing Libya as an Management*, PhD Thesis, University of Wales Institute, Cardiff, UK
10. Lafferty G., Youssef J. (2015), Beyond the Arab Spring: Evaluating Libya's long-term tourism prospects, *Tourism Management Perspectives*, 14, pp. 55-62.  
<https://doi.org/10.1016/j.tmp.2015.03.002>
11. Masoud N. (2013), Libya's Step towards Change. *Journal of World Economic Research*, 2:(4), pp. 75-81.
12. Naama A., Haven-Tang C., Jones E. (2008), Human resource development issues for the hotel sector in Libya: a government perspective. *International Journal of Tourism Research*, 10:(5), pp. 481-492., <https://doi.org/10.1002/jtr.683>
13. World Tourism Organization, *Yearbook of Tourism Statistics (2018)*, Available at: <http://www2.unwto.org/publication/yearbook-tourism-statistics-data-2012-2016-2018-edition> (Accessed on 10-02-2019)
14. [www.libyaakhbar.com/libya-news/666238.html](http://www.libyaakhbar.com/libya-news/666238.html) (Accessed on 10-02-2019)
15. <https://ar.tradingeconomics.com/libya/unemployment-rate> (Accessed on 10-02-2019)
16. <http://whc.unesco.org/en/list/>

## LIST OF AUTHORS

ABONYI, János – Hungary .....	162
ALAMMARI, Ali – Lybia .....	398
ALBRYCHIEWICZ-SŁOCIŃSKA, Anna – Poland .....	224, 231
ALEQEDAT, Houda Qasim – Jordan .....	299
ANDOCSOVÁ, Alexandra – Slovakia .....	293
BERČÍK, Jakub – Slovakia .....	52
BITTNER, Beáta – Hungary .....	148
BITTSÁNSZKY, András – Hungary .....	370
BOGÁTH, Emese – Hungary .....	95
BORISOV, Igor – Russia .....	320
BYŁOK, Felicjan – Poland .....	22
CHAT, Izabela – Poland .....	341
CHMIELARZ, Grzegorz – Poland .....	254
CICHOBLAZIŃSKI, Leszek – Poland .....	329
CSEGŐDI, Tibor László – Hungary .....	307
CZARNECKA, Aleksandra – Poland .....	120
DARÓCZI, Miklós – Hungary .....	162
DAROUGI, Amina A. M. – Lybia .....	398
DUDEK, Dariusz – Poland .....	267
DUNAY, Anna – Hungary .....	362, 370, 390
EVTEEVA, Tatiana – Slovakia .....	274
FARKAŠOVÁ, Mária – Slovakia .....	43
FILOVÁ, Alexandra – Slovakia .....	347
FODOR, Fanni Ildikó – Hungary .....	286
FODOR, Zita Júlia – Hungary .....	59
GÁSPÁR, Sándor – Hungary .....	95
GÉCI, Andrej – Slovakia .....	260
GUZIY, Snezhanna – Russia .....	274
GYENGE, Balázs – Hungary .....	169
GYURCSIK, Petronella – Hungary .....	2
HAMBALKOVA, Maria – Slovakia .....	9
HORVÁTH, Ádám Benedek – Hungary .....	169
HRDÁ, Veronika – Slovakia .....	347
HUDÁKOVÁ, Monika – Slovakia .....	43
HUSSEIN, Mohammed A. – Iraq .....	132
ILLÉS, Bálint Csaba – Hungary .....	370
JANŠTO, Erik – Slovakia .....	335
JASIM, Asmaa Noaman – Iraq .....	132
JĘDRZEJCZYK, Waldemar – Poland .....	243
JURATLI, Ahmad – Hungary .....	377

KADLEČÍKOVÁ, Maria – Slovakia .....	67
KAPRALSKA, Łucja – Poland .....	29
KAPSDORFEROVÁ, Zuzana – Slovakia .....	67
KEREKES, Etelka – Hungary .....	95
KHALIF, Abdussalam Ashour – Lybia .....	398
KHNOUF, Victoria – Syria .....	377
KHOUDARI, Majd – Syria .....	377
KOBIS, Pawel – Poland .....	35
KOKOT-STĘPIEŃ, Patrycja – Poland .....	114
KOŠUDA, Jozef – Slovakia .....	67
KOSZTYI, Dávid – Hungary .....	59
Kovács, Anikó – Hungary .....	370
KOVÁCS, Attila Zsolt – Hungary .....	185, 236
KOVÁCS, Ildikó – Hungary .....	75, 88
KOVÁCS, László – Hungary .....	281
KUCEBA, Robert – Poland .....	341
KULBECKIENĖ, Gintarė – Lithuania .....	355
KULEJ-DUDEK, Edyta – Poland .....	154
LAJOS, Attila – Hungary .....	286
LEHOTA, Zsuzsanna – Hungary .....	192, 199, 204
LENCSEŚ, Enikő – Hungary .....	185, 192, 199, 204
LIS, Tomasz – Poland .....	81
LITEVKIENĖ, Nijolė – Lithuania .....	355
MADAI, Hajnalka – Hungary .....	148
MAMAK-ZDANECKA, Marzena – Poland .....	29
MARCZELL-SZILÁGYI, Eszter – Hungary .....	102
MOHAMMED, Qusay J. – Iraq .....	132
MRAVCOVÁ, Anna – Slovakia .....	52
NAÁR-TÓTH, Zsuzsanna – Hungary .....	286
NÁBRADI, András – Hungary .....	148
NAGY, Adrián Szilárd – Hungary .....	148
NÉMETH, Tamás – Hungary .....	2
NGUYEN, Duc Phong – Vietnam .....	142
ORAVECZ, Titanilla – Hungary .....	75, 88
ORLOVITS, Zsolt – Hungary .....	281
PETRIĽÁK, Marek – Slovakia .....	335
PIOTROWSKA-TRYBULL, Marzena – Poland .....	210
PTAK, Aleksandra – Poland .....	314
RANDAK-JEZIERSKA, Małgorzata – Poland .....	17
ROBAK, Elżbieta – Poland .....	231
ROVNY, Patrik – Slovakia .....	9, 274
RUPPERT, Tamás – Hungary .....	162
SHAHBAZ, Saadi Ahmad – Pakistan .....	362
SEROKA-STOLKA, Oksana – Poland .....	126

SIRKO, Stanislaw – Poland .....	210
SZILI, Viktor – Hungary .....	390
SZUDA, Csaba – Hungary .....	385
TANGL, Anita – Hungary .....	142
TÓTH, András – Hungary .....	370
TRAN, Tuan-anh – Hungary .....	162
TURZAI-HORÁNYI, Beatrix – Hungary .....	217
URBÁNNÉ TREUTZ, Ágnes – Hungary .....	177
VALENTINYI, Zoltán – Hungary .....	59
VINOGRADOV, Szergej – Hungary .....	320
ZADROS, Katarzyna – Poland .....	248
ZAIEN, Samir – Hungary .....	377