book 1

thinking together

THE ECONOMY IN PRACTICE

Thinking Together
The economy in practice

Óbuda University
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THINKING TOGETHER

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Contents

PREFACE

New things take time to become crystal clear. Not little time. The colleagues of the Institute of Enterprise Management are working on creating a platform in the Collaborative Knowledge Platform research lab of Keleti Faculty of Business and Management of Óbuda University where a new method of gaining, generating and sharing knowledge could be worked out. The concept of personal knowledge, i.e. knowledge can only be personal, has become crystal clear by now due to Michael Polanyi. Of course, it does not mean there are no attempts to divert it. Information and Communication Technology exercises a strong, and we can say, dangerous impact on sharing knowledge as it is just very often about exchanging documents sent via emails. It would take a long process for all the things to become crystal clear. The idea of the Community of Practise is not brand new but it is still in its infancy. It is beginning to be crystal clear that communities are not the same as networks, so the concept of the Community of Practise tends to be closer to thinking together, i.e. sharing personal knowledge.

This book has a varied content. Here and now we see that this reflects the present state. We believe that in this versatile world there is even more need for thinking together. This idea was supported by the project 'Supporting the implementation of innovation ideas' (IP2-2016) of Óbuda University. This is how BrainBay Centre was established whose primary objective is to support praxis-oriented researches and popularise their findings with more and more practitioners. The first step of implementing the idea is launching a series of books whose first volume is in the hands of the readers now.

We hope that the chapters of the book also inspire the readers to think and we may also meet personally at the following workshop of BrainBay Centre.

Regina Zsuzsánna Reicher

Jolán Velencei

COMPARING RISK DEFINITIONS GIVEN BY HUNGARIAN AND BELGIAN BACHELOR STUDENTS

Anita Kolnhofer-Derecskei and Viktor Nagy

Abstract: Students can detect the changes of newdays and easily adapt to new challenges. The aim of this paper is to observe and test the Domain-Specific Risk Taking Scale on Hungarian and Belgian Bachelor Students. This survey contains different risk attitudes depending on making decision involving Ethical, Financial, Health or Safety, Recreational, and Social risks. According to the DOSPERT Scale we are trying to find differences between 'Risk-Taking', 'Risk-Perceptions', and 'Expected Benefits'. At the same time, we are trying to measure how university students define risk. Therefore, three definitions were explored with content analysis technique, which helped to highlight and organise the most important attitudes. Furthermore, our results indicate how we can use this validated psychometric scale for our population in the future.

Keywords: Risk, DOSPERT Scale, Survey

Introduction

Reviewing the literature for collecting different approaches on risk, Vasvári (2015) is found to be one of the authors who summarized the different meanings of risk in the most satisfying way from our point of view, i.e. using psychological, economic, sociological and technical approaches. In the field of economics, risk management focuses on risks (not surprisingly) where probabilities play special roles. The terms risk and uncertainty are usually used as synonyms in everyday life. For those who do not deal with decision theory this is understandable. It is not only scientific research where the meanings must be clearly differentiated but also among students in the field of management or business. The complete decision theory system first consisted of three kinds of decisions regarding knowledge outcomes (Luce and Raiffa, 1957):

- decision under certainty;
- decision under risk;
- decision under uncertainty.

We talk about certainty when we are fully informed, have accurate data and knowledge of the outcome for each option. For each alternative to be chosen there is only one possible outcome and there is a sure cause-and-effect relationship. In that case there definitely is an optimal decision but it is supposed that we are able to compute with perfect accuracy in a fully rational way. Here methods of operational research such as linear programming and dynamic programming are to be applied.

We talk about uncertainty when several outcomes for each option can be identified but there is no knowledge at all of the probability to be assigned to each. In that case some criteria are available to help to choose an alternative.

We talk about risk when several possible outcomes of each option can be identified and a kind of probability of occurrence can be assigned to each. Probabilities can be expressed in many ways: as a percentage, a fraction, or a decimal number.

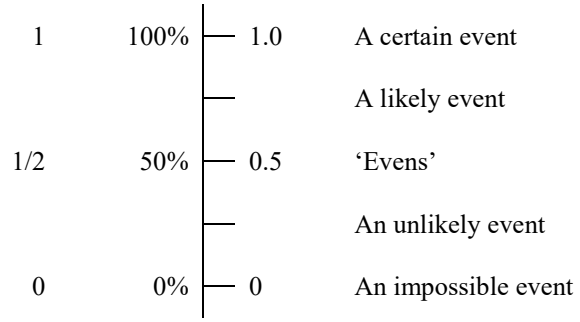

Figure 1 Probability scale

Source: Oakshott 2014

Probabilities can be obtained from three different ways depending on the event we are dealing with:

- objective probabilities: before the event happens, the exact probability can be calculated often based on mathematical rules. E.g. if you cast a dice what the probability is that a five will appear on the top of it;
- empirical approaches: probabilities are based on observations in the past. E.g. probability of having liver disease if someone drinks heavily;
- subjective probabilities: if there is a new or unknown event, probabilities are often based on experts' opinions.

The reliability of probabilities is not always 100%, it decreases from top to bottom; that is why we have to point out some criticism of Luce's and Raiffa's classification. Just because the probabilities are mentioned above in the latter two groups, the classification cannot serve as a complete event system. Empirical probabilities (and the subjective ones even more) cannot be interpreted in exact probabilities, so we should talk about a range of values instead that best describe the situation. Many decisions are situated between risk and uncertainty using the terms as mentioned above. Before we watch a football match between Celtic and Hearts do we dare to place a bet on Hearts? This is a yes/no question. Since we do not know the exact probability of victory it cannot be a decision made under risk. But we cannot say that we do not have any information about the chances. That is why it cannot be a decision made under uncertainty. So instead of using the previous approach we prefer the following classification (Hansson 2005):

- certainty: deterministic knowledge,
- risk: complete probabilistic knowledge,
- uncertainty: partial probabilistic knowledge,
- ignorance: no probabilistic knowledge.

Kahneman and Tversky (1979) figured out how risk gives weight to our decisions. They handled risk as a variable whose meaning is obvious. The real problem is how the subjects - who make decisions in the everyday life involving risk - define risk, can be interesting, as well. Recognizing this need, the concept of decision theory began to grow as most researchers built risk-taking into their models. However, Weber and her colleagues (Weber, et al., 2002) suggested a validated (i.e. scientifically approved) scale for measurement of risk. In their framework, people's preference for risky options is assumed to reflect a trade-off between an option's expected benefit, usually equated to

expected value, and its riskiness. Firstly, they suggested 40 items in three various points of view. In 2006 a new (shorter) version was developed which contains only 30 items i.e. risk interpretations or statements on risk classified into 5 domains. All items have to be evaluated in three different dimensions.

We summarise it in Table 1.

<table>
<tr><th>Domain subscales or life domains</th><th>Items number</th><th>Risk-taking (How respondents engage in risky activities.)</th><th>Risk perception (How respondents assess the level of risk in each activity.)</th><th>Expected Benefits of risk (What kind of benefit respondents obtain in each risky situation.)</th></tr>
<tr><td>Ethical</td><td>6 sentences</td><td rowspan="5">Instruction: “For each of the following statements, please indicate the likelihood that you would engage in the described activity or behavior if you were to find yourself in that situation.” 7 points ranking scale</td><td rowspan="5">Instruction: “We are interested in your gut level assessment of how risky each situation or behavior is.” 7 points ranking scale</td><td rowspan="5">Instruction: “For each of the following statements, please indicate the benefits you would obtain from each situation.” 7 points ranking scale</td></tr>
<tr><td>Financial (Investment/Gambling)</td><td>6 sentences</td></tr>
<tr><td>Health/Safety</td><td>6 sentences</td></tr>
<tr><td>Recreational</td><td>6 sentences</td></tr>
<tr><td>Social</td><td>6 sentences</td></tr>
<tr><td>5 categories</td><td>30 items</td><td colspan="3">30 items (from 5 categories) have to be evaluated 3 times = 90 scales</td></tr>
</table>

Table 1 DOSPERT 30

Source: author’s own table based on Center for Decision Sciences, Columbia Business School

This test contains 30 statements; the five subscales have six statements in each and, as the table shows, in three different contexts i.e. scales. Each response scale uses the same items from the five domain subscales or categories. That means all subjects need to read and answer three times the same 30 sentences since three different points of view are discussed (risk-taking, risk perception, expected benefits of risk).

The authors measured the validity of the test and offered scoring instructions, too (i.e. a concrete mathematical model as to how risk can be measured). To calculate risk-attitude they also offered a mathematical formula. Using this formula, they suggested calculating on expected benefits score and a perceived risk score (i.e. perceived risk regresses the three various dimensions) for any item. As the authors mentioned the test is not really respondent-friendly so we tried to observe which domain (E/F/H-S/R/S) should be left out or all three dimensions are necessary to influence a decision in a risky situation.

The test was translated into different languages including Hungarian, and most cultural differences had to be taken in consideration. Vasvári (2015) also handled the impact of different cultural backgrounds. The earliest comparison between cultural differences could be connected with Hofstede's work. Based on Hofstede's research, attitudes to uncertainty avoidance, and consequently judgments of risk, can be assumed to differ by culture. Hofstede defines uncertainty avoidance as the following: "the way that a society deals with the fact that the future can never be known: should we try to control the future or just let it happen? This ambiguity brings with it anxiety and different cultures have learnt to deal with this anxiety in different ways. The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid is reflected in the score on Uncertainty Avoidance." (Hofstede Centre, 2017) It has to be underlined that Hofstede focused on uncertainty (i.e. "The Uncertainty Avoidance dimension expresses the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity.") and not on risk because risk is mainly a personal trait, i.e. how the probability of a positive or negative outcome of an event can be managed.

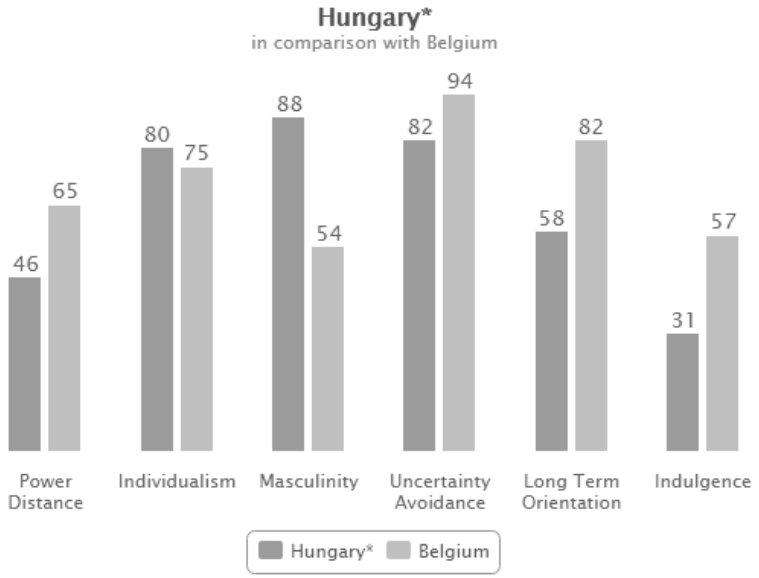

Figure 2 Cultural differences between Hungary and Belgium

Source: https://geert-hofstede.com/countries.html, Downloaded 24/02/2017

Hungary and Belgium scored quite close to each other on this dimension. It means in the view of the Hofstede Centre (2017) Hungarians need "rigid codes of belief and behaviour and are intolerant of unorthodox behaviour and ideas. In these cultures there is an emotional need for rules (even if the rules never seem to work) time is money, people have an inner urge to be busy and work hard, precision and punctuality are the norm, innovation may be resisted, security is an important element in individual motivation." What about Belgium? "At 94 Belgium has one of the highest scores on the UAI Index. Their history of frequently being ruled by others partly explains this score. Certainty is often reached through academic work and concepts that can respond to the need for detail, context, and background. Teachings and trainings are more deductive. In management structure, rules and security are welcome, and if lacking, create stress. Therefore planning is favoured, some level of expertise welcome, when change policies on the other hand are considered stressful."

So the research questions were given: are there any differences between the Belgian and the Hungarian students' risk-perceptions and definitions? How is risk defined in their minds? Last but not least, how can this validated survey be tailored to our population needs (i.e. university students from different cultures)?

Methodology

The survey was designed and tested earlier (see Kolnhofer-Derecskei and Nagy (2016)). It can be found in the Appendix. The survey contains four parts. The first part asked for the demographical background of respondents, like gender, age or nationality. In the second part respondents had to define risk in their own words (association). In the last half of the survey we used the categories of the previously mentioned scale, i.e. the items and categories of Blais & Weber (2006). Firstly (third part), the respondents had to evaluate which situation is more likely to happen to them. Then (forth part) they had to judge which aspect influenced their decision. These last two parts were handled and evaluated separately from each other. That helped us to rank any life domains (E/F/H-S/R/S). Domains, which are not really likely or common are not so necessary to measure. In a risky situation actors cannot be really rational although the mainstream economic model signifies that. We asked respondents which dimension would influence them to judge a risky situation. If a dimension is not so important, it could be removed from the survey. However, the two layers of our sample provide comparison between cultures.

Materials and procedure

The research was carried out at different universities in different semesters. The first respondents were the students of VIVES University in Kortrijk, Belgium, who participated at a guest lecture on 25th November 2016. The other research was done at Óbuda University. Paper questionnaires were given to Hungarian students at the first Economic psychology lesson. The instructions were general, and the papers were given personally to the participants. All of the responses were uploaded to an Excel spreadsheet. As all the answers were given in English, it was required that all of them be checked for spelling. For the evaluation procedures we used (online) content analysis software and SPSS Statistics. We mainly used descriptive statistics because most of the responses were measured on nominal or ordinal scales.

Sample

The aim of this study was to have an extrapolation so we did not monitor representativeness. We also tried to manage the problem of scientific reliability and validity. Moreover, this method does not provide exact representativeness. The frequency tables of the sample follow:

		Nationality		
		Belgian	Hungarian	Total
Age	18,00	1	0	1
	19,00	13	1	14
	20,00	8	0	8
	21,00	0	3	3
	22,00	1	2	3
	23,00	0	2	2
	24,00	2	4	6
	25,00	0	4	4
	26,00	0	1	1
	32,00	1	0	1
Total		26	17	43
		Nationality		
		Belgian	Hungarian	Total
Gender	Male	14	7	21
	Female	12	10	22
Total		26	17	43

Table 2 Distributions of the two samples

As we can see in Table 2, both samples contain a respondent who is older and the average age is higher in the case of the Hungarian sample.

Results

The first thing we did was monitor the meaning of risk, i.e. what kind of expressions came into the respondents' minds. It is necessary to underline that none of the students speak English as a native language but they were allowed to use dictionaries during the research.

Content analysis

Online content analysis software (https://www.online-utility.org) coded the text automatically, which means regardless of the meaning of the words only the frequencies of the expressions are counted. Content analysis solutions give us opportunities for deeper text mining without explanation (Table 3).

Belgian		Hungarian	
Some top phrases containing 3 words (without punctuation marks)	Occurrences	Some top phrases containing 3 words (without punctuation marks)	Occurrences
to lose something	4	you have to	6
you don't know	4	risk is when	3
but you don't	3	you know the	2
you are not	2	make a decision	2
it is possible	2	to make a	2

Table 3 Frequencies of used three words long expressions

The automatic coding can be illustrated with word cloud diagrams (with tagcrowd.com); the size of the word shows its regularity. Gap-filling words (like "something") are not important, so they do not need to be considered.

Figure 3 Cloud diagram of Belgian automatic coding

Figure 4 Cloud diagram of Hungarian automatic coding

This analysis indicates that the subjects judged risk differently. The Belgian students used negative expressions like "danger" or "bad" more frequently than the Hungarian ones. The Belgian students focused on the negative situation or outcome, the Hungarian students used mainly expressions connected to the process of decision. Both of them chose examples describing risk. At least one member from both nations identified risk as out of their comfort zone. Frequently mentioned expressions provide a good base for open coding. (i.e. finding structures after extensive readings.) These structures are the following:

- The Belgian respondents used more negative adjectives; it seems they are afraid or keep their distance from risky situations. They define risk as a dangerous situation that ends in a loss.
- The Hungarian students focused on the outcome of a risky situation; they suggested that there is only one outcome, therefore they need to choose between options. Risky situations can be caused by missing information. The effect of risks was frequently mentioned in relation to business examples.

Frequency tables of aspects

The DOSPERT scale contains three separate response scales: 'Risk-Taking', 'Risk-Perceptions', and 'Expected Benefits'. All of them are divided into five different subscales (or dimensions): Ethical, Financial, Health/Safety, Recreational, and Social. The problem is that 30 sentences have to be judged three times. So this survey aims to rank the aspects of the decision when a risky situation is coming up. We would like to underline that scales and dimensions were handled separately from each other. Firstly, we just observed incidences of any subscales (E/F/H-S/R/S) (i.e. which situation is most likely in respondents' life). Secondary, we separated three various dimensions concentrating on which one will influence students' evaluations of a risky situation.

In this study there were no mathematical expression suggested by Blais and Weber (2006) used. The middle of the survey dealt with different types of risky situations. According to Blais and Weber (2006) there are five typical types of risk situation which are the source of uncertainty.

Nationality		N	Mean	Std. Deviation	Mode
Ethical	Belgian	25	3,2400	1,16476	4
	Hungarian	17	1,9412	,74755	2
Financial	Belgian	25	2,8400	1,34412	3
	Hungarian	17	2,0588	1,02899	3
Health	Belgian	25	2,7200	1,36991	3
	Hungarian	17	2,7647	1,64048	3
Social	Belgian	25	3,6400	1,62993	2
	Hungarian	17	3,4706	1,12459	4
Recreational	Belgian	25	3,1600	1,57268	2
	Hungarian	17	1,8824	,92752	2

Table 4 Given answers regarding subscales

Although the given examples could influence and confuse the ranking order, there were some interesting differences. The Belgian students face risky situation and mainly ethical problems more often. For the Hungarians the most risky situation was Social. Using a non-parametric hypothesis test for two independent samples (Mann-Whitney test, significance level is 0.05) there were significant differences between the groups in two cases. We compared the distributions and in cases of ethical and recreational situations there were group diversities.

The Independent sample median hypothesis test came up with the same results. In the last part we used frequencies and cross tabs analysis to determine sources and motivations of risk. Originally Weber and Blais (Blais & Weber, 2006) used multilevel modelling. Their empirical investigations provided a multiple risk construct which contains three observations of risk. They found:

1. differences in the perceptions of the riskiness of risky choice options (perception),
2. differences in the perceptions of perceived benefits of risk (benefit),
3. differences in willingness to take part in a risky situation (risk-taking).

DOSPERT Scale allows us to assess conventional risk attitudes (reported level of risk-taking), perceived risk-attitudes (reported willingness to engage in a risky activity) and outcome of risk (reported value of taking part in a risky situation). In our study we were interested in which aspects mostly influence students' decisions in a risky situation. The students needed to choose which options impact on their decision. The last table provides us an overview about the choices.

Perhaps the order of the questions influenced the assessments but the influence-factor most often mentioned was the benefit (outcome) of a decision. The second important aspect was personal traits depending on risk-taking or risk aversion traits but we were not interested in the direction of this trait.

Comparing the two groups we found medium strength relationships between risk perception and nationality (Cramer's V = 0.499 p=0.05). There were no other significant differences. These results underline that there are different risk perception types, which verifies Hofstede's findings.

Nationality * Benefit Crosstabulation

	Benefit			
Nationality	Yes	No	No Opinion	Total
Belgian	25	0	1	26
Hungarian	14	1	2	17
Total	39	1	3	43

Nationality * Perception Crosstabulation

Nationality	Perception			
	Yes	No	No Opinion	Total
Belgian	15	2	9	26
Hungarian	8	8	1	17
Total	23	10	10	43

Nationality * Risk taking Crosstabulation

	Risk taking			
Nationality	Yes	No	No Opinion	Total
Belgian	15	5	6	26
Hungarian	10	5	2	17
Total	25	10	8	43

Table 5 Frequency tables of each dimensions

Conclusions

The goal of this study was to have a comparison of what Belgian and Hungarian students think about risk. Content analysis results in a useful distillation of the risk associations of our two different national samples. Only some - and mainly the Hungarian students - evaluated risk as a positive term. At the same time, students gave a concrete example to define risk which can be used as a part or item of DOSPERT Scale's subscales.

DOSPERT scale contains 3*30 examples from different life situations. However, this scale is a validated solution to measure risk. Our preliminary studies showed that 90 statements altogether are difficult to handle. That is why we tried to evaluate the dimensions of the aforementioned scale. For that we asked our respondents to rank five different risky life situations and three different points of view. We could take into consideration all different dimensions of risky situations. However, different nations (cultures) face different risky problems (or they perceive them differently). So the original DOSPERT Scale must be used when we would like to compare cultural differences, as well.

The final benefit of a risky decision will be the biggest influence on respondents (in a similar way, outcome was a frequently mentioned expression in the association's part). Finally, it is necessary not to omit personality. We tried to pay attention to all limitations of this research; hopefully, it could be a good base for the future. One of the advantages that we had was feedback from our respondents' definitions which show some similarities with the DOSPERT Scale. To sum up, we found that cultural differences would colour the perception of risk so the entire DOSPERT Survey must be used.

Appendix

Risky survey

Some background questions:

- Your Gender:
  - □ Male ♂
  - □ Female ♀
- Your Age: I am ……. years old.
- Your nationality: ……
- Actual Study: □□ Bachelor □□ Master □□ Other: ……
- Main faculty: Business Tourism □□ Engineering □□ Other: ……

What is risk? How can you describe it? (You can answer with your very first ideas, words which come in to your mind or you can draw as well.)

What do you think which situation is more likely to happen to you every day? How often do you face different types of risky situations? Please rate separately all of them (1: never, 2: extremely rarely … 5: extremely often 6: always, No opinion: 0)

	Ethical situations for example "Not returning a wallet you found that contains $200."
	Financial situations for example "Investing 10% of your annual income in a new business venture."
	Health or Safety situations for example "Riding a motorcycle without a helmet."
	Social situations for example "Choosing a career that you truly enjoy over a more secure one."
	Recreational situations for example "Bungee jumping off a tall bridge."

If you need to value a situation (regarding risk) which aspect influence your decision? (Y: yes, N: no, NO: No opinion)

	"Expected **Benefits** of the situations" the benefits/ advantages you would obtain from each situation.
	"**Perceptions** of these situations" In this case each situations have to be indicated (is the possibility of negative consequences) how risky you perceive it.
	"Risk-Taking": the **likelihood** that you would engage in the described activity or behavior if you were to find yourself in that situation.

Thank You for your answers!

Acknowledgement

We are thankful for the answers of 2016/2017 Spring semester Students of Economic Psychology and the participants of 2016. VIVES Belgian International Week.

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KNOWLEDGE INCREASE IN THE F-ERA

Péter Kártyás

Abstract: F-Era is the era of freedom and flexibility. So in the era of Facebook a vast and continuously increasing amount of ideas and knowledge are available for those who are willing to search it. Access is easy, however, the quality of knowledge is questionable because it originates from passionate amateurs. The search for validated and relevant knowledge has become the main task and the evaluation of the results, which are available for the person longing for knowledge. It is the users' task and responsibility to decide if the available knowledge is of appropriate quality. If the browsing person, who seeks knowledge, is able to contextualize the new knowledge in accordance with the previous one, increase of knowledge happens. Today's organizations have realized the necessity of properly created knowledge management systems, and are looking for labour force which is competent, i.e. capable of interpreting its knowledge. The future of knowledge management is much rather about managing and teaching and training competent labour force for themselves within the framework of corporate universities.

Keywords: F-Era, knowledge increase, process of learning, knowledge management, competence, corporate universities

Features of the F-Era

The term 'F-Era' refers to many aspects of our present. On the one hand, based on the alphabetical order, it implies that in time we are after the E-Era, the e-tools and e-solutions are no longer essentials, nor e-mail, e-commerce and e-learning are the most important keywords. On the other hand, 'F' stands for free, as in freedom. Freedom is of crucial importance in many fields of our lives just like free flow of capital, goods, labour force and knowledge but for us the freedom of learning and teaching is relevant. In the F-Era both learning and knowledge are available for everyone who has an Internet connection, and aims to obtain or share new knowledge. At the same time, F-Era refers to the Facebook phenomenon, as well, because the influence of social media on our everyday life is inevitable (Baracskai et al., 2014).

Facebook is important concerning our socialization too, posts and comments and shared contents are available in an abundance from all fields of life. Therefore, Facebook is not simply a tool for online communication among people but it has become a way for self-expression so most of us post emotions and thoughts, ideas and opinions on the world on a daily basis. Even if not all of the users of Facebook use the site to share their inner world but almost all of the users read the posts of their friends and acquaintances. It is important to realize that Facebook functions as a fake mirror because most people are trying to show a better and healthier picture of themselves than they really are. This distortion appears in many aspects of our lives and drives us to always question the reliability of information read on Facebook.

Nowadays Facebook is often considered as a source of news and information on interests, and most of us browse it to update their actual knowledge about the events and things of the world. However, most sources of information are usually trusted by the person seeking knowledge, it is still the reader's responsibility to choose the relevant sites, news portals or blogs to avoid fake or misleading knowledge which is not validated at all. If a person or organization is followed, the follower has to take it into consideration that the quality of the content shared is uncertain and has be aware of the fact that it is not necessarily true or validated. So in the Era of Facebook a vast and continuously increasing amount of ideas and knowledge is available for those who are willing to search it. Access is easy, however, the quality of knowledge is questionable because it originates from passionate amateurs (Anderson, 2008). The search for validated and relevant knowledge has become the main task and browsing and surfing the net and the evaluation of the found results which are available for the person longing for knowledge. It is the users' task and responsibility to decide if the available knowledge is of appropriate quality. If the browsing person, who seeks knowledge, is able to contextualize the new knowledge in accordance with the previous knowledge, increase of knowledge happens.

F-Era is the era of flexibility, too. Nowadays it is more complicated for the rest of us to maintain attention for a longer period of time because so many stimuli reach us in every minute. Carr says that reading is a different thing as it used to be in the past because books are often replaced by online contents (Carr, 2010). Back in the days reading meant continuous focusing and while we read our attention was not driven away by other things. At present, reading online texts is not simply reading any more, it became browsing because whilst reading the reader may meander.

Texts of simple articles on news sites can often take us to new homepages, direct links make it possible to jump to other texts and other online contents whilst in the past a link meant only footnotes or the reference. This network of online content is very tempting for most of the users so a larger amount of time is spent on the Internet with browsing, reading, following related links of the topic even watching attached videos. When searching for new knowledge, a chance is given to dive deeper in a topic, to check all previous articles or papers published concerning our interest, many online tools such as dictionaries or translation supporting sites are available. This whole system of abundant information seems to foster a better understanding of the knowledge found but there are so many details that usually less is more so we have to be able to shift of focus. Flexibility, the ability to change our focus quickly has become a new aspect of learning, searching and gathering knowledge.

At present the economic significance of Facebook is inevitable, too, as it is a main platform for organizational communication and online marketing. For most enterprises presence on Facebook is essential to present itself for the stakeholders. The online success of a business can be calculated based on the number of likes and comments or the number of its followers of its Facebook profile. However, a liked profile or a product's profile will not result in any profit but this information can be used to estimate the number of customers the enterprise can achieve (Godin, 2008). The key of the Facebook phenomenon is presence. One and a half decade ago we could say that an enterprise is viable only if it has a homepage on the Internet but by now this same minimal requirement is connected to the appearance on Facebook and other social media sites.

The Importance of Knowledge Management in the F-Era

The importance of knowledge is no longer a question for any organizations. Our world has become totally globalized, and by the technical conditions provided by the Internet communication and the trading of information happens faster than ever. Geographical distances do not hinder persons and organizations to contact each other quickly, the sharing of knowledge has become easy due to digitalization. As a consequence of the facts mentioned above, global economy has changed, too, and by now a much bigger emphasis is laid on knowledge based sectors, and this proportion is still growing. Such classical assets as capital or labour seem to be replaced by knowledge possessed by labour and instead of financial strength knowledge has become the the source for competitive advantage for even non competing organizations like non-profit and government institutions.

Most organisations have realised that the key to its success is the proper management of knowledge as by now it has turned out to be the most crucial resource. If an organisation is able to manage knowledge in an appropriate manner, it can contribute to such strategic result as profitablilty, competitiveness and capacity enhancement (Jeon et al., 2011). In the past decades the topic of knowledge management has become really popular with both HR experts, philosophers and researchers of social studies. The management of knowledge is considered as an essential factor for organizational sustainability and the maintenance of competitive advantage. Knowledge management is often defined as a complex system for an organization's strategy, structures and processes so that the organization can apply its knowledge to create both market and social value for its stakeholders. Organisations require a strong capacity to obtain, develop, organise, and sustain their employees' capabilities in order to be able to compete its competitors. Organisations that effectively manage and transfer their knowledge are more innovative and perform better (Riege, 2007).

Most organisations, which by now have understood why they must manage knowledge, create concepts how to achieve their objectives and dedicate time and energy to these efforts. Knowldge management has been described as a key driver of organisational performance (Bosua and Venkitachalam, 2013). So managing and utilizing knowledge effectively is crucial for the organizations to take full advantage of the value of knowledge. The attention and importance given to knowledge in literature as well as practice in the past decade is also of necessity due to changes in the operating environment such as the increasing globalization of competition, speed of information transfer and the acceleration of aging of knowledge, and the dynamics of innovations (Greiner et al., 2007). In a knowledge based economy, knowledge management is increasingly considered as critical for an organization to be effective and drive performance.

Knowledge management in the F-Era is necessary for leaders at all levels of an organization to be considered as a prerequisite for higher performance and flexibility in both private and public sector. For a couple of years, knowledge management was believed to be just another fashionable management tool that leaders are willing to add to their toolbox to impress stakeholders but with the passage of time, this will fade away, too, as many others (Scarbrough and Swan., 2001; Ponzi and König., 2002; Hislop, 2010.; Serenko et al., 2010; Oluikpe, 2012). Since the concept of knowledge management emerged in the literature at the end of the '90s many academic papers have been published concerning the topic, whose number is still increasing, so by now the belief that this was a whim only has been proven false.

Concepts on Knowledge

Based on the work of Blackler five different forms of knowledge can be separated. So knowledge can be embodied, embedded, embrained, encultured, and encoded (Blackler, 1995). Blackler defines embodied knowledge as knowledge that is gained through training of the body to perform a task, which also implies that knowledge cannot be independent from human activity, and knowledge will always be strongly attached to human beings' body.

The next category of knowledge defined is embedded knowledge, which is knowledge that is found in routines and systems. Everyday tasks in an organization, daily routines or the ways people think and feel about their jobs, can hold embedded knowledge as the habits foster learning among the workers that are beyond their job tasks. So embedded knowledge is inseparable from work practice and also embodied by the employees who manage these practices (Strati, 2007; Yakhlef, 2010). For example, an employee cleaning the corridors of the company headquarters, relies on his everyday routines, movements and practices using embedded knowledge whilst the sum of all the activities he does represent embodied knowledge because the person needs his body to perform a task even when he does not move at all, just stand and think on the next steps of the task.

Embrained knowledge is defined as the knowledge that a person can possess but has difficulties expressing in words or sharing with others. It is also can be described as knowledge that one cannot easily write down, talk about with others, or represent with pictures or other tools. This type of knowledge is gained through experiencing and may reflect one’s perceptions, opinions, values and morals. Compared to the categories presented above it can be said that embrained knowledge is always embodied but not necessarily embedded, too. Sticking to the previous example, the janitor can apply embrained and embedded knowledge during his work when he uses special movements for washing the floor because it cannot easily be told to a younger colleague how to perform it quickly and effectively, and it is a part of the workers routine. Or it is a quite similar situation that he neither can explain to his colleague how to court a woman because this is a type of knowledge which can be learned only by experiencing and explanations on this topic are both difficult to give and useless in practice. On the other hand, this knowledge is not embedded in our example because our janitor rarely courts women, so it is not a routine or system in his life. Still worth thinking through how could this type of knowledge be considered in case of a young, handsome man who is really experienced in socializing and often dates women.

Encultured knowledge is described as a set of knowledge that is shared among groups of people who share a similar environment or culture. If a group of workers all share an understanding what kinds of behaviour are accepted within the organization, or what actions and beliefs are considered normal, it can be said, that they have the same encultured knowledge. Encultured knowledge is always embodied, can be embedded and sometimes embrained too. The janitor knows the rules of social interactions within the company, can explain to his younger colleague how to welcome the leaders of departments or the white collar workers (encultured, embedded, but not embrained knowledge) but not necessarily can explain the significance of the company's mission statement even if he knows and understands it (encultured, not embedded, but embrained knowledge).

Encoded knowledge is a form of knowledge that can be easily written down, expressed in words or pictures, and is transferrable in many ways. Examples of it are

procedure manuals, guidelines, process diagrams or maps, charts and sheets on instructions, or recipes of encoded knowledge because they are encoded in a physical form that is understandable by a lot of people. The janitor surely knows or can easily access the basic documents regarding his work like the collective agreement, he is familiar with the logo of the company, knows the documents concerning health and safety or the rules of work laid in guidelines and manuals.

Thinking of organizational knowledge in general it can be stated that it is embodied and embrained in the employees, embedded in everyday routines and common tasks, encultured among the staff, and encoded in manuals, regulations, guidelines and standard processes. Davenport and Prusak says that in organizations, knowledge becomes embedded not only in documents but also in organizational routines, processes, practices, norms and cultures so it can be defined as the sum of all intellectual assets that can be found within an organization (Davenport and Prusak, 2000). It is embedded knowledge which is found primarily in relationships among employees of the company and in behavioral norms, beliefs and ways of making decisions that affect their relationships with each other.

According to another point of view knowledge can also be distinguished in two different types. Polanyi describes knowledge as existing in two main dimensions as tacit and explicit knowledge (Polanyi, 1967). Knowledge is most commonly referred to as either explicit (encoded) or tacit (which is in humans' heads). Tacit knowledge is always personal and context specific knowledge of a person so it is within the human mind. It evolves from people's interactions and requires skill, practice and experience. Therefore, tacit knowledge is highly personal, subjective, difficult to explain, express or communicate entirely, it is experience based, context and job specific, transferred through conversation or narrative, not captured by formal education or training and may even be subconscious but capable of becoming explicit knowledge (Nonaka and Takeutchi, 1995). It is the type of knowledge that is used mostly by employees of an organizational when performing tasks. Tacit knowledge is hard to tell in words because it is expressed through action based skills and on the job activities and cannot be simplified to rules, exactly defined processed and sequences. So tacit knowledge is reflected in actions, executed tasks, procedures, commitment, values and beliefs.

Referring back to Blackler's concept, tacit knowledge is embrained knowledge so if its explication requires the use of metaphors and an extensive process of socialization. Sharing of tacit knowledge is made possible through networking among those who possess it and this is referred to as Communities of Practice (CoP). It is good to be aware of the fact that tacit knowledge is difficult to copy or steal by competitors so this makes it an important source of sustainable competitive advantage. Furthermore, the major challenge for organizations is to develop strategies which make possible the transformation of the tacit knowledge into explicit knowledge.

Explicit knowledge, on the other hand, is formalized and systematic; it can be codified, collected, stored, and disseminated throughout the organization. It is not bound to a single person and is similar to the specialties of data. Explicit knowledge can be objected to sharing by information technology. Explicit knowledge has many examples as it can appear in tangible forms of books, journals, manuals, sheets, guidelines, illustrations, pictures, geographical or process maps, blueprints, technical specifications, mathematical formulas, visualized charts and diagrams. It can simply be documented or expressed in words or numbers, and shared formally. Due to all these characteristics listed above, explicit knowledge can easily be managed by organizations. Polanyi

distinguishes between tacit and explicit knowledge by suggesting that it is possible for people to know more than they can tell.

Explicit knowledge is the part of tacit knowledge that can be expressed by words and does not represent the entire knowledge. While tacit knowledge can be possessed on its own, explicit knowledge must be based on being tacitly understood and applied, therefore all knowledge is either tacit or rooted in tacit knowledge. A good example of explicit and tacit knowledge could be a guidebook on how to play the popular card game, poker. Explicit knowledge used in the game is which consists of the presentation of the deck, individual illustrations of cards (clubs, diamonds, hearts, spades) used during the game, or the rules, which explain what actions and plays are allowed, or how worthy the combinations of cards are. Tacit knowledge is an understanding of what makes a good hand, how to quickly shuffle the deck or particularly how and when to bluff during the game or not. The processes such as making decisions on raising the bet or to quit, observing the other players' reactions and making assumptions on their capabilities concerning bluffing are often difficult to express in words.

Dividing of knowledge into explicit and tacit is rather too simple, so a new category can be added by stating that knowledge is better described as explicit, implicit, and tacit. Explicit means information or knowledge that appears in tangible form. Implicit is information or knowledge that is not set out in tangible form but could be made explicit while tacit knowledge that one would have extreme difficulty operationally setting out in tangible form. On the other hand, some researchers categorize organizational knowledge into tacit, explicit and cultural parts. But whether tacit, implicit, explicit or cultural, the most obvious point is the making of the organization's data and information available to the members of the organization.

Independently from the categorization of dimensions of knowledge, the process of knowledge transfer is of crucial importance. Knowledge appears as a result of an interaction of explicit and tacit knowledge, and the process of creating knowledge results in continuous increase of personal knowledge. The process of knowledge increase begins with persons sharing their internal, tacit knowledge by contacting with others or by capturing it in written form. Some people then internalize the shared knowledge, and that process creates new knowledge. These people with the newly created knowledge then share this knowledge with others and the process begins again.

Because knowledge is basically tacit and owned by individuals it is difficult to gain control over it. Organizations need to formalize and store the individual's knowledge to be able to use knowledge more efficiently. This means that organizations have to make tacit knowledge explicit and make it available for all other members by spreading knowledge across the organization so it could become a part of organizational knowledge. These transformation processes are highly supported by information and communication technologies. Therefore, the main focus task an organization has to deal with transforming tacit knowledge into implicit then explicit knowledge, and assure that individual knowledge becomes organizational knowledge. This process must be properly and thoroughly planned and managed by all organizations that aim to become successful, sustainable, competitive firms with the need of being truly innovative and learning organizations built on professional knowledge sharing culture.

Components of Knowledge Management

Due to the spreading of theories on knowledge and knowledge management many organizations have realized that the most important and sustainable competitive

advantage they have is the well trained and continuously developing labour labour force so they must lay a significant emphasis on knowledge management if they are to maintain efficient operation. Such a company must have balanced capacity for obtaining, developing and organizing their employees' competencies. The realization came that processes and technology alone are not enough to drive an outstanding performance and human resource has a vital role in an organization's success. To be able to comply with the dynamically increasing challenges of the globalized economy and markets companies must develop a strategic approach for the management of knowledge, and to this end, serious attention must be paid to four key components: Knowledge, People, Processes and Technology (Desouza, 2001). In other words, the main role of knowledge management is to build bridges between people, processes and technology to achieve the goal of capitalizing on knowledge.

Knowledge is described as an essential part of knowledge management. Without having knowledge to manage there would be no knowledge management. Knowledge basically refers to a collection of information. This could mean that the information is embedded in the form of theories, processes, systems, or it could be voiced in the form of opinions, theories, ideas and analysis. As it was presented previously different typologies have been developed for the categories of knowledge but the only consensus is the notion that knowledge is more than simply data and information. Davenport and Prusak define knowledge as a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information (Davenport and Prusak, 2000). It originates from and applied in the minds of knowers'.

The second component of knowledge management is people. All knowledge is rooted in people which in the previous chapter was referred to by the term 'embodied' i.e., without humans there would be no knowledge at all. The ability of humans to think creatively and individually mixed with experience and talents make humans valuable sources of knowledge. People are both the creators and consumers of knowledge because individuals obtain knowledge from various sources every day just like they create knowledge. All in all, it can be said that the management of knowledge requires the presence of people at all the stages of the process. Consequently, it is a must to consider people as key element in knowledge management strategy and implementation. People face emergent knowledge needs as part of daily work tasks. And these needs should be fulfilled through tools, processes, systems and protocols to apply relevant knowledge.

Baloh et al. define processes, which is another component, as mechanical and logical artifacts that guide how work is conducted in organizations (Baloh et al., 2011). Processes direct work and are critical to the functioning of an organization. Processes can consist of, and executed by humans, machines or a combination of these. A crucial requirement for knowledge management is to be able to overview operating processes and how to map them. If the inputs, outputs, personnel, resources and work being conducted are known, a given process can be easily described. Process mapping can help to visualize what is happening in the organization and how strategy is being executed by managing consecutive tasks. The precise level of knowledge and competence required to accomplish steps and tasks of the business process can then be determined, and requisite technology or human intervention can be assigned to meet the needs with the goal of maintaining effectiveness and efficiency.

The last component of knowledge management is technology. The support provided by information and communication technologies is vital for effective

knowledge management. Modern IT technologies can foster cooperation between people and teams which are geographically located far from each other. It can also be used to support activities through the codification of knowledge just like vivid and interactive forms of communication through the Internet. Even though technology is important, helpful and can significantly back up knowledge management, it is necessary to notice that it is not a solution on its own. Technology is simply a great tool but without the commitment and expertise of people for implementing knowledge management system it will not make any organization share knowledge or gain the effectiveness and competitive advantages of it. If the leaders of the organization truly believe in the benefits of a highly performing knowledge management system, technology can significantly contribute to its success.

Change in the Process of Learning

As it was presented in the first issue, one of the most important features of the F-Era is the unlimited quantity of knowledge available. The consequence of this abundance is that knowledge is shallow and its validity and quality are questionable. The knowledge acquired during the traditional educational system is validated and approved, which means that in the past, then and there, it worked under certain circumstances. On the other hand, this kind of knowledge is not really valuable in the F-Era because it is easily accessible for everyone and quite surely refers to the past. So it is not necessarily valid in the present and will surely be outdated by tomorrow.

The essence and process of learning was described in different ways by the different disciplines of psychology. Behaviorism defines it as a changing of our responses to stimuli. According to the views of cognitivism learning is a process of storing, managing and recalling memories. The constructivism approach of pedagogy says that learners create knowledge and meaning themselves in order to understand the world around so learning happens by reconstructing known terms and experiences and their connections about the world. It is important to notice that in this way the knowledge increase is not a cumulative process, new knowledge is not simply added to the previous experience but new elements of knowledge adjust the previous ones, have an effect on it so the process results in reconstruction and reorganization. At the beginning of the learning process the learner had a bit misty picture of the world, and the essence of learning is that after the process a new, clearer, sharper, a more detailed and more elaborate picture will emerge in a different way. The learner gives meaning to the new knowledge in accordance with the previous knowledge and rules of thinking but the new knowledge also affects the organization of the previous picture, it reforms it so a new big picture is formed by learning.

Based in Polanyi's work, we can say that when we learn we build our personal knowledge (Polanyi, 1962). According to the philosophy of constructivism, personal knowledge is built as a result of a reconstructing process, which is individual, affects the person who is learning and lasts for the entire life of the learner. So the term of lifelong learning refers to all people, not only for those who learn in a formal way in the traditional educational system even throughout their whole life or always search for new topics and knowledge to learn. This approach changes the picture of traditional education because it says, that it is not the teacher who transfers his knowledge to the student so there is no intermediary in the process but a process of reconstruction happens within the mind of the student. So during the process of learning not simply new knowledge is added to the old one but the entire personal knowledge changes through

reconstruction and it can be said that during our lives, our knowledge is in continuous transition.

Organizational Expectations on Knowledge and Competence

There are a lot of important factors that emphasize the need for effective knowledge management like the survival of the organization, the impacts of globalization or the aging of the labour labour force. Considering the management dynamics nowadays, the needs of managing knowledge requires tense attention because most of the work is data- and information based. Most organizations independently of operating in the private or public sectors compete on the basis of knowledge because both products and services are becoming increasingly complex As a consequence, lifelong learning has become an inevitable necessity and knowledge management has gained more importance than even a decade ago because marketplaces are increasingly competitive and the rate of innovation is constantly rising.

Retiring and fluctuating staff also creates a need to replace informal knowledge with formal, standardized methods and processes. It is also of importance because early retirements and increasing mobility of the labour force lead to loss of knowledge while changes in strategic direction may result in the loss of knowledge in some specific areas. It must be realized that due to the faced working environments knowledge and information have become a field where new business problems occur. Consequently, managing knowledge gives an opportunity for organizations to achieve higher effectiveness, apply significant improvements in human performance and competitive advantage.

Desouza points out that without adequate care in the question how knowledge is managed, organizations will not be able to operate safely and optimally, and this can result in the ineffective and inefficient creation and delivery of products and services, which leads to unsatisfied customers that ultimately leads to the termination of the company (Desouza, 2011). The next reason for dealing with knowledge management is to help be different from competitors in both products, services and working culture. All organizations, whether for-profit or not-for-profit, compete within a given market. Knowledge management is a critical driver of competitive advantages because it increases the capacity of organizations to innovate. Organizations that are unable to innovate and grow capacities at a sustainable pace will lack the ability to continuously gain new clients, which can soon lead to their termination. Organizations that are able to innovate will be able to secure, and even retain, their competitive positions in the marketplace (Desouza, 2011). Globalization has also played its part in increasing the need for knowledge management because organizations wish to seek for effective supporting tools, methods and standardized processes for acquiring and sharing knowledge despite of many cultural hindrances, and to be able to come across countries and continents. The next important reason of expanding the necessity of knowledge management is aging labour labour force. Most organizations are experiencing a quick aging of their labour labour force and soon much knowledge will leave them due to fluctuation. This results in lack of intellectual capital which needs to be refilled, so that future generations in these working environments will not repeat the mistakes of the predecessors and reinvent the wheel again.

If an organization aims to be really conscious concerning knowledge management, it has to understand how important it is to effectively implement knowledge management systems. This means enforcing a strong, lively connection between the old best practices

within the organization and the actions taken by the members of the organization based on that information. From this point of view the increasing need for such abilities as creativity and innovation seems justified. Knowledge management is strictly attached to these skills and covers an important skill for anyone working in today's organizations. So for the safe and sustainable operation of organizations the labour labour force which is able to use its knowledge in the given context is of crucial importance because knowledge has become probably the most important resource. There is still a debate on the question whether knowledge can be considered as a resource or not because unlike other traditional resources like capital or land, it is not scarce, but on the contrary, an abundance of shallow knowledge appears. So it is not the quantity or the availability but the quality and validity of knowledge that is questionable. The purpose of business organizations is to provide labour force for their operation, which is able to respond quickly to the challenges of the dynamically changing environment and the atypical, unexpected changes and effects. Constantly evolving employees are capable of building the learning organization of the F-Era, which achieves sustainability through continuously providing knowledge, new ideas and innovation.

Previously the significance of an effective, strategically approached system of knowledge management was presented, but from this aspect the quality of both personal and organizational knowledge is in focus. As it was discussed, personal, tacit knowledge of the individuals first must be made explicit knowledge, and then it has to be available for the appropriate members of the organization. The difficulty resides in the different capabilities of individuals in applying their obtained knowledge under specific working conditions and situations, which require different ways of externalizing their knowledge. If an employee is not able to rephrase and re-contextualize its knowledge according to the new, previously unknown circumstances, they will not contribute to the successful operation of the knowledge sharing system. So it seems that the biggest challenge for educational institutions is the question how can they train latter employees who can perform in a fast paced working environment where their knowledge becomes out of date as quickly as lightning, where the knowledge of yesterday is insufficient and the knowledge of today is sufficient only at best. The knowledge of persons participating in traditional, academic education, the knowledge of subsequent leaders and decision makers of the future refers to the past, and is about ’know how’. Contrarily, most organizations are about to employ labour labour force which is able to apply their knowledge in a given working environment knowing the domain of validity and also knowing what ’there and then’ can be applied from the knowledge they have. So the emphasis has been moved from ’know how’ to ’know when’. So as it was discussed above, considering the four basic elements of knowledge management there is an increasing emphasis on people, and especially on the capabilities and competencies of people. It is obvious that a successful knowledge management system cannot work without precisely defined and built processes and that the support provided by information and communication technologies is inevitable, too, but knowledge in itself without the people capable for contextualizing it is worth basically nothing.

In the process of selection and recruitment of most organizations not only the qualifications and language skills but also personal and professional competences of applicants to be employed play a key role. There are (at least) two different definitions of competence in practice. In general, or the way human resource experts and managers use it, a person is competent if it is able to reach a certain level of performance or handle a situation or problem due to abilities and knowledge (Boyatzis, 2008). However, according to another viewpoint a person can be considered competent if it is able to

contextualize and apply its knowledge in a certain situation. So in other way being competent equals knowing how to interpret knowledge (Baracskai and Velencei, 2004). 'Competence is not the same as knowledge and it is not even an entity but a dynamic relationship of three entities: the knower, the knowledge and the context' (Dörfler, 2012). Consequently, two different persons with the same knowledge and abilities on the same professional field can perform differently based on the context. Furthermore, it is also possible that the same person in two different environments cannot achieve the same level of performance so they are competent in one situation but they are not in another.

To shed more light on this by an example, let's imagine two fresh graduates with great results during traditional education as junior lawyers. They both have the same knowledge on the field of civil law but one of them will be very successful at a huge law firm whilst the other simply cannot stand its ground in such a fast paced working environment but can perform above the expectations at a small business company, and vice versa. Or if we take a look at the example used before with the employee in the position of a janitor, he can perform according to the expectations if he is familiar with all the circumstances of the situation like cleaning the corridor, but may be incompetent when he has to clean the office of the chief executive officer due to embarrassment. The key point in all these differences is the context and the lack of ability to adopt to quickly changing circumstances and expectations. This also explains why the studies on organizational culture were so popular lately because the characteristics of the organizations can have a really significant impact on the competence levels of employees. Therefore, it is easy to understand that different organizational cultures mean different challenges for employees.

Cooperation between Educational Institutions and Business Organizations

Based on the previous findings it can be said that an organization is capable of handling the radical changes of its environment only if it develops its ability to adapt and furthermore, it can come before changes, and influence its environment itself. That is the reason why organizations try to establish and operate educational institutions on their own because this way they can provide themselves competent labour force for their safe operation. During the last thirty years we could see many examples of corporate universities and strategic associations with universities or shared education. The purpose of schools as such is to disseminate the culture and identity of the organization, to foster the development of not only on the job skills but teach competences like leadership, creative thinking or problem solving (Szoboszlai et al., 2014). Corporate universities or other institutions under different names as academies or centers for excellence are often operated by business organizations as strategic partners for the development of human capital according to the expectations and goals of the funding organization. In this way the students are allowed to get familiar with the culture of their latter employer, which later can really ease socialization for new employees.

These internal educational branches of business organizations are located halfway between universities and centers of academic knowledge and the world of business organizations. The validity of knowledge offered by them is different from the validity of knowledge offered by universities because it is basically organization-specific where actual or latter labour force is trained based on the needs of the institution. Consequently, all corporate universities are unique and different so it seems that there is no standard definition for what a corporate university really is. Still it can be said that students participating in such education can build knowledge and ability for adaptation which

cannot be applied in all organizations, only in ones with the same organizational culture this knowledge can be considered as valuable.

Ways of Knowledge Increase in the F-Era

Based on the researches of Szoboszlai et al., the ways of knowledge increase can be interpreted by achieving a transformation on the bride between the world of universities ('know how') and the world of corporations ('know when') (Szoboszlai et al., 2014). Many different methods can be used during the individuals' learning journey such as training, coaching or mentoring.

The role of the persons participating in educating and training the leaders of the future is also an interesting question. These teachers are not really teachers in the old sense of the term. They need a great variety of previous experience as leaders or experts not only in one specific field but have to able to apply and possess transdisciplinary approach. In most situations they cannot act as teachers because a new way of both teaching and learning has to be applied, which is more informal, person related and indirect. So a teacher of such a corporate university is more likely to be a trainer, coach and/or mentor.

When speaking of trainers at corporate universities we have to step back from the concept we usually know about trainers dealing with development of skills and abilities like assertive communication or conflict management. A trainer is a person who helps to understand why it is necessary to practice the contextualization of concepts. It is not worth preparing for a situation that cannot even be planned, it is rather useful to be able to quickly adapt to new circumstances and unexpected situations. A trainer can help to accept and learn to be comfortable with the uncomfortable and to be able to act in 'here and now'. Training in such institutions focus on helping the trainees to be able to create a situation in which they can contextualize their known concepts and elements of knowledge or even non-existing ideas. All these trainings are created to provide an opportunity for the participants to learn from not only the instructor/trainer but also from each other and themselves. To achieve these goals trainers can rely on many different tools, techniques and methods like role-plays, simulations, classroom, computer- or web based instructions.

Another approach in such an environment that works is coaching. Participants of training and educational programmes at business academies are often busy leaders themselves with little time to read and learn about the most recent concepts and knowledge of the gurus. In such a situation a coach can help them by selecting the relevant knowledge for them and during the coaching sessions they together can contextualize new ideas. The task and responsibility of the coach is to filter the most recent knowledge of the gurus and find out which ideas are advantageous for the coachee. Business experts sometimes need the coach to discuss both dilemmas and new ideas and concepts with them or because due to the uncertainty he cannot do this with his subordinates or other leaders of the organization.

Coaches are often invited by leaders to help with their different business issues. Such a case is when the leader would like to update his knowledge with relevant new ideas, or wants some fresh inputs from someone with the same way of thinking and understanding of the given broader picture. A coach can also be useful if he can support the coachee in understanding how to apply old knowledge in a new context. Another way of supporting the coachee in the process of knowledge increase is to point out the new connections among old terms and ideas by rearranging their known rules. Business

leaders sometimes require their coaches to help them understand their own knowledge, which must be made transparent for themselves and for their colleagues. It is important to notice that a coach is not an advisor so he does not provide advice for the coachee but enables the person to realize how to use their knowledge in another, new context.

Unlikely coaches, mentors give guidance and advice for the mentored persons, so it is a more developmental relationship. Speaking of a corporate university, all students act as both mentors and mentees, and learning techniques include such simple tools as explaining concepts to each other, which is a practical application of constructivism theory at work. This way it makes the students clarify, elaborate on and otherwise reconceptualise material by teaching each other (King, 2002).

Conclusions

The F-Era requires new ways for both learning and teaching. Knowledge workers of this era are eager to build valuable knowledge and are willing to use whatever tools and help they get. By now shallow and not validated knowledge is accessible for everyone who is willing to learn but the responsibility of searching and finding validated knowledge and/or to contextualize new knowledge by ourselves is constantly increasing.

Knowledge management has become a well-known and respected method for strengthening the competitiveness of all organizations. By understanding the nature of personal and organizational knowledge new methods and approaches have emerged in knowledge increase. It seems that the focus has been removed from 'know how' and the future is more about 'know when'. Corporations are looking for leaders and competent labour labour force who knows how to contextualize their knowledge so they can make the operation of the organization of the F-Era effective and efficient.

An important upcoming question is about the support of both learners and teachers. How can a corporate university be managed so that it could provide competent labour labour force for the organization? How will the process of learning change in such an environment in the future? So there are still many questions to be answered concerning knowledge increase in the F-Era.

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INTERACTION OF THE HIGHER EDUCATION AND THE CORPORATE SECTOR

Beáta Kádár and Regina Zsuzsánna Reicher

Abstract: Higher education institutions are facing serious challenges all over Europe. In addition to the rate of unemployment, lack of professionals and the decreasing number of young generations the expected quality of competitive online presence such as websites and the content of knowledge have also changed. These challenges have a greater effect on post-socialist countries since it is completely new to them that educational institutions are players on the open market and are competitors. Our research sets out to examine the economic and educational policy background in Hungary and Romania for the past 10 years, which might have influenced the functioning of universities, financing research and development as well as relationships between higher education institutions and private companies. Nowadays people want to acquire practical knowledge and courses and trainings are also trying to be more practical in nature. Using in-depth interviews the objective of the research was on the one hand, to find out whether universities are trying to develop relationships with companies and if so, in which fields; on the other hand, it tried to reveal if the directors of these companies consider these relationships to be successful and what mistakes or shortcomings they see. The opinions and answers given by company directors clearly confirm the existence of such efforts on behalf of universities. The results show that in the two countries examined, having different educational systems, companies have similar expectations towards universities and their teaching staff. However, responses given to these expectations differ in several aspects despite of the similar background of these two countries.

Key words: higher education, research and development, companies supporting education

Introduction

Since the regime change post-socialist countries have had greater access to higher education instruction, thus the proportion of those enrolled in higher education institutions has also significantly grown in the past 20 years. Groups that have previously been excluded can now access their preferred courses or majors and can obtain professional degrees in a variety of fields. The freedom of learning and teaching has become a reality and with the EU's initiative a unified educational system has been created. This has led to the discovery of the need to have a harmonized educational and research approach. Furthermore, expectations towards quality development in higher education have also grown.

In addition to the positive effects of the changes in higher education, institutions had to face financing problems due to the introduction of the quota system and for this reason their strategy had to be adjusted accordingly. As part of strategy, online presence

also needs adjustments as there are notable differences of targeting "business, partners" groups on institutional websites (Losonczi, 2012). Therefore it is in the universities' best interests to maintain good relationships with several companies whose operational profile matches those offered by the universities. However, this interest is not a one way street; this can be a fruitful collaboration for the companies, as well because they can obtain young and committed labour force with excellent results during their studies. On the other hand, according to Kolnhofer-Derecskei in today's innovation-driven economy understanding how to generate great ideas is one of the most important managerial priorities. The main source of creativity is hidden in the heads of employees (Kolnhofer-Derecskei, 2016). During the 3+2 Bologna system students have the opportunity to spend six months practicing at a company where they can familiarize themselves with job market expectations and have the possibility to put their theoretical knowledge into practice.

The present study aims to explore how Romania and Hungary – who joined the EU in 2007 and 2004, respectively – are performing in this matter what the opportunities and difficulties are that universities have to endure in the context of the new system and the crossfire of continuous challenges. During the research company directors were asked to express their opinion regarding the advantages and disadvantages of their collaboration with universities.

In 2014 37803 research and development specialist were working in Hungary while in Romania there were 27600 (KSH, 2016). Comparing this number with the 2004 data, it can be seen that Hungary shows a 27% increase while Romania only 1% growth. However, if we examine these numbers by looking at the different sectors we get a different picture of the situation. In the higher education sector in 2014 there were 16000 researchers in Hungary and 15000 in Romania. Thus, compared to the 2004 data, in the case of Hungary this means a 16% drop and in Romania it represents a 32% growth. Of the total GDP, R&D expenditure in Hungary increased in all sectors including the corporate sector but we can observe a decline in the higher education sector. On the other hand, in Romania a small decline is noticeable in the corporate sector but there was growth in the higher education sector. Nevertheless, it is true that Hungary invested 3.5 times more than Romania (see Table 1).

	2004	2014
All sectors		
Hungary	0,86	1,37 ↑
Romania	0,38	0,38
Corporate sector		
Hungary	0,36	0,98 ↑
Romania	0,21	0,16 ↓
Higher education sector		
Hungary	0,21	0,19 ↓
Romania	0,04	0,06 ↑

Table 1 R&D expenditure[1]

Source: KSH, 2016

[1] Values compared to GDP (R&D intensity)

The Hungarian context

Higher education

According to Clark (1998) entrepreneurial university is not the creation of the devil and it is not the road to hell from the perspective of academic values. On the contrary, he believes that it creates the perfect ground for the academic values to be enforced. Furthermore, the author also claims that entrepreneurial university is such an institution where each department and each staff member is an entrepreneur and they are not separate entities but work together to form a joint venture and create a community within the university.

The world around us is constantly and rapidly changing. Adjusting to this constant change is extremely difficult for an educational institution; however it is vital in order to offer competitive knowledge and degree for its students. We need to pay attention to the on-going technological development, the effects of globalization, demographic changes, changing social needs and the growing problems of declining energy resources. Globalization and the changing social needs force universities to build relationships with other universities and companies and fully take advantage of these opportunities.

The number of publications of Hungarian researchers exceeds the EU15 average (85%). However, at the same time, the R&D expenditures are at 40% of the EU average. Financial support of publication is only 47% of the EU average (Figure 1). Therefore, it can be stated that in spite of the unfavourable financial support those working in higher education still play an active role in research and they also try to make their research results available to the general public. The only question that remains is whether these scientific publications can be accessed by the corporate sector and if so, can they understand and make use of its results.

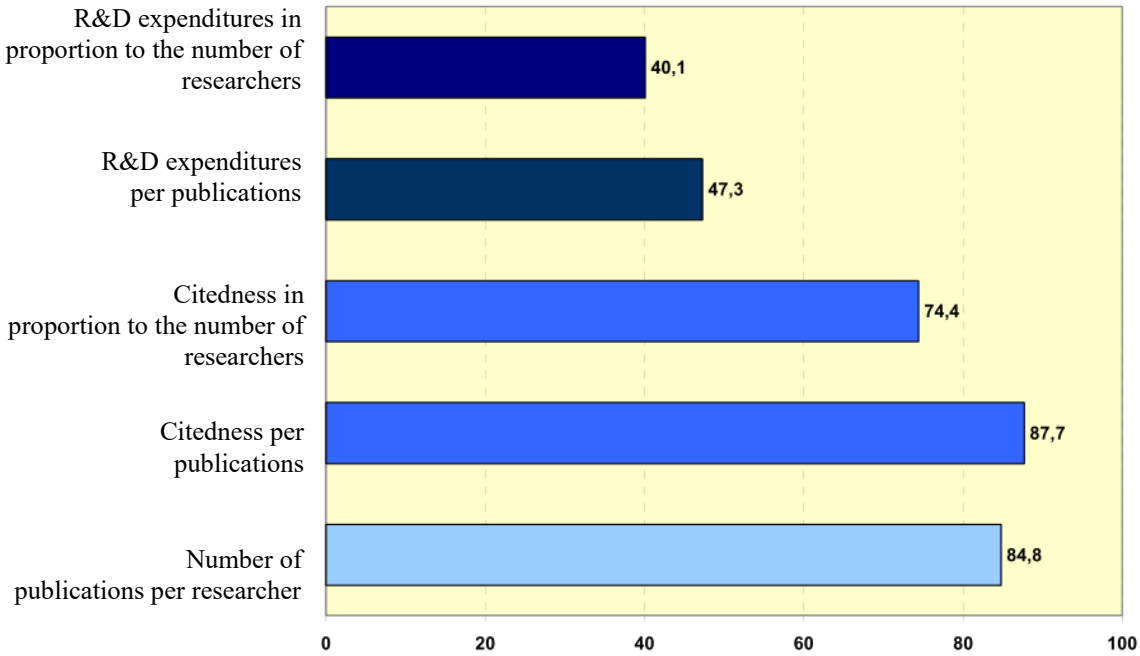

Figure 1 Hungarian scientific performance in international context, 2004-2006 (EU15=100)

Source: Havas and Nyíri, 2007

There are several factors that force universities to adapt. One of them is the need to find alternative financing for their research activity. Globalization has put an end to regional monopolies and they face competition from foreign universities. Nowadays universities are considered as incubators forced to practice science and technology-based business activities. Researchers are trying to adjust to this situation by widening their perspective leaving behind the narrow scientific fields and, instead, try to create interdisciplinary teams who are able to approach a certain field from a variety of angles. Change has also been brought about by the growing number of students (Figure 2), which demands an increased financial support. Therefore universities have been subjected to harsher governmental control and their organization has become more bureaucratic (Deés, 2011).

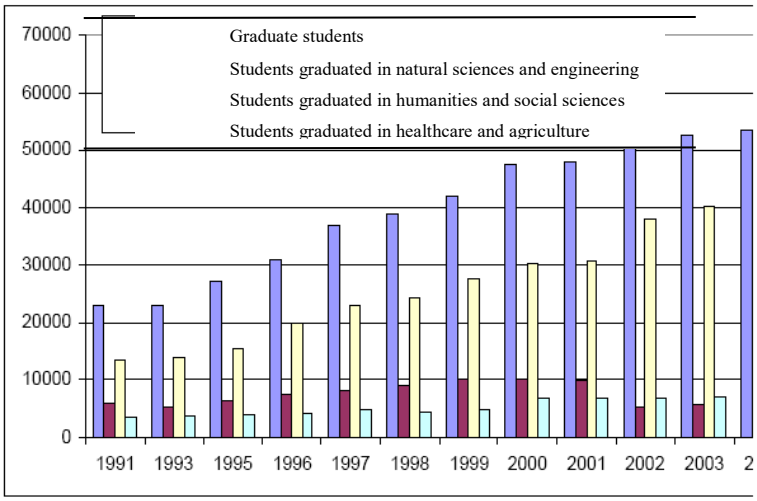

Figure 2 Number of graduate students between 1991 and2003

Source: Deák, 2007

However, this tendency of growth seems to be decreasing (see Figure 3). Despite some predictions according to which in the next 2-3 years the number of university students will be slightly growing based on the increased number of high school students, it can be said that universities still need to make considerable efforts to recruit and retain students, maintain a high quality of education and support their developed institutional system.

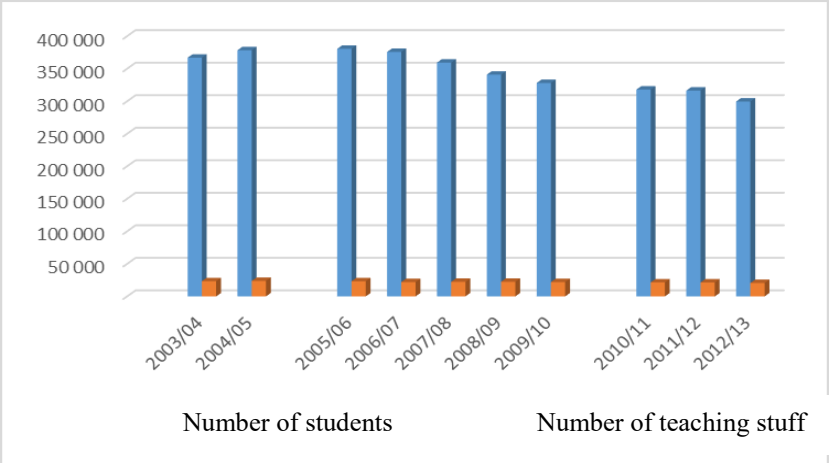

Figure 3 The number of students and teaching staff between 2003-2013

Source: Oktatási Hivatal, 2016 (authors' own elaboration)

One possible way of accomplishing this is to start so-called elite programmes which consist of special courses for exceptional students (Deés, 2011).

The SME sector

Throughout their development companies formed alliances in order to maintain and increase their competitiveness. These alliances can take different legal forms and the choice of one or the other legal form is defined by the nature of the cooperation and the partners' interests. Opportunities offered by universities are built on the institutions' structure and educational offers (economic, life sciences, engineering, natural sciences, law etc.).

So as to maintain a successful cooperation universities are continuously developing their course materials, organize apprenticeships and company-based trainings in order to satisfy the needs of the market. It is of utmost importance that university programmes consist of well-balanced theoretical and practical courses and that universities adopt an interdisciplinary approach. It would be incredibly useful that the academic and labour market sphere work together to create different courses and elaborate the curriculum as partners (Polónyi, 2011).

SMEs play an important role and make up a significant part of the Hungarian companies. It can clearly be seen that 60% of the added value is produced by the SME sector and this proportion is even higher in Central Hungary, close to 75% (Figure 4). Industrial joint ventures make up 8.1% of SMEs and due to their high productivity they produced one quarter of the gross added value. In all regions SMEs achieved greater results than their presence would indicate (Központi Statisztikai Hivatal, 2014).

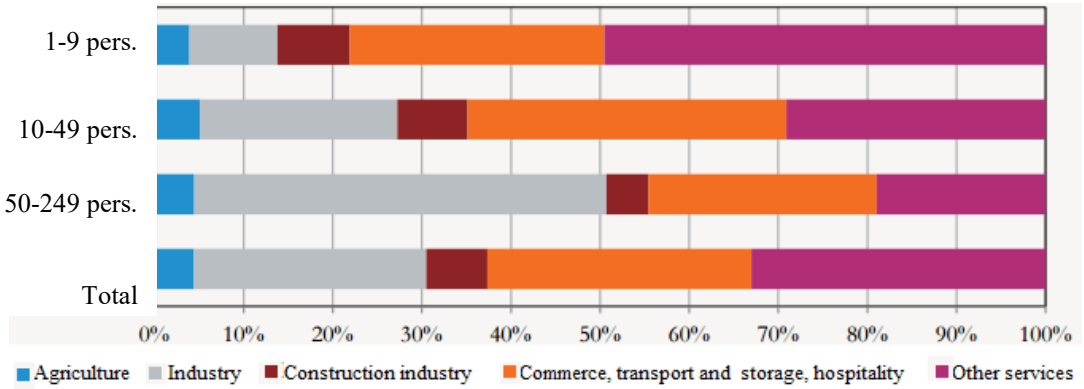

Figure 4 The breakdown of gross added value produced by SMEs in the aggregated economic sectors, 2012

Source: Központi Statisztikai Hivatal, 2014

On a national level 441 billion HUF was allocated to R&D in 2014, 5% more than in 2013. However in the country the number of research units was 2994, with 165 (5.2%) fewer than in 2013. Nevertheless, as was previously mentioned the number of researchers increased.

Companies offer more support for research and development. Since 2004 there has been a steady increase in the number of companies financing R&D (see Figure 5). At present technical sciences are the leaders in R&D activities. While basic research and applied research activities declined – basic research was 34.6% in 2004 and only 18.8% in 2014, applied research dropped from 30.8% in 2004 to 29.6% in 2014 – the proportion

of experimental developments has increased (34.6% in 2004 and 51.6% in 2014) (Statisztikai Tükör, 2015/71).

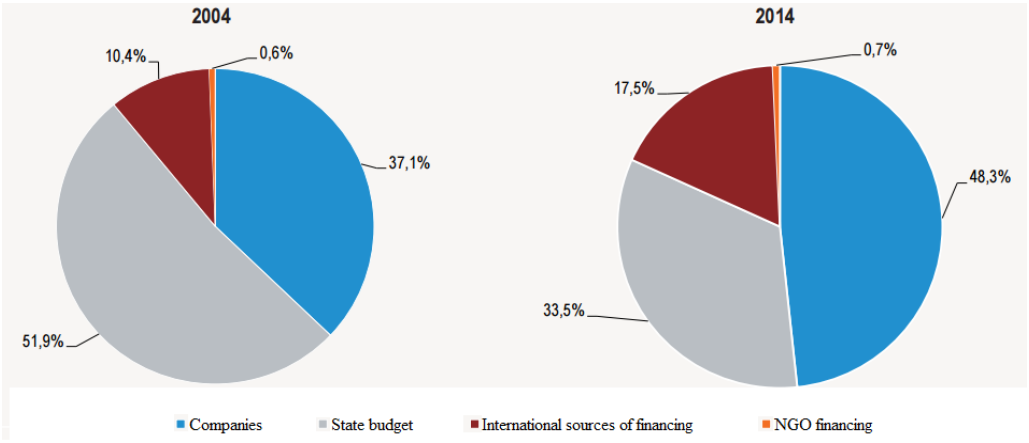

Figure 5 The structure of R&D financing

Source: Statisztikai Tükör, 2015/71

While in 2000-2001 only 4-5% of R&D expenditures in higher education derived from companies, this proportion rose to 11-13% in 2002-2006 and continued to increase year by year reaching a proportion of 15.5% in 2009. This is significantly higher than the EU27 average (6.8% in 2008). In addition, the largest proportion of Hungarian innovative companies consider information within the company group to be the most important (50% in 2006–2008) but there are high proportions of them who think that other companies they work with are also important (buyers: 39%, suppliers: 26%, competitors: 21%) (Table 1). This is in line with the international best practices (Havas, 2010/4).

Cooperation partners	Hungary	Romania
Other company within the company group	11.8	4.6
Suppliers (equipment, materials, fittings, software)	27.5	10.5
Buyers	18.6	8.2
Competitors (other companies within the sector)	13.1	4.8
Consultants, private R&D organizations	16.6	4.4
Higher education research institutes	18.7	5.1
Government research institutes	6.5	3
Total cooperation	41.3	13.8

Table 2 The frequency of cooperation among innovative companies in 9 EU member state, 2006–2008 (100 = all innovative companies)

Source: KSH, 2016

All in all, it can be said that both parties can profit from the cooperation, the strengthened relationship between higher education and the economic sector. Educational institutions can obtain new income (financing) thus the financial responsibility of governments would decrease – funds coming from the private sector can reduce the burden of government finance. At the same time, cooperation on a daily basis between higher education institutions and companies would enable universities to have a greater insight into the labour market expectations. Moreover, students could also benefit from such cooperation as universities could provide not only competitive, practical knowledge but also social capital and relationships that are essential when

starting a career. Therefore, it is important to involve interested and ambitious students into company based projects and research activities (Heti Válasz, 2012).

The Romanian context

Higher education

The higher education system in Romania follows the Bologna system. Except for the medical and engineering studies all BA programmes take 3 years to complete. It can be further continued for a Master's degree for two years after a separate admission procedure. Those who wish may continue their studies by enrolling for some postgraduate studies such as doctoral degrees, professional trainings which gain more and more importance with the spread of the lifelong learning perspective (Kovács, et al., 2009).

The problems and challenges of the Romanian higher education are very much in line with those present and already analysed in the western countries of Europe, more specifically the rise of mass higher education, poorer quality of education which is even worsened by the quota system or the normative per capita financing. With a slight exaggeration it can be said that the previous, general level of baccalaureate exam is replaced by the BA level degree (Tonk, 2012). For the reasons mentioned above and due to the oversupply universities are forced to enter into competition for their students as players on an open market. Romanian universities are only beginning to realize that they also have to compete for the employers because university diplomas issued by universities will become competitive only if students can successfully obtain a position on the job market.

In Romania at present there are 48 public universities, 7 military institutions of higher education, 37 accredited private universities and 10 institutions of higher education with temporary authorization to function. Looking at the number of undergraduate students a gradual decrease can be observed. While the number of enrolled students exceeded 650 thousand (650 247) in January 2008, by 2014 it dropped to 460 thousand (461 582). The reasons are manifold. On the one hand, there is the demographic decline, the economic crisis and the difficulties faced in the labour market; on the other hand, there is the promotion and development of vocational trainings (edu.ro, 2016). Figure 4 below shows the number of first-year, enrolled students between 2007 and 2014. Based on these numbers it can be stated that the expansion phase, i.e. growth has ended and there is a decreasing tendency. The number of undergraduates enrolled is continuously falling, thus universities are facing more and more challenges – they have to compete for the students. In fact, the number of students has become a matter of sustainability and existence.

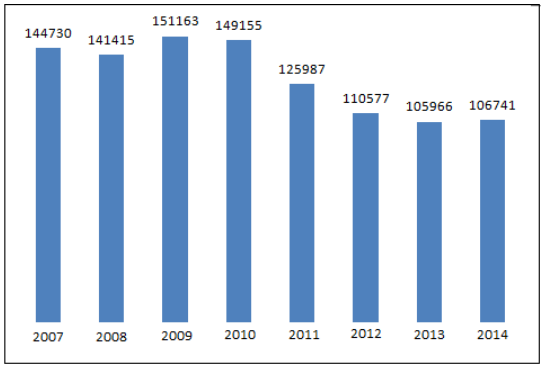

Figure 6 The number of students enrolled on BA education between 2007-2014

Source: edu.ro, 2016 (author's own research)

The SME sector

After Romania's accession to the EU so-called development regions were created (North East region, South East region, South Muntenia region, South West Oltenia region, West region, North West region, Central region, Bucharest-Ilfov region) and there is a Regional Development Agency in each region which analyses the region's economic and social situations and on the basis of the results they elaborate regional development plans. (aippimm.ro, 2015)

In 2015 Romania had three times fewer SMEs than the European Union average. It is a fundamental goal to increase the number of SMEs by 40% till the end of the 2020 financing cycle (Bozán, 2015).

Name	No. of employees	Maximum turnover RON/ year
Micro-enterprise	0-9	3 million
Small business	10-49	25 million
Medium business	50-249	50 million

Table 3 Types of SMEs in Romania

Source: Bozán, 2015

In order to promote the development of the SME sector the government tries to implement the following support systems: creating favourable financial environment for SMEs (e.g. advantageous conditions of loans), measures to improve competitiveness (e.g. financing innovative clusters), developing innovative capacity (national database, financing the development of innovative strategies) transforming the educational structure (transforming professional trainings in vocational schools, supporting vocational schools, supporting the relationship between universities and SMEs, creating paid internship programs).

Higher education and the SME sector

The cooperation between higher education institutions and SMEs can be mutually beneficial, yielding valuable benefits. One of the biggest challenges that universities are facing today is that they are unable to provide practical knowledge to their students while on the labour market companies are looking for experienced workforce. SMEs often cannot afford to hire a full-time employee but they have a lot of tasks which might fit for university students who could help with their theoretical knowledge, different perspectives and could be an efficient solution to the task at hand.

In the previous EU financing cycle the Sectorial Operational Programme Human Resources Development offered possibilities for financing cooperation between universities and SMEs (e.g. several innovative programmes, internship opportunities).

Innovative initiatives of Romanian SMEs lag far behind the EU average. Figure 7 shows how many SMEs were considered innovative in nature in 2014.

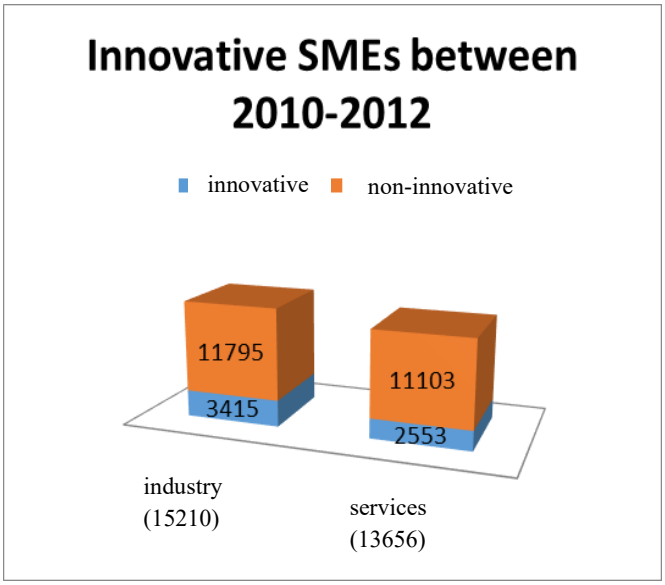

Figure 7 The proportion of innovative SMEs

Source: insse.ro – The number of SMEs (own elaboration)

In April 2014 the Romanian national R&D strategy was finalized. It stated that special attention was given to those R&D projects in the SME sector which are based on cooperation with higher education institutions. Furthermore, the inclusion of PhD students into practical research will be a top priority as well as creating temporary research positions.

The allocation of the funds in order to implement the above strategies is presented in Table 4.

	2014	2015	2016	2017	2018	2019	2020
% of GDP	0,41	0,56	0,57	0,63	0,72	0,83	0,97
Sum	2 730 911	3 870 244	4 176 023	4 846 341	5 670 831	6 684 955	7 932 327

Table 4 The allocation of funds for the implementation of the Romanian national R&D strategy between 2014 and 2020

Source: Ministry of Education (authors' own elaboration)

Analysing in-depth interviews

The present study is exploratory in nature; therefore structured interviews could not serve the purpose of the research. In-depth interviews have an informal character. They build upon the relationship between the interviewer and the interviewee. The researchers guide the conversation in order to prevent the interviewee from diverting too much from the topic but the conversation itself is informal and offers a lot of possibilities to explore new perspectives. The analysis of such interviews is strictly qualitative.

Using the above methodology interviews were conducted with 9 Hungarian and 8 Romanian entrepreneurs. Expert interviews contribute to explore related competences and enable a better insight into the topic (Kelemenné, 2014). They were asked to speak about their experience related to their relationship and cooperation with universities.

The main points of discussion were the following:

- What are the main activities of the company?
- What innovative solutions have been implemented in the past few years in order to improve the company?
- What are the entrepreneur's opinions and experience regarding university students who worked at their company as interns?
- What type of cooperation do companies have with universities?
- What are the advantages and disadvantages of cooperation with universities?
- What do entrepreneurs think about the ways universities could help them? What types of cooperation do they consider to be fruitful for both sides?

Interviews were conducted with the directors of 8 Transylvanian small businesses who have a relationship with universities either through cooperation with colleges for advanced studies or through internships programs. Interviews were conducted with the director of an online marketing consulting company, an accounting firm, an event planning company, a shading technology company and some trade firms. The nine Hungarian companies contacted include some software development company, a food processing company, a cluster development company and an automobile manufacturer. All three businesses collaborate with universities to offer practical knowledge for students and they also provide guest speakers to increase the quality of higher education. Company directors claim that their cooperation with higher education institutions is useful for them and this type collaboration fosters new ideas and perspectives that would not have occurred otherwise. All three Romanian companies have said that they are fully taking advantage of the internship programme. In Romania the majority of higher education programmes require students to complete a three-week long mandatory internship as part of their undergraduate studies. All respondents agree that this time interval is not enough not even for a future job application. Students do not have the possibility to fully understand the company's activities as well as to come up with new ideas and changes. Therefore, companies recommend students to commit their entire summer (2-3 months) to the internship. Companies expect students to come up with new ideas, innovative solutions and they expect universities to provide students with success stories, best practices and new ideas.

We conducted semi-structured interviews with two company directors who had not had any previous contract or cooperation with any university although they would like to engage in such activities. One of the directors mentioned that it would be a good idea if company directors and the representatives of higher education institutions would have a round table discussion where they could share and discuss their expectations. Thus, universities would know what type of knowledge and competences students need to be successful on the job market and find a job as soon as possible. The other company director complained about the fact that universities show little interest in how the students perform on the labour market and he believes that universities do not update their subject materials or their teaching methods in a proper way. For a concrete example, he mentioned students' little knowledge in foreign languages and their lack of Romanian language knowledge although most of the business activities are conducted in the state language – that is Romanian. The company directors were not satisfied with

fresh graduates' attitude towards work and their way of performing the job – these young people show difficulties in working in a team and they fail to recognize the situations which require immediate reaction or response.

Analysing companies' reach and the complexity of their cooperation with higher education institutions we arrived at the conclusion that in case of both Hungarian and Romanian companies a greater reach means a greater complexity of cooperation. SMEs do not see the benefits of cooperation with universities and therefore they do not take advantage of them. On the contrary, companies with international reach consciously exploit the possibilities of joint research, internships and guest speakers. Such companies outsource smaller tasks to students involving them in the company's activities while still at university.

Two of the most commonly used forms of cooperation are inviting guest speakers or on-site visits to the company's headquarter. Both are very useful for university students as practical business presentations and real world examples complement students' theoretical knowledge. On-site company visits provide an insight into day-to-day operations of a company. Students can learn about the equipment used, task delegations, therefore helping them to prepare for their future career. Joint research projects are rare but would be beneficial for both the corporate sector and universities alike. University employees have a greater understanding of the research methodology while company executives have more practical experience and therefore can suggest research questions and topics based on their insight and experience.

Hungarian companies also have positive opinion about their collaboration with universities, too. In Hungary most BSc programmes include a mandatory full semester-long internship during which students gain a deeper insight into the company's operations and the company in turn gets to know the students' qualities. According to the directors' statements university students are creative; they perform their tasks with responsibility and their work is mostly reliable and of good quality. The exceptional and hard-working students can prove themselves on the labour market with their innovative ideas, hard work and new perspectives.

The director of the Romanian marketing consulting company said that they run a joint project with the university students. The project involves developing online marketing plans for 2 companies. The project proved to be a success; the students were enthusiastic and worked very hard. The director also appreciated the fact that students were coordinated by a university teacher who facilitated communication and coordination of the work. Involving the students did not mean extra workload for him, he just had to keep in touch with the coordinator who guided and evaluated the students. This kind of project was considered to be especially useful because usually students do not take their work seriously if they lack supervision from part of the university.

Our respondents were asked to give 3 words each that first came to their mind about the advantages and disadvantages of cooperation among universities and the corporate sector. The answers given are shown in a word cloud. Word clouds are visual representations of the most frequently occurring words. Word clouds can be used for illustrating the frequency of certain words in a given text, the frequency of certain collocations or the number of subcategories within a category. Respondents mentioned a wide range of cooperation types. Almost all subjects mentioned presentations held by guest speakers, a lot of respondents spoke about on-site company visits and nearly half of the interviewees mentioned some kind of long term contractual cooperation and

partnership. All our respondents have been maintaining relationships with higher education institutions for several years.

These relationships were assessed as positive by all respondents. As far as advantages go the most commonly mentioned term was relationship building (Figure 8). Many key corporate actors believe that they can forge beneficial professional relationships during their cooperation with universities. They have the chance to get to know the executives of companies working in the same field as well as key university employees working in adjacent scientific fields. Information and awareness occupy second and third place among those most mentioned and in this particular case company executives brought as sample research carried out by universities.

Figure 8 The advantages of cooperation – word cloud

Source: authors' own elaboration

Our respondents also emphasized that keeping in touch with university teachers is pleasant and means a great opportunity especially with the scholars who have the ambition to increase their knowledge in a certain field and learn about the latest research results. Company executives are so encumbered by their day-to-day activities and tasks that they simply do not have time to read such information – the length and language of most scientific articles make it even harder to read and understand the results. Informal conversations seem to be more effective in engaging company directors sharing the most interesting and most important results and possibly give way to future implementation.

Finally, many of the respondents mentioned human resource development and keeping the fluctuation of the labour force under control, which has proven to be a significant challenge to many SMEs struggling with the lack of trained labour force and professionals.

The disadvantages mentioned by the respondents were spread across a wide range of topics. This is also visible in Figure 9 which clearly illustrates that the size of words shows very little difference. The most common objection was against the persistent presence of bureaucracy, and slow decisional processes. Another main disadvantage was that students working as interns quite often leave the company after graduation and thus the company loses the competitive edge they had hoped to gain by cooperating with the university in the first place.

Unfortunately, the term 'back off' appeared in a prominent position, the respondents explained that this happens when the university withdraws from certain agreements or decisions. They failed to give a clear explanation for this phenomenon.

Figure 9 Factors hindering cooperation – word cloud

Source: authors' own elaboration

As it can be seen many respondents stated that there are no drawbacks to collaboration with universities. This could be interpreted as a good sign on the condition that we know that dissatisfied 'clients', which in this case are the corporate sector, give voice to their objections and concerns on rare occasions, i.e. below 10% of all cases.

Conclusion

To conclude, it can be stated that cooperation between companies and universities in Romania has to be initiated and coordinated by universities. It is worth mentioning that companies are open and glad to take part in such cooperation and most of them are also willing to pay the students. In Hungary company professionals and experts feel they have to carry a significant administrative burden in exchange for the advantages of cooperation. The universities' bureaucratic system makes it difficult to make fast and flexible decisions. For this reason it is possible for the common project to fail or for it to be cancelled. "Universities can make their students familiar with basic concepts but they can not deliver the knowledge which shall be implemented in on-the-job contexts. Post-experiential education is not - as it can not be - 'knowing-oriented', thus there is a gap between the 'know how' (concepts brought from the university) and 'know when (on-the-job context in a corporation). The problem is that we do not know how to bridge the gap between the 'know how' and the 'know when'" (Szoboszlai, et al., 2014).

The discussion with company directors as well as the researchers' own teaching experience reveals that in order for students to be successful on the labour market it is

necessary and vital to gain practical knowledge during their undergraduate studies. The Romanian legal framework provides little opportunity to make this possible, therefore universities have to invest time and effort to initiate and organize joint projects with several companies in order to involve students.

In Hungary the half-year mandatory internship programme provides a good opportunity for students to gather experience for their professional development and future job seeking, as well.

Such joint projects of companies and universities have to be coordinated by university teachers in cooperation with company directors. Students have a lot to gain from such successful projects. Company directors are open to cooperation and they welcome new ideas from the universities and consider them useful. However, they complain about the huge administrative burden involved. Regarding the financial aspect of such joint projects company directors have different opinions. According to the director of the event planning company students should not be paid for the work they do during the internship program. However, the directors of the other two Romanian companies believe that students would take their work more seriously if they received some minimal compensation.

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WHY DOES IT FAIL TO OPERATE?

Csaba Otti

Abstract: The aim of this study to examine the user attitude towards errors experienced when using biometric access control systems. In the 20th century using access control systems within the corporate sector became natural. Biometric identification of users and employees in Hungary at companies began to spread mainly after 2000. Biometry is the first access control method that requires true cooperation from users, successful and unsuccessful identification can be defined by probability variables and authorised users can be rejected even if the biometric sample was perfectly positioned. Based on case studies, the biggest risk is if a large throughput system has the false rejection of authorised users. This study examines what users think of the system if they are rejected at an access point while being authorised. According to one respondent's answer on the question of how one would feel if rejected at the access point also served as the title of this paper.

Keywords: biometry, access control system, user behaviour, qualitative technique

Introduction

Nowadays biometrics has become an everyday feature in all aspects of life. Looking at security a wide array of solutions is at the disposal of experts, yet we still hear about a large number of unsuccessful projects.

One of the purposes of this study is to identify the typical usage areas of biometrics through a scientific approach and determine the factors that make the introduction of such a system more risky in certain cases. Risk factors will be examined based on which we will demonstrate the two areas that suffer from the biggest risk of a failed system deployment. These are the large user base access control and attendance tracking systems. The manufacturers of biometric identification systems provide false acceptance and false rejection rates, however, these are algorithmic values – in reality, the performance is worse by several orders of magnitude. Nevertheless, devices operating even within this range can be considered good based on the experience. The other purpose of this publication is to examine the hypothesis which states that false rejection rates at 1-5% which are worse than 0.01% by orders of magnitude are still considered good by users, as in practice they get stuck at the various physical restrictive elements of access control systems with that probability. To determine the threshold of user tolerance towards an access process within which they still consider it good or adequate, we plan to perform a questionnaire based research. A step in this was a focus group research, the result of which can be read in this publication.

Usages of biometric identification

Automatised electronic biometric personal identification has gone through a tremendous development in the past fifty years. Law enforcement agencies have an ever

growing need for the ability to identify people anywhere, anytime with high speed and certainty. Parallel to this, there is also an ever expanding need to identify users, incoming people and authenticate access throughout all aspects of life. It can be observed that the acceptance of such systems and the attitude of the users towards them largely influence the success and usability (Dillon, 1996).

When considering security applications users are general much more suspicious and rejecting than in the case of commercial applications where it is up to them whether they wish to use the solution or not, the biometric sample never leaves their possession and it is convenient to use. A good example that while general purpose biometry is rejected by the users (Suplicz, et al., 2006) (Földesi, 2015), 89% of iPhone users employ biometry in their phones (appleinsider.com, 2016).

One might justly ask what distinguishes the various applications, what their properties are and how they can be classified. The next part of the chapter will answer this. (Otti, 2016.)

1. **Law enforcement:** Biometry has been used to identify suspects for a long time by law enforcement agencies. These are mostly AFIS solutions, short for Automated Fingerprint Identification System. This system works by analysing fingerprints and fingerprint fragments then returning the best possible matches. Then forensic investigators check these results with traditional methods (Komarinski, 2005). However, multiple research projects are underway to enable real time support of law enforcement units in the field (Földesi, 2017).

    - A Hungarian connection is the deployment of the new biometric personal identification cards, started in 2016. This allows for the further spreading of law enforcement solutions and a much more efficient identification process. Similarly to biometric passports these cards feature an RFID smartcard which can hold the fingerprint of the user along with other possible biometric samples and data (Balla, 2013).
    - Biometric personal identification enables law enforcement to automatise identity checks with a portable device that facilitates data acquisition, database queries and provides a high accuracy verification. This technology does not allow for general identification for regular citizens as biometric data can only be stored on the card itself according to Hungarian law. If, however, the person is wanted, their data are held within a central database. A properly deployed system has a constant connection to this database and allow for the identification of people who otherwise would hide their true identities. Protection of the data on the cards is a risk factor, however, since depending on the security level of the chip, swapping the data stored within with forged credentials might be possible. A further risk factor is the large userbase. While law enforcement officers do not have to care about the required time for an identity check – at most, only for the sake of increasing their own performance – the system has to be extremely accurate to ensure that it does not falsely identify an innocent person as a wanted one. This requires a proper algorithm and high system performance.

2. **Background checks:** Many government agencies and private companies require biometric identification to fulfil certain roles and positions. Biometric features of candidates are taken (generally face and fingerprint) and sent to the authorities to gain information about any past transgressions. In case of private checks, the biometric data is destroyed at the end of the process.[2] In essence, this can be considered an extension of the law enforcement application.
3. **Video surveillance systems (CCTV):** The traditional CCTV systems were observed in 24 hours by the guard detail. This task is extremely monotone and tiresome – thus biometric facial recognition and other intelligent algorithms help to keep up their concentration and performance efficiently. *„The purpose of these upgrades was to support surveillance crew, because surveys show that any person tasked by surveillance can ignore up to 95% of events on screen after just 20 minutes."* (Berek, 2014, p. 34). The backbone of such systems is the face recognition enabled camera and control software. For ideal operation, the system must learn the biometric samples – for which an adequate biometric sample must be presented to the system. If the surveillance system covers most of the protected area there is a possibility to automatically track the movement and actions of the surveyed people (Otti, 2014).
4. **Border Control:** The constantly rising passenger numbers resulted in a need for advanced technologies that automatise, speed and ease up border passing. Based on international standards an ever-growing number of biometric passports gets issued that contain iris patterns, fingerprints and facial information. An ever-growing number of countries deploy biometric passports based on international standards that can contain fingerprints, iris patterns and faces. Some countries like the USA requires the presence of a biometric passport (for countries from which the USA does not require a tourist visa, in the case of a visit not exceeding 90 days) while others only provide an opportunity to obtain and use them. Properly designed biometric systems relieve pressure from live force and allow them to focus their attention on risky individuals. The database of dangerous individuals contains the templates of people who are dangerous to society, and as such, their disposition and acceptance towards the handling of their data can be disregarded. Their operation can be supported with other systems which provide further filtering levels. False identification rates of biometric systems used for border control are smaller by several orders of magnitude than their false rejection rates, and as such, if someone was to sabotage the identification process, it would be much easier to provide an unidentifiable sample than to spoof the system such that it identifies the attacker as a different person. A major property of this application is that the user acceptance is generally not a factor. The users – if no alternative method is made available to them – must use the system whether they like it or not. If they arrive at a border where biometric identification is compulsory, they will either cooperate or turn back (risking drawing the attention of the border guards with suspicious activity and ultimately, arrest). Authorities

[2] Private enterprises have no possibility to do so, and in my opinion, government agencies are very limited, as well in Hungary.

can disregard user opinions, the singular criterium in this case is efficiency. Naturally, however, this does not mean that the authorities shouldn't develop a high-performance system for at least their own sake – but this is not a risk factor. Compatibility of biometric passports is ensured by adhering to ICAO9303, which allows for any country to read them and utilise the samples stored within.

For the EU, and within, for Hungary, migration is one of the biggest challenges nowadays. (Balla, 2013). *"Migration did, does and will exist. One of the most marked globalisation factor within the 21st century is migration, which causes social-economical-ethnical-religious etc. problems. It is a complex process that can gravely endanger national-regional security but it can be a source of wealth, ending population decline, good statistics and a humanitarian solution. In summary: though it is very hard to handle, it must be handled."* (Görbe Zán, 2010, p. 4). Miklós Böröcz police lieutenant colonel have been examining the terrorist attacks targeting the western countries since 2001 and showed that they were committed generally by second or third generational migrants, however, it is a fact that illegal migration and organized crime are in close relation (Böröcz, 2015). Hence, recording biometric data from immigrants would be paramount in order to allow law enforcement agencies to root out criminalising individuals early on and in time.

Employing biometric passports raise several data security questions though from multiple standpoints. These passports, are in essence, RFID Smart Cards (radio frequency contactless intelligent chipcard) where the actual template is stored on the chip. They have to be adequately protected since they can be read from a short distance, and with a proper reader, data can be obtained from them, hence it is important to consider what kind of data are stored and how it is encrypted. Based on the standard ISO/IEC 14443 at least 32 kb of data is stored. The previously mentioned ICAO document states that different manufacturers use proprietary methods to encode samples and match them to the stored templates. Due to this, passports actually store raw biometric data in the form of images to ensure interoperability. This is a huge security risk as obtaining raw biometric data can be the source of a whole host of abuse as opposed to obtaining a template encoded with non-reversible coding.

5. **Reduction of frauds:** The various methods of fraud – abusing personal data or financial abuses – present a good opportunity to deploy biometrics in an effort to reduce or eliminate them. ATMs protected by biometry reduce the risk of fraud and also make banking services available for those who would not be able to use them otherwise. There are plans for this in India, where one of the biggest biometric databases were established by the authorities which is supposed to provide access to banking and state services for everybody (and also render citizens reachable for the state). The first such ATM was deployed in 2016. With this device, either the credit card or the ID number of the owner starts the transaction, but to authorise it the biometric sample is required. When signing contracts proper biometric samples provide an established personal identity and a record that can be traced back. Such samples include signatures or general writing).
6. **Trusted passengers:** This application would allow otherwise trustworthy passengers to pass through access points faster and be selected for in-depth security checks at a reduced rate. Participation in such programmes is

voluntary and is only available after clean background check results. Passengers can use their fingerprints or irises to pass through the simplified check-in process. Samples are recorded on authority issued smart cards. (Kovács, 2015).

7. **Access control systems:** Biometric identification is an effective method to facilitate physical access control as it allows for personal identification rather than object or knowledge based identification. (Kovács, et al., 2012, pp. 486-487). The most popular samples used in access control are fingerprints, irises, face and vein patterns. The systems can be broken down to two large groups, which are 1:1 and 1:N. In the first case, the system matches the presented sample against a pre-selected template and determines whether the two are similar enough. The sample can either be stored in a local database or can be owned by the user. In Hungary, the latter solution is the only legal possibility, such that the samples are stored on an RFID smart card. In 1:N operation, the presented sample is matched against the entire database of users, and the system looks for the best matching template – with regards to the general security level determined by the actual setup. The application is negative – its aim is to filter anybody who is not authorised to pass through a given access point at a given time. There are alternative – albeit older – methods to biometry, which are knowledge based (PIN or password) or possession based (card based) systems, however, they can be circumvented rather easily, which, in some cases might demand a higher security level. Biometric identification systems generally face higher performance expectations from the users since they have to strike a balance between the low false acceptance rates required by the negative identification method and the low false rejection rates that corresponds to the required throughput (although in application where access speed is not cardinal, the latter can be disregarded).
8. **Attendance tracking:** Biometrically tracking employee worktime can minimalise both administration and errors, mistakes, over- or underpayment and fraud. (Otti Csaba, 2011). Attendance tracking systems can exist as parts of an access control system or as individual systems. Their objective is to clearly assign a personal identity to a check-in, preventing any controversial situations in the future. Furthermore, it allows for automatized processing of worktime data and provides an easy access to them for the employees as well – if needed. The criteria set up for access control systems are expanded with proper identification speed as it is imperative to prevent the forming of large lines. It is important for both access control and attendance tracking systems that users accept and effectively use them.
9. **Customer identification**: Nowadays, mostly PIN codes, tokens and signatures are used to identify members of trade transactions. With biometry these solutions can be phased out or at least reduced to increase security and the sense of security as well. Furthermore, users can be brought into trade who are not skilled the traditional identification methods like very young and elderly people. (ISO, 2011) (ISO, 2010).
10. **Remote authentication:** A cardinal question in the creation of information security is the security of remote access and rights management for

computer networks. The most frequent usages are mobile or computer based bank services, web based applications and employee remote access to the company network.

11. **Protection of property:** Biometric identification replaces or supplements the classical security systems in this case – for example, in a NATO document repository protecting the safes containing paper based documents with fingerprints or disabling alarm systems with a palm vein identification system. (Berek, 2014). This application is intertwined with access control.
12. **Logical access control:** Using biometrical identification to access servers, databases, health- or financial data. According to Michelberger logical access control means protection of data integrity, virus protection, encryption methods and control to computer access. (Michelberger, 2013). Employing biometry in this application reduces the dependence of security level on the end user and is more convenient than traditional solutions – as one does not have to demand learning long passwords (that are hard to crack and to remember as well) from users.

The above list has to be expanded with a 13th item, which is the biometric protection of mobile devices. Laptops and Android-based devices have featured biometric identification since the early 2010's but the breakthrough came in 2014, when the iPhone 5S came out with fingerprint recognition capabilities which introduced several million users to the world of biometry. Parallel to this, biometric identification (fingerprint, iris, face) became a base functionality on newer Android-based devices. The iPhone 6S device features secure mobile payment through the Apple Pay service. It is important to note, however, that biometry in these cases is never the only solution – as there is always a compulsory fallback option to be used which is one of the traditional methods. Moreover, when starting up the device biometric sample cannot be used for the first unlock – it has to be either PIN, password or an unlock pattern.

This means that the protection of the phone is only as strong as the fallback option. Since most phones do not enforce a password policy (they do not require a secure password), biometry in this case can be reduced to a simple convenience option. For example, in the case of a pattern based screenlock[3], biometry only spares the user from drawing the pattern every time they wish to unlock their phone and allow for a simpler unlocking process. However, anybody can get the pattern by simply looking at the phone when the user unlocks it using that method – which is much easier than obtaining a difficult password) and bypass the biometric protection. Since the biometric settings can usually be found deeply in the setup menu of the phone, one can essentially record themselves into the phone without a high risk of detection if not all pattern slots are used. The number of recorded templates can generally only be seen from the enrolment menu which most users do not visit often (and which is, again, protected by the fallback option). This enables a silent, nearly undetectable access to the target phone although the attacker can also opt to simply lock the original user out of the device.

Many mobile devices have a safety feature which essentially factory resets the device deleting all data irrecoverably in the process if a certain number of failed login

[3] A pattern lock is a 3x3 grid consisting of nodes, where one has to use the nodes to create a pattern of straight line sections that will unlock the device. The sections can overlap each other, but every node can only be used once. A pattern must consist of at least three nodes.

attempts are made (the actual number varies between devices). A further possibility is to expand biometric identification to log into certain websites. In that case, the username/password combination is swapped in favour of a biometric sample, which unequivocally identifies the user. The application range of biometric identification is far-reaching, and even this short summary shows that every application has its own set of criteria towards the biometric devices. In the next chapter, I will introduce the circumstances of the applications, the attitude of their users and demonstrate why access control and attendance tracking are the two highest risk applications that prove to be the most challenging for companies.

Biometry and human attitude

Throughout our research we regularly faced a problem regarding the application of biometric systems. There are no biometric systems or devices that are universally good for any application and perform with the same efficiency throughout the full usage spectrum. Thus, the areas mentioned in the previous chapter should be further classified and grouped by several factors, as they have significantly different properties. Analysis of these will prove that the critical applications are access control and attendance tracking systems. But before the detailed factors let me be clarified the most important Rates:

- False Accept Rate: This is the possibility of the system accepting a person who should not be – either because not being in the database or because misidentifying him/her as a different person.
- FRR: False Reject Rate – This is the possibility of the system rejecting a person who otherwise should be accepted and is legitimately present in the database. The FRR is the ratio of false rejections and all transactions. Experience shows that this is one of the most important factors that truly define the usability of a biometric system. With an increase of user number, obviously there is a bigger statistical chance that false rejections will cause problems for the users.
- EER: Equal Error Rate: This is the ratio where the probability of false acceptance and false rejections are the same. This is the optimal setup point for a device and algorithm, because the FRR and FAR graphs intersect here. Deviating from this point in either the direction of security or convenience can only be done at the expense of the other. A system is more convenient, if it rejects authorised people less often, and it is more secure if the false acceptance rate is lower.

All of them are general probability variables and are treated as a quality control of a biometrics system.

1. **The number of people to be identified:** One of the biggest adversaries of biometric identification systems is the user number. While a smartphone usually has to recognise a single person – or a few at best –, in the case of a biometric identification document, the user number can be in the range of hundreds of millions. The problem stems from the probability nature of biometry. The general probability variables characterising biometry, such as FAR (False Accept Rate: This is the possibility of the system accepting a person who should not be – either because not being in the database or because misidentifying him/her as a different person.), FRR (False Reject

Rate – This is the possibility of the system rejecting a person who otherwise should be accepted and is legitimately present in the database. The FRR is the ratio of false rejections and all transactions. Experience shows that this is one of the most important factors that truly define the usability of a biometric system. With an increase of user number, obviously there is a bigger statistical chance that false rejections will cause problems for the users.), EER (Equal Error Rate: This is the ratio where the probability of false acceptance and false rejections are the same. This is the optimal setup point for a device and algorithm, because the FRR and FAR graphs intersect here. Deviating from this point in either the direction of security or convenience can only be done at the expense of the other. A system is more convenient, if it rejects authorised people less often, and it is more secure if the false acceptance rate is lower.) will not have perfect values and as such, will not guarantee a 100% acceptance or rejection even if the device and algorithm is extremely good. Generally, EER is given around 0.01% by manufacturers, and if we consider that, the system will make a mistake in every 10,000 transactions. In reality, however, capabilities are worse with 1-2 orders of magnitude, which means that the system will have problems in every 100 transactions (Otti, 2014).

2. **Convenience or compulsory use:** Obviously, if the user has an interest in using the technology, the attitude will be significantly different. For example, the biometric identification in mobile phones is clearly a convenience feature while the biometric reader of an attendance tracking system is a compulsory one – and the one that is the most rejected by users.
3. **Is there an alternative identification method:** Is it possible and acceptable to use a different method for identification in the particular application?
4. **Another important question is whether the identification is positive or negative:** Within the publication of Bunyitai, (Bunyitiai, 2011) positive identification is used in 1:1[4] verification, while negative is 1:N identification. Within this study the meaning is different. By positive identification we mean that certain individuals from a populace is sought: for example, identifying a VIP or wanted people or finding a terrorist. By negative identification, we mean identification of the authorised people and having the guard detail intervene when somebody is rejected.

Classification of applications

We classify the applications shown in the introduction by the standpoints in the previous point and see which ones should be put under further scrutiny.

Regarding user opinions, any application that has a viable alternative or is used for convenience is of less importance because who cannot use or do not want to use biometry can opt out. I have highlighted the two applications from the table above in which users must either use the system or there is no real alternative to biometric

[4] 1:1 verification is when identity is established by an identification step (e.g. by card or PIN) and the identity is then verified by biometry. 1:N identification is when the device looks up a database for the most likely match only by a biometric sample.

identification (naturally, this requires further explanation) and selection is negative – which altogether means that every user must use the system. These will put under further scrutiny.

Application	Typical user number	Convenience/ Compulsory	Alternative method	Positive/ Negative
Law enforcement	100.000+	Compulsory	Yes	Positive
Background checks	100.000+	Compulsory	Yes	Positive
Video Surveillance	1.000.000+	Compulsory	Yes	Positive
Border control	1.000.000+	Compulsory	Yes	Positive
Fraud prevention	100.000+	Compulsory	Yes	Positive
Travel	1.000.000+	Compulsory	Yes	Positive
Access control	1 - 5.000	Compulsory	Problematic	Negative
Attendance tracking	100 - 5.000	Compulsory	No	Negative
Customer verification	10.000+	Convenience	Yes	Positive
Remote authentication	10-100.000+	Convenience	Yes	Positive
Property protection	10-100	Compulsory	Yes	Positive
Logical protection	10.000+	Compulsory/ Convenience	Yes	Positive
Mobile	1-10	Convenience	Yes	Positive

Table 1 Applications of biometric identification

Source: author's own editing

Critical applications

Access control systems are a definitive area of electronic protection. Their objective is to restrict access to an area to only authorised people. Within the particular area further sub-areas can be created in order to fine-tune access rights and access levels – for example, a person who can enter the main gate might not be authorised to enter any server rooms, as well. While the basic function of access control systems is to restrict access to certain areas, the owner can opt for other functions as well – for example, attendance tracking. (Berek, 2014).

Evaluation of the table seen in the previous point will reveal the applications where introducing biometric identification bears the greatest risks.

User number

At low user numbers – about 50 people – using biometry generally causes no problems since company leadership can rather easily test prospective devices on every user and operation is more transparent and controllable. Beyond this, statistically there is a smaller chance to actually encounter a problematic biometric sample due to the low headcount. In practice, this means that virtually any biometric identification device will work according to its specifications if no other disturbing factors are present – for example, if a face recognition system is not installed at an external location where the sun periodically shines into the sensor.

Motivation for usage

It is obvious that if the users use biometry on their own accord or for their own convenience, their willingness of cooperation is vastly different when compared to situations where they are forced to use such a system. From this standpoint, both access control and attendance tracking is a critical application. These have the lowest acceptance rates of all biometric applications (Suplicz et al., 2006).

The task of attendance tracking is to record the presence (and in certain cases, the activity) of employees and pass the summarised data on to payroll at the end of the month. An accurate attendance tracking system is an advantage for any given company, as it allows for a more rigorous record keeping of actually performed work activity, which in turn allows for significant savings as they only have to pay for what the employee really did. However, it is also beneficial for the employees because in any controversial situation the system will clearly show the truth if the correct data are available.

In the case of an attendance tracking system opposing interests meet: the incentive of the employer is to only pay for the work done based on the narrowest possible interpretation of worktime while the interest of the employee is to have the most possible time accounted as worktime. We know of several methods to circumvent traditional attendance tracking systems, like “buddy punching”, when a colleague checks in with the credentials of another employee making it seem that the particular employee is present and is indeed working, hiding tardiness and unauthorised absences. The other neuralgic area is overtime because employees are entitled to extra benefits above the normal wage.

Such abuses generally happen when the employees work without a more rigorous oversight, in flexible schedules or the headcount is too high to effectively keep tabs on everybody.

Alternative identification methods

The opposing interests and operational features described in the previous point result in the fact that it is very hard to find an alternative for high userbase access control and attendance tracking, if it is possible at all. Naturally, the methods are available – such as PIN or card based identification for such purposes, but it is not prudent to use them due to the high risk of illegal access and fraud. These risks might rise past a point where deploying a biometric system loses its purpose altogether. Furthermore, the phenomenon of exists that those who have a vested interest in a less reliable attendance record will sabotage the system to try to coerce the deployment of a less secure “legacy” method. If companies allow this to happen, at worst case, the deployed biometric system has to be phased out (Otti, 2015).

The terminals employed for the task must also comply to a number of other criteria as well:

- It must feature an adequate interface to (depending on application) allow extra data to be input to the system.
- Tamper/vandal proof design: an attendance tracking system might cause animosity with employees if they feel that the company intrudes their private sphere too much – or if they in fact want to cheat and the new system is preventing them from doing so (the latter is a definite purpose

of a biometric system). By harming the device, they might try to emphasize that the system is fundamentally useless and pointless.

- The system must operate efficiently for users of any demographics, age and sex, for the number of employees that can be present at the given location: general employee number, borrowed workforce, guests, subsidiaries, employees of other factory units, inactive users, etc.

Type of the selection

In the case of attendance tracking and access control, selection is negative: the system must determine who is not allowed to enter. We have to examine which properties of access control systems are the most important in this case. The relevant performance indicators such as FAR, FRR, operational times and enrolment values were defined within Chapter 3.

FAR and FRR values are usually set to their intersecting point, the EER value by default (with a usual value of 0.001%-0.1% (Figure 1).

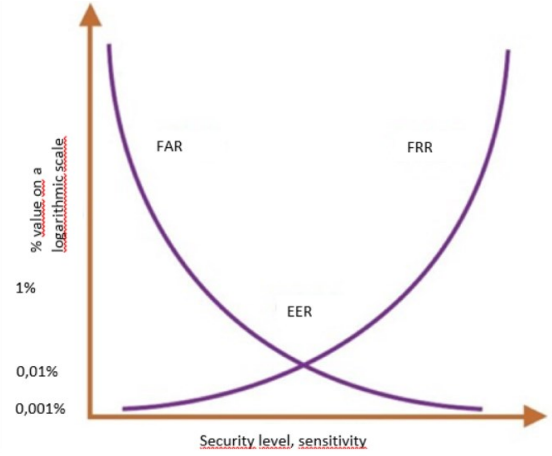

Figure 1 Sensitivity of biometric systems

Source: author's own editing

Given that we are considering a security system, FAR might seem to be the most important factor however this, in itself, is not true. In high userbase applications two factors modify this. The first is that at a manufacturing corporation it is rather hard to create access points which ensure that only one person can pass through at any given moment. Let us just imagine a truck entrance or a loading ramp where 10-15 trucks can park in simultaneously. In such a case, using only the technology without the help of a security detail, it is impossible to guarantee that no unauthorised entry occurs. The other factor is that the valuables to be protected are easily attacked with different methods (e.g. hacking, social engineering, etc.) than with the illegal physical access of attackers.

If we look at the FRR values, however, we can see that a bad performance on that front can fully cripple the system operation. In high userbase applications, a high FRR will cause a serious problem even if the protected facility justifies it and personnel is also trained to accept it because in practice even the first failed identification attempt might require the intervention of the security detail and they might even need to perform a manual identity check.

Considering attendance tracking systems, we have to take further factors into account – but to do so, we must understand what a faulty attendance record will result in and what kind of disadvantages it can cause. In the best case scenario, it will take extra worktime and administration to correct the errors while the workforce could have been doing something productive had the register been correct. The worst case scenario can have legal consequences ranging up to a direct lawsuit. Due to this it is very important that users can only use the system as themselves (which is its purpose). However, as we have described in the previous point, a negligently planned system might motivate users to try and circumvent or sabotage it. This means that it is not enough for the system to determine whether the person presenting the sample is the same person who was enrolled in the system – it has to do it with certainty, in other words, it should not reject authorised users falsely, or at least, in a minimal amount. Biometric identification is always relatively unpleasant when compared to knowledge and possession based methods as the user has to put in extra effort to achieve a successful identification. If the system does not work efficiently, the users can easily get frustrated (especially if they already have a negative disposition towards the system). Good performance is also very important when we consider the operation times of the system. It is not an easy task to define fast but it can be stated that the fastest biometric system is slower than any card based system – which in turn means that even that system will cause relative inconvenience for the users. Enrolment performance is important for both operation and system deployment. The most important question for an operator is whether the system will work for every user with an adequate security level (for example, hand geometry identification requires every finger on the hand to be fully present). For users, the more important factor is that they most likely meet the system first during the enrolment process and the first impression might be the key to the future disposition towards the system.

Further factors

While the parameters described in the previous point are subjective from a user viewpoint, it is possible to define them objectively. In the following section, a number of other factors will be listed which cannot be measured objectively but are very important regarding the acceptance of the system nonetheless:

- Misconceptions: a number of technologies are plagued with misconceptions that dominate the initial disposition and user attitude towards the particular system. A good example for this is the suspicion regarding iris scanners: many popular movies portray “eye scanning” (which they call retina scanning although in reality scanners examine the iris) where a laser beam scans the sample. Users might be afraid that the scanners will damage their eyes while the device actually uses harmless near infrared (NIR) light to illuminate the iris. Another misconception is that devices are extremely dirty because everybody has to use them resulting in user reluctance to touch them pondering how contaminated they are and what negative effects it might have – while they happily grab a doorknob without any second thoughts. Proper education and the deployment of appropriate technology (for example, contactless devices) can solve these problems.
- Privacy: As it has been stated, some companies handle biometric samples in their own local databases (although some countries mandate that the samples are

stored on devices which are in possession of the user)5 and employees might be worried about the safety of their data – for example, what third party gets hold of their biometric data or whether it can be obtained anybody – as data security is largely dependent on the software, hardware and protocol environment. The templates generated by biometric devise are irreversibly encoded, the original sample cannot be restored from them but this is not a well known fact among end users – and even if they know it, they are usually sceptical about this.

- Morale: certain employees (who otherwise do their work well) might feel that they are not trusted, which causes tension to build up in them – while the system will specifically protect their interests as well, since the company will not have to spend as much money on the employees who do not work well. As such, it is very important that the company communicates the reasons and advantages of the system before deployment. It will naturally also cause a morale drop for those who were behaving fraudulently because chances are that this possibility will end with deployment (Kovács, 2015).

Disregarding these factors is a big mistake for any operator since it will cause employee unrest, which is harder to solve than taking preventive measures with proper planning and preparation and communication. This naturally does not mean that the system has to cater for the needs of every single employee but the reason of deployment and the advantages must be clearly communicated.

The critical point of biometric access control systems at large headcount companies is whether the system can facilitate its tasks with adequate speed and certainty while providing the required security level.

Access control systems in practice

Virtually everybody has met access control systems: at work, in office buildings, preschool, school, university, museums, municipal offices or at airports. Most of them use some kind of proximity card based technology but PIN code and magnetic stripe cards also exist. These systems are almost always paired with some kind of physical barrier, for example a gate, turnstile, automatic door or revolving door. Figure 2 will show the general scheme of such systems.

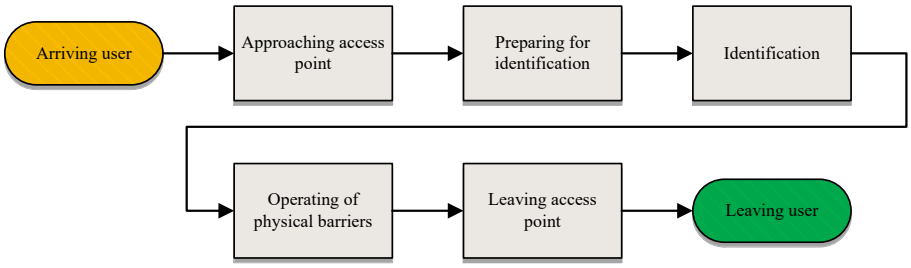

Figure 2 The general access process

Source: author's own editing

Their common property is that people can only pass through them with the proper clearance. Studying many implemented and currently working solutions we can say that many times that the physical barriers also stop authorised people as well, in cases like:

[5] Based on the currently valid NAIH opinions (Nemzeti Adatvédelmi és Információszabadság Hatóság – National data protection and information freedom authority) (19 March 2017) for Hungary as well.

1. The door warps and get stuck.
2. The electric lock gets strained in the door so it has to be moved into the opposite direction first to open it.
3. The sensor of an automatic door does not detect the person.
4. The user tries to pass through the turnstile to quickly while the lock did not release just yet, the arm gets strained and cannot be opened.
5. Drops the card while trying to hold it to the reader.
6. The system selects the user for bag/alcohol check.

When attendance tracking systems are concerned, we can say that in many instances it is tied to the access control system such that they use the same terminal – and if not, the same identification method is used nevertheless.

In case of biometric access control systems, the 0.01%-0.0001% false rejection rate (FRR) given by manufacturers only applies if the user presents the sample perfectly (4th stage: Identification) (Otti, 2016). However, in practice, experience shows that this value is a few magnitudes worse – between 1% and 20%. This value contains the physical access problems as well, but the user does not recognise this difference (Otti, 2015, p. 70.). Customer satisfaction must be measured in every case to ease the use of the IT system. To ensure this it is imperative that the customer company creates an even image of the system with every employee through internal marketing. This is important for the company as the employee is the face of the company but it is also important for the developer because a dissatisfied user is ultimately a negative advertisement (Reicher and Szeghegyi, 2015).

Examining the true FRR values is of critical importance for determining how good the system is. This paper begins the work of discovering user attitude and discover whether they experience false rejection in their everyday life and if so, what they think about it.

The research

When considering large user number biometric access control projects, we always see that the main concern of decision makers is the successful and fast admission of employees. But what can be considered successful if a number of employees regularly get stuck in the identification process? What is the user attitude regarding the everyday use of such a system? My hypothesis for which we seek an answer is that rejection rate orders of magnitude worse than the 0.01% (around 1-5%) is still considered good by users since they get held up by the physical barriers in similar amounts. In order to understand where the limits of user patience lie – the line between acceptable and unacceptable operation we planned to perform a questionnaire survey. An important step was a focus group survey the results of which will be disclosed in the following points.

Research pertaining the topic

Professional literature features user acceptance research in order to examine the various biometric technologies regarding human factors. Most of these researches reference Andrew Dillon's and Michael G. Morris' 1996 „User acceptance of new information technology: theories and models" paper, which sums up the models for user acceptance of information technologies and the psychological background (Dillon, 1996). According to this paper the definition of user acceptance is the proven willingness within the user group to use the information technology for the purpose it was created to.

The user acceptance research of biometric systems is summarised in the chapter of Marek Rejman-Greene in the Encyclopedia of Biometrics book (Li and Jaiw 2015).

The first such research in Hungary was performed in 2006 at the Budapest Technical College Bánki Donát Engineering and Security engineering faculty, with a Panasonic BM-ET 330 iris recognition access control system, „Research of the attitudes and aversive reactions generated by access control systems" (Suplicz, et al., 2006). Following this in 2014, Földesi Kriszta and Kovács Tibor performed a niche research project featuring 333 examined people with the help of the students of Óbuda University and the police (Földesi and Kovács, 2015).

Researches and studies focus on biometric devices and technologies as well as their quality and acceptance. Throughout my research I did not find any material that evaluates the access point as a whole although that is the environment the user meets in reality. Although it might be possible that at other parts of the world, access points where the negative factors determined above are negligible can be built, but I doubt it – and for Hungary, it is certainly not true. In the over 300 installations I have knowledge about, there are fewer than 10 where the problems examined previously do not exist.

Methodology

The nature of the question pointed into the direction of focus group research method as we asked open questions and expected spontaneous answers. The objective of the focus group system was clearly to discover the spontaneous feelings and reactions of the users. The qualitative technique gives space to map the thoughts, logic and feelings of users. Through the introspection, we gained an insight into their attitude towards access control system. This way we can summarize the thoughts that may arise in users when faced with the problems and errors of the system and what their experiences are. However, this technique is not suitable to make quantitative inferences, the results can be projected on the surveyed sample. Nevertheless, they help understanding immensely and provides a solid base for the research of a future, large size sample (Vicsek, 2006).

Sample and results

The survey was done by asking corresponding students of Óbuda University Keleti Károly Faculty within classes. An important factor was to ensure that the responding students should not have any previous experience within this field – as it was in previous studies. This way we ensured that we reached users (and not developing engineers) who do not have specialist knowledge about such systems and as such, their preconceptions stem from their own experience. The questions were compiled based on previous researches, brainstorming and professional opinions in such a way that they would not influence the answers in any way. We aimed not to change any questions from other surveys. This research can be considered as a pilot project as in further research, we will use the terms and words used and understood by the survey participants – ensuring the validity of the research.

Properties	Values
Answers:	13
Gender ratio:	Female: 6, Male: 7
Age groups:	Minimum: 25, Maximum: 49 Average: 37

Table 2 Sample (N = 13)

Source: author's own editing

The groups were moderated by two of us. The focus group discussion was performed within the frame of Statistics lesson on an early Friday afternoon within the classroom. Notes were taken of the answers and additional information was gained by written comments of the participants.

1. "Have you ever met an access control system?"

   100% of the participants answered yes to this question, which is not a surprise as access control systems are rather widespread nowadays and due to age dispersion, most users already had/has either a main or a secondary job.

2. "What is your first impression regarding access control systems?"

   In this question, we looked at the attitude of the participants regarding access control systems. Based on the answers we created the categories with the inductive method.

No.	Answer	Usability	General attitude
1	Operational.	Positive.	Positive
2	I find it slow, the possibility for malfunctions is high which causes disruptions	Slow.	Negative
3	It slows me down and restricts me	Slow.	Negative
5	Positive, people without access rights can be filtered out	Secure.	Positive
6	Many errors, if the "network" is saturated, it won't let me in	Slow.	Negative
8	I find it good to increase security	Secure.	Positive
9	Slow pass-through, in case of disturbances, it can cause delays. In case if the turnstile gets stuck, it poses a threat for accidents.	Slow.	Negative
10	They aren't always justified and they are sometimes slow.	Negative.	Negative
11	Useful, I have no bad experience.	Positive.	Positive
12	As a leader, I find it good as it can be used in case of working hours dispute. As a quality control person who is involved in fire protection, I also find it useful as it can give information about where people currently are. As a football fan, I hate it.	Secure.	Positive
13	Maybe a bad thing that is required. I hate it at my workplace.	Negative.	Negative

Table 3 What is the first impression? (N = 11)

Source: author's own editing

The categories can be laid out along three dimensions: general attitude: negative – positive, usability: the most frequent answer was that it is secure and slow. Also in several cases, a distinction was made between the standpoints of a user and an operator.

Figure 3. Word cloud of the first impressions.

Source: author's own editing

Altogether we had 11 answers, which is an 85% ratio. We used positive and negative categories to encode general answers.

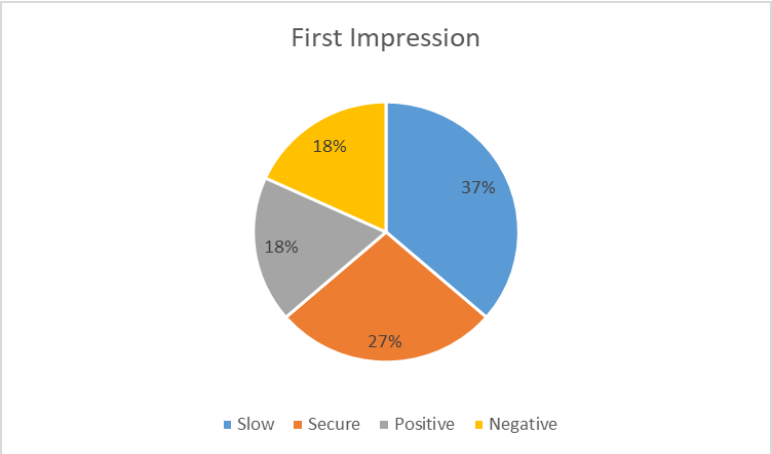

Figure 4 What is the first impression? (N = 11)

Source: author's own editing

55% of the answerers had negative statements regarding access control systems and 37% gave the specific reason that they are slow.

3. „Where did you meet an access control system?"

Most of them reported their workplace, they most likely met access control systems bound together with attendance tracking.

No.	Answer	Location 1	Location 2
1	Multiple systems	Multiple	
4	Basically, everything works based on this system at my workplace. If the system fails, there are big problems.	Workplace	
7	I arrived to a big firm as a guest. We were registered at the reception and given a card.	Workplace	
12	Workplace: stadium	Workplace	
13	Workplace	Workplace	Stadium

Table 4 Where did they meet? (N = 5)

Source: author's own editing

4. „What kind of systems you know?"

Most of the respondents have met turnstile based systems – and an important conclusion here is that most of the users consider physical barriers as part of the identification process.

No.	Answer
1	Turnstile Detector gate Automatic gate PIN based Card based
2	Access control system RTG gate Revolving gate
3	Turnstile Metal detector
4	Turnstile It opens a door in my office
5	Turnstile Metal detector
6	Turnstile
7	Card that was given at the reception opened the door (proximity card)
8	Doesn't know the type
9	Honeywell Turnstile Man sized bars Photocell door Metal detector gate
10	Polip armed Metal detector gate Proxy key with no gate
11	Card based Turnstile
12	Turnstile Revolving door Gate
13	Turnstile Detector gate

Table 5 What kind of systems you know? (N = 13)

Source: author's own editing

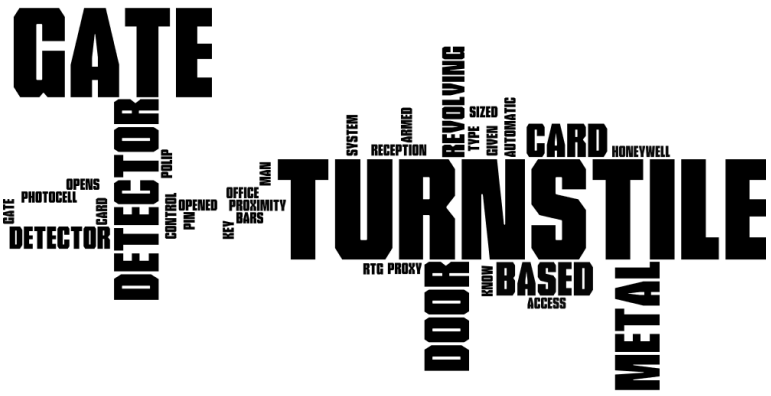

Figure 5 Wordcloud of the known systems

Source: author's own editing

5. „What kind of problems can an access control system face?"

The problems can be tied to the actual malfunctions of the physical barriers as seen above – like getting stuck or getting held back either by the error of the reader system or an access level. Actual slow reaction and false rejection only rises in two instances.

No.	Answer
3	Gets stuck
4	Gets stuck Slow Blocking me
6	Won't let me in.
9	Gets stuck
11	Disruption Barricade

Table 6 What kind of problems can access control systems face? (N = 5)

Source: author's own editing

6. "How would you feel in such an event?"

An access control system requires a human operator who helps access and can answer questions if any rejection occurs. This is also true if the user is selected for random search as personnel can disperse user uncertainty.

No.	Answer	Category	Note
1	Impatient		The impatient answer was swearing.
5	Impatient		The impatient answer was swearing.
7	I get embarrassed and look questioningly to the operator: "Why won't it open?"		
8	"The damn gate selected me again." I have been beeped in.		
10	Waste of time.		
12	What happened? Why does not it work??		
13	Junk.		

Table 7 How would you feel in such an event? (N = 7)

Source: author's own editing

Conclusions

The first part of this study collected the applications of biometry and defined the critical areas and the aspects on which this definition is based. A significant property of high user base access control and attendance tracking systems is that they are used by a large amount of people mandatorily, there are no alternative identification methods and selection is negative. The most important factor in these applications is the False Rejection Rate (FRR), since that defines whether everybody can use the system with sufficient speed and low rejection rate. Manufacturers of biometric devices generally provide algorithmic FRR values (0.001%-0.01%) which are better than the values achievable in practice. These values are practically unreachable. The difference is so big compared to our actual measurements (1-25%) that we started to examine the threshold of adequate performance a biometric system can provide within a real situation. The second part of the study summarises this.

Our results naturally cannot be generalised from a statistical standpoint, however, they are adequate as a pilot research as we can utilise the phrases used and understood by the research subject in future researches ensuring their validity. Access control systems are generally known to users, everybody has already met them somewhere. An expert

will have a fully different opinion than a general user, therefore in future research, they should be filtered. Regarding this issue, another question arises: how much can prior Hungarian research be generalised because they were mostly conducted on experts and university students studying in security directions?

More than half of the answers were negative regarding access control systems and 37% pointed out slow speed as a disadvantage. Parallel to this, 27% said that the system is secure. It would be beneficial to ask both questions in future research to determine whether the two concepts hold themselves together: biometry is slow but secure.

Users mentioned mostly revolving doors, turnstiles and metal detector gates so they encountered fully equipped access points. This means that the false rejection rates (FRR) specified by biometric equipment manufacturers are not met by the users. The given algorithmic FRR values move within the 0.01%-0.0001% range, thus users encounter these problems in every 10,000-100,000 transactions. Calculating with an average of four transactions per day, they should only be falsely rejected in about every 15-150 years (!), which they obviously would not even notice and most users would not even face such issues. It would be a proper course of action to seek the practical rate of rejections where the users might fail to pass through due to either user, system or physical errors but still accept the system as useful and properly operating. This is important because in that case biometric access control systems could not simply be gauged and ranked by the algorithmic performance values. The practical rejection rates are what must be sought and tested –that are generally between 1% and 20%.

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RETIREMENT SECURITY – THE ROLE OF SELF-CARE

Zsolt Mihály Szabó

Abstract: One of the most significant social changes threatening the EU member states is the ageing of the population and its effects on the economy. Hungary is no exception and as a result, it faces various challenges including the reform of the health care system, the social insurance system, the pension system and the tax system. These economic and social challenges necessitate long-term government strategies, which need to be modelled, tested and verified. In the developed members of the EU the method of microsimulation has been used for a long time and it is becoming more and more popular in checking the effects of measures. This study consists of three parts. The first part shows the present and expected future populations of the EU member states. The second part presents the pillars of the Hungarian pension system and the achievements of pension modelling. The third part summarizes the theoretical basics and results in the research project "The role of self-care in our lives".

Keywords: ageing society, retirement security, modelling the pension system, self-care

The present and expected future population of the EU and Hungary

At present the social insurance system of most countries is the PAYG (Pay As You Go) system, that is, every year pensions are mostly covered by the contributions of the working population (Augusztinovics, 2014). The theoretical foundation of this pension system was first mentioned in Paul Samuelson's publication in 1958, in which the author assumes that the active population always pays for the pensions of the elderly. Based on this assumption it follows that the system can be maintained if a sufficient number of children are born, who will become active workers later and support the generation before them. The system also assumes that as the population grows, the economy will also grow (Samuelson, 1958). The distribution of the population according to age can be examined with a so-called population pyramid. Fig. 1 shows the precalculation of the website https://populationpyramid.net. According to it, the population of Europe will probably decrease and get older, which threatens the sustainability of the pension systems of European countries in the long run similarly to developed countries outside Europe (EPC, ONYF, OECD, 2015).

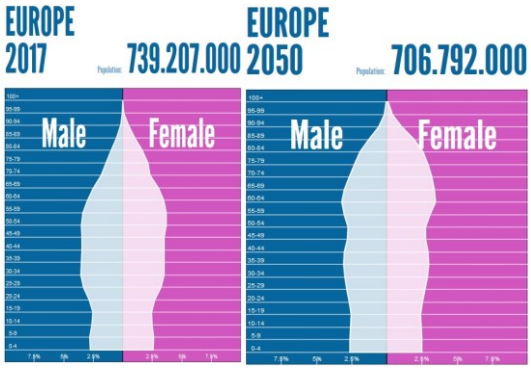

Figure 1 The population pyramid of Europe in 2017 and in 2050

Source: https://populationpyramid.net, *2017*

Hungary's population pyramid can be found on the website of the Central Statistical Office (KSH), at http://www.ksh.hu/interaktiv_korfa in a virtual and editable (interactive) format. Fig 2 shows that in the population pyramid of Hungary in 2050 the population will probably be stagnating: the proportion of middle-aged people is slightly higher than that of children, but the proportion of elderly people is even higher. Only the proportion of very old people is lower.

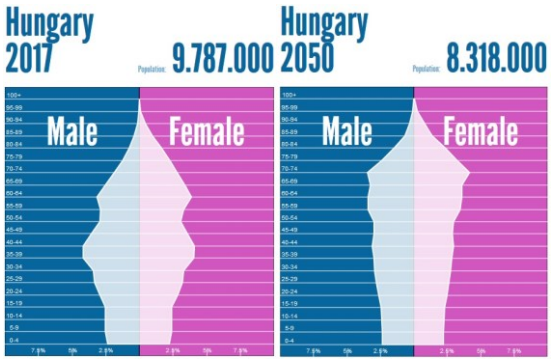

Figure 2 The population pyramid of Hungary in 2017 and in 2050

Source: https://populationpyramid.net, *2017*

Table 1 shows the precalculations of the study of the European Commission (EPC, 2015), which predicts a considerable ageing of the population of the EU, as the life expectancy of both men and women will probably increase. The number of births is not expected to change considerably. Table 1 shows that stagnation is expected.

	2010	2050
Life expectancy of women	82,1 év	89 év
Life expectancy of men	76 év	84,5 év
Number of births	1,5	1,6
Working age population (15-64)	325 million	283 million
Pension expenses in the EU (as a percentage of the GDP)	10,2 %	12,5 %
Pension expenses in Hungary (as a percentage of the GDP)	10,4 %	13,8 %

Table 1 EPC precalculations for the EU

Source: EPC, 2015

Table 1 shows that the active working population in the EU will decrease drastically and pension expenses are also expected to increase in the EU member states. Forecasts show that financing pensions will probably be a greater and greater burden for the governments of the EU member states including Hungary.

	2007	2010	2020	2030	2040	2050	2060
Population (15-64)	6.9	6.9	6.5	6.2	5.8	5.2	4,8
Population growth (15-64)	0.0	-0.4	-1.0	-0.3	-1.2	-0.8	-0.7
Employment growth (15-64)	-0.1	0.7	-0,4	-0.6	-1.2	-0.9	-0,6

Table 2 EPC macroeconomical forecasts for Hungary

Source: EPC, 2015

Tables 2 and 3 show that expenses of pension payments are likely to grow at the same time.

	2007	2010	2020	2030	2040	2050	2060
Real GDP growth rate	2,9	3,3	2,4	2,1	1,1	0,8	1,0
Labour input growth rate	-0,3	0,8	-0,2	-0,6	-1,0	-0,9	-0,7
Labour productivity growth rate	3,2	2,5	2,6	2,7	2,1	1,7	1,7

Table 3 EPC demographic forecasts for Hungary

Source: EPC, 2015

The basis of the sustainability of the PAYG pension system is that the number of active workers is far higher than the number of retired people, otherwise the system collapses [6]. The precalculations of KSH show that the proportion of young and old people will change in the wrong direction because the number of old people will rise and the number of young people will fall. Table 4 shows that the proportion of pensioners and working age people hardly grew from 22.4% in 1970 to 27.2% in 1990. By 2050, however, it may grow to 47.7% (Simonovits, 2002), which means that in 1970 5 workers contributed to the pension of one pensioner, whereas in 2050 only 2 workers will do the same.

	1970	1990	2020	2030	2040	2050
Pensioners and working age ratio (%)	22,4	27,2	30,2	33,7	38,6	47,7

Table 4 The ratio of pensioners and working age people in Hungary

Source: KSH, 2015

The pillars of the Hungarian pension system

State pension systems are targeting long-term goals and have long-term impacts (Holtzer, 2010.). Fig. 3 shows that the Hungarian pension system is founded on two pillars. The first pillar is the PAYG principle, the second is the capital provision principle (Novoszáth, 2014). In the case of a pension system based on the PAYG principle, the incoming contributions are not capitalized or invested but pensions are paid directly from them (Mészáros, 2014). The PAYG system is comfortable and seems attractive while the population and the economy are growing (Samuelson, 1958). The current obligatory social insurance system faces the following three problems that

endanger the financial balance of the Hungarian pension system: an ageing population, low level of employment and the partial payment of contributions. According to demographical data the population stopped growing a long time ago, the economy is not growing, and pension payments are continuously growing (EPC, ONYF, OECD, 2015).

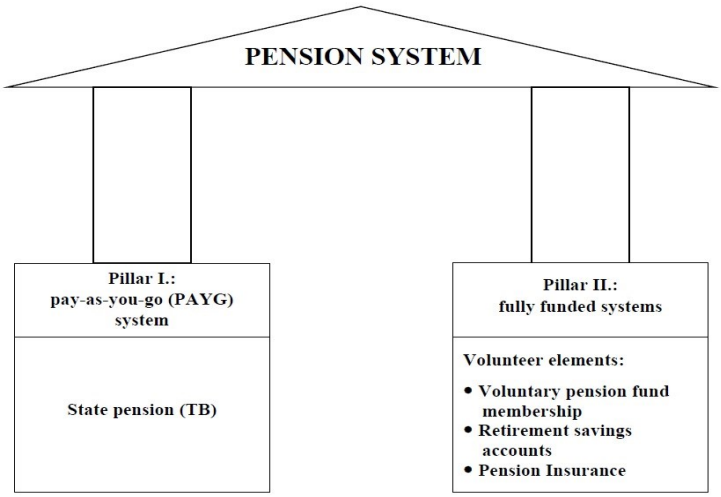

Figure 3 The pillars of the Hungarian pension system

Source: Uniqa, 2017

The possibilities of modelling the state pension system

The PAYG system is in a serious crisis all over the world and the reforms of pension systems are inevitable. . On a macro level an automatic system should be designed for contributions and pension payments that would ensure the long-term balance of the system. The results of measures need to be examined and a suitable method for this is microsimulation. The microsimulation models used in the impact assessments of pension systems can be classified according to several criteria from absolutely static to fully dynamic. Fig 4 shows this classification (ONYF, 2015).

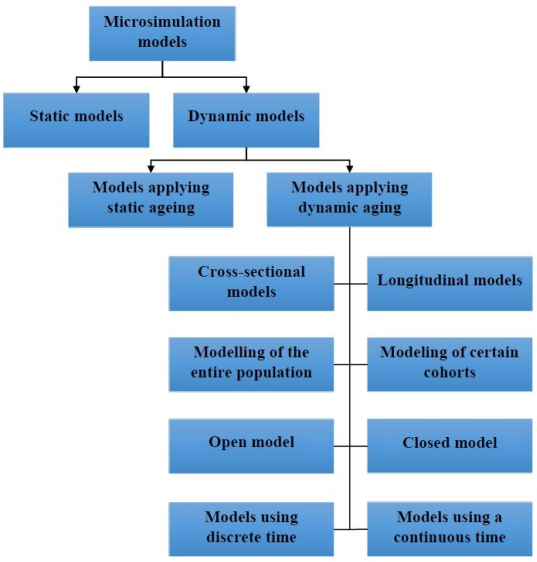

Figure 4 Microsimulation models

Source: ONYF, 2015

Microsimulation performs modelling at the level of individuals and households, where the direct impact of a change in the pension system is felt. This way the changes in the distribution of various incomes (wages, pensions) in time can be modelled. The task of pension calculation requires the long-term forecast of data, which means they have to be modelled at least 30-50 years ahead (in the U.S. calculations are performed for 75 years (Simonovits, 2002), in the EU and in Hungary for 50 to 60 years ahead (EPC, ONYF, OECD, 2015)). In general, the following two micro-simulation models are used in the impact analysis of the pension systems:

- Static models: pension modelling based on statistical data collection, where the known statistical data are further extrapolated as a function of time. Statistical and probability calculation tools can be used to perform this. The impact of the hypotheses in the model can be examined with the statistical analysis of the simulation results, and strategic decisions can be based on this (Gilbert, Troitzsch, 1999, Spadaro, 2007).
- Dynamic models: Microsimulation calculations based on model points where the model points are focused on, which means sets in the same category are extrapolated. This way it requires considerable fewer calculations but if a pension system is examined, say for 50 years ahead, problems may arise with new people entering the system (Li, 2011, Dekkers, 2013).

Dynamic simulation is usually used where demographic models also have to be created (Fig. 5). The probabilities of births, deaths, marriages and divorces in Hungary can be obtained from the Central Statistical Office (KSH). For the most important demographic events, such as births and deaths, the Hungarian Demographic Research Institute (NKI) has forecasts.

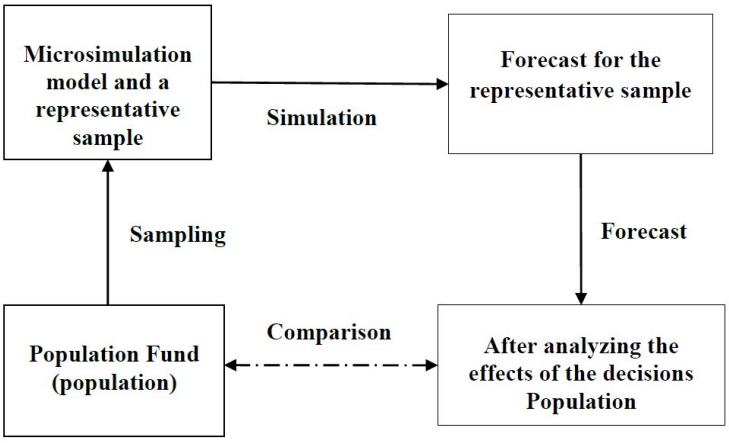

Figure 5 The process of microsimulation modelling

Source: Gilbert-Troitzsch, 1999, Molnár, 2004

Nowadays microsimulation is an accepted method in Hungary to examine the composition of the population and its impact on the present and future pension system with the help of demographic data. It is based on statistical data collection and makes the time series analysis of demographic data possible (ONYF, 2015).

The possibilities of modelling voluntary pension schemes

Present economic thinking goes beyond scientific areas related to markets only, and reaches areas focusing on human nature such as behavioural science or sociology. In

a way it returns to classical traditions, since early thinkers focused on self-control, too (Hámori, 1998). The components of human nature become part of the economic thinking and their interactions change it.

1. reserved – outgoing	2. trusting – distrustful
3. concrete thinking – abstract thinking	4. practical – imaginative
5. reactive emotionally – emotionally stable	6. open – nondisclosing
7. submissive – dominant	8. self-assured – apprehensive
9. serious – lively	10. traditional – experimental
11. disregarding rules – rule-conscious	12. group-oriented – self-reliant
13. shy – uninhibited	14. flexible – perfectionistic
15. utilitarian – sensitive	16. relaxed – tense

Table 5 Cattell's 16 personality factor model

Source: Mirnics, 2006

People are reasonable; it is a basic assumption of economy meaning that people make decisions based on their system of preferences. In other words, the rational behaviour of people means that of all available possibilities they choose the best (Fodor, 2013). On the other hand, we are emotional beings. Table 5 shows how Raymond Cattel describes personality using 16 personality factors.

Economy examines social cooperation, phenomena resulting from decisions individual make based on personal interest (Heyne, Boettke, Prychitko, 2003). Such social cooperation is for example a government, a business venture, or the stock exchange, which is created by individuals who follow their own interest and have little information about each other, yet it still works, it constitutes a production unit and not disorder. Socioeconomic systems like pension systems are governed by rules. In order to operate systems the participants have to know the rules and agree to apply them. A widespread computer method nowadays to map personality is a statistical method called factor analysis (Ottó, 2003). The data can be processed and the statistical calculations can be performed with the SPSS software (Sajtos, 2007).

Motivations of decisions

A basic assumption is that people view retirement with apprehension and uncertainty. The previous parts show that the PAYG system is in a crisis, therefore the second pillar of the pension system, self-care, receives more and more attention nowadays (see Fig. 3). Self-care helps retain material and personal independence, and also expresses responsibility towards one's family. In developed European countries self-care has been playing an important role for a long time (EPC, 2015). In order to understand the motivations behind our decisions (Hámori, 1998) more deeply, I used certain parts of factor analysis, which is a popular computer method nowadays (Czirfusz, 2010, Ottó, 2003). I used the SPSS software and help from the department to process the questionnaires and perform the statisctical calculations (Csiszárik, 2015, Sajtos, 2007). The questionnaires were filled by students of the Keleti Faculty of Business and Management in 2015 and 2016, respectively. The respondents could fill in the questionnaire on paper or online at kerdoivem.hu. The number of respondents was 222 (N=222). My questions were related to pension systems, pension savings systems, self-care and planning retirement security as these elements define the financial backgrounds of one's future existence, that is, the extent of self-care (see Table 6). The questions were grouped into three categories:

- The role of self-care (savings);
- Pension systems (compulsory, voluntary);
- Financial planning (seeking expert financial advice).

The qualitative research analyses the three groups separately. Different statistical analyses were performed on the three groups such as averages, frequency, cross tabulation analysis.

Questions	Answers	Percentage
1. Gender		
Male	138	62,2%
Female	84	37,8%
2. Age		
below 28	118	53,2%
between 29-48	86	38,7%
above 48	18	8,1%
3. The role of self-care		
Yes	126	56,8%
No	96	43,2%
4. Knowledge about the pension system		
State pension		
Yes	82	36,9%
No	144	63,1%
Private pension		
Yes	60	27%
No	162	73%
Other possibilities		
Yes	62	16,16%
No	160	83,84%
5. Financial planning		
Yes	64	28,8%
No	158	71,2%
Total number of respondents	222	100%

Table 6 "The role of self-care in our lives" questionnaire

Source: author's own research, 2015 (N=222)

The questionnaire can be found in Table 6. The gender and age distribution of the respondents can be found in Tables 7 and 8.

Gender	Frequency	Percentage
Male	138	62,2%
Female	84	37,8%
Total	222	100,0%

Table 7 Proportion of gender among the respondents

Source: my own research, 2015 (N=222)

Age	Frequency	Percentage
below 28	118	53,2%
between 29-48	86	38,7%
above 48	18	8,1%
Total	222	100,0%

Table 8 Distribution of respondents by age

Source: author's own research, 2015 (N=222)

The role of self-care

Based on the replies given to questions 3 and 4 of the questionnaire young people are basically well-informed about pension and retirement but still do not consider financial planning important, which is shown by the low percentage (28.8%) of "yes" replies to question 5 (see Table 6).

Saving for retirement	Frequency	Percentage
Yes	126	56,8%
No	96	43,2%
Total	222	100,0%

Table 9 Saving for retirement

Source: author's y own research, 2015 (N=222)

The "yes" replies in Tables 10 and 11 indicate that young people are thinking about saving for retirement. Table 10 shows further connections with cross tabulation analysis, for example retirement savings are more important for men than women in our survey.

			Gender		Total
			Male	Female	
Role of self-care	Yes	number	86	40	126
		% Retirement savings	68,3%	31,7%	100,0%
		% Gender	62,3%	47,6%	56,8%
		% Total	38,7%	18,0%	56,8%
	No	Number	52	44	96
		% Retirement savings	54,2%	45,8%	100,0%
		% Gender	37,7%	52,4%	43,2%
		% Total	23,4%	19,8%	43,2%
Total		Number	138	84	222
		% Retirement savings	62,2%	37,8%	100,0%
		% Gender	100,0%	100,0%	100,0%
		% Total	62,2%	37,8%	100,0%

Table 10 Cross tabulation of the questions about gender and "Role of self-care"

Source: author's own research, 2015 (N=222)

Table 11 show further relationships by cross tabulation, for example that people between 29 and 48 years of age consider retirement savings important.

			Age			Total
			below 28	between 29-48	above 48	
Role of self-care	Yes	Number	86	66	12	126
		% Retirement savings	38,1%	52,4%	9,5%	100,0%
		% Age	40,7%	76,7%	66,7%	56,8%
		% Total	21,6%	29,7%	5,4%	56,8%
	No	Number	70	20	6	96
		% Retirement savings	72,9%	20,8%	6,3%	100,0%
		% Age	59,3%	23,3%	33,3%	43,2%
		% Total	31,5%	9,0%	2,7%	43,2%
Total		Number	118	86	18	222
		% Retirement savings	53,2%	38,7%	8,1%	100,0%
		% Age	100,0%	100,0%	100,0%	100,0%
		% Total	53,2%	38,7%	8,1%	100,0%

Table 11 Cross tabulation of the questions "age" and "Role of self-care"

Source: author's own research, 2015 (N=222)

Knowledge about the pension system

The replies in the "Other possibilities" section of question 4 show that 16,16% of young people are thinking about some alternative forms of financial planning (see Table 6). The other answers included voluntary pension scheme, additional voluntary contributions, Pension Savings Account, pension insurance, life insurance combined with investment, investment funds, life insurance with investment and buying gold or real estate as investment. Table 12 apparently shows that young people do not know very much about state pension but the cross tabulation in Table 13-14 shows a different result.

State pension	Frequency	Percentage
Yes	82	36,9%
No	140	63,1%
Total	222	100,0%

Table 12 State pension

Source: author's own research, 2015 (N=222)

Cross tabulation based on the replies by gender shows that the respondents are knowledgeable about state pension (see Table 13).

			Gender		Total
			Male	Female	
State pension	Yes	Number	48	34	82
		% State pension	58,5%	41,5%	100,0%
		% Gender	34,8%	40,5%	36,9%
		% Total	21,6%	15,3%	36,9%
	No	Number	90	50	140
		% State pension	64,3%	35,7%	100,0%
		% Gender	65,2%	59,5%	63,1%
		% Total	40,5%	22,5/	63,1%
Total		Number	138	84	222
		% Stet pension	62,2%	37,8%	100,0%
		% Gender	100,0%	100,0%	100,0%
		% Total	62,2%	37,8%	100,0%

Table 13 Cross tabulation of questions "Gender" and "State pension"

Source: author's own research, 2015 (N=222)

Cross tabulation shows that young people are knowledgeable about state pension (see Table 14).

			Age			Total
			below 28	between 29-48	above 48	
State pension	Yes	Number	58	20	4	82
		% State pension	70,7%	24,4%	4,9%	100,0%
		% Age	49,2%	23,3%	22,2%	36,9%
		% Total	26,1%	9,0%	1,8%	36,9%
	No	Number	60	66	14	140
		% State pension	42,9%	47,1%	10,0%	100,0%
		% Age	50,8%	76,7%	77,8%	63,1%
		% Total	27,0%	29,7%	6,3%	63,1%
Total		Number	118	86	18	222
		% State pension	53,2%	38,7%	8,1%	100,0%
		% Age	100,0%	100,0%	100,0%	100,0%
		% Total	53,2%	38,7%	8,1%	100,0%

Table 14 Cross tabulation of the questions "Age" and "State pension"

Source: author's own research, 2015 (N=222)

Table 15, similarly to the above apparently indicates that young people are not well-informed about private pension but the cross tabulation in Tables 16 and 17 shows a different result.

Private pension	Frequency	Percentage
Yes	60	27,0%
No	162	73,0%
Total	222	100,0%

Table 15 Private pension

Source: author's own research, 2015 (N=222)

The cross tabulation according to gender and age shows that respondents are knowledgeable about private pension (Tables 16 and 17).

			Gender		Total
			Male	Female	
Private pension	Yes	Number	40	20	60
		% Private pension	66,7%	33,3%	100,0%
		% Gender	29,0%	23,8%	27,0%
		% Total	18,0%	9,0%	27,0%
	No	Number	98	64	162
		% Private pension	60,5%	39,5%	100,0%
		% Gender	71,0%	76,2%	73,0%
		% Total	44,1%	28,8%	73,0%
Total		Number	138	84	222
		% Private pension	62,2%	37,8%	100,0%
		% Gender	100,0%	100,0%	100,0%
		% Total	62,2%	37,8%	100,0%

Table 16 Cross tabulation of gender and the question about private pension

Source: author's own research, 2015 (N=222)

Even though the number of respondents was not too high, the replies were quite varied. The respondents had varied opinions concerning the foundations of their future financial security.

			Age			Total
			below 28	between 29-48	above 48	
Private pension	Yes	Number	40	18	2	60
		% Private pension	66,7%	30,0%	3,3%	100,0%
		% Age	33,9%	20,9%	11,1%	27,0%
		% Total	18,0%	8,1%	0,9%	27,0%
	No	Number	78	68	16	162
		% Private pension	48,1%	42,0%	9,9%	100,0%
		% Age	66,1%	79,1%	88,9%	73,0%
		% Total	35,1%	30,6%	7,2%	73,0%
Total		Number	118	86	18	222
		% Private pension	53,2%	38,7%	8,1%	100,0%
		% Age	100,0%	100,0%	100,0%	100,0%
		% Total	53,2%	38,7%	8,1%	100,0%

Table 17 Cross tabulation of age and the question "Private pension"

Source: author's own research, 2015 (N=222)

Financial planning

Based on the replies to the previous questions it can be concluded that young people are basically informed about pension systems but they still do not consider

financial planning important, which is shown by the low number (28.8%) of "yes" answers (see Table 18).

Financial advice	Frequency	Percentage
Yes	64	28,8%
No	158	71,2%
Total	222	100,0%

Table 18 Financial advice

Source: author's own research, 2015 (N=222)

The cross tabulation in Table 19 shows that men are more likely to ask for financial advice than women. It is interesting to note that in an older age the respondents are more likely to use financial advice.

			Gender		Total
			Male	Female	
Financial advice	Yes	Number	48	16	64
		% Financial advice	75,0%	25,0%	100,0%
		% Gender	34,8%	19,0%	28,8%
		% Total	21,6%%	7,2%	28,8%
	No	Number	90	68	158
		% Financial advice	57,0%	43,0%	100,0%
		% Gender	65,2%	81,0%	71,2%
		% Total	40,5%	30,6%	71,2%
Total		Number	138	84	222
		% Financial advice	62,2%	37,8%	100,0%
		% Gender	100,0%	100,0%	100,0%
		% Total	62,2%	37,8%	100,0%

Table 19 Cross tabulation of gender and the question "Financial advice"

Source: author's own research, 2015 (N=222)

Examining Table 20 we can see that with increasing age retirement security is becoming more and more important.

			Age			Total
			below 28	between 29-48	above 48	
Financial advice	Yes	Number	18	36	10	64
		% Financial advice	28,1%	56,3%	15,6%	100,0%
		% Age	15,3%	41,9%	55,6%	28,8%
		% Total	8,1%	16,2%	4,5%	28,8%
	No	Number	100	50	8	158
		% Financial advice	63,3%	31,6%	5,1%	100,0%
		% Age	84,7%	58,1%	44,4%	71,2%
		% Total	45,0%	22,5%	3,6%	71,2%
Total		Number	118	86	18	222
		% Financial advice	53,2%	38,7%	8,1%	100,0%
		% Age	100,0%	100,0%	100,0%	100,0%
		% Total	53,2%	38,7%	8,1%	100,0%

Table 20 Cross tabulation of age and the question about financial advice.

Source: author's own research, 2015 (N=222)

Conclusions

The current pension system will be likely to cause social, economic problems in Hungary and globally in the future due to the ageing of societies, the drastic change in the proportion of retired and working age people according to forecasts. The question of sustainability greatly influences the choice of possible models. This sustainability is determined by the proportion of jobholders, or more precisely, those paying contributions and pensioners, as they get their pension from the contributions paid. Therefore the two sides must be balanced macro economically. As shown before microsimulation can model pension concepts effectively in advance. Microsimulation is gaining importance in both Hungary and the EU. Both experts and this study recommends a mixed system; i.e. state pension is supplemented by voluntary elements. Information about the available possibilities is very important. Obviously, a single study cannot solve the problems of the pension system that many experts and governments have not been able to solve so far but in addition to presenting the problem, it can be stated that there are possibilities and concepts to forecast the impacts of the pension systems.

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DETERMINING FACTOR OF E-MARKETING IN HUNGARY

Katalin Tari

Abstract: In the world of marketing, innovative solutions and new development opportunities will always come into play. They are major factors in improving the competitiveness and for consumers needs as well. The aim of the study is to examine and compare the efficiency and effectiveness measurement of the online campaigns. This study demonstrates theoretical approaches. Moreover, it points to the practical application differences. The paper wants to rank the effectiveness of online advertisement with the currently used Hungarian online measures (index). This index is explained in this study by using the available practical literature. Procession of the practical literature will include the online advertising methods ranked by the CPM (Cost per 1000 Impression) which will imply the effectiveness of ads. My research methodology followed qualitative strategy, on the base of content analyses of in-depth interviews of online experts (N=7). I recorded the conversation and then I transcribed the data. My questions were structured. The questioning went between 10 March and 18 May 2016. Seven persons have taken part in the research. The in-depth interviews will be conducted with the consent of online shop managers and leaders of creative and advertisement agencies. Each interviewee serves the business-to-business trade. My aim is to present same of the Hungarian online advertising trends from 2016. This indication will show the effectiveness of different marketing tools and the reach of online experts. This research point out the possible measuring methods and indications.

Keywords: e-marketing, online marketing, Hungarian trends

Introduction

Development of innovative solutions and efficacy and developmental opportunities of marketing and its tool-system have an important role in marketing - in my case the online marketing - from the point of view of all sectors of economics. The appropriate positioning and segmenting of the target market, the usage of the properly structured sales promotion, as well as differentiated price and product policy are well known tools of increment of efficiency. These play an important role in improving competitiveness as well as satisfaction of customers' demands. What kind of transition are I witnessing? This topic has higher priority while the most developing industrial branch today is the e-merchandizing. Reviewing the events of the last decades, right after the radical changes affecting the economy and with it the sector of marketing, now I live in an essentially new boom of digital age which is also called the 'golden era of e-trade' (Virányi, 2014).

This intensive increment – on the base of estimations – will entirely define the formation of the economy until 2018. On the base of the research of 'emarketer.com', the number of regular internet-users is going to reach the half of the population of Earth in two years. Therefore, the number of the internet-users will slow down in the future (eMarketer, 2015). The other reason for decline is the fact of the finite element number, which is the population of Earth. Related to Hungary, this slowing effect could already

be experienced last year (Majláth and Kelemen-Erdős, 2015). In 2010, 55% of population of the country was regular internet-users, while 72% of them have been using the internet regularly since 2014 and 74% of them were in 2015 (KSH, 2016). I am going to write more about the slowing increment in section 'Introduction' in more detail, later. The firms build an increasing confidence in internet-users with proper utilization of online communication tools (Feather, 2013). The number of interactions is growing between the participants which may support reports of experience gained by word of mouth. The online firms appearing on the online market can target a growing online customer layer with flexible opening hours and comparable prices; with various product range; by easy operation as well as everyday usage of smart phones (Kaushik, 2010).

How to work on the online market more effectively?

The first step is to make the company's aims clear. The revenue growth and reputation, as well as popularizing, are the focus of marketing campaigns. The support of these aims enhances a more effective planning and targeting of campaigns by the most determining elements of the recent online age. In addition, the selection of the marketing channel is an essential factor. These aims are impacted by the target group, characteristics of the product and/or service, the competitors, the budget, the features and measurement of online media as well as other unique factors such as time, urgency, the synergy-effects or the creative ideas.

The effectiveness of the campaign, which means the number of realized purchases, can be measured by tools that have been used for many years among marketing agencies. This means there are several possibilities of the personalized optimizing tools. For example, SEO, PPC also known as CPC, the follow-up of bounce index, conversion optimization, click through rate, call to action (CTA) and then the analyses and interpretation of incoming data as well as conclusions (Kaushik, 2007). These last three factors will be discussed later in my study. Search engine optimization (SEO) has basically two main work phases. One is the optimum content and structure of the website. Furthermore, the other is the link promotion. The meaning of Cost Per Thousand Impressions (CPM) is the cost per 1000 impressions. Cost Per Click (CPC) allows the maximum amount of clicks what the company need to pay (Fehér and Gombos, 2016). Call to action (CTA) button is if it encourages a visitor to leave the website. For example: click for registration, download or more information (Fehér and Gombos, 2016).

Everyone can launch the idea of running an online shop along with the broad proliferation of online trends in Hungary. Today, it is much easier to prepare and support the company's decisions, which can reduce risks or open up towards unprecedented cross-border markets. The presenting companies could follow-up with the customer, analysing antecedents and actions so they can have a highest offer with their personalized products and/or services. Then these firms can achieve 100% conversion index - which is actually still inaccessible (Fehér, 2013).

My research goal is to demonstrate the most frequently used tools at the online market as well as the differences in practice between online and offline marketing campaigns on business-to-business market in Hungary. Further aims are to evaluate the effectiveness and influence of them. My results are based on content analyses of structured in-depth interviews, recorded in professional context (Ghauri and Gronhaug, 2010).

Short review on the Hungarian e-trends

As mentioned in the introduction, I wish to present the reasons for the slowing growth of Internet users, during the presentation topic. The migration and poverty there could stand in the background of the slowing pace of growth. In addition, the two groups of Internet surfers should be separated, in the beginning. Namely, those who do not buy, and those who buy online, since they are direct participants in the economy. While the figures show slowing growth of number of users, then the number of online shoppers will gradually grow. The intensive growth rate here has lagged in my country, so it is now gradually distributed throughout a prolonged period. The companies using online communication tools correctly are building an increasing confidence among users, the number of interactions that supports experiential reports obtained by the oral tradition - in a family/friend expression is increasing between the participants. It means that the customers are sharing their preferences to each other (Malik and Sachdeva, 2015). By flexible opening hours and comparable prices; with a diverse range of products and easy operation and by extensive display support or by everyday use of smart phones the company is more widely and more efficiently able to target the customer base, if it advertises on online market. This growth is associated with the relatively positive evolution of the total costs and revenue (Kotler and Keller, 2006). Conversion index shows the fixed cost recovery. Therefore, it is important to clarify the concept for this reason, and also because of correct interpretation of my questions. The conversion index is not meaningful as itself, because it is necessary to define a conversion goals and research question or questions, first (Fehér, 2013). I use the conversion index most commonly, in general form in case it shows the number of realized purchases, usually examining the online market aspects. The 3-5% of access can be stated as a good achievement on the Hungarian online market, which means 4-5 purchases from 100 accesses, e.g. clicks (Miller – Washington, 2009). In addition, I calculated the access (clicking) conversion on the base of private experiences – gained as a media designer 1 year long – of the ad (banner / image), DM, search engine optimization (keyword) or sub-page of the website (landing page) accesses. The performance and optimizing of marketing campaign can be analysed at any time even including free programs, as Google Analytics, Google Adwords (Miller and Washington, 2009). These free or paid analytical evaluations summarize the company's statistics for that given period and point out the results of the breeding rate of return (Szabó, 2008). After analysing the statistics, the business decisions can be facilitated, the process becomes more predictable, and the key is that individual attitudes and habits and range of features of target group of the product and / or service can be formed which largely supports the company's competitive and efficient operation. Thus, this indicator as a separate segment shows the efficiency or effectiveness of used online marketing tools. To choose the right one, I need to clarify the conversion goals (Saleh and Shukairy, 2010). One of the most popular targets is to reach - really – online customers had to purchase, acquire subscribers, with participation in the sweepstakes, as well as market research and survey questionnaire is included (Bíró, 2009).

Research method

My research methodology followed a qualitative strategy, on the base of content analyses of in-depth interviews of online experts (N=7). The first author recorded the conversation and then I transcribed the data. My questions were structured. The questioning went between 10 March and 18 May 2016. Seven persons have taken part in

the research who were middle and/or top managers and had at least four years of experience and maximum fifteen. Their job activities included planning, leading and following-up marketing and/or creative campaigns, together with analyses, online legal advising, retargeting, optimization services and running an online shop. Each interviewee serves the business-to-business trade. Their average age is 31 years. The oldest interviewee was 38, the youngest one was 25 years of age. All interviewees graduated from higher vocational education in economics, three persons received Master degree and four persons received a Bachelor degree. All were residents in the capital city, Budapest, except two persons, who also live in the state "Pest". Two female and five male persons responded during the in-depth interviews. Two respondents asked for anonymity, but I explain further content in the following (position, work experience, scope of activity).

Analyses of experts background of interviewees

(1) My first interviewee: he is a social media expert. Previously, he has worked for Kirowski Iso Bar Ltd., one of the biggest media agencies, as a marketing advisor on e-mail, online and social platforms. Recently, he is dealing with online marketing and creative campaigns with a team covering seven countries, as a Head of Social Media. He intends to be an effective intermediary between companies' ordering campaign and among consumer purchases – which has been precisely positioned by him – gained along with the joint work.

(2) My second interviewee: he manages the one of the widest Internet advertising networks of South-East Europe as an ad-serving leader. Since the founding of the company in 2006, it has become an exclusive partner of international and regional actors; they cover eight countries. Today the company is a quality partner of such publishers as MSN Messenger, Windows Live, Facebook and Miniclip, as well as leading local publishers. They treat the marketing campaigns uniformly to ensure the highest level of service at various surfaces, such as display banners, rich media, search and video.

(3) My third interviewee: he is a recognized Managing Director and an Internet and online legal expert. He founded the business with another person by having decades-long legal experience. The company published quality certificates, as well as a book on the subject, besides online legal advisory.

(4) My fourth interviewee: considering his current position, he is responsible for the new markets (CEE Head of New Business). He started his unbroken career in 1999. Initially, he worked as an independent financial expert. Then, he has been working for companies providing online payments, mainly, as well as banking services; and secondly for a company, bringing together the global technology services, concerning the online sphere. The company is resident in Austria from 2016 but can be found on the Hungarian market also, with diverse range of activities.

(5) My fifth interviewee: his current position is leader of a marketing department at a Conversion Optimizer tool/software provider company. The company's services are like popup, Call to Action, which means calling to action trying to save the departing visitors, by a CTA window, thus increasing the access rate of conversion index. The promised conversion by them is 3-4%, which is 3-4 purchases from 100 visitors. The company is developing a growing pace, as it is marketing services not only individually, but as a package; their services are also available bringing together, for example, companies operating web shop or server.

(6) My sixth interviewee: he is the Head of PPC, i.e. Pay per Click team leader, so he knows a lot about advertising and statistical analysis side of Etarget, Google. In addition, web pages and web operations, SEO optimization is also addressed. Besides the company's online campaigns – it is also available as a special package offer – it sells Yellow Pages phone books' print advertising surfaces as well.

(7) My seventh interviewee: he has been working as a media supervisor for a classical media agency for years, where they manage both offline and online ads, however they do not deal with creative tasks. The online activity of them is fully extended; they offer AdWords, banner display, EDM, Facebook, mobile applications, online video, YouTube and search engine optimization inclusions.

Questions to be answered

(Q1) Question one: can the professional web experts provide a targeted, personalized offer for companies in any sectors of industry at any time, in order to reach the proper target group?

(Q2) Question two: do starting a new web shop promises a proof of income in 2017, as it is an easy way to produce firm revenue for a business, nowadays?

(Q3) Question three: is the conversion index a reliable measure?

(Q4) Question four: which are those measurable online marketing campaigns that determine the Hungarian online market? Is a sole online presence sufficient in order to achieve a secure corporate success?

(Q5) Question five: by various assurance certifications - quality product, data protection, legal compliance, ensuring low price, etc. - stated on the web site the buying propensity can be increased - and thus also the extent of the conversion index - in addition, arising mistrust can be reduced, as well.

All of the respondents said that whether I serve the business or customer sector, besides the online advertising and optimizing methods the campaign should be supported by offline activities. These can be divided into two groups on the base of answers given by each respondent. The first is the replacement of the personal contact which can be experienced during the online activity. One of the means of supporting the online activity is related to this is the thorough and precise work of customer service or the active participation in professional conferences. Each of the respondents consider important to disclose the firm's activities and opportunities, even as a presenter. Including this, a typical way of gaining customers is tendering which is also based on personal relations. The other group – examined by me - extends mainly to the B2B business trade. Here, the offline scopes of activity are grouping around the topic of education: trainings, newspaper appearances – like professional articles, interviews, case studies, etc. – or the opportunity of personal advisory. The conference participation also belongs to is, partially, in case it demonstrates the analyses of their activities with educational aims. The result of the survey – because the low number of items and its composition – is non-representative.

The interviewees were talking about the most important elements of the optimal and effective online marketing campaign, including the conversation index and involuntary published data of web shop visitor, like Google or Gmail account, the logged profile on social media sites, etc. and statistical analyses of my browser – which activities strengthen each other, closely. In case I analyse the reachable statistics of a

potential customer properly, the conversation index of us will increase quickly supporting the strengthening competitiveness.

Results

In this chapter I briefly summarized the previously introduced questions.

(Q1) Question one: can the professional web experts provide a targeted, personalized offer for companies in any sectors of industry at any time, in order to reach the proper target group?

The campaign implemented *'at any time'* is neither expedient not profitable because it is important to consider the external and internal conversions as to reach the aims in a simple and effective way. Despite of this – as an example – I can meet a customer who wants to run his or her banner tomorrow already which can be realized with the staff available, however, but the optimal level of effectiveness cannot be reached this way, because the majority of its target group is on summer holidays, nationwide, and that's why they use the Internet less often. I should consider such non-factors like the time available or timing. Differentiating is needed, because the timing of the campaign depends on cost frame available in a great extent. Each interviewee, except one, told me that he cooperates with other companies if not directly but indirectly as a so called intermediary, convening the proper partners as to reach a successful campaign. The only exception is a group leader who manages the Facebook advertising platforms in 8 countries. He never meets this problem, because as a marketing agency, they are mandated all the time. They employ ready materials during their work and they do not offer out because they are overloaded, usually. Studying the questions further, the reaching of 'any industrial sector' occurred to me as a questionable one, but during the in-depth interviews conducted with colleagues of the agencies it has been revealed that they are able to serve 'any industrial sectors', indeed, recently. If not, then they can solve the problematic situations along with their social capital, as well. Obviously, a newly competing minor creative marketing agency (8-10 persons) would not do it well. My last interviewee works with 12 fellows at a company which has been existing for 15 years, already. He also suggests the further recommendation and supports the cooperation with other companies in order to reach the common marketing aims, customized to the orderers' wishes. Thus, the trustworthiness, which is being built during the years and projects is an important factor between the experts. In case of the online marketing campaigns the investments on the best opportunities can be lost if they are not timed, positioned or segmented properly. I extend my research on visiting minor agencies with maximum 8-10 persons, in the future. It is necessary for improvement of efficiency the – before mentioned – proper positioning and segmenting to which the adequate professional knowledge is provided for business-to-business members. In case I intend to reach the customers directly as web shop operators, worth to ask for advice or control of a professional online marketing expert even then, in order to reach an infallible success. It is also important to pay attention to the product policy, the competitors, the new trends and customized sales promoting, besides the optimal timing. The majority of the interviewees (5 persons, respondents 1, 2, 5, 6 and 7) stated, that in order to such an excellent operation, the agencies utilize analytical tools which not only monitor and analyze during surfing but conclude to possible outputs, e.g. the future purchase decisions. The program is based on sophisticated system theory which is continuously developing. The aim of the analytical programs is the optimizing and increment of effectiveness, thus the enhancement of competitiveness, as well. My seventh interviewee

said that there are threats, the so called 'ghost-accesses' against of which the firm has been succeeded so far. This means that they apply a permanent monitoring to filter the click-generating programs. All of this is carried out by a computer alarm program which should be upgraded continuously.

(Q2) Question two: do starting a new web shop promises a proof of income in 2017, as it is an easy way to produce firm revenue for a business, nowadays?

My second question has not been accepted because although it is a possible 'easy' way to gain, however, I can be mistaken in many aspects without taking into account the before mentioned external and internal conversion factors. On the base of analyses of experts' interviews, the interviewees – except 2 of them - named the income realization and the long term operation as 'easy' if the adequate social capital and financial resources are available. So if the company can afford money for marketing and it knows which media agency to turn to, then the 'easy going' is guaranteed. In case they do not avail the services provided by agencies, then a necessary condition is the targeted professional knowledge, such as online marketing, IT, marketing, logistics, bank sector and continuous mapping, analyses and development of them in order to appear and retain on the online market meeting the permanent innovation.

(Q3) Question three: is the conversion index a reliable measure?

My third question proved to be true after the answers. The 100% of online experts I interviewed agreed with my statement. In my view, however, beyond the 'spirit-access sites' - which is filtered by agencies by an alarm program based on the IP address - further problems could arise with respect to the recontrol. There is a risk of the sole use of a single conversion value, as it distorts the results-for example, if an ad is clicked just by chance, or the cursor automatically adjusts and starts. They reach a separate count for the program, but in reality they are random events, of which you will never buy. When I asked it right after their response, all of them said that this failover occurs, indeed, but it is not common, and the optimization software can be set so sophisticatedly that access of actually not relevant consumers is almost completely excluded.

(Q4) Question four: which are those measurable online marketing campaigns that determine the Hungarian online market? Is a sole online presence sufficient in order to achieve a secure corporate success?

Nowadays, the three most popular trends of Hungarian online market-offers in 2016 are the thematic, personalized online materials - such as courses, downloadable training materials and e-mail, or the web personalization. In addition, it has been said that the proper use of content marketing can increase my accesses, and my search engine optimization - such as application of a blog, a blog post promotion, the guest blogging, etc. In addition, I got homogeneous results related to the business-to-business exchanges, in the selection of channels used in practice in the offline area, typically. Access to online conferences and professional presentations - for example: Conversion World - have become instruments of development of productivity, as usual. In association with it, the surveyed companies place a great emphasis on article publishing and advertising opportunities of trade journals. The use of these two offline channels are defining scopes of activities in corporate reputation as well as in widening the clientele.

(Q5) Question five: 'By various assurance certifications - quality product, data protection, legal compliance, ensuring low price, etc. - stated on the website the buying propensity can be increased - and thus also the extent of the conversion index - in addition, arising mistrust can be reduced, as well.'

I got homogeneous result regarding the topic, again, after analysing 4-1 in-depth interviews of online experts. All respondents used the answer-combinations ‘yes’ or ‘yes, of course’ - without hesitation. Although this result is reliable, as they are experienced professionals, it is not a representative one. I spread the number of interviewees, and as well as I intend to ask also consumers within the framework of a standardized questionnaire.

Figure 1 Logos of the “reliable shops” in Hungary

Source: https://www.primanet.hu/images/upload/image/megbizhato-bolt-minositett-webshop-630px.jpg, *downloaded: 31.03.2017*

Discussion

There are so many e-trends all over the world but we have to take care about the most important one. What is comfortable to the consumer that will be for sure a good strategy to the firms too? For example the certifications are important. Moreover, there are many blogs too. Blogs and Facebook Fanpages are platforms to help the communications between consumers and customers but between people and companies too. They are ‘multidirectional communication’ platforms. These mean that these platforms can help to orientate to the customers very easy and fast about what kind of product and/or services liked another customers or which are the cheapest. Therefore, the companies have to use online complaint management because they have to solve the problems if the customers have problems with the product and/or service. There are many effective strategies to save these kind of situations too. For example, firms are giving written feedbacks to say ‘excuse us, we would like to help you solve your problem what you have after that you have got the product and/or service’ on their blogs or Facebook sites too. Moreover, they give discounts, gift cards or any another compromises to their ‘injured’ customers. If somebody would like to work online than have to

- be fast: respond to competitors and give feedbacks to customers in 24 hours,
- be claim and patience: because customer has always right,
- be clear and give personalized product and/or service and use web personalization: give everyone what they need and communicate how they want,
- use downloadable training materials and e-mails (learn, learn, learn),
- use content marketing and certifications,
- analyse your web site and your customers: because online marketing campaign are measurable. You can use the analyses during your promotions and discount campaign.

Conclusion

The most important aims of this paper were to research new, innovative, productivity-enhancing options and their tools, to estimate the volume of their efficiency and reliability, as well as introduce the Hungarian market index measurement used in practice. I found the current conversion rates correct based on my research, but nevertheless I rejected the questions of bias 'ghost' on purpose. From the point of view of my investigation of the effectiveness of online marketing, the first step of a start-up web shop is to fix the web site content and formal requirements. The next step is to develop it before advertising the start of the distribution. Then, following-up and comparing the continuous statistics, the individual consumer habits, attitudes and characteristics that are relevant to the company's product and/or service terms can be emphasized. Therefore, despite my results and optimization programs, I have to continue testing the target groups, permanently, by changing several promoting tools as well as some design components like varying the layout or colors. The consumer behaviour groups established this way follow a relatively similar behaviour pattern. Based on the adequate number of access statistics, a more targeted and effective marketing message can be fed to the visitors, by which the purpose of the message can have a greater chance of success, and the shopping phase continuing testing can be reached more rapidly.

Another aim of this study was to introduce the most frequently used tools and measurement capabilities of Hungarian online and offline marketing campaigns, relevant in practice, in business-to-business market. Among my respondents, there were the participants of B2B, and members of the two-player supply-chain, where the trader, the retailer and the consumer are also located among partners. My further goal was to emphasize their influence and effectiveness, as well as potential dangers. The web shop operators take a great care to show the full online extensions, paying particular attention to mobile to ensure adequate competitiveness. In addition, the sleek design, user friendly, concise, yet informative content marketing is essential to support both business and consumer (B2C) sectors (Loveday and Sandra Niehaus, 2007). My conclusions have resulted in online experts' circles, based on analysis of the content of structured in-depth interviews. The limitation of my study was the low number of the elements that I would like to expand in my next research. After completing the recent phase of the study, I believe that the online market research topic still contains a lot of alternatives and research potential. The picked up online shopping is to peak until 2018-2020 (eMarketer, 2015), which is why I will research the topic further. In the future, I plan to observe, analyse and compare the changes in the direction of the development of the two nationalities involved.

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THE MULTIPLYING EFFECT OF WINE TOURISM

Ildikó Gál-Czékus and Erika Nagy-Kovács

Abstract: Wine tourism has become one of the most dynamically growing types of tourism. Primarily, the reason for this can be found in the basic need for getting to know wine culture, quality wines, the traditions of wine making and general knowledge about wines. Other opportunities connected to wine tourism must also be noted such as getting acquainted with cultural scenery, traditional rural lifestyle and gastronomy. Wine tourism is an important marketing tool in the wine market and also it is one of the branches of wine marketing. It provides an opportunity for the Hungarian wines to become well-known by the domestic and international wine consumers alike. It acts like a tool of 'wine export'. The economic impact of wine tourism is also significant for the wine regions. The wine tourists spend their income generated elsewhere in wineries and cellars at wine tastings sometimes organised in far-away regions. As a result of wine purchases wine tourism can also be regarded as a cost-efficient commercial channel.

Keywords: wine tourism, wine festivals, multiplying effect, wine region of Eger and the Mátra

Introduction

The prestige of domestic tourism in Hungary has greatly been appreciated nowadays. Inbound trips have become trendy and popular offering real alternatives to holidays abroad. Statistical data prove that a lot of tourists have spent more time within the national borders these days. In our country tourism has significantly contributed to boosting the economy and creating jobs through its multiplying effect. Based on the data of the Central Statistical Office (CSO) in 2014 the number of participants in domestic trips for several days has grown by 3.3% approximately reaching 15 million people. The performance of domestic tourism is in line with the use of SZÉP (Széchenyi Recreation) card which was used at commercial accommodation points worth 15.9 billion HUF in 2014. The duration of domestic trips amounted to 61.4 million days (Magyar Turizmus Zrt, 2015.a). Domestic tourism has been playing a great role in stabilising the industry. It is less geographically concentrated than inbound tourism so it is able to provide jobs in regions and ensures to make a living in regions where inbound tourism is of slighter importance. In most regions seasonality is more moderate. It is important that keeping the tourism demand within the borders also means keeping the travel expenditure of tourists within the country.

The economic significance of the industry is highlighted by the following figures. In 2014 the expenditure of foreign inbound tourists and domestic tourists in Hungary amounted to 1450.8 billion HUF of which 308.4 billion HUF income was generated. It is estimated that the direct contribution of tourism to employment reaches 5.6% while the indirect one accounted for 9.8% of full employment (CSO, 2015).

The most typical tourism products in Hungary include health tourism, MICE (meetings, incentives, conferences and exhibitions), cultural tourism, wine and gastronomy tourism, active and eco-tourism as well as rural tourism.

Recently the role of gastronomy including a cultured way of wine consumption has been appreciated. Tourism has a great part in it as experiences are gained on the spot. Consequently, expectations have also grown for the local producers and craftsmen. Local primary producer markets are flourishing as they are important destinations for the tourists (Magyar Turizmus Zrt, 2015.b). Wine tourism and events centred on wine are decisive in the econoic life of a region, county, town, city or wine region. The objective of our study is to explore the results of this effect on the basis of the wine events and festivals organised in these two wine regions.

Wine as a tourism product

Approaching from the theoretical side of tourism, wine is part of cultural tourism together with gastronomy tourism as both of them are tourism products linked to activities (Mihalkó, 2012). Hajdúné et al. (2009) draws attention to the visitor as a key part of wine tourism and the wine region as the wine producing area serving as the basis for wine tourism as attractions in tourism. The main motivation of the visitor is to get acquainted with the viniculture and viticulture of the destinations frequented while gaining and living through such experiences that are connected to cultivating grapes and consuming wine. Wine tourists have a chance to participate actively in cultivating grape plantations, harvesting the grapes or preparing wine (Tarján and Törökné, 2015; Szakály et al. 2010).

Due to its nature wine tourism is the typical tourism product of rural areas. On the supply side we can find wine regions and wine routes as destinations. However, even in urban areas we can take part in wine festivals, wine tasting, wine and dine dinners or even wine museums. At present in Hungary there are 30 registered wine trips organised by wine associations of which 19 are members of the Association of Hungarian Wine Routes. According to Cheverton (2005) the image of the wine region plays a central role in wine tourism. Its attraction basically lies in the consumption of wine in authentic surroundings. The several thousand-year-old wine culture of mankind can sell excellently as a tourist attraction (Cey-Bert, 2002). In the relationship between wine and tourism wine itself as a gastronomic speciality is regarded as an attraction. It is the source of the image and the symbol of the given wine region. It has a catalysing, multiplying effect and also highlights and popularises the other attractions of the region.

Multiplication in tourism

Multiplication is an indicator of the extent of the effect generated by additional spending in the tourism sector and in the entire economy. It shows how and through which channels the money entering the economy from tourism spreads and how it affects the whole economy. From an economic-geographical consideration tourism is regrouping income in space. The income generated in the homeland (sending area) of the tourist is not spent there locally, rather, in another geographical region. In the recipient (host) area it is a form of income not generated by the local economy. By analysing the economic impacts of tourism the amount of this income is also measured together with the economic areas where it is displayed. Multipliers are only used in tourism when the

effects of an additional unit of tourism consumption and expenditure are to be explored to define additional income, employment, production and consumption.

Tourism service providers spend the funds received on purchases. They buy consumer goods, production tools or cover the operating costs of their business. By purchases the funds reach different economic organisations. Every unit of money spent is channelled to different enterprises. Optimally, further income is generated so it is multiplied. Income multipliers in tourism mean the ratio of total income in the economy generated by an addition unit of tourism expenditure (Puczkó-Rátz, 2002). The following model illustrates the multiplication of income generated in tourism. Part of the direct income of the households derives from the tourists and another part from the amount paid by tourism service providers. The income of the central budget is transferred to the treasury via the tourists (visa fee, VAT) or in the form of entrepreneurial taxes.

Material and methods

We were looking for the opinions of the students of the colleges in Eger and Gyöngyös about wine tourism, the economic and multiplying effects of different wine festivals and also the services used by them. Concerning the methodology of the examination a questionnaire was filled in and also in-depth interviews were conducted with the managers of hotels. In spring 2015, 100 questionnaires were filled in at both colleges which were processed by Microsoft Excel mathematical-statistical programme. Our paper is not aimed to present all the findings of the research. Due to limitations only the results of the areas that most support the effects of multiplication are published.

The demographic features of the respondents are as follows. The higher ratio of women (61%) is due to the fact that there are more women among the students at college, too. There were two categories based on age: under 25 (69%) and above 25 (31%). It was interesting to examine the domicile: capital (8%), county seat (15%), city (37%) and village (40%). It was justified by the fact how far they are willing to travel to a wine event although some knowledge on the venue or accommodation at a student hostel as well as being a wine lover (71%) or not can also have an effect in it. We also asked how much they spend occasionally, which reached approximately 10 thousand HUF without accommodation and travel costs.

Results

Of the wine events most students participated in visiting cellars. Wine festivals, wine tasting and vintage festivals are also popular. Figure 1 shows that wine programmes are preferred in Eger, which refers to the dynamic development of the Eger wine region. The role of wine events in frequenting a wine region was judged differently by the students. Forty-two percent of the students of Eger and only 29 percent of the students in Gyöngyös acknowledged the positive effects of wine events. In their opinion wineries develop more dynamically in the Eger wine regions, they cooperate and organise more professional days and wine events.

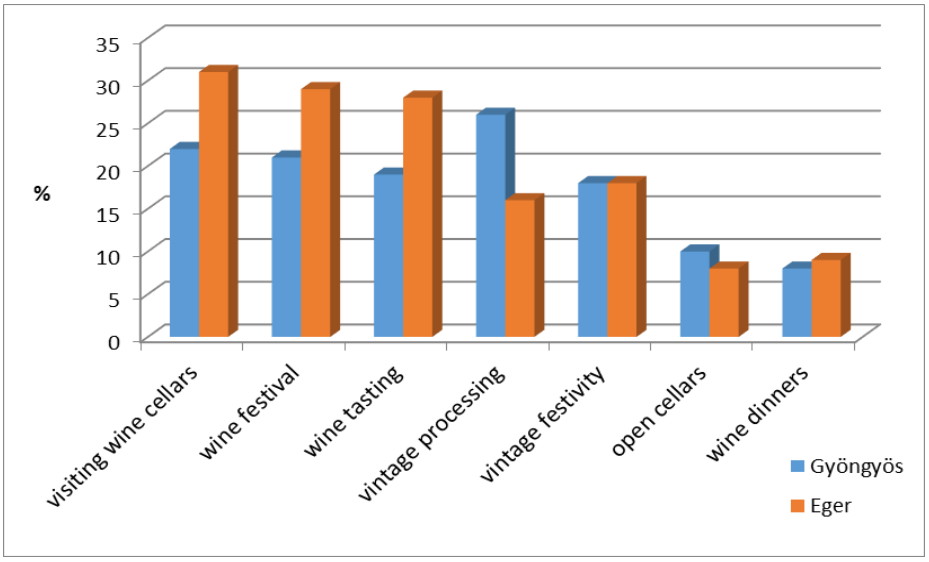

Figure 1 Breakdown of participation in wine events

Source: authors' compilation based on their own research

Ninety-seven percent of the respondents would go back to the venue of the wine event and its surroundings. Nearly 50% of the students of both colleges would get to know the sights: the Castle of Eger, the museums (marzipan, Mátra, clerical museum), village museums, churches, historical sights and would visit the cellars of Farkasmály and the wineries of Szépasszony-völgy (Valley of the Beautiful Women) together with other renowned ones. Among the responses hiking in the Mátra and Bükk and also taking a dip in Eger, Demjén and Egerszalók were also mentioned. It justifies our statement that a strong brand helps the weaker ones to come to the foreground, so they also contribute to the multiplying effect of the economic role of wine tourism.

During the wine events wine tasting services connecting the wineries would be welcome by the visitors. The local people can get back home on foot, or by local or long-distance services. However, returning guests who visit several wineries along the wine route can hardly get from one cellar to another as they are away, the taxi is expensive and if they drive, they cannot taste wine. These wine services could be operated like sightseeing buses: at the weekend in cooperation with information offices and cellars. Visitors could hop on and hop off at any winery between 10 am and 11 pm so that they could also dine there in the evening.

For the visitors to a wine event gained experience is the most important followed by the need for a complex service (86%). We also explored what expectations the young had and how the hosts should prepare for them (Figure 2). The standard of rural accommodation is marked by (1-4) sunflowers (guest rooms, furnishing, internet, range and standard of services, programmes etc.).

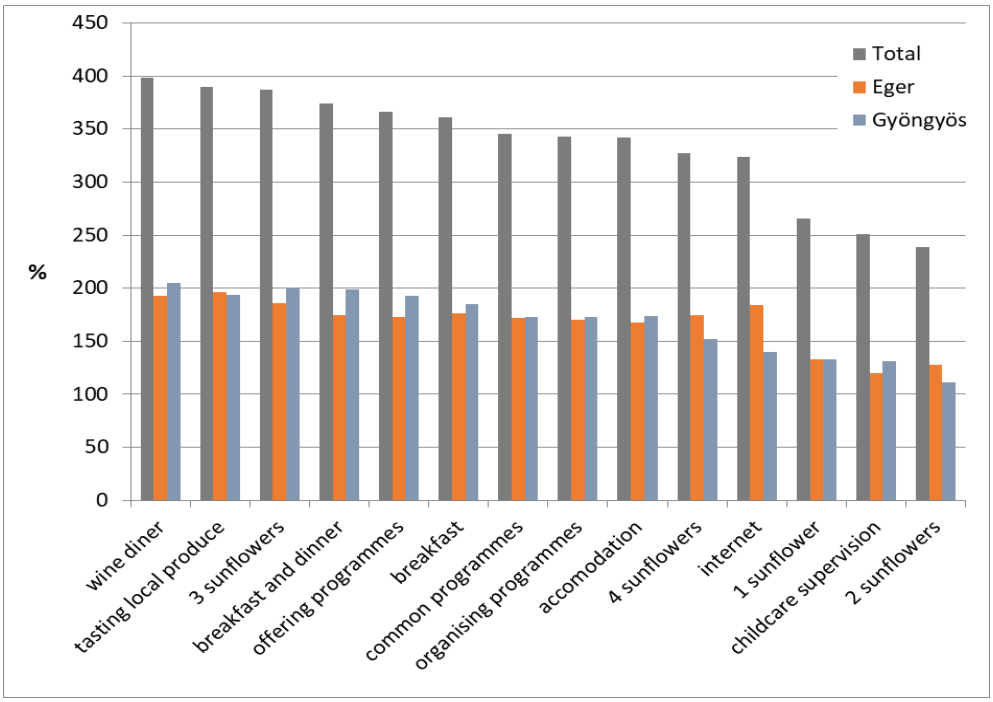

Figure 2 The order of importance for services used

Source: authors' compilation based on their own research

We would recommend offering tourism packages to tourists arriving from other parts of the country. This is also stressed by the results of the in-depth interviews with hotel managers. In Eger hotel bookings rise when a wine event takes place while in Gyöngyös bookings only rise when a complex hotel package supplemented by other programmes is offered. In Gyöngyös hoteliers cannot experience the rise of accommodation needs generated by wine programmes. That is why they drew attention to wine events as part of a package offered formerly, which is bought and frequented by guests with pleasure.

Based on our research findings and the experience of the hoteliers we recommend issuing discount cards that would entitle the holder e.g. 10% off the consumption at a restaurant after visiting 3 sights which could be proved by stamps at the back and could be used freely during the event. Eighty-two percent of the respondents would use this card, which is offered, for example, in Zsámbék, too.

We also assessed the wine events economically. Eighty percent of the respondents think that wine events also incur financial benefits. In addition to wine and gastronomy programmes, local produce is on offer on the market with handicrafts and children programmes like at a festival (e.g. Bikavér Ünnep/Bull's Blood Feast, Mátrai Bornapok/ Mátra Wine Days, vintage festivals).

Women attribute a higher importance to festivals (67%) than men, which may be attributed to programmes for the whole family. Responses on domicile show that the positive economic effect in cities and smaller villages differ. Events organised in villages are mostly frequented by the local people or who live nearby. During their one-day stay they use local services but the number of those requiring accommodation is slight.

When analysing the positive assessment of wine events further, some factors are listed that can assist the settlement in developing economically and other ways (Figure 3). The option of multiplication was selected mostly by the students of both colleges,

which we also agree with. The benefit deriving from here is also multiplied inducing more and more, hopefully positive, changes. The money spent by visitors is circulated in economy generating more and more services so it is multiplied there.

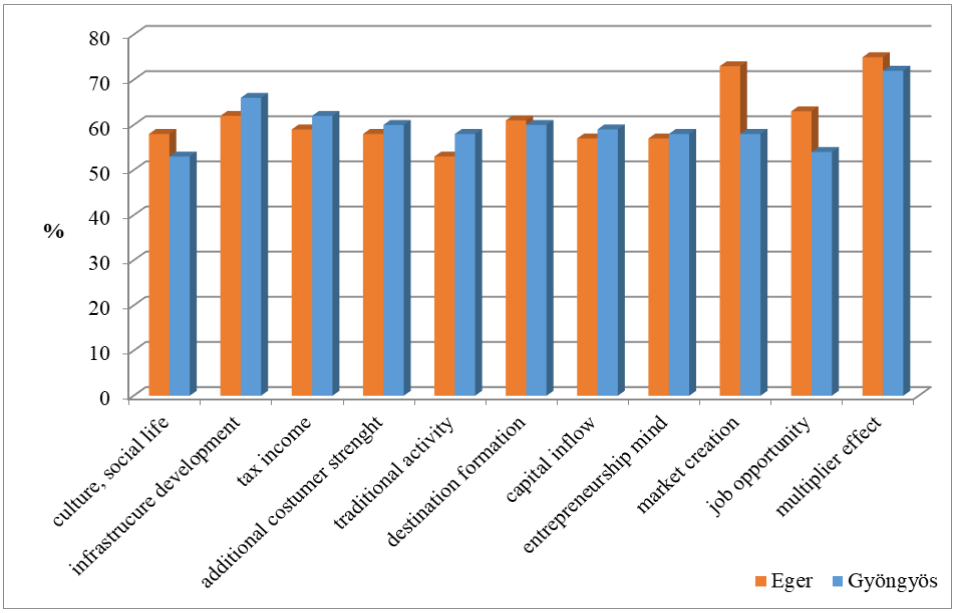

Figure 3 The multiplying effects of wine events on settlement development

Source: authors' compilation based on their own research

The income from accommodation, colourful programme offers and the direct sales of local products contributes to making a living and by possessing income directly from the services the service providers themselves have further demands for other local products and services, as well. The money spent by tourists will be channelled to the entrepreneurs in tourism first, who spend part of their income on local produce in order to run their businesses. Part of the income of the local governments also derives from the tourists (tourism tax) and the other part is taken up by the taxes that local entrepreneurs pay. The tourism tax paid in 2015 in Eger accounted for 4.7% of all the taxes while it was 2% in Gyöngyös. The local tourism tax increased from 2012 to 2015 by 65% in Eger and 21% in Gyöngyös, respectively (Eger, Gyöngyös-local authority statistics, 2016).

The local market is definitely wider, which boosts the development of local economy. Social effects partly prevail in employment but local identity also strengthens local communities. The aggregated multiplying effect of wine tourism, rural tourism and agritourism has an impact on the natural, social and economic environment.

Conclusions

Wine events are very important in the life of a wine region and they have a synergic effect on the attraction of the countryside and wine. They strengthen the wine tourism of the given wine region, the reputation of its wines and also help differentiate them from other wine regions. They offer favourable opportunities for reaching new target groups and opening new market segments.

They mean concentrated wine offers so they also act as an incentive for purchases. The tasting organised by cellars provides an opportunity to compare the types of wine of the given wine region and serves to educate, inform and get consumers acquainted with moderate wine consumption and quality wine. In our opinion, which is also shared by

the initiatives taken by the wineries, it would be practical to organise a professional day on the first day of the event series that would accommodate conferences and meetings.

They also play a great role in the life of the wine regions, the organising settlements, and the local and neighbouring population. They have a positive impact and strengthen the image of the city and also stress its nature. We concluded that the strong brand of the two wine regions assist the weaker ones in coming to the foreground so that they can also contribute to the multiplying effect of the economic role of wine tourism.

The attraction of wine events prevails but it lacks proper marketing activity. It is especially the Mátra wine region where development slowed down. The rate of bookings at hotel has been increasing only when other events and accompanying programmes are offered. Our examination justified that the objectives of tourism could be achieved and its multiplying effects could also prevail but still there are lots of tasks for these two wine regions. On the basis of the responses demands and expectations have been outlined so the capacities of the cities and towns could be exploited by consciously planned and proper marketing activities.

Further research must be carried into the composition and the characteristics of visitors as there are no statistical data available about who the visitors are or which target groups the wine regions could be classified into. Based on our questionnaires recommendations were made on starting wine tasting services that connect wineries among others, and also attention was drawn to the significance of complex services and gaining experiences and also the concrete nature of positive economic impacts. Although our analysis is not representative, it has highlighted part of the problems and the need for further research and tasks to be carried out.

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CHALLENGES AND OPPORTUNITIES OF ORGANIC FARMING

Gábor Gyarmati

Abstract: Harmful effects of agricultural and industrial production have intensified in the past decades and we are late to solve them by the optimal solution date. But as soon as possible, it must be taken so as not to do irreparable damage. A possible solution is organic agriculture. The purpose of this article is the comprehensive presentation and analysis of its role in the last decade in the world and in our country. The sources are taken by the organizations of organic agriculture and their analyses and data. Sustainability was examined in these resources, too. Our results indicate that organic agriculture has the reason for existence in global agriculture but there are a lot of obstacles whose dismantling is the mission for the future of humanity. The spread of organic farming is necessary to strengthen a number of factors but in any case it must be achieved in the domestic conditions that the prices of organic products are affordable for wider audience.

Keywords: organic farming, organic production, markets, sustainability, environmental protection.

Introduction

Duality is observed in the world's agricultural production, and this duality has been reflected for long time. First, agriculture in the developed countries is struggling with overproduction. While fewer and fewer people choose agriculture as a profession, thereby the average age of workers frequently increases in the agricultural sector. It can cause big problems in the long run because labour force deficit can be expected in decades in agriculture. Necessary food will not be produced because of these factors. Despite the advanced technological background these countries can produce multiple of the needs. The poorer half of the world's countries may be characterized by malnutrition and hunger. They are unable to cater for their citizens' potable water and are not able to supply them with basic food. On the Earth, about 925 million people are chronically underfed. This is 8% of humanity. There are a lot of people who suffered from it and died or going to die in short time from a disease in which to die with good medical care and appropriate nutrition is almost impossible. The solution is to increase food production in excess of population growth in these poor countries. In particular, appropriate agricultural production technologies are exported widely to resolve issues of irrigation, proper seeds to use, reducing crop losses, pest management and fertilizer solution as well as the mechanization of spreading (Tóth, 2010; The state of the world, 2013).

Another problem is land use and erosion. It can be foreseeable with simple mathematical thinking that if we continuously perish from one side of the balance sheet and we do not replace the other side, the result is imbalance. And this imbalance will sooner or later lead to big problems. In fact, fewer and fewer minerals and nutritious will go to the crop from the soil, which makes food less valuable from a nutritional point of

view. In response to the many problems, lines emerged which wanted to change and cure existing issues. Perhaps the most important of the responses incurred is biodynamic agriculture invented by Rudolf Steiner (Steiner, 1924), which responded the problems and offered comprehensive solutions for healing. The line and other organic lines began to spread in the world.

Theoretical background

Damage of the natural elements and their harmful factors

The zonal analysis of the environmental problems is spread in geography. The various ecosystems and human society can be examined this way. However, the two systems operate with different background affected by each other. The human desire for power and money, and other factors result in the fact that the functioning of society puts the ecological system and man himself in danger (Kerényi, 2003).

At each level analysis shows that the state of our environment is gradually decreasing and humanity exploit natural resources to a greater extent. These processes are strengthened by the increasing population. Urbanization and consumption are increasing. These processes can cause continuous and significant pressure on the environment, the health of ecosystems and the use of natural resources (Tóth, 2010).

The composition of the atmosphere would be relatively stable without human intervention. Smaller amounts of gas or liquid particles go to the atmosphere as the result of human intervention. If they appear in small amounts it can be cleared, degraded, or deposited. If, however, larger quantities go into the atmosphere, it would cause a variety of problems. One of the major effects is the greenhouse effect. The essence is that plants absorb carbon dioxide of the atmosphere in the cycle of carbon while the carbon bounded is released in a huge amount due to human activity, thus it can increase the concentration of CO2 in the air. At the beginning humanity recovers energy from coal followed by petroleum and natural gas. After that we start to switch to alternative energy sources but CO2 emissions are huge. The effect of this increase is that the atmosphere absorbs an increasing part of the reflected rays from the Earth's surface and starts with a warm-up process. In fact, this process is already taking place today. Due to the warming up the Arctic ice cap melts, which means that agricultural production can be started in areas which were snow-covered yesterday. Unfortunately, however, these areas are much less fertile, and they cannot make up for the capacity of the lost Canadian and US grain-producing regions (Sántha, 1993).

Increasing level of carbon dioxide does not start at the stage of burning but also at the stage of exploitation. On the one hand, exploitation can make emission possible; on the other hand, we can convert the earth's surface and nearby areas by surface mining. So it is really a central issue. Fossil fuels provide 88% of all energy in the world. This means that the effects arising from the issue are still dominant. 61% of this is produced by national oil companies, which are typically supported by national governments. So it is difficult to change. The oil industry is the world's largest industry representing $ 2.3 trillion capital and 14.2% of the world trade. In addition, this is the most capital intensive industry in the word. The value of investment is $ 3.2 million by an employee in contrast, to information technology where this value is $ 100,000 and chemical industry, where the figure is $ 200,000, for example. However, these companies are considered the most successful ones and they are among the most influential and successful

companies. The fossil fuel infrastructure occupies an area of the size of Belgium. If we want to replace fossil fuels by biofuel, we need an area of the US and India. 7-10 kcal calories of energy are required to produce one calorie of food energy. It means that this rate cannot even reach the level of energy efficiency of fuels (The state of the world, 2013).

The next atmospheric phenomenon is ozone depletion which is related to social activities. The spread of ozone is not decisive but it is particular important in terms of the protection of life. Indeed, it protects against harmful ultraviolet radiation from the sun. On the one hand, the ozone layer is thinning in the stratosphere; on the other hand, the ground-level ozone concentrations increase in the industrialized areas. Since ozone is a highly unstable molecule it can easily decompose. A continuous cycle creates the ozone layer that ensures the stability of ozone quantity. This can be easily confused by some elements. According to experience halogenated hydrocarbons can easily damage it. Various compounds of chlorine, fluorine, bromine, carbon, and hydrogen can damage ozone. Due to the formation of the ozone hole several states have signed the Vienna Convention in 1985 and the Montreal Protocol in 1987. Freon and HCFC emissions fell sharply in the 90's and now they are disappearing. Nevertheless, the phenomenon of the ozone hole is an existing problem as the area is 24-26 square km today and it is amplified in September and October during the polar night and later it subsides (Kerényi, 2003; Környezetvédelmi és Vízügyi Minisztérium; Országos Meteorológiai Szolgálat, 2003; Ozonwatch, 2017).

The following effects are acid rain and its effects. The most typical form is sulfur rain. This was caused by the high concentration of sulfur dioxide. On the one hand, this is normal occurrence and formation; on the other hand, human activity plays a role in it. The major emitters are industrial plants and internal combustion engines without catalyst. For this reason, the most affected regions are countries with major sectors industrialized where strong industrial activity is still going and environmental aspects are left ignored.,e.g. China, Eastern Europe, the former Soviet Union territories (Sántha, 1993, Mészáros-Schweitzer, 2002). Unfortunately, the phenomenon of smog becomes frequent again in mainly Chinese industrial areas where you can daily see its harmful effects on man and the environment. On the one hand, there is an industry emitting smoke and polluting; on the other hand, specific weather conditions are required. The Chinese economy has substantially increased coal consumption and energy use and has become the world's largest emitter of sulfur dioxide. Its coal consumption is increased by 70% and its energy use is increased by75% in 2000-2005 (Pomázi, 2008).

The freshwater resources are 2.8 % of Earth's water supply and they are in the soil and less than 1% are in lakes, rivers (Bogárdi, 1975). The water needs of humanity have more significantly increased than those of the general population. This is due to the industrial and agricultural use. There would not be water shortage in absolute terms but the use is not proportional to the population as agricultural areas used for water supply in a greater proportion as there is regional water scarcity. Due to frequent droughts in the recent decades, this area is even more pronounced. Water supply has been such a problem in e.g. Britain, Poland and Russia. The soil and the ground water was thrown down by the industrial, agricultural and municipal pollution and it can be said that less and less clean water for human consumption (Kerenyi, 2003; Pomázi, 2008; Sántha, 1993). In some areas water supply has been displayed in a reason for war. It is expected that 30-70% more people will reach the same amount of water within 10 years' time. Water shortages can cause war conflicts.

Catchment area	Population 1999 (million)	Forecast by 2025 (million)	Change %
Aral Lake	56	74	32
Ganges	1137	1631	43
Jordan	34	58	71
Nile	307	512	67
Tigre Euphrates	104	156	50

Table 1 Population in the main catchment areas in 1999 and forecast by 2025

Source: Postel, 2000

The land is one of the most important resource for human race because the earth gives the base of food production. In addition, it also supplies us with industrial raw materials and trees. The top layer land is fertile and it is habitat and food source for the flora and fauna. The size of Agricultural cultivation is approx. 3 billion for hectares, of which less than half favored good, and the remainder can be made suitable for cultivation with substantial investment. Agricultural activities can be continued in only 10% of the total area of 13 billion hectares of the Earth (Sántha, 1993).

More than 1 billion people suffer from hungry and 2 billion people suffer from nutritional deficiency in the world. In accordance with global trends wheat, maize and rice based food came to the fore and became to ignore local, indigenous crops that are rich in nutrients. These are resistant to heat, drought and disease. As a result, there are more than 1.5 billion people obesed, overweighted, and are vulnerable to diabetes, and cardiovascular diseases. Another fact it that people wastes considerable food almost everywhere in the world. Thirdly, agriculture is responsible for one third of greenhouse gas emissions, there is a significant impact on major environmental issues (The state of the world, 2013). In 1924 Rudolf Steiner (Steiner, 1924) held courses for farmers living in the vicinity in which he laid the bases of biodynamic agriculture. Since then, this line has been prevalent in many countries, practical experiences were implemented. Initially it appeared to be a small line that had his own small groups of enthusiasts but now some countries have already achieved significant turnover in markets. It has become relevant in maintaining health, and protecting the environment.

Organic farming was still considered as an incorrect tool to feed the world couple of decades ago. Today, due to increased environmental problems, agricultural ecological methods considered it a good way in the world of declining fossil fuels, increasing hunger and poverty. More researches also point out that food production can help to provide a solution to climate change, unemployment, water pollution and environmental problems (The state of the world, 2013). Organic farming has become much more popular in Hungary around the turn of the millennium. It seemed that the declining line of domestic agriculture could provide an opportunity to raise. Lots of writings dealt with the subject. There have been predictions, extolling and realistic approaches and criticism in these works. The domestic agricultural production with small capitalization was looking for break-out directions. Organic farming seemed to be a way for farmers to resolve issues of low profitability. The study seeks to answer the question of how the predictions of the outbreak and have been implemented in the 2000s, and what issues need to be changed to a greater extent of this direction.

The advantages of organic farming

Organic farming has many advantages for writing shortly. Certain organic ingredients prove to be more descriptive. Many nutritional ingredients contain more than non-organic products. For example, based on the studies of Kraft et al. (2003) of organic

milk has reached a higher level of omega-3 fatty acids than conventional companion due to organic forages. As the production methods use organic fertilizers in accordance with the regulations, the benefits can be formed on the nutrient composition. Furthermore, some studies have established that certain flavonoids and polifenons in organic fruit and vegetable products are richer than conventionally produced counterparts (Győréné Kis et al., 2006, Weibel et al., 2004). Moreover, in apple experiments it was found that phosphorus and plant fibers also have high antioxidant regards resulting in the organic apple (Weibel et al., 2000). The organic product is synthetic-free, guaranteeing that organic products are no pesticide residues. The compliance with regulations minimize their occurrence probability (Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91). Organic farming methods using genetic engineering-free, which means that the application is not compatible with the principles of genetic engineering so such interference is prohibited at any stage of production (Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91).

The steps and provisions required follow the principles during the system of rules of organic farming and conversion processes. After the specified time we can talk about organic production and farmers can only seed organic and bateless seed in drilling processes (Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91).

How much can the following requirements be kept to guarantee that production is e organic and how can the rules be deluded? This means that the product is really organic because the farms are to be controlled. As at any stage of production random checks can occur, so there is substantial likelihood that the organic product is really organic. The annual comprehensive examination is mandatory, which verifies that each step meets the requirements. The compliance with these regulations is compulsory for the processing plant and trading companies. as well (Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91). The legal background is detailed and extensive monitoring organizations supervised by the state institutions reduce the possibilities of misuse due to the Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control).

The welfare of animals is kept according to organic regulations that can be higher than to the traditional animals. For example, there is no mutilation during keeping, no use of synthetic enhancers, larger living area and keeping in the fresh air and consumption of milk are typical avoiding the use of infant formulas. In case of illnesses, mainly natural medicine can be used for treating the sick. More observation and experiment confirm that birds are favorable for organic farming in the region around it. Chamberlain et al. (1999) studied that up to 25% more birds occur from certified organic fields than from conventional fields. Lokemon et al. (1997) and Wilson et al. (1997) studied skylarks who also prefer to choose organic fields for their nesting site. In addition, many insects and worms are presented in the areas of organic farming (Mäder et al., 2002; Pfiffner et al.; 1996, Szászíné, 2007).

Biodiversity that is prevalent in several studies found that one volume of several species occurs on the organic farms (Fuller et al., 2005, Hole, 2005). The authors

concluded that the tested organic territories have 5-85% more species than the control areas have. Schader et al. (2011) tests have been determined for dairy farms having 20% higher of the average number of species in the organic territories than in traditional areas. The differences can be traced back to the following. Organic farms are in greater amounts in nature reserves. The lower the intensity of the nitrogen production, the more extensive production is. There is lack of chemicals and fertilizers used instead of feeding hay silage feed.

The soil erodes much less in organic production so that it can be constructed better than conventional soil cultivation (Mader et al., 2002). This is essential in the case of the prolonged use of soil in any event to improve the soil because of less energy and costs that should be paid. The threat of nitrogen leaching into the water is less in organic farming method because there are no pesticide residues present in natural waters protects (Haas et al., 2001, Liess et al., 2001). In addition, it spears ground water and due to the better soil structure, it leads to a sudden downpour of precipitation, which means that for inland waters, flood risk is lower (Nieberg et al., 2002).

A Swiss study assessed that the total energy use in organic farming is as much as 50% lower than in the integrated production (Mader et al., 2002). and by skipping a number of pesticides and fertilizers, it uses less energy than conventional production (Mader et al., 2002, Haas et al., 2001). By having less climatic gas emissions (NO2, CO2, CH4 etc.) organic farming carries a number of environmental benefits. Soil is the largest carbon-emitting agent in the production process (Hörtenhuber et al., 2010). In the production process (for example in the case of dairy or bakery products), agricultural activities have the biggest CO2 emissions, so in the case of dairy products carbon dioxide emissions are 10-21% less, in the case of bakery products 25% and in the case of vegetable production 10-35% than with traditional means of preparation, respectively. Alföldi et al. (1999) and Nemecek et al. (2002) also found these benefits. The emission of ammonia levels reached also contributes to the protection of the atmosphere in the small farming (Haas et al., 2001, Geier et al., 1998). Emissions of greenhouse gases range is moderate, as it has been demonstrated in several national research (Petersen et al., 2005; Robertson et al., 2000; Hörtenhuber et al., 2010).

Organic farming is medically beneficial. In Germany in 1999 approximately EUR 12 million, extra expenses were reported in cases of acute pesticide (Jacob, 1999). It increases employment because the work process is more manual labor-intensive.

The economic judgement of organic farming

The economic model of organic farming is very similar to those of the regular schemes. In addition to input-output, the positive and negative externalities appear. However, the following ones affect the system: renewable resources, waste and by-products. The main difference in operation is located on the input side as it seeks to minimize the use of industrial materials and involves more renewable resources. It seeks to increase positive externalities while the negative ones are reduced (Radics et al., 2006).

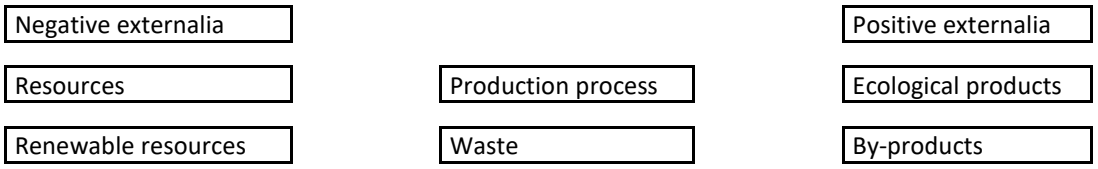

Figure 1 The steps of the process of organic production

Source: Radics, 2006

The benefits of organic farming are outlined above but also organic farmers seek to take advantage of the benefits offered by agro-technological development, for example, the technological development of land culture, plant breeding, the use of decision support systems, logistics improvements, allowed protection against pests, irrigation systems development (Niggli, 2012). As it has already been said on the input side level that organic farming uses fewer chemicals and fertilizers and lower costs can be calculated, but the seed costs may be higher due to special regulations. It can be said that the input side is with definitely lower cost s and we can count on the factors where there is discrepancy due to the management mode.

The investigation of the production side is more complex. Due to the fact that organic farmers do not use chemicals and fertilizers, they take risks. Lower yield can be counted under the same conditions. Nieberg et al. (2002) experience that the grain yields is 30-40% lower while dairy products with 0-20% rate of decline can be reported. How can organic farmers compensate for the loss of income resulting from lower remuneration? This is the only possibility to achieve a higher premium in the sales market. How much extra margin can organic farmers reach in the European markets? It depends on the product. We can state the most uniform extent in the case of dairy products, where it reached a level between 8 and 36% from 1994 to 1997. The lowest value was in Switzerland, and the highest was found in Denmark. We can see more deviation, for example, in Italy which is more than 100% but 20-25% on the average. The lowest values were reached in Norway. It is also not a small deviation that can be observed in the case of wheat. It reached 50-200% premium compared to conventional vs. organic players. Germany and Austria had the highest values while in Italy it was the lowest around 15%. In the latter case we can see pasta (mass product) material as it formed a lower value (Nieberg et al., 2002).

A sure thing is that unique products in the oversaturated markets have less competition than the mass-produced ones. This novelty is one of the reasons for the rapid growth of the turnover of organic products from certain markets. However, let us remember that if the novelty decreases, the advantages of concentration and development of higher technical manifest themselves due to the increase of tightening requirements. One point of the Common Agricultural Policy is to support agricultural production. In particular, support for organic production is an important process. As agricultural raw material production is extremely capital intensive, the return time is high due to the length of the production cycle and the major risks in production are high, as well. The production and market conditions are necessary to be regulated at high degree (Santha, 2006). In addition, it is vital that organic farmers can take advantage of the technical and other process improvement tools and opportunities for vertical and horizontal coordination but it does not expect to receive an extra payment scheme with the specific aim of recording and maintaining existing structures since it would point in the opposite direction of development, which may not be the objective of organic production. Although conventional production is supported in many countries like

Britain and France, support can only be provided during the transition period. 100 per hectare amount is to assist in the process of first two years of the transition, but in Finland and some other countries this amount is EUR 470 while in Switzerland it can reach EUR 800 per hectare (Nieberg et al., 2002).

The rate of support as a percentage of the profit is 15-26% in the tested western European countries. The average rate per hectare reached € 123-490. Without this support many cases would have been loss-makers during the transition to the plants (Nieberg et al., 2002).

One of the characteristics of agricultural production is high fixed costs. This should be covered by the revenue that is volume produced multiplying the price. Only then it is possible to achieve high rates and we launch quality products on a limited market. In the 1990's and the 2000s it was also a characteristic of the market of organic products that market demand was observed, as a result of which there the possibility of a higher price level was reached. However, if supply were considerably increased, it would change and the prices would fall, which is beneficial to the consumer but disadvantageous to the farmer. The Western markets treated expansion very carefully in line with demand by taking care not to increase supply more than the increase of demand. However, the producers are able to keep their prices due to the higher degree of processing and quality. It should also be noted that domestic production is 30-100% lower than the optimal yields, which appears in the case of organic farming because there is a premium which can be paid by only few customers (Santha, 2006).

Based on several years' studies it was found that on the average the profit of organic farms is +/- 20% compared to conventional farms. Unfortunately, to make an overall statement is difficult because the results are highly variable. For example, in Germany and Denmark it was a positive difference from the typical, small profit per hectare results have been achieved compared to conventional farms in Finland or Great Britain. The two test results show differences between countries because profit per hectare and per labor unit in the family benefit varied considerably from country to country. In the latter case, either equal or higher values appeared in the case of organic production while we have seen different results in the case of profit per hectare from country to country. Looking at the product produced we can see differences. Arable cultivation of organic one is better for the most countries while in the case of dairy farms we have seen differences between countries (Nieberg et al., 2002).

The following things are mentioned in the researches.

- It is not the soil and climate that significantly affected economic outcomes. The yield indices (the soil and climate potential of influencing the description) were better only on marginally successful farm sites.
- Successful organic farms have larger fields. The number and the area of dairy cows reached significantly higher values than the less successful economies.
- Successful farmers seem to be better agro-engineers. Both the dairy and arable production, yields achieved higher volume.
- Successful organic farmers reached higher yields using half the amount of concentration, lower service costs and veterinary medicine (Nieberg et al., 2002).

The average size of land was shown economical taking into account the cost income conditions of domestic production. The amount of premium of product increased with the rate of the processing. The beneficiary of the bonus is not the producer but the

processor and distributor. The size of organic farms compared to domestic conditions is high (Takács, 2006).

A gap is observed in the distribution chain between supply and demand, that is, they do not always manage to connect. The following issues were explored in this regard.

- high operating costs,
- lack of supply and demand for interconnection,
- supply of low reliability
- non-cooperation of the supply chain members,
- different values and motivations of the actors in the chain,
- lack of information flow.

Until these issues are resolved, consumers' need will not be available information not always able to satisfy needs, and thus the income of the farmers can achieve worse results. It is therefore necessary that organic farming would be in different integrations and on the one hand, remain viable; on the other hand, they are able to fully satisfy customer needs (Meredith and Willer, 2016).

The ramp-up of organic farming plans and actual achievement

The world's organic food retail sales in 2009 amounted to 40 billion euros (54.9 billion dollars), whose value increased to $ 80 billion in 2014. (FIBL, 2017) The highest value markets in North America expects $ 38.5 billion despite the fact that the regional share is only 7% of the world's organic territory. The United States is the largest exporter of organic products in the world.

The proportion of the world's organic cultivation areas is 0.99% of the total. Almost a quarter of the world's total organic cultivation area, 50.9 million hectares in 2015 (FiBL, 2017), is found in Europe (12.7 million hectares in 2015). This is around 5% of the total area under agricultural cultivation in Europe. Returning to the world's data the world's largest organic cultivation areas are in Australia (22.69 million hectares), Argentina (3.07 million hectares), the US (2.03 million hectares) and Spain (1.97 million hectares). Typically in Australia these areas are larger dues to free-flowing livestock not because of the crop. Australia also was a country with the highest increase of organic land with 4.35 million hectares in 2015. 220 thousand producers managed the area under organic cultivation in 2009 while their number increased dramatically in 2015 (2.4 million producers). In particular, a significant number of small producers of India, Uganda and Mexico caused these high values. It can be concluded that farmers of developing countries have the opportunity to take steps to the expansion of organic markets of the more developed countries, and they actually do it. The transition to organic farming is perhaps the only survival option for many growers in these countries. Since the early 1990s, organic farming developed rapidly in most European countries. Between 2008 and 2009, Europe's organic cultivation area of 1 million hectares has been added primaly in Turkey, Spain, Italy and France. In recent years the rate of growth in the new Member States exceeded the growth of EU-15. Most organic farms in Italy was then found (Boldvainé Böde, 2011). From 2014 to 2015, growth in Europe was 0.011 million hectares, which may indicate a close to the saturation point and / or the deterrent effect of economic crisis.

43 thousand organic farms with 1107 thousand hectares operated in Italy in 2009, which grew to 1.4 million hectares and to 52.6 thousand producers in 2015 (FiBL, 2017).

After Spain this country has the second largest organic product surface. It is a serious vegetable and grain producer but also a major player in fruit and olives and an absolute leader in tomato. Italy exported around 10-11000 tonnes of organic vegetables to Germany in 2010-2011. In 2010, an additional 6,000 ha of vegetables 3900 ha of Orange 46 600 ha of grain area (of which 24,000 ha of durum wheat) was in transition. 30.6 thousand organic farms cultivate 1.7 million hectares in Spain, making it the largest surface area of organic cultivation in Europe. Spain together with Italy is the largest supplier of organic products in the market of Central and Eastern Europe. There are also plenty of sites registered under the transition (Willer, 2012).

The model of Járási (2006) measured and indicated in advance that we can count how much increase can be expected in the market of organic products. Compared to projections the facts increase fell shorter than expected. Growth in many cases was due to the increase of areas involved in extensive livestock. This is not the same as sales growth, so the increase of food turnover is less than these figures. What trends can be observed in our country?

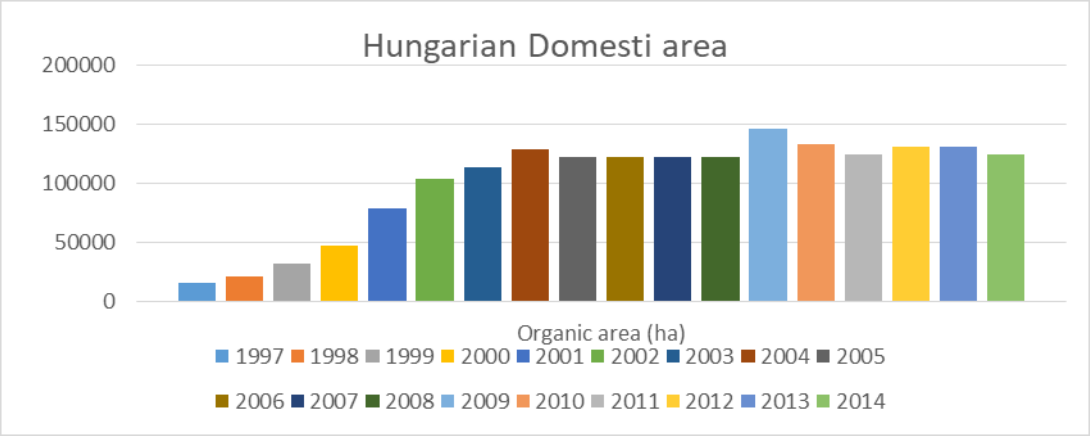

Figure 2 The evolution of the domestic organic areas between 1997 and 2014.

Source: Biokontroll Hungária and Ökogarancia

Looking at the domestic situation we can see that the initial high growth momentum has stalled and stagnated since 2004, it set on a level from which it cannot move permanently. What is the reason for this? First, domestic production continues to develop export raw materials, in which there is intense competition among producers of raw materials on the main markets. Approximately 10% of producers are biodynamic which have opportunities and the remaining 90% is exposed to considerable competition. So it is difficult to grow on the markets. Another factor that contributes to growth failure is the loss of income to the people who are also trying to compensate by reducing food consumption. The third reason is the rate of change in domestic purchasing power, in which high growth is not observed.

(Kg/person/year)										
Appellation	Bread and cereals	Meat	Egg, piece	Milk, litre	Canned milk, powdered milk,cheese, cottage cheese	Oil, fat	Potato	Vegetables	Fruit	Sugar
2003	98,9	59,5	174,0	63,0	5,2	19,8	37,7	57,3	51,5	15,9
2006	90,0	57,9	167,0	58,6	5,8	18,5	33,5	53,9	44,6	13,8
2009	83,0	53,2	148,0	53,5	5,5	17,1	30,0	51,6	42,2	13,9
2010	83,3	53,7	148,0	52,9	5,5	16,9	29,1	47,8	37,1	13,5
2012	79,3	50,8	128,0	50,5	n.a	15,7	29,1	47,9	37,5	12.0
2015	63,6	57,6	n.a.	52,8	n.a	n.a.	30.0	44,4	44,4	n.a.

Table 2 Evolution of household food consumed volume (2003-2015)

Source: KSH author's own research

This can be seen from Table 2 that there is a significant decline also in the consumption of certain food. So there is no possibility to increase domestic organic consumption according to this decline.

Organic production and market trends

As mentioned the US market spent the most on organic products, i.e. EUR 27.1 billion. In 2014, EUR 26.4 billion was spent on organic products in Europe. Germany leads with EUR 7.91 billion followed by France with EUR 4.8 billion and the United Kingdom and Italy with 2.3 and 2.14 billion euros, respectively.

If we examine which countries consume most organic products, the following outstanding values are found. One person spends EUR 221 on average on organic products in Switzerland with similar values in Luxembourg (EUR 164). The line is followed by several European countries, and on the largest market we can see that an American consumer spent the average of 85 euros on organic products a year. We can see the connection clearly between the respective purchasing power and the consumption of organic products. How could the 2008-2009 crisis concern the consumption of organic products? Unfortunately, statistics can be found very narrowly available for us to answer this question. According to available statistics for the period between 2006 and 2013, the following can be experienced. Only four countries are available with complete data for this period: Austria, France, Germany and Italy and the EU's GDP per capita, food and non-alcoholic drink consumption of organic and total.

First, it can be stated that in the case of per capita gross domestic product clearly there was a downturn in 2009, which managed to recover only in total EU-level in 2015. There was, of course, the rate of decline different from country to country. The stronger economy in a country, the faster recovery from the crisis, the weaker it is, the slower recovery has gone. For example Italy has not reached the 2008 level.

The consumption of organic products in all countries examined and the EU's overall level experienced a continuous rise. Whereas the same was observed for total consumption, it is worthwhile examining the organic / total consumption. We can also find that the proportion of consumption of organic products, both the test and in the case of total EU data showed a steady growth and in 2013 it reached 0.24%. Overall, statistics also support the expansion of organic products in the consumption.

organic/total consumption	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Austria	0.27%	0.38%	0.42%	0.47%	0.52%	0.57%	0.55%	0.54%	0.57%	0.61%
France	0.12%	0.15%	0.18%	0.21%	0.23%	0.25%	0.27%	0.29%	0.30.%	0.31%
Germany	0.26%	0.30%	0.33%	0.32%	0.33%	0.36%	0.38%	0.40%	0.42%	0.45%
Italy	0.10%	0.09%	0.10%	0.12%	0.14%	0.15%	0.17%	0.19%	0.22%	0.25%
EU	0.14%	0.16%	0.17%	0.18%	0.20%	0.21%	0.23%	0.24%	0.27%	0.28%

Table 3 The consumption of organic products divided all food and non-alcoholic beverage consumption inside

Source: Eurostat and FiBL, IFOAM's calculations and author's own edition

Such an assessment has not been made in Hungary, so such statements can not be determined but it is likely that growth is not typical from 2009 onwards.

Conclusions

Based on the sources we can see that domestic organic production has been balanced and can not continue to grow. The reason for this is the domestic purchasing power of the weakness, the raw material producing nature of domestic organic, the decrease of food consumption per capita and the minimum level of processing of domestic households while the consumption of organic products continues to grow in Europe and in the world although not as much as they hoped in the early 2000's. Despite the size that the domestic organic farmers possess is favorable, as is typically performed in the organic production of large farms, export is still typical because domestic consumers can not buy. Several writers (Sántha, 2006, Járási, 2006) found that when the supply grow faster than demand, prices will decline, and you may find selling products at below cost. Although the support is present in most EU countries more organic farmers and producers would not be able to produce without additional support. The less favorable habitat endowment provision is one of the reasons. Organic farming would have a chance to break out of the weaker economic prospects for farmers with worse lands. However, they cannot be competitive without raising capital and development and the eastern competitors with cheaper labor force are able to overtake in Europe markets. It is impossible for organic producers to operate effectively in the case of producing raw material; it is absolutely necessary to improve the processing stage.

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IMPORTANCE OF FEMALE ENTREPRENEURSHIP

Kata Keveházi

Abstract: Behind the most significant problems of the world – poverty and starvation, wars, environmental pollution and climatic change - there are goals characteristic of the patriarchal society, i. e. the extension of power, the acquisition of resources and even the use of violence. One of the main tools of acquiring economic and political advantages is to maintain the subjection of women. Due to their biology, they are exposed to harassment and violence in times of peace and war alike. Their core necessity is their own security and the safety of their children in order to achieve that they endeavour to develop a form of behaviour, an appearance, a life path, a way of life supported by the patriarchate – especially if they have no pecuniary room for manoeuvre. The investment of women with economic power and entrepreneurship activity strengthen their autonomy and influence the its personal, economic and even political sense, and, at the same time, the prevailing of values that go beyond the patriarchal set of verb missing, e.g. are important issues such as: the welfare of children, the elderly, the sick and other persons exposed, preserving environment and safety. The objective of the paper is to raise awareness to the importance of female entrepreneurship, the impediments lying ahead of their progress and set forth the conditions of their development.

Keywords: female entrepreneurship, women entrepreneurs, economic independence, women in political decision making

Background

Personal motivations

For sixteen years now, I have been dealing with providing support for women restarting their career, creating equal opportunities for women on the labour market and promoting their economic independence. My endeavour is to assist spreading the application of a gender-based approach as an advisor at individual levels, at an organisational level while elaborating workplace programmes that support women and as a gender expert by making proposals of specialised policy at global societal level. It is my conviction that solving the most significant problems of the world – poverty and starvation caused by the distribution of resources and earnings, wars, pollution of the environment (Braidotti, Charkiewicz, Hausler, Wieringa, 1994), the change of climate, etc. – is inconceivable without questioning and changing the patriarchal order of society and the hierarchy of genders.

The key element of social, economic and environmental sustainability is to promote gender equality. As stated by Kofi Annan, Former United Nations Secretary-General in 2006. ”The world is starting to grasp that there is no policy more effective [in promoting development, health and education] than the empowerment of women and

girls. And I would state that no policy is more important in preventing conflict, or in achieving reconciliation after a conflict has ended" (Fitzpatrick, 2016).

Questioning the global patriarchate

Patriarchal society, based on continuous power expansion, growth on acquiring the resources even by means of violence and wars, essentially jeopardizes women's pecuniary and physical safety (Haq, 1999). The millenary distribution of tasks between genders, thus, the subordinated social role of women is an essential interest of global patriarchate, as its absence would jeopardize the operability of present societies (Waring, 1989).

The less democratic a state is, the more economic or political power is concentrated in the hands of a restricted circle, the more leaders strive to maintain their power by means of intimidation, violence, political or religious ideologies supporting this, the more typical the effacement of women is, maintaining the subordination of women is increasingly its interest (Hudson et. al. 2009). Throughout the world, economic and social life continues to be organised along the goal of power expansion, and it is not the interest of those who own power to share it to waive the position they occupy in society. Belonging to the masculine gender in itself is already a privilege, girl children andwomen are less appreciated by the societies. Even a man with the lowest status senses the emancipation endeavour of a woman with a status identical to him as a loss of power to a certain degree, therefore it is not surprising that it is equally a primary endeavour of patriarchal structures built on male power to preserve the status quo relevant to gender hierarchy, restrict the actual interference of women and disregard their aspects.

The current determinant political and economic world order, i.e. global capitalism, has been organised along the millenary patriarchal relations system and the subordinated role of women. The past 150 years proved insufficient to have the feminist endeavours aimed at promoting gender equality and eliminate the most ancient inequality in the world that pervades every field of life.

Maximising profit is the central goal of global capitalism. To achieve this end, it exploits the environmental and human resources to the extent allowed by the set of values, rules, the jurisdiction of the societies, or the social groups more remote from power. Since, in the event of holding on to political power, maintaining it is subject to their own economic resources or those of persons belonging to their spheres of interest, the actual role undertaken by a considerable part of the states in the preservation of resources is very meagre – the less democratic a government is, the less extent the aspects of sustainability, social justice, equal chances and freedom of speech prevail. Operability of the world order striving to maintain the power structure continues to be based on the millenary gender distribution of tasks, whose preservation continues to be monitored vigilantly by the male-governed structures. Due to the growth demand of key actors of global capitalism, multinational corporations and states, the economic role undertaken by women has been revalorized both in the developed and developing world, there is increasing talk of women's ability to generate earnings and of their consumption, of the positive impact their economic activity exercises on growth, evidenced by researches, as well (PWC, 2012).

Today's societies need women as a human resource. Regardless of the cultural circle, to an extent and in form that varies by countries, they are present in the world of paid labour, too, they work as employees, entrepreneurs, occasional workers or helping

family members in the legal, informal or black economy, and, at the same time, they continue to perform the tasks that secure the work-performance of men as well as the life quality of the more elderly and new generations.

Taking care of the children, the elderly, the sick, the reproduction of men's earning and power-exercising capacity by itself restricts their participation and their exposure to discrimination in the world of labour and also maintains their secondary labour status since coping with domestic tasks restricts their opportunities of taking up a job and promotion in terms of time and space too. Two-thirds of unpaid and paid jobs are performed by women. At the same time, patriarchal society does not appreciate the caregiver activities so women are left with hardly 10% of the world's earnings and hardly 1% of the assets (GENDERNET, 2012). In case they perform a paid job, a disproportionate number of them works in the sectors of caregiving, education, health, hence, their earnings and pension show a durable, life-long lagging behind those of the men even in the developed world. Besides, gender affiliation multiplies other disadvantages – that stems from belonging to a disability, ethnic or another underprivileged group – from the aspect of e.g. lodging, access to the core infrastructure or health services, exposure to violence and discrimination (Castiello et. al. 2013). One of the main indicators of dedication of a state or a society to change the hierarchic set of gender relations therefore is not whether the participation of women in the labour market is allowed or incentivised, but rather where they strive to take over women's reproduction and caregiving activities as a state task, supervise the distribution of tasks in private life and improve the role of women in decision-making.

Today patriarchal societies face the serious challenge of deciding on the proportion to have recourse to, or utilize simultaneously the economic and caregiving potential inherent in women; the point where to designate the boundaries between paid and unpaid activities performed by women, the type of social system for reproducing human resources they should operate as the participation of women in paid labour inevitably raises the questioning of women's subordinated role.

In the globalising economy, societies disposing of a different culture in terms of gender equality, strive on the one hand, to meet more or less the minimum of human rights recorded in the basic documents of international organisations. However, on the other hand, they deem it their inalienable right to determine where the place of women is, restrict or incite maternity, take up jobs, facilitate or aggravate studies, divorce, entertainment and the autonomy and rights of women. This contradiction is conspicuous especially in the European Union where transplanting values relevant to the equality of women and men into comprehensive gender equality policies and programmes of national scale have failed.

Merging women's situation with the families' situation – which, for instance in Hungary, is very deep-rooted in public thinking – successfully diverts attention from the balance of power within the family to the utilisation of earnings, the domestic distribution of tasks and access to leisure (Acsády et. al., 2012). We should recognize that women are one of the most important tools and victims of sustaining patriarchal society (Ferguson et. al. 2016), to a larger extent compared to men at the identical levels of social hierarchies.

Women in the patriarchate

Women are naturally present at the highest level of social and economic hierarchies. The importance of female leaders has undoubtedly also increased within the

patriarchal organisational hierarchies striving to maximise influence and profit as they build upon women's purchasing power, too, on their consumer markets. At the same time, they represent a trifling proportion at the top executive levels, thus, although women represent and would stand for a lot more the aspects of equal chances, welfare and environment, the values of tolerance and understanding, the executive style based on involvement and democratic participation (Eagly and Carli, 2007). Their influence, in general, consists in supporting initiatives of such orientation with regard to participation in the global problems so they are present rather in the role of wives than executives of high-powered global companies. The scant participation of women in management is negligible at multinational organisations, higher-powered in case of the states, not merely upon their business goals, investments and social programs but also their organisational culture. Even in the IT sector showing the highest commitment to women's participation, the typical labour-market disadvantages of women (pay gap, glass ceiling, etc.) are reproduced, attached to their involvement, and the harassment and disparagement of women is just as typical as in any other patriarchal medium (Frost, 2017). At the same time, women who acquire executive roles in the patriarchal structures, conclude their own patriarchal bargain (Kandiyoti, 1988) in order to develop and safeguard their position, measuring and validating themselves and their fellow women using the set of values of men, and the male-governed structures and patriarchate.

Women's appreciation, moreover, in certain societies, the basis of their existence straightforward is their biological suitability (their ability to bear children, their beauty), or the performance of caregiving activities deduced from the biological role, provided for free. In order to maintain the subordinated position and fulfil the expectations stemming from the gender role, they are exposed to harassment and violence in peace and war times alike (Manjoo and McRaith, 2010).

The collective and transmitted trauma of physical, sexual, economic, spiritual and verbal violence to which women are exposed, well-known to generations, compels women to adapt themselves instinctively, partially or completely consciously to the patriarchal set of rules, to apply specific fighting techniques - in many cases in return simply for their own and their children's physical and material safety (Tickner, 2004). Violence against women affects every third woman (European Union Agency for Fundamental Rights, 2014), in the private sphere, spiritual, physical, sexual, economic and physical violence is general, at the same time, its institutionalized forms – mutilation of the female genital organ, coerced marriage, coerced sterilization and the selective abortion of female foetuses, prostitution and trafficking in human beings are the major jeopardy to hundreds of millions of women (UN Report World's Women, 2015), to the safety of women, as well as the mass violence deployed during wars as a weapon.

Thus, security is the basic need of women, and with a view to achieve it, they generally endeavour to develop a behaviour, look, life path, way of life, family model supported by the patriarchate – especially if they have no pecuniary room of their own for manoeuvre, for choices corresponding to their own ideas, needs, desires.

The importance of women's economic independence

One of the principal traps set by patriarchal society for women is the message whereby men create the safety of women, whilst it is precisely the subsistence of the patriarchal set of values based on women's subordination that constitutes the main source of jeopardy for women's long-term individual safety and for the safety of women

and children. A core condition to women's safety is to cease their dependence and helplessness whose key factor is to invest women with power at an individual level, to support the creation of their autonomy and economic independence, and at the social level, to promote their equal access to political, social power and to the power enabling the forming of opinion. Via female enterprises, under operational conditions created by women, supported by digital technology, the disadvantages of women in terms of resources affecting monetary- and social capital can be offset in particular, they can become capable of a business performance even surpassing men, being able to represent the values important for them as well (Kevehazi, 2016).

I would subsequently like to talk about the female entrepreneurial activity which provides women with earnings obtained in their own right, at the same time, confirms their ability to independently prosper, reduces their insecurity with regard to the ability of taking care of their children, hence encourages other women as well to strive to assume their autonomy in personal, economic, even political sense, to make independent decisions, to stand up for themselves and their environment.

Female entrepreneurial activity – I am convinced – , women's genuine pecuniary and spiritual independence, a higher proportion of women becoming entrepreneurs, the strengthening of their enterprises are the factors that can strengthen women's proportionate participation in the decision-making of societies. The economic power of female entrepreneurs, the deploying of their self-assertion skills, their assuming responsibility for themselves and their own sort will allow for an ever-increasing number of women to recognize their own skills, opportunities, acquire economic independence and represent the society values that go beyond the patriarchal set of values: the welfare of children and other helpless persons, caregiving, preserving the environment and safety. The key element of social, economic and environmental sustainability is to extend women's personal autonomy and their rights to strengthen their enterprises.

My paper is based on the processing of international specialized literature and the research niche I conducted between 2015 and 2016 in Hungary while working at civil organisations during which I examined the features characteristic and specific of female enterprises along with the social, economic, structural impediments and approaches that stand in the way of women becoming entrepreneurs and women gaining strength as entrepreneurs. Women resident at 187 various settlements participated in the survey conducted by way of questionnaires, nearly 80 women participated in 10 towns in focus group discussions, moreover, we interviewed numerous experts experienced in the development of enterprises. My aim is to cast light on the aspects, reasons and nature of gender inequalities characteristic of enterprising. Namely, without revealing and following up the inequalities, without commitment to their termination in principle and also manifesting it in actions without carrying out interventions at system-level, it is impossible to create social justice between women and men.

Inequalities between genders in the business sector

Should they live in any region of the world, due to the genders' different roles and opportunities for getting on, to date, female entrepreneurs face numerous social and cultural impediments that determine their career prior to the entrepreneurial activity, influence the circumstances of launching their enterprise, and subsequently also hinder the development of their enterprise and aggravate its survival. Visible and invisible impediments are associated with the patriarchal set of values and the patriarchal

mechanisms maintaining inequalities whose determinant tools are stereotypes attached to gender roles that, again and again, reproduce the barriers of approach.

Gender-based stereotypes determining the entrepreneurial activity of women

The business sector is essentially dominated by men to date, the role model of entrepreneurs is conceived as male by the majority of society to this day. Namely, education that stresses and supports the different qualities, skills of boys and girls, and training that prepares for the traditional gender roles, do not strengthen the qualities necessary to launch an enterprise – willingness to assume risk, independence, self-confidence – in the case of girls, or less than in the case of boys. According to socialization and the stereotypical views confirmed by the media women are – as they say – "emotional beings", it is almost like advancing that enterprising is not a field for women since women:

- are not tough enough for business,
- are incapable of making rational decisions,
- are impressionable, therefore unsuitable for an executive role to manage people.
- companions, private life are more important to them, thus, they are not sufficiently reliable, etc.

Women interiorize the gender-based stereotypes, they determine their choice of career, career ideas, expectations of earnings, requirements for financial independence at a lower level compared with men subordinated to family life. Their self-assessment is largely influenced by the social expectations attached to female roles, physical look, the existence of companions, the fact of childbirth, the clever running of household, compliance with the scope of caregiver task (Pérez et. al. 2015).

Female life strategies in the entrepreneurial activity

The extension of female roles, occurred in the last century, did not bring along the transformation of male roles: the distribution of domestic roles is still determined by the model of a male breadwinner. The necessity or need to earn money is still a secondary social expectation in the case of women regardless of women assuming an ever-increasing part of the family costs of living, moreover, in an ever-increasing proportion of the households, the woman is the primary, or the only breadwinner.

However, due to the female life cycle and roles different from the male ones, compliance with the family obligations is especially emphatic for women at certain life stages, which, as long as they live, affects their participation in the world of paid work, the development of earnings acquired in their own right, the freedom of their decisions and their safety.

According to the female life-strategies offered to them, female entrepreneurs living in societies that belong to different cultures form essentially part of three well-separable groups in terms of participating in the world of paid work:

- dependent existence: performing the domestic tasks, lasting absence from the labour market or absence from it all their lives
- combination strategy: restricted presence on the labour market with regard to promotion opportunities, subordinated to the obligations of private life in terms of time and space

- career strategy: its goal is durable presence on the labour market, exploiting the skills, earnings acquired in one's own right (Bernhardt, 2000).

A considerable part of women, although they do not take up a paid job and do not possess a proprietorship ratio within, contribute to the development of their husband's/partner's enterprise, support it, subordinating their personal development, their own goals, knowledge and livelihood to the breadwinner activity of the head of the family. Their environment but even often they think of themselves as the helper of their husband/partner, eventually even if the also hold formally their own stake of ownership in their husband's firm based on which they could acquire earnings in their own right.

Pecuniary exposure considerably increases the chance of economic and other violence against women in the couples. An eventual breaking up of the couple – despite the rights enforceable during divorce – significantly jeopardizes pecuniary security as the enterprise can be essentially linked to the man's activity. Those thinking in terms of the combination strategy are active on the one hand in a joint venture with their husband/partner, on the other hand, have an enterprise of their own, yet subordinate it to the family, enterprising being a complementary activity for them. These women strive less to or are forced less to remain in the background.

A substantial part of female enterprises is a single-person enterprise, which could mean that growth of the enterprise, the upward-swinging career equally rank among the personal goals. At the same time, for the majority of these female entrepreneurs, an aspect determining daily operation and one of the main barriers to their growth is the endeavour for the compatibility of family and work (Kelley et. al. 2015). Female entrepreneurs setting themselves the career strategy – although private life is by all means no less important for them either, moreover, they even strive to reconcile work and private life – do not restrict the development of their enterprise: if necessary, they do several hours of workplace overtime, hire an employee, eventually they undertake even absence, travel, etc.

The impact of gender roles and stereotypes on the position of female entrepreneurs

As a result of stereotypes restricting the willingness of women to embark upon enterprises, their urges to launch an enterprise, education and socialization for the prescribed gender roles, furthermore, due to their roles and position in private life, compared with men, female entrepreneurs

- dispose of less external resources (financial, technological and social capital required for the entrepreneurial activity);
- dispose of less internal resources (self-confidence, assertiveness regarding their executive competences, willingness to assume risk, in certain countries, knowledge, expertise, etc.) that could support their entrepreneurial activity;
- can devote less time to their enterprising activity due to their family obligations, the unequal distribution of domestic tasks and the related external and internal expectations
- dispose of lesser mobility opportunities due to their private life obligations, their scantier resources, in certain cultures, do the set of its customs, elsewhere, due to the restricted safety of women; moreover
- from a pecuniary and emotional aspect, they enjoy less family support;

- they are less accepted, appreciated at social level too, since gender stereotypes directly impact social representations of their role opportunities; they are exposed to disparagement, harassment from the side of their male competitors, business partners, - to exclusion from the male networks, in certain countries, from professions, etc., and this latter in turn impacts all the foregoing factors.

Different motivations of the genders

All over the world, necessities, constraints or personal urges can be found in the background of women and men launching their enterprise. In countries with a restricted labour market, enterprising activity is typically the only source of livelihood, of survival. A consequence of different expectations applicable to gender roles is that all over the world, women become entrepreneurs rather out of necessity, constraint (this is the so-called push-factor), then because of enterprising as an activity being attractive to them (pull-factor) (Kirkwood, 2009). In countries with a low GDP, a significant proportion of them perform their enterprise activity informally, in their home, sacrificing their spare-time, typically for the sake of mere survival, to satisfy the family's core necessities.

Following the crisis of 2008, the number of coerced enterprises has substantially increased in the developed world too. At the same time, the difference between the motivation of women and men is less, they are frequently compelled to launch an enterprise by changes having occurred in their life situation, like a divorce, the insecurity or lack of a work-place or the husband's/partner's loss of job. Although the proportion of informal enterprises is lower in the developing societies, it is still more typical of female entrepreneurs, as women more frequently embark upon entrepreneurship as an activity completing their principal one – besides running a household, performing the caregiving activities, or eventually in addition to having a job. This is also supported by the fact that whilst in countries with low earnings 74% of women launch an enterprise; in countries with medium earnings 91% of them; and in those with high earnings, and 82% of them start an enterprise in addition to their existing occupation (Minniti, M, 2010).

The difficulties involved in enterprise activity, the unpredictability of earnings, success hold back many from launching their enterprising even if otherwise, the independence, self-determination, free disposal of time offered by the entrepreneurial existence were attractive to them. In the case of women, risks are primarily overwritten by the compatibility of work and family, men are a lot more inclined to assume uncertainty inherent in the entrepreneurial existence as to work for someone else.

Female entrepreneurs around the Globe

Facts and figures

The 2016 survey of Global Entrepreneurship Monitor (Global Entrepreneurship Monitor, 2016) supports it too that female entrepreneurs everywhere launch their enterprise rather out of constraint than men. The number of female enterprises is the highest in those countries where the goal of enterprising activity is to generate the earnings necessary for survival. In some countries – Vietnam, the Philippines, Malaysia, Peru, Indonesia -, the proportion of female entrepreneurs is higher than the proportion of male ones, according to the data, they are typically young people. Senegal has the highest proportion of female entrepreneurs within the active female population in the

world, 37% (40% of men are entrepreneurs). The lowest figures of proportion come from Morocco, Italy, Bulgaria and Malaysia (hardly 3%). In the latter two countries, the proportion of male entrepreneurs is low too, at the same time, in the former two countries, only the female willingness to launch an enterprise is low: the proportion of women does not reach half of the number of male entrepreneurs.

The gender differences manifesting themselves in the number of enterprises are the largest in the countries with medium earnings, however, in Latin American and the Caribbean, also in certain countries of Asia, the proportion of genders is approximately identical among the entrepreneurs, and the lowest proportions are typical of the Middle-East and North-Africa. In these countries, the traditions and social norms do not support the independence of women, their taking up jobbed and especially their entrepreneurship.

In the former socialist countries, also owing to the collectivist economic past, this rate is relatively low, at the same time, e.g. in Russia –in the absence of other labour market alternatives -, the number of female entrepreneurs vigorously leapt forward. In countries with high earnings where reconciling work and family, and the opportunities of acquiring earnings in their own right are equally assured, the proportion of coerced female entrepreneurs is trifling. The lowest rate is typical of the Netherlands where part-time employment is outstandingly widespread (70% among female employees) and moreover, part-time employment offers a decent livelihood, here the proportion of coerced female entrepreneurs is hardly 47% of the male coerced entrepreneurs. In general, public policies supporting the promotion of gender equality favour female employment, thus, for example, in Norway and Canada, there are less coerced female entrepreneurs than male ones. It refers to the different past of post-socialist countries, the different social participation of women, and the different traditions of entrepreneurial existence that, e.g., the proportion of coerced female entrepreneurs is also lower among Polish women who enjoy a higher appreciation than the Hungarian ones. For instance, in Croatia, due to self-employment, having subsisted in the Yugoslav economy and the major economic importance of tourism, female entrepreneurship has its traditions also, and in Romania, due to the regional differences, female enterprises have subsisted during the socialist era, too.

At the same time, the fact that there are less coerced female entrepreneurs than male ones can allude to the obligation of supporting women, stemming from the traditional gender roles. Hence, in Ireland, which nowadays can already be considered as a country with high earnings, yet is very conservative, the proportion of coerced female entrepreneurs is the lowest, however, the proportion of coerced female entrepreneurs inferior to the proportion of male ones, can be explained also with cultural reasons, female roles within the family, and the subordination of women, in Iran, India and Israel also. Whereas the lesser number of female entrepreneurs than male ones in China too is a consequence of entrepreneurial traditions deeply rooted in the culture.

According to the OECD statistics, from among the 34 member states (OECD, 2016), the willingness to assume risk is the highest among women in the South-American Brazil, Mexico and Chile, the Republic of South Africa, and this is the most important component of the entrepreneurial inclination. In these countries, just like in the United States, self-care has a great tradition, as opposed to the „providing states" where, on the one hand, as an inheritance from the post-socialist past, on the other hand, due to the extensive employment as workers, female entrepreneurial inclination is low. In these countries, the proportion of female entrepreneurs is 2.5 times lagging behind the

proportion of male ones on average. They mostly operate their typically single-person enterprises in the service industry, in fields that require no high starting capital: in retail trade, consumer industry, at the same time, profitability is lower here, too. They hardly participate in manufacturing and the construction industry. In terms of their number, revenues, assets, profit – also of the performance indicators – survival rates, return, etc. – they are lagging behind the men's enterprises.

Female entrepreneurs in the developing and in the developed world

Female entrepreneurs are typically highly qualified (Kevehazi, 2016) almost everywhere in the world, thus also in the developing countries. At the same time, stemming from their female identity, even in case of the most qualified ones, their knowledge is not identical to that of the men in order to allow them to launch and operate up-to-date and efficient enterprises, resulting in high profitability, since, for example, they have restricted access to IT technologic expertise, but also to the pieces of business information.

In societies with low level of education, uneducatedness can be attached to other, so-called intersectional disadvantages (belonging to a religious, ethnic minority, disability, etc.), which entirely exclude independent appearance for the affected women, in case of any field of their life. Being qualified, or belonging to the privileged social group however does not suffice by itself for the success of the enterprising activity, as it merely creates the demand for autonomy, eventually contributes to creating the self-confidence necessary to the venture. At the same time, it does not guarantee either the possibility of independent decision-making or the financial background, or the supportive family or institutional environment hence it does not guarantee the increase in social/economic influence even in an otherwise entrepreneurship-friendly business environment.

In societies where patriarchal social norms are coupled with religious restrictions as well, merely the fact that somebody has been born a woman makes it impossible to become an entrepreneur. In the countries of the Middle-East and North-Africa, the prevailing of women's rights attached to personal freedom is not assured either, at the same time, in almost 2/3 of the countries of the world, women's economic rights are infringed, and almost 44 countries restrict the duration of (paid) work-performance by women and 71 countries regulate legally the work-performance by women in certain sectors (World Bank, 2012). For example, it is natural in Asia that the husband disposes of the income earned by the woman. Although women living in the countries of Black Africa are restricted every day by the prejudices, the violence and discrimination directed at women, there is high proportion of them present in the craft industry, the light industry and the small-scale agriculture too. Having strengthened in the entrepreneurship, their influence has increased also, which is equally indicated by the exceptionally high proportion of female politicians.

Female entrepreneurs in the developed world

The state of gender equality is also formed by very diverse traditions and policies in the developed world. The progressive governments of societies having become pro-women due to historic reasons and/or as a result of the effort of feminist movements support with strategic and system-level public policies the women's economic independence, their labour-market participation and the compatibility of family and

work. In these countries – as we have seen it previously, too -, female employment is high-level, and coerced female entrepreneurship is low-level.

For female entrepreneurs, flexibility, the compatibility of family and work constitute serious value. At the same time, like everywhere in the world, the pecuniary and emotional support of the family is a determinant factor in the developed world as well for women to operate as entrepreneurs. The husband's/partner's participation in raising the children and in the domestic tasks is cardinal from the aspect as to how free the female entrepreneur is from the aspect of time management, how exposed she is to stress while co-ordinating her manifold activities, and reconciling the external and internal expectations.

Women – intentionally or unintentionally – adopt various battling techniques in the course of harmonising their roles. The female role model widespread in the developed countries, the so-called superwoman strives to meet all expectations, yet, even with the involvement of a household employee, this often involves conflicts of value. Due to their female roles, however, they cannot entirely evolve in business life: on the one hand, they themselves restrict the expansion of their enterprises, on the other hand, due to their roles of private life, owing to their inflexibility in terms of time and geography, their participation is restricted in the business networks that continue to be characterised by male dominance. Owing to these factors – even if they themselves think differently -, in the environment's judgment, they strive less to have a successful enterprise, consequently, female enterprises are less attractive to investors, to creditors.

In countries where no political will exists to promote the equality of women's chances, female entrepreneurs endeavour to create a balance between their conflicts of roles by accepting the patriarchal conditions. Even if they recognize that these male prerogatives incommode them in deploying their skills, in order to comply with the masculine expectations of the entrepreneurial existence, they rather conceal, or precisely over-emphasize their femininity, and in the interest of success, they accept the men's rules of the game, they deny discrimination, and do not support either women who are less successful in their battling strategies or happen to attack the structural inequalities. It is part of the patriarchal bargain that female entrepreneurs are not independent even in this role of theirs, they are supported even as entrepreneurs: they are active in their husband's/partner's enterprise, or, besides the primary breadwinner – although they have an enterprise of their own -, they strive less to develop their enterprise, their efforts are rather aimed at acquiring earnings complementing the family income.

In case they are independent entrepreneurs, they do so far from the male-dominated business environment, or, adjusting themselves to its disparagement, they perform their activity mostly in segregated, „feminine" business fields, with female clients, frequently under informal conditions. Although becoming an entrepreneur is assured to them, however, the entrepreneurship seldom assures them the possibility of acquiring significant earnings. The verbal- and physical harassment, violence ruling the business life dominated by men affects their business activity, too.

Forms of inequalities

To summarize: Among inequalities existing in the world of labour, the highest-level inequalities can precisely be observed in the world of enterprises:

- There is lower proportion of female entrepreneurs (Vajda R. 2014).

- The entrepreneurial activity of women is often of auxiliary nature, they often carry it out in their homes, often under informal conditions,
- Besides their mobility in terms of space, female entrepreneurs devote fewer working hours to the enterprise, reconciling work and family life means difficulty for them.
- Female enterprises mostly appear in feminine activities (horizontal segregation).
- Female enterprises are mostly single-person enterprises (vertical segregation).
- Female entrepreneurs are missing from the decision-making that serves the development of enterprises, from the representation of entrepreneurial interests; they do not participate in the business networks dominated by men.
- Women have lower earnings from entrepreneurial activity than the earnings of enterprises owned by men.

The capital supply of female enterprises is by far lower than the enterprises led by men, already from the start-up:

- they have more restricted share capital at their disposal, due to their earnings, inferior to those of men, they dispose of lower savings,
- they are less independent than men in decision-making on the use of family savings for an enterprise goal, also, within couples, men are less supportive in connection with the enterprising activity of women than the other way round,
- they involve investors to a lower proportion,
- their willingness to assume risks is lower, therefore they take up fewer borrowings to launch the enterprise.

The growth of female enterprises is of lower extent too than that of men-managed enterprises, due to similar reasons:

- they devote their accumulated earnings rather for goals related to family life,
- female entrepreneurs are less growth-oriented, since the primary goal of women – in the longer run by all means – is to create a balance between work and family,
- female entrepreneurs strive less to involve the contributors as they endeavour less to become executives to assume the additional burdens the employer tasks involve,
- very few of them take up borrowing, involve investors,
- the ability to reconcile enterprising activities with the female/family roles is an important criterion of success (Jaiswal et. al. 2011).

During their entrepreneurial activity, female entrepreneurs face numerous forms of discrimination. However, considering that women themselves also embrace the gender-based stereotypes, they are less sensitive to being directly or indirectly exposed to disadvantageous discrimination as women. In connection with this, legal awareness is of low level, it is hard for them to recognize the various forms of discrimination. Female entrepreneurs operating in a business environment dominated by men have related several situations which illustrate well the prejudices against women, the sexist belittling of women which can be described as general, the very widespread harassment, which,

although those concerned perceive mostly as unpleasant due to their own stereotypical views, at the same time, they do not recognize at all whereby they have received unequal treatment, or have encountered adverse discrimination (Kevehazi, 2016).

The importance of solving inequalities

The role and influence of female entrepreneurship both increase in regions of the world with the most different economic opportunities and social traditions, a multitude of governments, international organisations, and prominent participants of the business world welcome the business networks of female entrepreneurs (McCracken et. al. 2015).

It is an increasingly acknowledged and recognized fact whereby enterprises led by women can, could substantially contribute to growth, the development of human environment, social mobility and integration, general welfare, therefore, the development of female enterprises is a highlighted priority for the most notable organisations, prominent in the field of developing international economy (EIGE, 2014). The international organisations particularly highlight in strategic documents in their communication whereby prevailing of the aspect of gender equality is of determinant importance for the sustainable economic and social development.

The action program formulated at the UNO World Conference in Beijing (1995) convened for ameliorating the position of women includes the objectives applicable to the prevailing of women's economic rights and independence; their equal access to resources, employment, markets and trade; the securing of their access to markets, pieces of information and technologies; the strengthening of their economic capacities and commercial networks as primary priorities. Since then these strategic goals have appeared, in addition to the economic development programmes of numerous organisations (e.g. ILO), in a great many governmental programs (e.g. USAID) too. Besides, a number of other transnational organisations, states and multinational companies also emphasize in their strategic documents and communication the importance of enforcing the aspect of gender equality, hence the aspect of women's and girl babies' security appears in the UN endeavours aimed at maintaining peace. Despite the unequivocal positions taken, for the time being, the majority of states, international institutions still apply mostly obsolete models, public policies.

Whilst it is general knowledge that macroeconomic- and social-economic environment are determinant from the aspect of entrepreneurial success, decision-makers and reasoners usually disregard the gender, social affiliation, family and other circumstances of the enterprises, not applying the gender-based approach that takes intersectionality also into consideration when describing the position of enterprises and formulating their ideas aimed at their development. Application of the gender-sensitive approaches creates the genuine opportunity to increase the role of female entrepreneurs, understand their disadvantages and eliminate impediments. A part of these builds on the differences between women and men, others on the similarities – yet, these differences of opinion have no significance from the aspect of elaborating the solutions, since in fact, it is patriarchal society itself whose structures and mentality hinders women in access to the resources, segregates and discriminates them.

A proposed model for solving inequalities

The gender-sensitive approach in public policies – gender mainstreaming – creates the genuine opportunity to increase the role of female entrepreneurs, understand their

disadvantages and eliminate the barriers in front of them. This requires simultaneous interventions

- consistent manifestations in order to proclaim the values to eliminate the prejudices, shaping the approach positively;
- by means of deeds, actions – e.g. prizes, competitions, sponsorship programs -, with systematic initiatives aimed at women;
- moreover, in certain countries, also at a strategic level, female executives and female enterprises are equally supported by programmes of macroeconomy and public policy.

Genuine changes are achievable in the field of eliminating the social and economic inequalities between the genders if every concerned participant simultaneously appears at all three levels. As I am convinced whereby welfare and security interpreted at the individual and broader levels can be realised exclusively by integrating the objective of gender equality, by re-thinking the patriarchal values, strengthening the women, promoting their economic independence and extending their undertaking of social role.

With I wish to provide assistance is the following model (depicted by Table 1) for the forthcoming years to plan the action and follow it up.

What is/can (could) be done for gender equality	by the state (macro-level)	by the world of labour (micro-level)	by the individual (man and woman)
in the field of rethinking the values, eliminating the prejudices, stereotypes			
at the level of deeds, actions, practices			
in the scope of influencing public policies and strategies			

Table 1 Model of solving gender inequalities

Conclusions

I think that the elimination of hierarchical gender relations would result in essential changes with regard to determining the priorities of society, creating an opportunity for global processes of the world to take a different direction. However, the increasing economic power of women is indispensable to create and maintain genuine influence, change the patriarchal set of values which rushes the world into danger. Detailed elaboration of the above-presented model would mean a systematic action plan aimed to put an end to the economic- and power inequalities between the genders, and my subsequent researches will focus on that.

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HUNLYWOOD – EVOLUTION OF HUNGARIAN FILM PRODUCTION, THE ATTITUDE OF HUNGARIAN AUDIENCE

Cyntia Valociková

Abstract: Filmmaking in America is an integral part of the entertainment industry, while it remains in Europe as an expression of art, representing meaningful national values. Hungarian cinematography is not necessarily a business idea but an integral part of the national circulation of the national culture. In the last few years Hungarian film works have received worldwide attention. However, there are many dependables of making a film industry successful. This study shows the foundation and evolution of the Hungarian film industry, considering its milestones and future possibilities and also shows cinematography as an action of saving the national values of Hungary.

Keywords: Hungarian cinematography, film production, audience, national value, film financing

Introduction

During the last two years, unprecedented events took place in the Hungarian film industry, due to two Hungarian films which won the Oscar Award. In 2016, Saul fia (Son of Saul) won the highest ranking of the film industry, whereas in 2017 the so called Mindenki (Sing) received this award, making Hungary's position steady in cinematography. However, to understand how it could happen, it is necessary to know the Hungarian film industry, including the film support system. Most of Hungarian films are supported by the government, so they have an influence on the indicators of deficiency and debts and also have a major role in national judgment. To determine the present situation of the Hungarian film industry, cinematography and financing should be examined. Although, structurally the film industry is complicated and there are many steps when making a Hungarian film, the study deals only with the support and production activities of the Hungarian films and it does not investigate film distribution. It describes the integrated system of cinematography, including its past and also how financial issues had changed in Hungary from time to time. It also lists the awards given to Hungarian films during these years. Basically, these films are produced from public funds that is why the study also describes the personal equations of Hungarian viewers. Hungarian film industry has a successful past. It is a strategic sector which have a huge influence on Hungary's position in Europe. The study describes 4 main genres, which are feature films, documentary films, animated films and instructional films. TV shows and TV series do not appear in this study.

Historical overview of film funding

Hungarian cinematography was controlled by the state and political censorship until 1991. Financing was also controlled centrally by the Film Directorate General of the Ministry of Culture based on official preferences. Inside film studios, the candidates applied with scenarios and synopsise which were rated by the leaderships of the film studio and the Directorate General at the same time. The structural change and evolution of the film industry cannot be related to an exact date. Independency came through many events. If the reader has a look at the independency of the promoting system in Hungary, one may see that cinematography and state are strongly related because cinematography is a cultural value. However when the method of financing is examined it is inevitable to consider the moment when private stock appeared in the Hungarian film industry (Cunningham, 2006). In 1963 two great company merged into MAFILM, these were Objektív and Dialóg film studios in 1976. One of the most significant inventions of the 1960s was television, which had a great influence on the film industry. Most of the film studios incomes were from productions made for Hungarian Television and from national and international lease works. That was the only way to exploit the capacity of the film studios, and the higher incomes from lease works made the opportunity to cross finance the more expensive feature films. The appropriation intended for Hungarian films was more or less limited, and the number of films to make in a year was also standing while the costs of production constantly increased. Film studios found hard to exploit the available appropriation. The appropriation of promotion left the inflation out of account as well, which constantly decreased at present value for 1986 causing crisis in film industry. The employment rate and waste of resources increased in film studios. As an effect MAFILM was taken by a new leadership, which ordered an inner settling and increased the production costs of the procurer film studios. Film studios protested against this increase and in 1987 the whole system was reorganized. Production company (MAFILM) and film studios were separated, so film studios not only could make films with MAFILM but could choose other independent producer as well. After the regime change more private production companies appeared including the most important The Motion Picture Public (MMA, MMKA) in 1991 (Varga, 2010). Decision making had two steps: first the National Board of Trustees decided about sponsoring the certain advisory board, and then these advisory boards decided about the promotion of certain genres. State promotions were not controlled yet, so many corporations favoured cinematography, such as:

- Hungarian Historical Film Foundation, which promoted historical documentary films
- National Radio and Television Commission (ORTT) whose role was to promote community services shows, to maintain and improve culture and to guarantee a variety of shows
- National Cultural Fund of Hungary (NKA) was such a corporation that handed out small amount of promotions, which were just enough to start or finish making a film
- The Motion Picture Public (MMA, MMKA) was the main spring of support to Hungarian documentaries and feature films. Candidates could apply once a year to one of the four advisory boards, the condition of making a film was to complete by the end of the budget year. The awarded grant amounts were quite small, and the limited time frame, the lack of advance preparation jointly contributed to the deterioration of the quality of the films (Sárközy, 2013).

A significant portion of the Foundation's revenue, about 97 percent was government support. The unfavourable economic situation and the termination of TV offers put their mark on the operation of MAFILM, so there was a loss from the early eighties. So much so that in 1992 it liquidated, and in the same year Filmunió Ltd. purchased it. The film law of 2004 tried to put the tangling film industry on a more solid pedestal, which mostly defined and structured, to what extent the state has a role in the film production funding and support. It embraced a lot of important areas, namely to determine the extent of the subsidies, monitoring of compliance with this scheme, the establishment of a tax policy (incentives) which can be harmonized with the economy and film production, as well as the layout of the Hungarian film rights and property settlement. The Motion Picture Public got hold of a newly organized advisory board, which ordered a complete overhaul of the Foundation as a first decision. During a due diligence a 7.9 billion HUF commitment to flock mainly to the financing banks was found, which were mainly formed by overspending the available budget and irregular actions, bad debts and wasted resources aggravated the situation. As a result, the government abolished the foundation, and from 2011 the position was taken over by the Hungarian National Film Fund Non-profit. Its main task was to finance 8-10 big-budget feature films and one big-budget documentary per year, and to create a unified system instead of proportioning finances, that provides enough resources for the production and post-production phases of film making. An operational strategy had to be developed that can effectively make film industry competitive and operational. The Film Fund successfully agreed with three banks in 2011 to settle the dept portfolio of the earlier liquidated MMKA because of irresponsible management and impenetrability (Magyar Mozgókép Közalapítvány, 2010).

The Film Fund's plans included the restoration of the film assets and property possession, and expanded the scheme with an escrow account, which might have helped not only a single film, but the Hungarian film industry as a whole with the supporting cashing of companies. The Film Fund also began to deal with the international marketing of Hungarian films. However, the system still had a number of complicating factors; "single window" remained persistently among others. The organizers could only apply to the Film Fund, inhibiting diversity, which meant that if the committee did not like one certain scenario, the productions had to raise money from other sources, which is still a very difficult task. Discontent with the Film Fund was elevated by them so called last cutting rule filed in the supporting policy, according to which: The supporters have the right of approval to final cut a production. The rules in a case of a film meant that during the final stages of the production the Film Fund ruled over the scenes, the story and the act as well. In 2012, the Film Fund has added a new point to the rules, so that the right of the last cutting only belongs to them if there is a bonus given. In January 2012, the amended Film law was adopted, which ruled over revenues for the operation of the organization. The Film law also provided that 80 per cent of the "Hatoslottó's" tax (one of the largest Hungarian gambling service provider's draw games) was due to Film Fund (Állami Számvevőszék, 2016). The direct payments will be distributed based on a tender of scenarios, which may aid in cash or services (i.e. rental of a studio). The scenarios play a significant role in the support, as a production can only be supported if a scenario is strong and developed enough and The Film Fund helps this development. The support will be determined by the five-member Film Industry Arbitration Committee that enters into a contract with the manufacturing company established only for the film after the positive assessment of the project. In June 2014 the European Commission approved to an increase in support in the form of tax relief on the cost of film production in Hungary from 20 percent to 25 percent. The tax mainly benefits the foreign co-productions, which

were filmed in Hungary, but the supporters of the Hungarian film industry can also benefit from the discount, since, the amount of support paid, placed in an escrow account, may be deducted from tax base (OrienTax, 2014). According to the European Audiovisual Observatory data in 2011, the market share of Hungarian films was 7.2 per cent, it fell to 1.9 per cent in 2012, and then to 1.5 per cent in 2013. The 7 billion HUF amount of the subsidy in 2010 fell to 3 billion HUF in 2013. By 2014, however, due to an increase of 25 per cent in tax relief, film supporting grants of companies increased by 35 percent over the previous year. With the amendment of the Film law and the increase in support, the number of Hungarian films increased, which greatly increased the market share, notably with 3.7 percent in 2014 and with 4.2 percent in 2015. This ratio dropped to 3.3 percent in 2016, which can be explained by the strengthening of other European, like Czech film industry, and that in this year Hungary has invested more resources into the production of foreign co-production films (European Audiovisual Observatory, 2017).

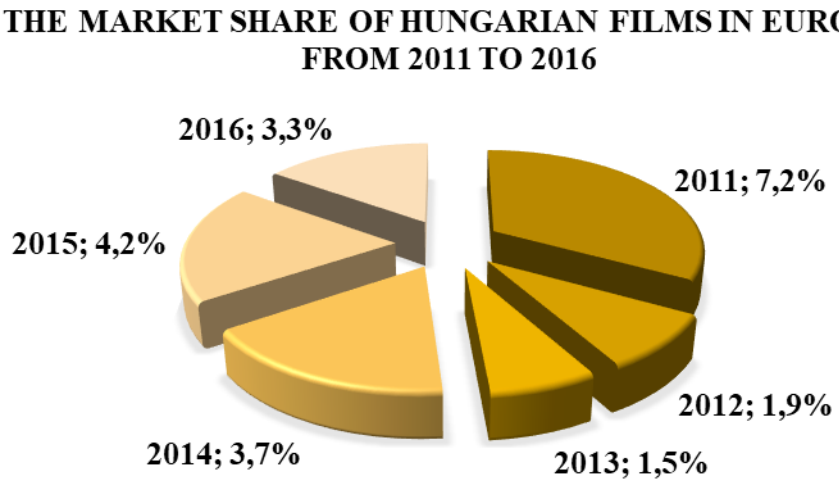

Figure 1 The market share of Hungarian films in Europe

Source: European Audiovisual Observatory, 2017

In December 2016 the Film law was amended again, the most important provisions in order to further boost the Hungarian film industry are the following:

- The overall amount of the escrow account collecting company grants increased from 14 billion HUF to 25 billion HUF.
- The examination of applications relating to shoot a film in public areas is done by The Hungarian National Film Fund Non-profit, as a professional authority, so it also decides where to shoot.
- The motion picture industry training contribution is introduced, to where film production companies and producers are required to pay indirect support (Nemzeti Média- és Hírközlési Hatóság, 2017).

In February 2017, at the request of The Hungarian National Film Fund Non-profit, analysts of OrienTax tax consulting firm compared the film industries' competitiveness of eleven countries that have similar characteristics as Hungary. Several economic factors were taken into account during the research, as the film subsidy system, living and wages, film industry infrastructure, political environment and currency stability based on the outcome Hungary occupies a prominent place. However, this is likely to benefit from co-productions to Hungary than Hungarian films, mostly because most of

the Hungarian films do not bring back the costs of production subsidies (OrienTax, 2017).

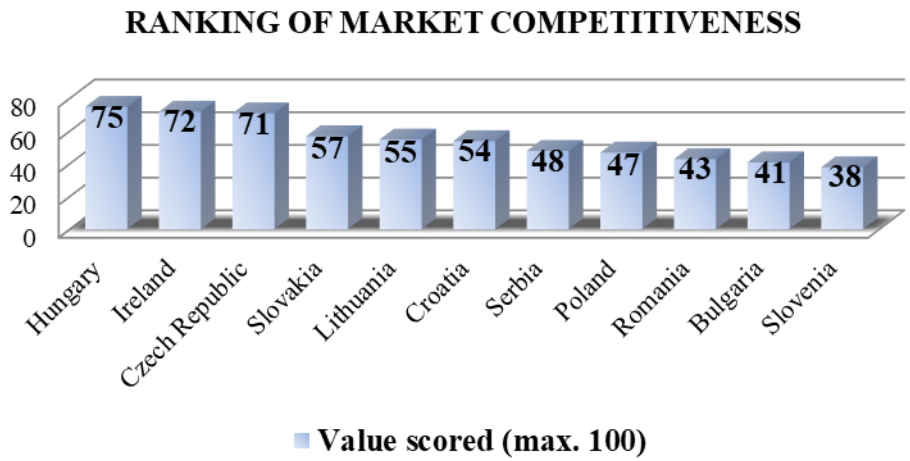

Figure 2 Ranking of market competitiveness

Source: OrienTax, 2017

While some films surpass the expectations thanks to popularity (Saul fia, Coming out), the majority of Hungarian films break even, or even there can be a loss (Veszettek, Az éjszakám nappalod). The Hungarian National Film Fund Non-profit, from its foundation directed 42 feature films and this number do not include features and documentaries. The goal is not to maximize revenue and profit, but to preserve the existence of the Hungarian film industry and culture. However, it is also crucial to reach the professional success of a Hungarian film, and how good is the relationship with the audience (OrienTax, 2017).

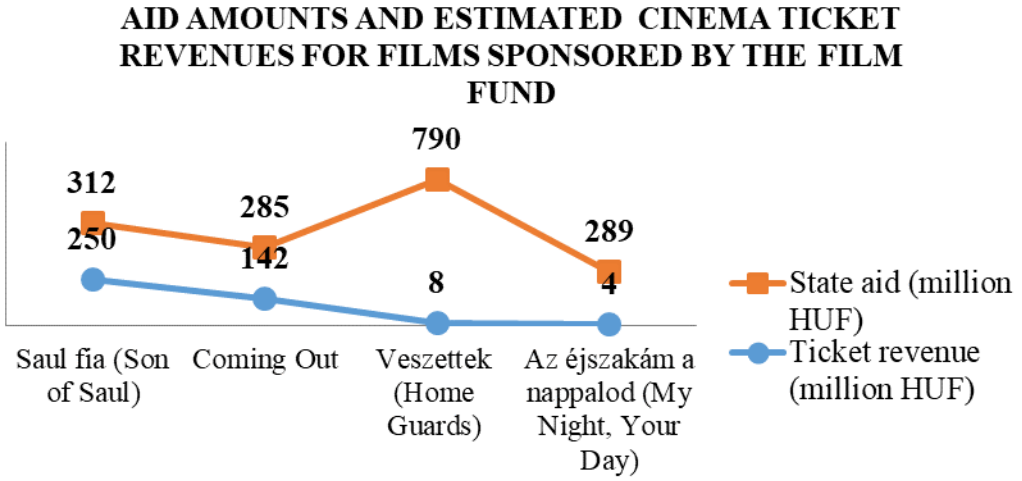

Figure 3 Loss-making and profitable movies supported by the Film Fund

Source: Nemzeti Média- és Hírközlési Hatóság, 2017

Viewer perception

In the 1970s, 1980s many of the films sought the artistic status while entertaining the public remained in the background. As the studio-based operation made the production of quality films possible, or even impossible more and more films were

made purely for supplying a deficiency to fill the annual film headcount. Low interest, low demand and indifferent attitude featured the domestic audience, which were closely related to the deterioration of the quality of Hungarian films and loss of prestige. The deep ravine and the drawing-away between the Hungarian films and the audience have not changed in the 2000s (Szabó, 2000). Accurate viewership and success details are hard to find, there are only accurate details in the archive of the National Media and Info communications Authority (NMHH) from 2007, so there is only a vague inference on the viewer perception of the former Hungarian films. The entire film system and its change of attitude, economic crisis, shattering distortion of information and foreign events (like the 2001 terrorist attacks in New York) were also influential in cultural judgement of Hungarian films. However, from 2010 the film industry renewed and a new era dawned on the Hungarian film industry, although, the enthusiasm of the audience was not affected. The interest in Hungarian films shows a negligible amount, which at first was explained by the continuity of the film regime change since the manufactured film frame failed to be redeemed and only five major feature film's production was ensured in 2012, but much emphasis was put the quality development of scenarios required by the system. The statistical data of films after the 2011 "regime change" are hardly traceable and can only be estimated, because the film office stopped data dissemination in March 2011, and has been subjected to NMHH. Between those years (2011-2013) only the Association of Film Distributors provided information on cinema attendance of Hungarian films, but these details were only approximate. The number of manufactured films in these years was almost zero or at least very low, the films showed undetectable traffic. Cinema audiences of Hungarian films were much stronger than the season before 2011 despite the turbulence of the film industry.[6] The Film Fund has only begun to review and improve the submission process and scenarios. Among others, that is the reason why a prestigious Hungarian film was not made during these years. Another influencing factor is that the Hungarian viewers prefers to watch significantly smaller-budget films than the American creations on TV or online. Furthermore, in case of cinemas, low viewing figures and decreasing audience make the cinema to quickly remove the films on the program, which also hinders the spread of Hungarian films to wider areas. Yet the Film Fund is holding back the marketing expenses to drive down the costs so the viewer is not informed about the films made.

Professional glory

The renowned and professional judgment is essential to any artistic renderings whether, as the movies as well. The Hungarian film remuneration was stronger in the early 80's, when two films (1981 - Best Short Animated Film – A légy (The fly) Directed by Bence Rófusz, 1982 - Best Foreign Language Film – Mephisto Directed by István Szabó) won the Oscar prize, in spite of the professional recognition ceased in the early 2000s (Nemzeti Média- és Hírközlési Hatóság, 2017). After 2010 the scenario development and stringent quality control of the Film Fund, however, eventually bore fruit, so the international success of Hungarian films are not left out. For the first time in 2012 at the Berlin Film Festival, Bence Fliegauf's Csak a szél (Just the wind) film won the second-highest award, the Grand Jury Prize, then the prestigious professional recognitions followed each other. 2015 brought the biggest triumph for the new Hungarian film industry, because after 30 years a Hungarian film, directed by László

[6] The two most popular Hungarian films every year have reached the 100,000 viewers that are considered good in relation to domestic films (Nemzeti Média- és Hírközlési Hatóság, 2017).

Jeles Nemes titled Saul fia (Son of Saul) took the Grand Prize at Cannes Film Festival and London's BAFTA awards and after he took the Oscar statue for the best foreign film in 2016 February. The film is considered the most prized Hungarian creations of all time, because it boasted with nearly 50 awards by the end of 2016. It was also a great glory for the Hungarian National Film Fund Nonprofit, as the lone supporter of the film. Not long after, Hungary boasted a new academic award, as Mindenki (Sing) directed by Kristóf Deák, won the Oscar Prize for the best short feature film but no matter the viewing figures and the list of successful existence, none of them fully reflects the attitude of the Hungarian audience. Another important aspect is that what kind of future the Hungarian film industry will have. To answer these and many other questions a primary research work was needed (Gazdasági Versenyhivatal, 2016; Háhner, 2017).

Empirical research

Methodology

After a deeper understanding of the assumptions, outlines, and processing of the literature it has been revealed that the structure of the Hungarian film industry and film support scheme completely transformed over the past 60 years. Information and resources on the old and the contemporary structure and system were, sometimes incomplete, sometimes worn, and more or less difficult to be obtained. In addition, information on what can be expected in the future can only minimally be found on both the scheme and structure of the film industry. The real attitude of Hungarian viewers and their relationship with Hungarian films are difficult as well, and there are no entirely new, aggregated data. The aim of my research is to get a deeper understanding and to outline this issue as much as possible. My theoretical research includes considerable amounts of various processing of source files in some places; however, there were some discrepancies between the data. This can be explained by the existing system of the chaotic film industry in 2011, but it can also be explained by the continuous development of the system since the foundation of the Film Fund, that the published statistical and numerical data were incomplete at the time of the regime change. In order to confirm these data, interviews of experts were needed. The Hungarian films are still made largely by state support, so it is worth checking out the audience side of how the relationship between viewers and Hungarian cinema develops. Actually, it is a theory-driven research, based on cognition to expand on the knowledge.

Methods qualitative and quantitative

The issue to be examined is approached by both qualitative and quantitative research methods, because basically it is a complex subject. One of the most important methods of data collection was the depth interview, which aimed for an opinion from an expert in the subject. During the interview a film expert shared his views and experiences on the topic. As quantitative research methods surveys were shared among potential viewers, the same questionnaires aimed at the Hungarian public attitudes and to assess their opinions and knowledge.

Sample

During the depth interview a Hungarian filmmaker and screenwriter was asked. During the questionnaire survey, the extrapolation was the primary consideration when determining the target population. Since the study wanted to measure the attitudes of

Hungarian viewers about Hungarian films, only Hungarian fillers were relevant. Sampling was randomized by sharing forums through online social networking sites. The definition of the target population did not include the knowledge of the Hungarian films, as an indifferent insight provides useful information. The questionnaire was available for three days on online social networking sites and in general forums, with a sample size of 144 (it contained 5 foreign fillers), so after the data were cleaned, the study was examining the opinions of 139 respondents. Research results are not representative, but based on the results it can be inferred the opinion of the target population. To analyse the open issues, the study used a frequency analyser and online word cloud software. It was used statistical calculations with the SPSS program for analysing demographic data (using nominal scales), including age (Jánosa, 2011). These statistical calculations showed that the average age was approximately 23 years. Most filler (i.e. mode) were 21 years old and the average deviation was 7,276. The lowest value (i.e. min) was 11 years and the highest value (i.e. max) was 50 years, which shows diversity. There was no minimum age for filling in, as there are Hungarian films that try to address all ages (a good example for this is the film Mindenki (Sing). However, as the average age of respondents was 23 years, the results are mainly related to the younger Y generations (which are why the questionnaire is disseminated). There were 68 students, 30 employees, 5 managers and 2 unemployed fillers, and 34 fillers were students and employees at the same time. The survey also published the demographic characteristics of the school, which distinguished the studies based on the basic, intermediate and advanced level. By filling, 28 completed elementary, 60 completed secondary school and 51 graduates had a higher education degree. From these data it is also apparent that the majority of fillers were young, Y generational individuals who completed their secondary or higher education.

Results

Survey

As far as demographic data are concerned, the survey has not drawn a limit, since the results are important for all gender, age, occupation and qualifications. It was used the SPSS program to evaluate the questionnaire and to examine the correlation of some data. The questionnaire utilized various techniques and contained open (5) and closed questions (13). After clarifying the demographic data, the survey tried to evaluate the attitudes of the fillers in 13 further questions, which the study evaluates one by one. Among these, the first two questions focused on mapping the most popular and best-known Hungarian films they liked. The results were evaluated using a frequency analysis program, an online word cloud program, Word Cloud Generator, which was developed by Jason Davies, an English software developer. For the first question, which measured the most popular Hungarian films focusing on the fillers, the film Üvegtigris (Glass Tiger) was most frequently mentioned, followed by films such as Kincsem, Valami Amerika (A kind of America), Indul a bakterház (The Stationmaster Meets his Match), Kontroll (Control), or Magyar Vándor (Hungarian Vagabond). The next question happened in a same way, and it was curious about how many Hungarian films were known about fillers and which movie titles were most frequently displayed. During the responses, the survey also asked for the title of the movies in the text, but the number of fillers could be assigned so that it could later determine the interval on how many movies they knew averagely. The filling ranged from 6 to 60 films, the most common

value (i.e. mode) was the 15. The result of the analytical program was that the most mentioned Hungarian film was the Saul fia (Son of Saul), which was not surprising, since it is a popular, internationally recognized work. Anyhow, there were mentioned excellent nationally and internationally prized films such as Mindenki (Sing), Tiszta szívvel (Kills on Wheels), or Fehér tenyér (White Palms). Again, Kincsem, Valami Amerika (A kind of America) and Üvegtigris (Glass Tiger) enjoyed great popularity as in the previous issue, but also entertaining works like Coming out or SOS Szerelem (SOS Love) came up. There was apparent from the data that the majority of fillers' knowledge was around prized and entertaining works.

In order to get a better understanding of the attitudes of audience, the next more interactive question asked the fillers, to express one comment on how they think of average Hungarian films. To analyse data, like the previous two questions, the study used Word Cloud Generator. From the results it was found that most of the Hungarian films are considered "humorous" and "funny", which can be traced back to the previous questions as most of the works mentioned are classified as entertaining films. Nonetheless, the word cloud also contains negative indicators such as "bad" or "not good", which confirms the results of the theoretical research on which the attitudes of Hungarian viewers are mostly open minded. The word "Hungarian" was used as a sign, which would be worthy of clarifying the meaning in the future. The following two questions are intended to assess the viewing habits of respondents, in which the survey was curious about where and how often the fillers watch Hungarian films. Based on the results (8 people in the cinema, 63 people on TV, 56 people online, 12 people nowhere), fillers are more likely to watch Hungarian movies at home, and only 5-7 percent go to cinema. As far as frequency is concerned, not a single person said that they would watch Hungarian films every day, but only seven people would watch these works several times a week. According to commonness 42 fillers per month, 82 fillers per year and 8 fillers never watch Hungarian movies. The result shows that if the Hungarian viewer is allowed, they watch Hungarian films at home, they does not pay for it, and the frequency of it is limited only to a few films a year or less. The study used the Word Cloud Generator program to evaluate the following question, using a projective technique that called sentence supplementation. The fillers had to complete the following statement: "I will go to Hungarian cinema if ..." When evaluating the results, the phrase "red snow falls" was a common term that is a well-known Hungarian proverb, meaning that an event or activity will never occurred. The answer was related to the results of previous questions, which confirms that fillers rarely go to Hungarian movies in the cinema. The next prominent value was "interested" or "find interesting". The answers to the first questions are helpful in order to determine exactly what is considering being the filler's interest in entertaining or award-winning works.

In the following question, with the help of an ocular differential scale, the survey tried to assess the average viewpoint of the respondents about the Hungarian films, in which they had to evaluate how they generally think about Hungarian films on a semantic differential scale from 1 to 6. At the two ends of the scale, two opposing adjectives were shown (terrible, great). Respondents had to select the value that they think is the most characteristic of the phenomenon. The most common value was 4 (40 percent of fillers), which is roughly median. However, 19 per cent of fillers were more inclined (2 per cent more) towards negative value judgment of 3 than the positive value of 5. On the basis of these, it can be said that, on the whole, the fillers neutralize Hungarian films, but more people are inclined towards the negative attitude. In the next question, the survey also tried to assess the attitudes of fillers with Likert's scale. They

had to evaluate six different statements, on a scale from 1 to 5 (where number 1 is totally disagree, and number 5 is fully agree) according to how they agree or disagree with them. The allegations contained four positive statements with respect to Hungarian films and two negative statements. Among the four positive statements, one claimed that Hungarian films succeeded in the cinemas received a median of 2 on the basis of the respondents' values, which put the standard in the negative range. The other three statements (a lot more Hungarian films should be awarded, Hungarian films have place on the international film chart, Hungarian audiences would like to have as many Hungarian films made as possible) in one case got a mean of 3 and in two cases a mean of 4. It is clear that respondents would rather support the completion of Hungarian films. In their opinion, Hungarian works have a place on the international level, but are uncertain whether they deserve more prizes. Based on the answers to the two negative statements (there is no standard in Hungarian films that the audience expects, Hungarian films are more lethargic than entertaining) the mean value was 3, which means uncertainty. The fillers are therefore uncertain whether the Hungarian films are of sufficient quality and they split the opinion of whether they find them entertaining or lethargic. The study wanted to observe the relationship between the issues done by Likert scale and the semantic differential scattering, the relationship between the various statements and the average attitude towards Hungarian films. The strongest link was “the Hungarian films have a place on the international film chart”, which showed 0.666 values, what is somewhat stronger than the middle. The relationship is significant (at the value of $p = 0.95$) and moderately strong (Spearman correlation 0.643). The result shows that the majority of fillers like Hungarian films and believe that they have place on the international film chart.

The rest of the questionnaire was dealt with films that the fillers knew. On this question, the respondents had seen different movie titles, then they had to evaluate how much they liked (5-totally liked) or did not like (1-totally disliked) each of the creations. As an option, the “not seen” option was given, which was zero in the evaluation. The question selected films based on the number of prizes, recognition and movie rating. During the evaluation, the study analysed the most well-known and least known films with the Friedman test (non-parametric test, different predicted values, mostly position mean values, such as a mode). Based on the Friedman test (at the value of $p = 0.95$) there was a significant difference in the popularity of the films. It is also clear from the result that Üvegtigris (Glass Tiger) was the most well-known, so the fillers saw this movie and rated it the best. This was followed by the Kontroll (Control), the Saul fia (Son of Saul), and then the Kincsem. The high-budget film Veszettek (Home Guards) by Kriszta Goda was not seen by a large number of fillers, and the films like Fehér tenyér (White Palms) and A nyomozó (The Investigator) that were rewarded with several domestic film awards showed the same values. Though the Kincsem and the Saul fia (Son of Saul) were seen by many, they were not fond of the work, which was a bit contradicted by the results of the first issue, which listed Kincsem as the most popular works. This can be explained by the fact that respondents are divided by this film. The most optimistic result was achieved by Kontroll (Control) and Üvegtigris (Glass Tiger), which confirms the results of the first question, as several of these films have been mentioned. However, except for Üvegtigris (Glass Tiger), the most common value for each movie was 0, so the respondents did not see that work.

In the following question, the fillers had to name movies according to three photographs. Each picture depicts a famous scene of three films like Mindenki (Sing), A torinói ló (The Turin Horse) and Fehér Isten (White God), which are famous and

recognized Hungarian works. During the qualification, the question used two values: 0-do not knows, 1-recognized. The results revealed that identification in the mirror of international recognition and awards is declining negatively. This means that while the Oscar winner Mindenki (Sing) has reached the highest value (recognized by 101 people), the Karlovy Vary prize-winning Fehér Isten (White God) was already considerably lesser, (only 56 of the 139 fillers recognized it) and the most respected Hungarian director's film, A torinói ló (The Turin Horse) was hardly identified (only 8 people). In the last question, the survey wondered how much the respondents are aware of the Hungarian film financing system and do they know how many Hungarian films are produced annually in our country. The result was an average of 21.46 films, but the most commonly recorded value was 5 films per year, which is closer to the number of 8-10 real films made per year. Nonetheless, the number of fillers dropped to a fairly wide scale (2 and 500), and the average is well above the real value, which shows that many people are not aware of the number of Hungarian films being shot in Hungary.

Professional interview

The expert interviewer, András Réz, was a member of the Hungarian Film Science Institute between 1979 and 1982, and from 1983 to 1987 he worked as Director of Arts at the Film Directorate of the Ministry of Culture. His main activities include the teaching of the theory of advertising and mass culture in the ELTE Faculty of Humanities. He is also creative director at the Grant Advertising Agency and also working as a permanent art director at the Werk Academy. As a filmmaker and, on several occasions' industry as an art department manager, he has gained profound experience in the field of films and has extensive knowledge of film production, support system and overall film industry as a whole. The depth interview took place in a personal meeting and the conversation lasted for 1.5 hours. During the conversation, a voice record was made; the depth interview guide featured semi-structured, open questions about the past, present and future of the film support system. The guide pondered the successes of Hungarian films, their influences on Hungary, as well as questions about the reasons for judging the attitudes of the current audience. This guide moreover only managed the interview to find answers to the existing shortcomings in an informal conversation. Firstly, were asked from András Réz for a brief overview of mapping the film support system, for information that may not be described in the theoretical research. Basically, the information on the structure of the MMKA did not deviate from the structure outlined in the literature. To sum up, in the 1960s, the system operated in a way that the high advisory boards and multi-faceted professional classes decided to finance the films. Since András Réz was a member of a college, he had the opportunity to see into the system, about which he said:

> *"Then it turned out that we really did not have too much to say, because the big advisory board was a kind of mapping of parliamentary relations. So in the big advisory board - there would be no misunderstanding -, they were not filmmakers, and even made sure that even the members of filmmaker's advisory board were not really a filmmakers, but rather people who roughly mapped political power in the country."*

This also supports the literature data that the system was strongly politically oriented. András Réz explained in the interview that the funding was distributed on a "friendly basis". As a consequence, from the professional point of view, no attention was paid to the quality and quantity of all-night Hungarian films. Much more Hungarian

movies were produced than the cinemas could have bought, and the members of the foundation did not even have the goal of bringing the Hungarian films to the movie theatres or to the audience. The distribution of film grants was so generous; decisions were mostly unfounded, hoping for government support. They did not make sure that the viewers had access to the movies; marketing was completely out of the question. This is what the expert said:

> *"And even more serious, you need to make sure viewers know that the movie is ready. We do this as a generous marketing bundle. This can be achieved in a wide variety of pictures so that viewers can get to know the film, but the practice was - and so far it have remained - that we got the money, spent on the movie, thank you very much, there is no money left for advertising."*

According to the expert's statement, it may be a common phenomenon that the producer does not look to the most appropriate tools when he wants to promote a movie. As an example, he introduced the film Veszettek (Home Guards) a billboard campaign was used to reach the public, but most of the people did not even know that it promoted a film. According to András Réz, the increased viewership and communication of Hungarian films is still an unresolved issue, and as a primary aspect the funds are intended to produce the film. The expert said that a Hungarian film cannot be profitable in Hungary, because viewers like to see foreign films at current movie ticket rates. However, this is not the only exclusionary reason, since the Hungarian film market is basically small. For comparison, he has brought Poland as an example, as a proper size of a movie market where, without film export, can a movie be profitable. In short, were asked the expert whether it would be desirable for a Hungarian director to settle abroad. In his reply, he explained that a Hungarian director is not only a director, but works independently in television or film production, and that a traditionally produced national film production does not have a particular need for importers. The expert talked about the effects of the Hungarian films' success on the film industry, which revealed that the successes did not affect Hungarian cinema but the movie market. This means that the flourishing of the film industry will enable the training of professionals, which is extremely favourable for co-productions coming from abroad, not to mention the 25 percent tax incentive that is unique in Europe. In the 90's, it was a problem to serve foreign productions both technically and as a labour force. With regard to today's situation, the film industry is technically equipped and the Hungarian filmmakers have a very high degree of qualification. The film industry has been successful in foreign co-productions, but this is only influenced Hungarian filmmaking in a way that Hungarian professionals working in a larger foreign production could gain a wide range of experience, which can be easily exploited later in the Hungarian production as well. Another connection is related to the support of the Hungarian films in a peculiar manner in which they try to generate yields through wage work or even renting equipment. However, he replied on the current film support system and structural build-up, that he believes that there will be no change in the future. András Réz talked about whether of high popularity or internationally renowned films could contribute to the development of the Hungarian film industry. The expert said that some films, such as the Saul fia (Son of Saul), have been given a kind of "commodity" by the Oscar prize and produce profits. In spite of, Saul fia (Son of Saul) did not made profits from domestic performances, but after the awards ceremony, it bought the film rights at Sony and distributed the film worldwide, producing profits, and promoting the film industry of Hungary to foreign productions. András Réz talked about the film Kincsem, and was primarily accused of

this film being the highest budget movie. As a counterpart, he introduced Hídember (The Bridgeman) produced by Géza Bereményi, that, based on estimated figures, was produced of 7 million USD (which is almost 2.01 billion HUF in the current 287.17 purchase price), somewhat higher than the Kincsem budget of 2 billion. Though, these state supports often come with grants from larger companies, which the Film Fund does not need to account for as it is not a state funding. According to the specialist, these subsidies may be based on the relationship capital, if a film exceeds the budget frame. However, Hungarian filmmaking is not a source of profits, but it one of its most important functions is called "identity creation".

"We are preparing them for ourselves, our life, our problems, our cramps, our tensions."

The expert explained the viewers' refusing attitude towards Hungarian filmmaking. András Réz first introduced examples from the 60s on the factors influencing the viewing habits of Hungarian viewers such as TVs, home cinema and the spread of the Internet, which changed the habits of the Hungarian viewers to cinema, so the cinema's viewership was rather limited to popular foreign films. In the 1970s, Hungarian films featured as "new aesthetics", which were mostly inspired by history, but most of the audience was indifferent as they were not entertained. Overall, he said that a Hungarian viewer is looking at a Hungarian movie in the cinema if it is a prize-winning or a mass-movie / entertainment movie.

"At present, Hungarian viewers have settled in if there is worldwide fame, hang it, we will watch it."

It is also important for Hungarian directors to obtain a high degree of recognition, such as a high number of viewers, as they gain a reputation and consolidate their work in the future. According to him, Hungarian films are made more for a professional audience than the average viewer, so this "movie language" becomes complicated for the viewer and makes Hungarian films unreasonable. Finally, András Réz talked about how he would encourage audiences to watch Hungarian movies. Explained the fact that Hungarian films are sometimes projected by televisions, especially public service media such as Hungarian Media Service Support and Asset Management Fund (MTVA), but they do not achieve high ratings because they are not sufficiently advertised. There is no state channel on television that would have a larger number of Hungarian films. According to the specialist, a separate channel could help increase the viewership of Hungarian films as it would make Hungarian films available to the audience, which cannot be seen online or otherwise. There are also a number of Hungarian films such as Üvegtigris (Glass Tiger) or Valami Amerika (Kind of America), which the Hungarian audience would be happy to see. There were, of course, initiatives (such as the MTVA public service channel, M5), but later stopped. As a next option, he said that an effective promotional catch could be the use of pre-presentations, audience meetings and conversations, that is, the use of word-of-mouth advertising after the film's completion. He talked again about TV channels that he lacked the presence of film-chatting shows where the current works could be talked about. András Réz thinks it is important that the production of a film is communicated to the audience from the moment of ordering to the moment of appearance, thus increasing the audience's interest. The expert lacks the existence of movie journals, printed pages, where both creators and film critics can communicate with viewers.

"This would not be the trick of having impersonal advertisements, but bringing films much, but much closer to the viewer."

Conclusion and future plan

Summarizing the results of the questionnaire, it turns out that a large number of respondents are not fully satisfied with the current level of Hungarian film making but in the future this attitude may change as they support Hungarian film making and believe they have chance at the international film level. The current attitude is therefore passive, but there is a chance for the future to progress in the positive direction. The respondents know many Hungarian films, but their acceptance are limited to prized or high-achieving works, and it is much more important for them if a movie is rather entertaining than being recognized. The film Üvegtigris (Glass Tiger), produced by Péter Rudolf, has beaten the other works, which proves that comedy is needed. The interest of audience has not risen rapidly with the remuneration and the attitudes of the Hungarian viewers have not improved drastically. Nevertheless, the results of the quantitative research suggest that viewers are open to the development of film production and Hungarian cinematography.

The data provided by András Réz regarding the structure of the film support system was basically the same as the data collected during the processing of the literature, but his experience gained at the Committee of the Film College's College, that the distribution of grants was "generous and professionally unfounded" was new information. The interview revealed that the role of Hungarian filmmaking is rather the creation of identity, and the successes of Hungarian films are a big advantage for foreign co-productions coming in from a growing number of countries. The attitude of Hungarian viewers was similar to the data collected in the theoretical research and the results of the questionnaire research, so the viewers reject the Hungarian films. One of the reasons for this is that the Hungarian directors are preparing the films for the professionals (however, the mass movies are aiming at the average). Another, more important reason is the poor communication of Hungarian film production with viewers and the negligible role of marketing in film distribution. As a suggestion, as the most effective tool, word-of-mouth marketing can be mentioned, since a Hungarian film, as a national value, mostly deals with current issues and problems. It worthwhile to do research in the future about what are the best marketing tools for motivating the Hungarian audience and how much change can be made to increase the viewership of Hungarian films. Based on the results, it also worthwhile to extend the field of research and to look at the foreign co-productions produced in Hungary, as it has been shown in the research that Hungarian filmmaking has low effect on economy but on film production abroad, as it utilizes Hungarian workforce and it can have an impact on the gross domestic product as well thanks to the tax refund.

Following all of these researches it can said that the value creation of Hungarian films is unquestionable, and the flourishing of film production has a great impact on international recognition. Hungarian film production has grown into a profitable market in recent years, which can take even better turnarounds.

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After many years of experience in ICT, she joined the DoctuS KBS developer team in 1995. Simultaneously, she started a scientific career, where her field of research was the investigation of business decisions. As a business coach in several coaching processes she supports one of the most important steps of constructing a knowledge base, the extraction of knowledge. She received her PhD in Economics and Management from the Budapest University of Technology and Economics in 2008 and the Habilitation degree in 2016. She is currently an associate professor at the Institute of Enterprise of the Keleti Faculty of Business and Management of Óbuda University. Her research is focused on modelling personal knowledge supported by building knowledge bases and drawing concept maps. Recently she has developed two Massive Open Online Courses offered by K-MOOC (Carpathian Basin Online Education Center). She is a scientific coordinator of the Collaborative Knowledge Platform research lab at Óbuda University. Author of 5 books and over 60 scholarly articles in management science.

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