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Contents

Training for Improving Staff Performance in the Light of Empirical Experience from Qatar

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Abstract: The aim of this paper is to evaluate the impacts of training on the Ministry of Culture and Sports' employees' performance by getting the feedbacks provided by the employees on the training programs provided by the ministry. The methodology applied in this study included a survey handed out to 100 employees working in the Ministry of Culture and Sports and interviewing one key person: the Head of Training Department in the ministry. A key major finding is that few employees at the Ministry of Culture and Sports are not satisfied enough with the provided training programs adopted by the organization. It is recommended that more effective, integrative, intersecting, enjoyable and practical programs should be supported.

Keywords: training, staff, performance, Ministry, Culture, Qatar

1. Introduction

This research study investigates and evaluates the impacts of training on the performance of the employees working in the Ministry of Culture and Sports. The importance of this work is that it explores how training can be reflected in the employees' performance.

The problem statement: To what extent are the employees working at the Ministry of Culture and Sports satisfied with the training provided by the ministry? And what is the impact of training programs on the employees' performance?

The objectives of conducting this study are to find out the current strategies of the Training Department in the Ministry of Culture and Sports, to identify the importance of training for the employees, to find out how the employees needs for training are recognized and satisfied, to explore to what extent the employees are satisfied with the training programs provided to them by the Ministry of Culture and Sports, to evaluate to what extent training is reflected in the employees' performance, to identify how the employees' performance can be reflected in dealing with clients and to determine how to improve and implement a successful corporate training strategy to maximize productivity and profitability.

2. Literature Review

Training is very important to expand the employees' knowledge and improve their experience in their workplaces. It helps to address weaknesses, improves employees' performance, ensures consistency and increases employees' satisfaction (Frost, 2011).

2.1. Training Definition

Training is defined as a particular process applied at work place to provide the employees with the knowledge and the skills required to operate within the systems and standards set by the management (Kim, 2011).

2.2. Employees' Training and Development

Training and developing employees are associated with increasing and enhancing the knowledge, awareness, proficiency and skills of employees for doing particular jobs associated with their job descriptions. Development requires enhancing and increasing the employees' growth in all aspects. While training increases, enhances and improves employees' job skill, developments play a very important role in shaping employees' attitudes and improving their performance constantly (Bose, 2012). To ensure the efficiency of each business department in an organization, it is important to implement training and development successfully. This can help the organisation to attain a better organisational efficiency, enhanced profitability and greater competitive practices. This stage can produce collaborative efforts between each level of management and also the functions performed within an organisation. Furthermore, training is very important for the organization to develop the recognition and production of its employees. An employee uses the skills which help him for better performance. An employee recognizes what is taught to him and transfers the recognized thoughts and learned concepts into productive outcomes (Noe, 2013).

2.3. Objectives of Training and Development

A key objective of the individual training development includes the matching of personal need with the organisational need to make the organisational growth through the personal growth (Andrew, 2010). Moreover, handling equipment, materials and tasks can be positively enhanced by training and accordingly safety and time management can be ensured. The most qualified employees to hold higher jobs are those who are well prepared and trained to improve their advanced skills. In brief, training and development aim at enhancing higher productivity, quality improvement, wise time management, safety, and use of technology (Jones and Lockwood, 2004).

2.4. Training Designing Process Concept

Noe (2013) affirmed that training design process concept or theory passes through seven different stages. The first stage is conducting needs assessment through things like organizational analysis, personal analysis and task analysis. The second one is ensuring employees' readiness for training: through attitudes and motivation as well as basic skills. The third one is creating a learning environment based on learning objectives, meaningful material, practice, feedback, modelling and program administration. The fourth one is by ensuring transfer of training based on self-management and peer and manager support. The fifth stage is developing and evaluation plan by identifying learning outcomes, choosing evaluation design and planning cost-benefit analysis. The sixth stage is selecting training method such as traditional and E-learning. The seventh stage is monitoring and evaluating the program by conducting evaluation and making changes to improve the program (Noe, 2013).

2.5. Theory of Performance and its Role in Training and Development

According to the Theory of Performance (Campbell, 1990), there are six initial concepts which can be developed and shared to outline a framework that is possible to be applied for the purpose of eliciting the performance and developing it. Effective training can result in better performance which in return results in creating more welcomed and appreciated outcomes. According to Williams (2002), there are types of performance which are done individually while there are some other types which are done in groups. Training is one of the most fundamental factors which improve performance and goes side by side with it to elevate to more advanced stages. The elements on which the performance relies are context, knowledge levels, skills levels, individual factors, identify levels and fixed factors

This theory states that individuals have the abilities which enable them to do excellent jobs if such abilities are well invested in, utilized, supported and trained. The theory can be applied in the Ministry of Culture and Sports in implementing its six levels of performance to enhance the knowledge, skills, abilities and productivity of the employees. As the organization works on improving the level of its employees' knowledge, skills, productivity, and experience, this theory can serve in this respect. However, the theory is still criticized as not being implemented perfectly. One reason behind this according to Harvey and Martinko (2003) is that it lacks an obvious attribution of performance to motivation. Motivation is considered an essential factor for better performance as it encourages the individuals to enjoy their work and to their jobs more interestingly. Furthermore, according to Frye (2011), Campbell theory is restricted to a single-item measure of the overall job satisfaction, which is only preferable to a limited scale which depends on the sum of just specific job satisfaction. Thus, there is a drawback to this technique, because it cannot comprehensively evaluate the internal consistency reliability of just a single item measure of performance.

2.6. Impacts of Training and Development on Employees' Performance

The chief purpose of any firm should be linked to improving performance which can be improvised by adopting efficient training and development programs. In the business sector, employees' performance positively contributes to maintaining improved productivity, customers' loyalty and organization profitability (Elnaga and Imran, 2013). Training and development contributes to enhancing employees' performance through increasing their efficiency and accomplishing the overall goal of the organization. This is achieved by increasing employees' capacities, skills and knowledge to take the proper actions associated with the tasks associated to their job. Training deals with the know-how, acquisition of understanding, techniques and practices. It helps to close the gaps between the current performance of employees and the one expected and targeted by the organization management (Jan and Yousafzai, 2014). Moreover, employees' productivity and performance efficiently are enhanced by training and development. Employees' productivity is associated with the employees' efficiency to do their jobs. Employees' performance is associated with employees' job related activities which are expected of them and how they can be able to execute these activities. Employees' performance and productivity can be enhanced by training and development which brings many benefits that are considered effective factors to reach this target. They include improving, and maintaining employees' enhancement, job knowledge, techniques, skills, ability, competency and morale (Elnaga and Imran, 2013). Employees' enhancement is associated with enhancing employees' jobs and essential skills, especially by enabling the employees to undertake new tasks and responsibilities and provide them with the opportunity to develop their abilities and skills. This better prepares the employees for more promising promotions and positive organizational changes. Their skill shortages can be well addressed too. Employees' improved performance increases their self-confidence and motivations. Also, stress and turnover can be reduced. More positive healthy learning culture in the organization workplace can be supported too (Greeno, 2006).

Training and development also positively enhances employees' performance with regard to their job knowledge, which is associated with job enhancement by making employees more aware of the job tasks and responsibilities to do specific job-related tasks. This all make the employees have clearer understanding of their jobs which fit into to the organization's overall work picture (Sims, 2007). This requires enhancing both techniques and skills. Technique is associated with the employees' ability and manner with which they can employ their technical skills more professionally to do the assigned tasks. Training and development enable employees' positive performance through enabling the employees to employ the proper methods and procedures in any specific job in the organization, especially when dealing with technology (Kandula, 2006). Employees' skills are associated with their ability to perform the assigned tasks. Training and development enhance employees' expertise, adeptness, talents, artistry, aptitude, talents and virtuosity to perform well. Employees' skills, thus, are developed and their attitudes are adjusted to the work required situation (Cardy and Leonard, 2014).

In addition employees' abilities are positively enhanced by training and development. Employee ability is associated with the possession of the skills or the means to do their jobs. This ability or proficiency is enhanced by training and development to trigger the employees' talents and raise the sense of accomplishment. Their potential and aptness are positively enhanced. Both intellectual and physical abilities are enhanced by training and development. Intellectual abilities are enriched by increasing knowledge and do activities which are processed mentally. Physical abilities are also enhanced by knowing how to deal with things properly, especially tangible things like computers, telephones and other equipment. The way the employees use their body language and employ both verbal and non-verbal communication with customers is also enhanced by training and development. This helps to create job fitness (Stack, 2011).

Employees' competency, which is an aspect of their ability, is also enhanced by training and development. An employee competency is also integrated with having job related knowledge, efficient skills and positive attitudes. Thus, competency is not a separate concept, but it almost integrates with all what can be employed to utilize employees' ability to perform skillfully. Training and development enhance employees' technical or functional competencies, core competencies and leadership competencies. Functional competencies include having specific skills and knowing how to perform efficiently. Core competencies are essential to be possessed to help employees perform properly using competencies like discipline, team work, and good behavior. Leadership competencies can be also enhanced by being able to lead teams and having more responsibilities, commitment and obligation while cooperating with other members of the staff (Ricci and Tesone, 2005).

Employee morale is also positively enhanced by training and development by building up employees' disciplines, confidence and enthusiasm. It grows the sense of belonging and strengthens the ties of cooperation among the employees. It grows team spirit, self-esteem. This also can be done through raising the employees' sense of responsibility to save the company time and reduce costs. It raises employees' awareness to be committed to the organization's values and establish positive attitudes towards the organization's management, co-workers and guests. This can be reflected positively on the employees' performance and productivity (Chukwuemeka, 2012).

2.7. Job Satisfaction and Job Performance

Cook (2008) stressed that one of the key factors of job performance is job satisfaction. There are some causes such as conscientiousness, assertiveness, friendliness, and self-evaluation, side by side with cognitive facility and job difficulty. Hardy et al (2003) believe that there are other important factors which play important roles in job satisfaction, especially motivation provided by the job place. Promoting the satisfaction of employees helps to increase their productivity. Campbell et al (1990) state that job performance comprises the noticed behavior the employees practice at their work place to achieve the mission, vision and goals of their places of work. It provides them with interest at work and results in fruitful productivity. Thus, performance is mostly a behavior than just an outcome. Performance is a staff behavior which results in positive outcomes.

2.8. Training and Performance

Robinson et al (1998) affirmed that training responds to different needs, especially work environment needs, business needs, learning needs and most importantly performance needs. Performance improves with training. Gaertner et al (2004) attributed the perfectness of performance to the perfectness of training. However, they affirmed that any training should be based on business strategy which involves a planned course of action carefully made to align the business with its environment well, so that it can respond more efficiently to the forces which can passivity or negatively influence staff performance.

2.9. Evaluation of Performance

Employees' performance can be efficiently by supervisors and the Human Resources Department in the organization for the purpose of identifying the training and development needs for each employee based on different standards such as self-appraisals and supervisors' feedback. Performance Evaluation is regarded a multi-purpose tool which can be employed for the purpose of measuring the employees' actual performance against the expected one (Houldsworth and Jirasinghe, 2007). It is the role of the HRM in the organization to smooth the progress of staff performance evaluation in order to take account of its manpower; it also measures its contributions to the organisational goals. Reasons for conducting the performance evaluation are mainly for strengthening the overall organisational performance through the individual performance improvement, for identifying the existing potentials for utilising to handle the future higher position vacancies (Tzafrir, 2005).

Planning, training and development should be practised effectively in the organization in order to achieve higher productivity. In addition, the adaption of evaluation system to distinct the organisational culture, environment and the informing of higher management principles and objectives and also the assisting of management peoples are major roles of HRM people. Many functions particularly the identification of desired targets of performance, self-assessment of the individual person, and the elimination of complexity should be ensured (Uzondu, 2013). Based on evaluated performance, it is possible to evaluate the employee training needs. Thus, it is possible to design and adapt efficient training programs to enhance employees' performance. (Andrew, 2010).

3. Methodology

3.1. Research Design

The research design adopted in this study is descriptive as it is essentially connected with searching for data that respond to the research questions through using two key methods: quantitative and qualitative.

3.2. Study Approach

For the purpose of gathering information on the methods used in this study in order to evaluate the feedback of the employees working at the Ministry of Culture and Sports in Doha Qatar on different issues associated with training applied in the ministry. It was also searched to seek qualitative data based an interview conducted with a key management personnel working in the Ministry. Thus, the targeted collected data was based on two primary sources: quantitative and qualitative data. Furthermore, the secondary sources extracted from books, journals and websites were useful to construct relevant interview questions and questionnaire.

3.3. Type of Data Collection (Instruments)

Both questionnaire and interview questions serve to collect data related to the research questions. A questionnaire was handed out to 100 employees working in the Ministry of Culture and Sports in Doha, Qatar. An interview was conducted with a key personnel working in the organization: the Head of Training Department Mr. Sultan Al Hemeedi

3.4. Sample

A sample of 100 employees working in the Ministry of Culture and Sports in Doha, Qatar was reached during their working time in the ministry.

3.5. Procedure

The respondents were assured that their personal information would be kept confidential and they were free to provide their most accurate feedback to the questionnaire questions. It took four days to distribute and get the respondents feedback during the aforementioned period and time.

3.6. Data Analysis

SPSS was employed to reach statistical results for the purpose of reaching reliable findings and discuss them and evaluate them.

4. Results and Conclusions

4.1. Quantitative Results

The quantitative results present the data obtained from the surveyed employees. They contain both demographic and rating data.

4.1.1. Demographic Results

- Most of the employees served in this study are between 26 and 55 years old.
- Up to 56% of them were females.

- Up to 75% were nationals whose primary language is Arabic.
- While up to half of them are BA and higher degrees holders, the other half are vocational and high school documents' holders.
- Most of employees have two years or more experience with the ministry with annual income that exceeds QR100, 000 (36,500 USD).

4.1.2. Rating Results

Table 1.
Rating Results

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Ministry of Culture and Sports provides me with effective training programs.	3%	27%	21%	47%	2%
2. I enjoy the training programs provided to me by Ministry of Culture and Sports.	4%	17%	29%	45%	5%
3. The training programs help me to improve my performance at work.	4%	13%	19%	29%	35%
4. I have the best opportunities to learn in various modern training methods.	5%	17%	15%	46%	17%
5. The training programs I get help me to advance in my career.	6%	18%	21%	46%	9%
6. There is a positive match between the training provided by Ministry of Culture and Sports and the staff practices.	8%	12%	7%	36%	37%
7. Ministry of Culture and Sports provides all staff with fair training opportunities.	6%	14%	33%	35%	12%
8. Ministry of Culture and Sports management supports me with adequate training in a safe environ-ment.	3%	8%	16%	36%	37%
9. I have good access to different resources to improve my acquainted learned skills.	4%	12%	3%	52%	29%
10. The training programs provided by Ministry of Culture and Sports live up to my expectations.	4%	13%	12%	45%	26%
11. Ministry of Culture and Sports considers training as a part of the organizational strategy.	2%	4%	12%	48%	34%
12. Overall, I am satisfied with all concepts and practices associated with training and development at Ministry of Culture and Sports.	8%	17%	9%	43%	23%

- Regarding if the Ministry of Culture and Sports provides the employees with effective training programs, up to 30% did not agree on that.
- Up to 21% do not enjoy the training programs provided to them by Ministry of Culture and Sports.
- Up to 16% did not consider that training programs provide them with accurate information related to their job description.
- About one fifth of them did not regard that the training programs helped them to improve their performance at work.
- Up to one quarter of them did not consider that that the Ministry of Culture and Sports provides them with integrated training programs which contribute to better performance.
- About one fifth regarded that they have the best opportunities to learn in various modern training methods, and that the Ministry of Culture and Sports provides all staff with fair training opportunities.
- Up to one quarter of them didn't agree that the training programs helped them to advance in their career,
- Up to 16% didn't consider themselves have good access to different resources to improve their acquainted learned skills.
- Up to 19% said that that they were not encouraged by their management to utilize the best of their skills and abilities at work.
- 15% said that that the Ministry of Culture and Sports staff did not show care and interest in the training programs.
- Up to 20% didn't consider that the training programs provided by Ministry of Culture and Sports live up to their expectations.
- Up to 18% didn't regard that they were given good opportunities to brainstorm new ideas based on the learned programs.
- The majority considered that the Ministry of Culture and Sports considers training as a part of the organizational strategy.
- Overall, two thirds of the surveyed employees assured that they are satisfied with all concepts and practices associated with training and development at Ministry of Culture and Sports.

4.2. Qualitative Results

- The Ministry of Culture and Sports in Qatar provides different programs to enhance the employees' professional development.
- It has contracts with training centers like Alafdalia Training & Consulting, E'dad Centre.
- It recognizes the employees' training needs based on supervisors' feedback and annual employee performance appraisals.
- To ensure the efficiency of training, it measures training impact through the reports provided by the supervisors on the employees' performance as well as the employees' feedback to evaluate their satisfaction.
- It also works on improving training and development by listening to the employees' voice and selecting the most appropriate training centers and strategies to match employees' training needs.

4.3. Recommendations

It is recommended that the Ministry of Culture and Sports make specific improvement to improve training and development which can be positively reflected on the employees' performance. It is also recommended that more effective training programs which live up to the expectations of the employees and meet their training needs for better performance and better productivity should be managed.

Furthermore, training programs should be more interesting, practical, enjoyable, interactive and integrated. They should cover the employees' needs, and provide accurate up-to-date information relevant to the nature of each job description. As well, training programs should positively contribute to increasing staff abilities, skills and performance.

Moreover, training programs should address the employees' needs and provide them with equal and fair opportunities for training. Finally, providing the staff with opportunities to employ their skills and abilities in their work can serve the ministry and the staff altogether.

4.4. Conclusions

This thesis evaluates the impacts of training on employees' performance in the Ministry of Culture and Sports in Doha, Qatar. The importance of this work is that it explores how training can be reflected in the employees’ performance. The problem statement sought to be investigated was: "To what extent are the employees working at the Ministry of Culture and Sports satisfied with the training provided by the ministry? And what is the impact of training programs on the employees' performance?" Based on this, it was sought to find out the current strategies of the Training Department in the ministry, to identify the importance of training for the employees, to find out how the employees needs for training are recognized and satisfied, to explore to what extent the employees are satisfied with the training programs provided to them, to evaluate to what extent training is reflected in the employees' performance. To sum up, this thesis evaluated the impacts of training on employees' performance in the Ministry of Culture and Sports in Doha, Qatar. Also, the employees' training needs are satisfied based on their self-evaluation and supervisors' feedback. It is still needed to improve, diversify and adapt training programs to meet the expectations of all employees and enhance their performance.

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Drivers of shadow economy in transition countries during the post-crisis period: The results of structural model

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Abstract: During the recent years the problem of the shadow economy is becoming more prominent, especially in transition countries that are faced with the numerous structural imbalances inherited from central-planning period. The emergence of the global economic crisis emphasized the necessity of solving this problem, given that widespread shadow economy reduces the amount of available budget funds for the implementation of anti-crisis measures. Having that in mind, the aim of this paper is to assess the role of wealth or living standards, market openness, political environment and tax system in the emergence and development of the shadow economy in the European transition economies during the period 2009-2014, using PLS-SEM model. The conducted research enabled authors to suggest recommendations and guidelines that policymakers should include in their long-term strategy for fighting the shadow economy.

Keywords: shadow economy, transition countries, PLS-SEM model, global economic crisis, economic development

1. Introduction

The interest of economists and policy makers in shadow economy is not dying down. On the contrary, an increasing number of them is trying to define shadow economy as precisely as possible and to determine its size in the economy. Precise defining of the shadow economy concept is one of the key preconditions for a high-quality and comprehensive analysis of the factors which create favourable environment for its emergence and expansion in the economy, but it also helps in defining recommendations and guidelines for the battle against this negative social phenomenon.

There are numerous activities which are considered to be shadow economy. On one side, there are activities which are illicit (such as racketeering, drugs and firearms trafficking etc.), and on the other one, there are activities which may be either legal or illegal depending on the risks and benefits of not reporting them [1]. Therefore, authors often use different terms as synonyms for the shadow economy, such as the "underground (illegal) economy" and "informal economy". However, it should be kept in mind that these terms are not synonymous and that the definition of the term shadow economy requires a precise definition of the activities it encompasses. The underground or illegal economy encompasses income generated through economic activities based on the violations of law which strictly defines a wide range of legal forms of trafficking. Participants in this segment of the economy are engaged in the production and distribution of prohibited goods [2]. On the other hand, the informal economy includes the individuals engaged in the production of goods and services whose primary goal is to generate income and employment for themselves. These activities are legal and usually the individuals who carry them out do not have neither a deliberate intention to avoid paying taxes or social security contributions nor to violate labour laws or other legal regulations [3]. Figure 1 clearly shows that the shadow economy includes part of these activities, but that the abovementioned three terms cannot be synonymous.

Perhaps the most precise definition of shadow economy has been given by Schneider [5] who pointed out that shadow economy encompasses the whole market-based legal production of goods and services, which is intentionally hidden from state authorities for the following reasons:

1. to avoid paying taxes on income, VAT and other taxes,

2. to avoid payment of social security contributions,

3. to avoid the obligation to meet certain statutory labour market standards, such as minimum wages, maximum working hours, workplace health and safety standards, etc.

4. to avoid meeting certain administrative obligations, such as filling out statistical questionnaires and other administrative forms.

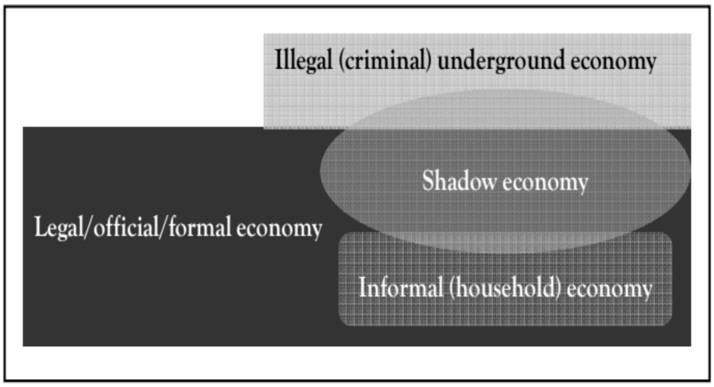

Figure 1.
Legal/official/formal, shadow, illegal/underground and informal economy [4]

Generally speaking, the shadow economy includes economic transactions and non-formal activities which are: not recorded in official documents, not controlled by the government and not included in the system of national accounts [6,7,8].

Insufficiently effective fight against shadow economy has numerous consequences on the functioning of formal sector and, ultimately, on the performance of the national economy. A high level of shadow economy in the national economy can induce policy makers to make decisions which are not based on realistic information. In such conditions, so-called "positive indicators" (those to be maximized), such as GDP and industrial production indices, are underestimated, while "negative indicators" (those to be minimized) like, for example, inflation and unemployment, are overestimated. Hence, economic policy makers strive to include measures aimed at fighting the shadow economy in long-term strategies of economic growth and development, since by reducing its size, their decision on measures of economic policy will be made on relevant facts. The significance of the struggle against the shadow economy is especially evident in the conditions of the crisis, since this type of activity reduces the volume of available resources which are necessary for the economy in order to get out of the crisis [9]. This is particularly true for transitional economies, which, in most cases, besides the lack of resources, do not have a sufficiently developed institutional and regulatory environment to overcome the crisis, which additionally complicates the problem.

Hereof, the aim of this paper is to identify the causes of shadow economy in transition economies in the post-crisis period (2009-2014) and the direction of their action, to explore the differences between the factors that stimulate the shadow economy in 20 transition economies and thus to define recommendations and guidelines for fighting against this negative phenomenon.

2. Literature review

As the consequences of the shadow economy in the post-crisis period were becoming more pronounced and the crisis exit was becoming more unreachable, an increasing number of authors strived to identify the concept, determinants and the size of the shadow economy more precisely, by applying different methods and models. Depending on the way of defining the shadow economy and the characteristics of the area in which the research was carried out, the authors used different indicators of the shadow economy and the causes of its emergence and expansion in the economy. Particularly suitable ground for investigating shadow economy factors are the former command economies, primarily owing to the legacy of the period of real socialism when corruption and the shadow economy were almost institutionalized. In most of these countries, public institutions, such as social security, for example, still lack credibility. The same applies to the institutions which regulate the financial market, where property rights are weak, competition is limited and investment transparency is low. Therefore, the absence or inconsistent implementation of all necessary market reforms, creates a large number of constraints on the establishment and development of companies, so potential entrepreneurs will operate in the "shadow economy" area, and the already existing companies will try to avoid paying the state taxes.

In the initial phases of transition, the existence of shadow economy in the former socialist economies has been neglected and treated as an absorber of poverty and social chaos [10]. Some authors point out that in transition economies, shadow economy has some positive effects [11,12], since it leads to economic and social balance by stimulating economic growth, boosting competition, providing people with living resources and the like. However, such an insight cannot be considered justified, since it would mean that illegal economic activities represent a prerequisite for the survival of business entities on the market, while on the other hand, the behaviour of citizens and the government is only sporadically regulated by legislation, which is contrary to the fundamental purpose of existence of the country - preservation and development of human capital as well as the increase of prosperity [13]. Bearing in mind the specificity of the transition economies, it is realistic to expect that significance and direction of actions of certain factors on the emergence of shadow economy will be different from the ones which are acting in market economies.

Since most transition economies, in spite of the implemented economic and political reforms, have not realized the expected growth rates for many years, Pathak et al. [14] examined factors which have influenced the development of entrepreneurship as a potential driver of growth in these economies. They proceed from the assumption that ethnic fractionation along with the level of shadow economy determine the entrepreneurial initiative of every individual in these economies. And while ethnic fractionation increases the number of newly established entrepreneurial firms, the high level of shadow economy reduces them.

Hence, they state that ethnic diversity in transition economies can be one of the key drivers of the entrepreneurship development.

Besides the influence on economic growth, a large number of authors focused also on the analysis of the shadow economy in the labour market [12,15]. Thus, Cichocki and Tyrowicz [16] focused on the labour market in Poland as one of the transition economies. They state that the shadow economy appears due to two imperfections in the labour market in transition economies. On one hand, taxation disorders on the formal labour market lead to the fact that it is not rational for certain workers to be reported (the tax evasion hypothesis), while on the other hand, engaging in formal sector is unattainable for some workers due to either the high cost of reporting or restrictions in demand for labour force, which leads them to engage themselves in the informal sector in order to earn any kind of income (the market segmentation hypothesis). On the basis of the survey, they examined which of these two hypotheses is being confirmed on the labour market in Poland. They have come to the conclusion that undeclared workers have had higher expenditures and lower incomes than reported, which have led them to conclude that the market segmentation hypothesis is applicable in Poland, i.e. that some individuals are engaged in the informal sector because they have no other choice. Colin [17], however, states that in transition economies, the high level of tax rates and significant regulation as well as intervention of the government, reduce the number of employees in the informal sector and that in the future it is necessary to intensify control and increase taxes in order to reduce the number of employees in the informal sector as much as possible.

Generally speaking, the majority of authors used the so-called MIMIC (Multiple Indicator and Multiple Cause) model for examining shadow economy determinants and estimating its size in the economy of a particular country or group of countries [18,19,20]. However, it is often stated in the literature that there are certain disadvantage of this method, such as, [20,21] it:

1. allows estimation of the shadow economy only in relative, and not in absolute terms, so it is necessary to use additional procedure in order to determine the size of the shadow economy in absolute term;

2. uses some ad-hoc econometric specifications which leads to certain errors in the measurement of the shadow economy;

3. does not provide appropriate conclusions at the microeconomic level;

4. requires a large set of data to fulfil the condition of stationing and normality,

5. uses a subjective choice of variables where certain indicators (such as the unemployment rate) can be used both as the cause and as the indicator of the shadow economy.

In this paper, due to all above stated, the PLS-SEM model for analysing the shadow economy determinants in the observed European economies was applied due to its serious advantages. It is very convenient in situations where the sample is very small (less than 100), like in the case of this one. Also, many authors have noted that it should be used in situations where the needs of work exceed the capabilities of the standard SEM model, especially when the number of indicators per latent variable becomes too large. So these are the main reasons why the authors have chosen this particular method.

3. The Shadow Economy Determinants

The shadow economy determinants in this paper are divided into four groups: wealth, open market, tax system and political environment. Each group consists of several latent variables which describe the situation in that area. The following indicators of the shadow economy were used: the share of household consumption in GDP, tax revenues as % of GDP and the unemployment rate.

The wealth of a country, viewed through the standard of the citizens and their satisfaction with living and working conditions, in general, is one of the very important factors of the shadow economy. Quintano and Mazzocchi have concluded in their research that wealth has a negative influence on the shadow economy, i.e., a higher level of social welfare in the economy is associated with a lower level of shadow economy. It certainly makes sense, because the economy and citizens in such conditions have no reason to involve themselves in the informal sector [22]. Apart from the wealth, an unequal distribution of income in society and the level of social development greatly influence the emergence of the shadow economy. Empirical research has shown that a greater level of inequality in society certainly encourages the emergence of shadow economy and that insufficient social development is linked to a higher level of shadow economy [23]. Bearing all this in mind, the wealth of the country in this paper is presented through GDP per capita (as an indicator of the standard of the citizens), the Gini coefficient (as an indicator of equality in the distribution of income) and the HDI index (as a synthetic indicator of living and working conditions).

The open market is another very important determinant of the shadow economy, especially for transition economies. By analysing 69 national economies, Friedman [24] and his associates have come to the conclusion that highly regulated economies have a greater share of the shadow economy in the national economy. In open, fast-growing economies, people have many chances to earn extra earnings in the formal economy, so they have no interest in engaging in the informal sector. On the other hand, in a closed, regulated, autarchic economy which faces a recession or slow growth, people try to make additional income in the informal sector. Therefore, a large number of authors who analysed the link between the level of liberalization and the level of shadow economy in developing countries have stressed the importance of reducing regulation of economic flows for an effective fight against the shadow economy [25,26,27]. This determinant is shown by the Index of Economic Freedom in a great number of countries which publish Heritage Foundation annually: freedom of business, freedom of investment, freedom in the labour market, monetary freedom and trade freedom.

The level of the shadow economy and the motivation of both citizens and the economy to engage in the informal sector are directly dependent on the characteristics of the country's tax system. The acting of the economy and citizens in the shadow economy sector is tightly connected with the taxes evasion [28]. At the same time, not only the level of tax burden, but also the tax administration should be taken into account, as the overly complicated procedure of preparing documentation and paying taxes creates the risk of tax evasion. One of the US Senators Max Baucus pointed out that "the complexity of tax procedures is a kind of a tax itself" [29]. It often happens that companies show unrealistic losses at the end of the fiscal year in order not to pay taxes. Besides the fact that this is a criminal offense, it also has a bad influence on other companies which are doing business in accordance with the law, because their competitiveness on the market is decreasing comparing to the companies which have evaded taxes [30]. A similar effect has the evasion of other types of taxes. Non-payment of the labour tax reduces the costs of doing business, which entails a lower cost price and a selling price compared to the competition, while the evasion of VAT payment directly affects the selling price. This behaviour depends on the perception of the taxpayer on the relationship between the benefits generated by non-payment of taxes and expenses for penalties if the tax inspection finds that they have been doing business illegally. This perception is determined by the frequency of control, the amount of penalty and, in general, the efficiency of the legislative, regulatory and institutional environment defined by the last determinant which is included in this research. Bearing all this in mind, this determinant is described by the amount of income tax, labour tax, value added tax and the time necessary for the preparation of documents and tax payment.

The emergence of shadow economy is certainly connected with the polity, the level of democracy, the quality of regulation and, in general, the political and regulatory environment. Bearing in mind that political and economic development is closely connected and mutually conditioned, the importance of public management in transition economies is reflected in finding the optimal relationship between the government and the market, having in mind that their acting is complementary. Teobaldelli and Schneider [31] have come to the conclusion that democratic countries have fiscal policy measures formulated to reflect the attitudes and preferences of citizens, and therefore the level of shadow economy in such economies is lower. The greater confidence of citizens in the government and state institutions, according to D'Hernoncourt and Méon [32], results in a reduction in the size of the shadow economy in the national economy. However, the level of this trust depends on the quality of the government. One of the very important aspects of the quality of government, which directly affects the level of the shadow economy, is the efficiency of the government in collecting taxes [33]. The best examples are the countries of northern and western Europe where, despite high tax rates, the shadow economy is at a relatively low level due to strict and efficient tax collection control. At the other end are the countries of Eastern Europe, among which the best example is Bulgaria, whose, despite relatively low tax rates, have been struggling with the shadow economy for years. This further brings also the problem of increasing the budget deficit and public debt, which further stimulates the growth of the shadow economy [9,30]. Due to the decline in the country credit rating and, thus, the worsening of the macroeconomic situation, the situation of the citizens and the economy is deteriorating as well (especially since in such conditions, as a rule, the austerity measures are implemented), so they are increasingly engaged in the activities in informal sector. The political environment is explained by World Bank Governance Indicators (WGI) related to the government efficiency, regulatory quality, rule of law, political stability and voice and accountability.

4. Methodology

In recent years, researchers have used different methodologies for measuring the degree of shadow economy [34,35,36]. This research uses the PLS-SEM procedure. SEM_PLS analysis was used to analyse the relationship that exists between data which represent the factors which influence the emergence of the shadow economy in the observed countries and the degree of the shadow economy in that particular country. Although there is a serious debate on the validity of using SEM_PLS analysis versus standard SEM analysis, its serious advantages are that it is very convenient in situations where the sample is very small (less than 100), as it is in this case. Also, many authors have noted that it should be used in situations where the needs of study exceed the capabilities of the standard SEM model, especially when the number of indicators by the latent variable becomes too large and these are the main reasons why the authors have decided to use this particular method.

In Europe, the number of researchers in the field of management, who are using the SEM-PLS method, is increasing, as many have managed to recognize the benefits of this method, primarily thanks to study published by Hair [37]. However, its overall possibilities are not yet fully utilized, primarily due to certain limitations. Henseler and his collaborators [38] have indicated that the PLS method represents a good compromise between the theoretically oriented covariance-based approaches, such as LISREL, and the predictive power of the Artificial Neural Networks (ANNs). In their researches, Reinartz [39] and his associates have concluded that PLS offers greater precision during the assessment compared to LISREL, in cases where there are less than 250-500 samples, which is a very usual situation in econometrics [33].

The PLS method focuses on maximizing the variance of the dependent variable explained by an independent variable instead of creating the covariance matrix. Like any SEM, PLS consists of the structural part which shows the relationship between the latent variables, the measuring component, which shows that the latent variable and its indicators are connected, and the third component, the weight links, which are used to estimate the value of the latent variables [40].

5. The Results and Discussion

In order to examine the direction of determinants which influence the emergence and expansion of the shadow economy in transition economies, by applying the PLS-SEM model, the structural model was created - shown in Figure 2.

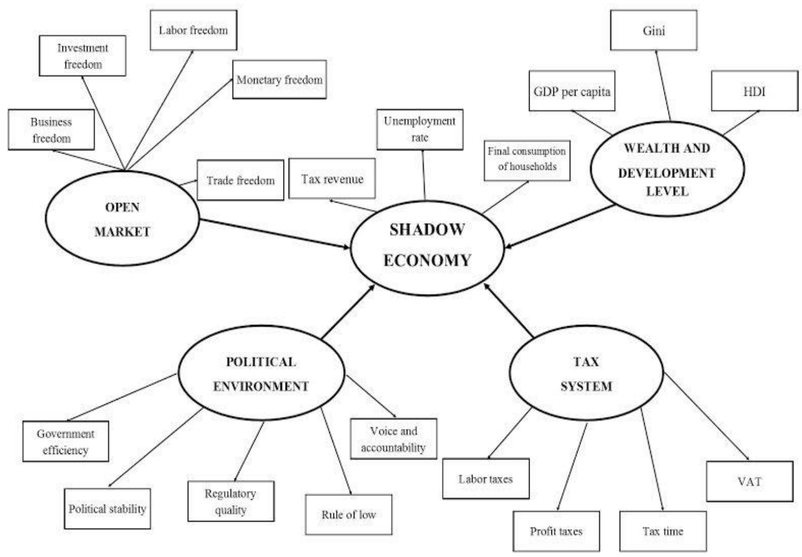

Figure 2
Structural model

The analysis used data on determinants and indicators of the shadow economy in the period from 2009 to 2014 for 20 transition economies (Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Montenegro, Estonia, Croatia, Armenia, Latvia, Lithuania, Hungary, Macedonia, Poland, Romania, Russia, Slovakia, Slovenia, Serbia, Turkey and Ukraine) in order to determine the degree and direction of latent variables on the shadow economy as a dependent variable in the post-crisis period. Table 1 shows the results of the structural model.

Table 1.
Results of PLS-SEM

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	p Values
Wealth and development level-> Shadow economy	-0,234	-0,303	0,182	1,285	0,199
Open makret -> Shadow economy	-0,315	-0,244	0,140	2,256	0,025
Political environment -> Shadow economy	-0,057	0,072	0,246	0,233	0,816
Tax system -> Shadow economy	-0,242	-0,168	0,280	0,864	0,388

Based on the results shown, it can be noticed that the only link between open market and shadow economy is statistically significant. In addition, this determinant has the highest coefficient of regression of -0.315 and shows a negative relationship between the achieved degree of the economy openness and the shadow economy. The greater openness of the economy, i.e. the lower regulation of economic flows by the government, has the influence on the reduction of shadow economy, since in such conditions the economy and the citizens do not have a strong enough motivation to engage themselves in the shadow economy, which is in accordance with the neoliberal approach of the economy development. Although the debate on the validity of the neoliberal concept of development was launched after the global economic crisis, with the majority of authors emphasizing the negative side of this concept, this model proves that a high degree of regulation of the economy creates a favourable ground for the development of the shadow economy. This does not mean it is necessary that the government completely withdraws from economic life, but it means that the government should strengthen its role as guarantor that the market laws will function properly.

A somewhat lower but also negative regression coefficient (-0.242) was obtained for the tax system, indicating that higher tax rates and longer taxation procedures result in a lower level of shadow economy. Also, we should point out the already mentioned fact that even the most restrictive tax system will not have a widespread shadow economy if there is an effective, consistent and rigorous control over the submission of documentation, calculation and collection of taxes.

The negative regression coefficient -0,234, which shows the link between the wealth and the underground economy, indicates that higher economic development as well as higher social well-being have a lower level of shadow economy. This can be justified by the fact that firms and the citizens in the more developed transition economies will be less interested in taking actions in the shadow economy zone since they have high enough incomes and sufficient conditions for living and working in formal sector. Finally, the lowest, but also a negative coefficient (-0,057), was obtained in the area of influence of the political environment on the shadow economy. This value of the coefficient indicates that if the quality of the political environment is higher, implying greater rule of law, better regulation, more efficient state administration as well as higher level of democracy and political stability, the level of the shadow economy will be lower.

Conclusions

Shadow economy is not a problem that only transitional economies are facing, it is a global problem. Almost every country faces it more or less. Observed at the global level, the shadow economy began its "takeoff" in the 1960s, but it boomed in 2008, with the escalation of the global economic crisis. In the former socialist countries, inadequate and inconsistent implementation of transitional processes created an additional space for its emergence and expansion in the economy. The phenomenon of the global economic crisis has only further encouraged both the citizens and business entities in these countries to engage in the informal sector. Its level in certain economies has reached worrisome proportions.

The consequences have been very damaging and reflected in: ill-gotten wealth, social stratification, reduction of public revenues, unfair competition, slowdown in the growth of economic activities in the formal sector, and so on. On the other hand, if something positive can be said about the shadow economy at all, it is that it contributes to the reduction of social tensions, through a certain improvement in the living standard of the poorest layers of the population, and from an economic point of view, the prevention of the fall of the profit rate.

The causes of the emergence of the shadow economy are also numerous and diverse. Many authors have tried to systematize all the causes which condition its phenomenon, but there is still no consensus on this. In this paper, the wealth, open market, the tax system and the political environment are the determinants of the shadow economy as the most commonly cited causes of the emergence of the shadow economy. The defined PLS-SEM model have indicated that all observed determinants negatively affect the shadow economy, whereby only the connection between the open market and the shadow economy is statistically significant. Bearing in mind that in a large number of transition economies, there are still some restrictions on the conduct of economic activities and that, in this regard, the liberalization process is not fully completed, it is not surprising that such results have been obtained.

Since the shadow economy is not only an economic phenomenon, but due to its complexity it has all the attributes of a political, sociological, psychological, legal phenomenon, the fight against this negative phenomenon requires a multidisciplinary approach. Each country, within its activities, undertakes a whole "arsenal" of various measures and instruments to reduce the shadow economy to an acceptable extent as well as to create a long-term sustainable system of fighting against this phenomenon. In transition economies, these measures and instruments largely coincide with the reform processes, which these economies need to implement on the way to the establishment of the market system, in relation to:

• improvement of the business environment, which will be, on one hand, stimulating for business and on the other, discouraging for business entities from acting in the informal sector,

• creating conditions for improving the market economy, increasing the independence of business entities and reducing the influence of the government,

• introduction of an adequate tax system that will stimulate tax payers to socially responsible behaviour, i.e. using the broader scope, lower tax basis and lower tax rate,

• modern organization and functioning of the labour market,

• creating conditions for accelerated employment, primarily through the development of entrepreneurship, and the granting of certain privileges, especially for vulnerable categories of the population,

• affirmation of some forms of modern business that are in the function of reducing the shadow economy - transparency, legal security, property protection, non-cash payments, reducing bureaucratic procedures and the emergence of bribery and corruption (black economy).

• responsible work and full implementation of the law by the competent state institutions - inspection services, customs, police, prosecution, courts with the aim of suppressing illegal business.

Given that this is a complex and delicate phenomenon, the shadow economy should be the subject of continuous monitoring, viewing and analysing which would lead to the establishment of the system for the effective, long-term fight against this unwanted phenomenon.

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Why apple? The z generation's preferences and choices of communication device in light of apple products

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Abstract: Communication is a defining part of our lives. Since humanity's existence, we communicate depending on our cognitive and progress level. The people of the prehistoric era told stories around campfires, then drew on the cave walls what they wanted to share with others. During the last millenia the means of communication become very different yet the need, the message and the amount of it has not decreased. Our research focuses on the basic issue of how the individual with the need to communicate in some way builds his own subjective system of evaluation and choses the tool he would prefer from the options available. Our basis for primary research is the increasingly popular Apple brand and products as well as the difference between impulsive and conscious purchase based on consumer behaviour. We also treat the so called Z generation and their brand chosing preferences.

Keywords: consumer brand selection, Z generation, communications, system of preferences

1. Background literature

Within the processing of scientific literature we gave high attention to the analisation of consumer behaviour.

The modern approach of marketing suggests that the consumer is in the center of attention, more specifically the individual moving in the foreground while racionality getting in the background.

Representatives of consumer behaviour science tend to give sociological and psychological methods and results more stress since the scientific field itself is interdiscipline.

For **Z generation** it's important and indispensable to keep in touch with friends and acquaintance. Beside maintaining personal connections they use the devices of internet and virtual world easily. The gadgets of digital era, like cell phones, became an organic part of their lives. On the other hand their emotional intelligence developes much slower, which means prolonged childlike behaviour and mishandling certain situations [1].

Changes of consumer is worthy to observe. To define **consumer behaviour** the knowing of „homo empaticus" – the emphatising consumer - is essential, according to Törőcsik-Varsányi (1988). For the empathising consumers the pleasure gained by consuming or owning the service or product is in focus, not functionality. This raises the question whether the consumers we observe are similar [2].

Jobber (2002) defined the following **5 basic questions related to purchase**: Who, What, How, When, Where [3]. These questions suggest that we have to know the consumer in order affect them succesfully. But to know them we need to identify the different types of **purchase decisions**. The four basic types are: impulsive, problem solving, routine and simplified purchase [4].

To extend our research we divide **consumption** to two types: reasonable (or functional) and unreasonable (or symbolic.) In case of functional consumption the purchase is rational, reasonable and logical while under symbolic purchase we mean a decision based on emotions. Further on, symbolic or emotional consumption can be divided into self-calming or expressive; the former aiming at ourselves and the latter to our environment [5].

With a view of this, when studying the **trends affecting purchase** we would like to highlight the growing importance of innovation and the unlimited shopping opportunities for any generation induced by globalization.

The triangle of convenience, price – or rather an affordable price – and time plays a key role in the evolution of trends since consumers use at least one of them as their own evaluation viewpoint during a purchase [5] [6].

Above emotions and **trends situations** can also influence the buyer. Jobber (2002) differenciates five of these: social environment, phisical environment, mood of consumer, time and the nature of purchase. These are all impacts on the outcome of our purchase, which is presented by the following model.

Engel-Blackwell-Miniard's five-step model helps us to define the exact phases the consumer walks through until the actual purchase. The model's five steps are [4] [7].

1. Realising the problem
2. Seeking information
3. Evaluating alternatives
4. Choose (purchase)
5. Post-purchase experiences

2. Methodology

Following the secondary research we executed quantitative calculations which contained non-representative, arbirtary sample. The data collection took place between March and May of 2017 using a pretested, standardised query by internet questioning. The final questionnaire was prepared by trial questioning of 50 people which led to recompose a few questions to make them more straightforward.

The data was processed using Microsoft Excel and SPSS 15 by statistical methods which will be detailed at the given sections.

Quantitative research provides numerical data applicable and evaluatable by the help of statistical methods. The primary aim of qualitative research is to reveal, within that is to understand problems [8].

Our survey research was done with the help of Google survey maker and analyser. Our questionnaire included 33 questions. The first part referred to brand selection, the second inquired about specific shopping criterias, the third and last part was about choosing preferences and demographic. The survey was based on several authors book in order to be get the best results [9] [10].

We had a pilot sampled with 50 people. The following data was concluded:

Sampling points: nation-wide

Sampling method: random

Method of data gathering: internet survey

Time of data gathering: March-April, 2017

Target group: Z generation

Filled questionnaire: 339

3. Results

The result of quantitative research has given visible correlations in case of the Z generation. The questionnare that supports our results was filled by 339 people.

The primary quantitative research's questions were divided to four different areas, the results are given below:

3.1. Brand choosing

98,8% of the respondents were in possession of a smartphone. Most of these users had one device (86,3%), But there were some with 2 or even more.

Concerning the brand of these devices, most answers were given to „Other"(31,3%) most likely because the list of answers was too short, altough as predicted, Apple has a strong presence (29,8%). Samsung made the top though a bit fell back from where it was expected, while Huawei and Sony were not the respondents „favourite" ones. The overall conclusion is that Apple is the most chosen since the Other category covers several brands on the market.

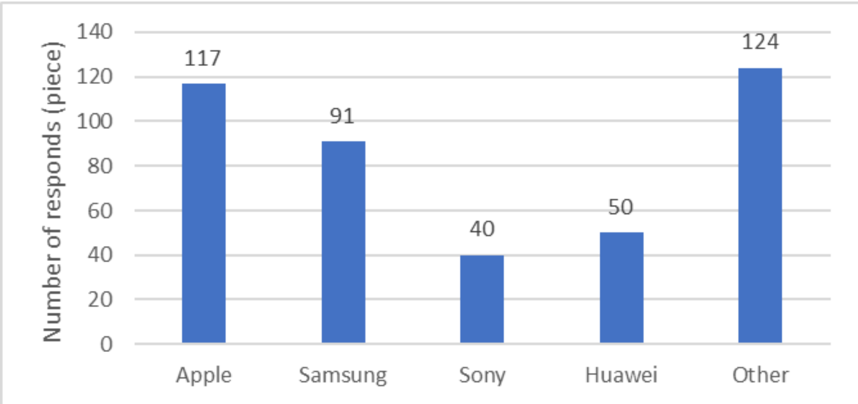

Figure 1.
Share of studied brands (Own research 2017, N=339)

The satisfaction was measured by a 1 to 6 scale where 88.8% of the responders are at least „satisfied" but mostly „very satisfied" or „perfectly satisfied" with their actual devices. Interesting fact is that more tha half of the „perfectly satisfied" responses came from Apple users.

Addition to this, that these young adults 54,9% had no Apple device before. The rest of the sample did maybe more than one, but there are some, who had no Apple device before but plans to get one.

3.2. Preferences

Most iPhone users chose it for the quality. This could mean the quality of design, the long lifespan, the services provided respectively. After this comes the operating system, the user friendly interface, knowledge. The least important aspects were the price and colour.

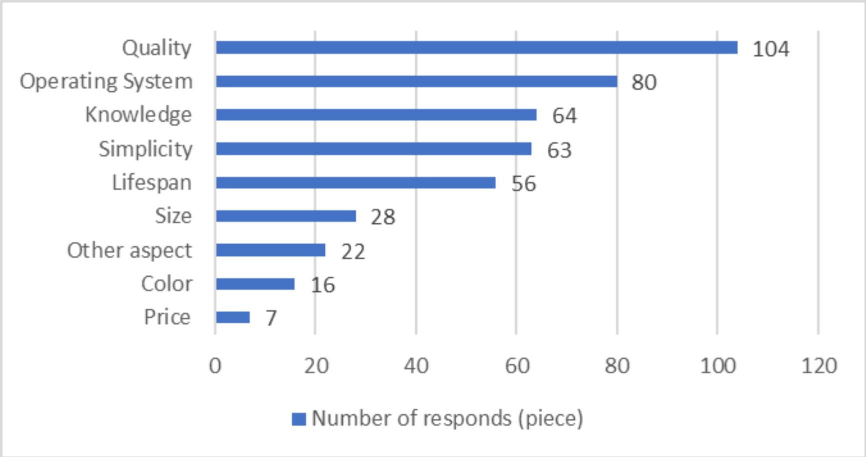

Figure 2.
iPhone buyers' aspects (Own research 2017, N=130)

The question of what the favourite features of their current device are was not only raised for Apple users, and in several cases there are overlaps. The whole sample rate user friendliness the most important (58,7%), but speed (56,3%) and the size and display are also valued high (53,7%). The quality of the battery and camera are secondary when it comes to purchase, yet both are more relevant than waterproofness.

Furthermore, importance of features were also measured on a scale system which obviously identifies 3 clearly critical features: knowledge, quality and lifespan. The precessing of whole sample clearly shows the correlation that not only Apple users seek quality but every smartphone owner. Knowledge aslo stood out when we looked at the whole sample and among Apple users as well. The same goes for lifespan and price they are important, but not crucial aspects. Colour, brand and recommendation by others are the least important ones.

Table 1.
Importance of aspects for smartphone buyers
(Own research 2017, N=339)

Aspects	Average
Price	4,70
Knowledge	**5,02**
Quality	**5,45**
Brand	3,65
Colour	3,21
Recommendation	3,46
Trusworthiness	4,63
Lifespan	**5,23**

As it turned out, most young adults prefer to decide on their own (47,2%) when it comes to purchase, if they need any help, then they ask friends and family, occasionally an expert or anyone „available".

Our research looked into the judgment of Apple devices. We wanted to find out if consumers actually find them more expensive compared to other brands. Mainly the andwer was a clear yes but still many thought that the price is reasonable and some that the price is as good as it is.

We wanted to know how a decrease in the price would affect the willingness to buy. Nearly 40% answered that they would definietly buy iPhone in this case. 33% would at least consider it and only 27,1% declined even considering it.

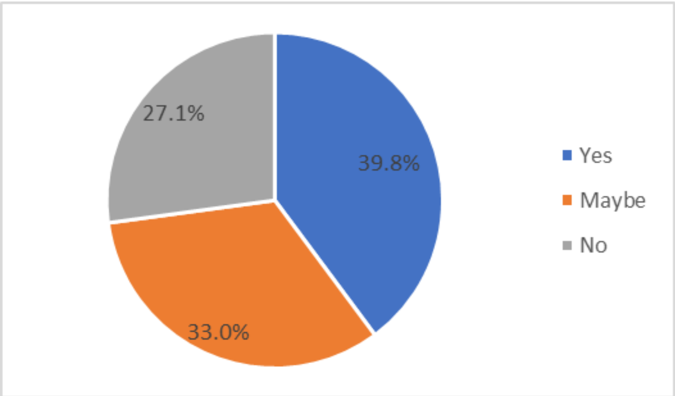

Figure 3.
Willingness to purchase if iPhone would be cheaper (Own research 2017, N=339)

Overall the attitud of young adults toward Apple is positive, the pricing is the only negative aspect, which is wierd, because it did not come up as a preference point when chosing a device, so we found a controversy.

To measure brand loyalty we asked if they would buy a more expensive, new model. It turns out that most of those who would are Apple users.

3.3. Criteria of buying

We divided the frequency of purchase to years, and gave 1 as highest and 4 or more years as lowest. This question was independent from brand. The answers were mostly 2 and 3 years, which we connect with service provider's contract and instalment constructions or the obsolescence of the device.

The usual amount consumers spend on smatrphones is between 51 and 100 thousand forints, the interval under (0 to 50) and over (101 to 150) shares the same a rate. However, 75,5% of those who spend more than 151 thousand forints for their cell phone are Apple users.

Those who purchase mostly prefer to pay the full price, but close to third of the sample pays in some kind of instalment. Yet nearly half of the sample don't own the money necessary so they have an alternative source. The financial state of the family could explain it as most young adults' family has an 101 to 150 thousand forints income per person (31,6%) or a step lower 51 to 100 thousand forints (25,1%). However more than half (55%) of the families with a higher than 200 thousand forints income per person buys Apple device.

4. Conclusions and suggestions

According to the result we have straight assumptions regarding Apple buyers. Even at the brand choosing it become clear that lots of Apple users filled the questionnaire and made a paralell easily tracable trhoughout every point of the research.

iPhone users gave a base for the research that defines brand loyalty. Those in favor of Apple products are most likely satisfied with their actual device and their choice is based on the brand's quality, the uniqeness and handiness of the operating system and long lifespan, not the price.

They usually make the choice on their own, so it's based on the individual's system of preferences and personality. Even though most think that the product is overpriced many are willing to pay for it, and more would be if the product's price was slightly lower.

This leads us to a paradox because at the beggining we cleared that the price is not a serious aspect of decision, yet it is, since more people would buy it for a lower price.

The two year bind stipulated by the service provider's contract seems to be the reason behind the changing of device, but it doesn's necesseraly mean that consumers will buy a new device whenever it expires. The amount spent on smartphones (51-100 thousand forints) covers the mid-top category cell phones on the market but there are many who buy for higher prices. Those able and willing to pay more than 200 thousand forints for a smartphone are most likely will settle for an Apple product. The reason behind could be the simplpe fact that this is the usual price of brand new devices but it could be explained with the outlining status symbol among consumers.

Prefering to pay full price instead of instalment raises the question of who or what the source of money is since most of the respondents don't have income of their own. We are assuming that family helps out financially since noone asks for a loan to buy a cell phone. This is verified by the fact that in most families the monthly income per person is between 101 and 150 thousand forints so it seems legit that parents are paying for their kids device. Furthermore, those young adults whose families has an income above 200 thousand forints per person are likely to purchase Apple prducts.

I assume that financial conciousness is not yet a common ability among Z generation since more than half of the sample buys pretty expensive devices without any individual income and most likely - even if they can afford it - relies on family to cover the costs. In terms of conciousness it would be wise to raise their attention to the value of money and the devices because in today's the market of electronic devices fast and untimely obsolescence is usual, which the consumer could experience as valuelessness that leads to another purchase maybe again on the account of the family.

On the other hand, from the perspective of Apple it's exemplary how they manage and make the brand and the product marketable since it's clear that more people would like to buy an iPhone and many already do. The brand is identified with quality, user friendlyness, long lifespan which for most consumers are the main features they seek when looking for a new device.

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How to finance renewable energy projects – facts and trends

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Abstract: Renewable energy has a higher and higher significance, both on a national and international level. Investments and projects building on renewable energy are becoming more and more important due to the exhaustion of conventional energy sources and the increasing energy demand. However, these projects present several risks and uncertainty, regardless of the fact that they also offer countless benefits and profit. Because of the risks this field cannot be considered as a target of investors looking for a traditional, certain but moderate return. In addition to the said risks, the long payback period is another reason why it is necessary to attract other financing methods. In this study I venture to introduce the development and financing of the investments in the renewable energy sector, highlighted the main trends and facts about the area.

Keywords: renewable energy, project financing, debt financing

1. Literature background

1.1. Roles of renewable energy and projects in the economy

Exploitation and utilization of the renewable energy sources is one of today's most essential challenges. The growing demand for energy – which is down to global warming, the climate changes, the depletion of conventional energy sources, and the steadily intensifying popularity of electronic devices – places the focus on the issue of utilizing the renewable energy. Relying on the data of the World Energy Forum, in their study Kumar and his co-authors [2010] drew the attention to the expected exhaustion of the fossil fuels and the oil, coal and gas reserves in the next century. At the moment nearly 80% of the energy we're using comes from these sources, therefore their replacement is getting more and more critical.

During the past years not just the investors have been putting greater emphasis on the renewable energy sources , but the fund providers and the governments as well, which has led to a spectacular increase – both in quantity and in value – of new investments focusing on this field.

The growing utilization of renewable energy provides an opportunity to protect the environment and to lower the carbon-dioxide emission, creating more liveable and more sustainable conditions for the future generations. This way the environmental cost of the economic prosperity can be reduced [Szigeti –Tóth, 2015] and the divergence can occur, which is such a development path that does not involve a rising pressure on the environment [Szigeti –Borzán, 2015]. The usage of renewable energy sources is gaining more ground not only in the national economies but in the households too. Green thinking is getting more and more integrated into our everyday life, and we are increasingly realising the importance of green energy. Nevertheless, these sources still barely contribute to 20% of our entire energy demand. The investments into renewable energy sources showed a significant leap after the millennium, and even at the time of the crisis, as the graph below demonstrates.

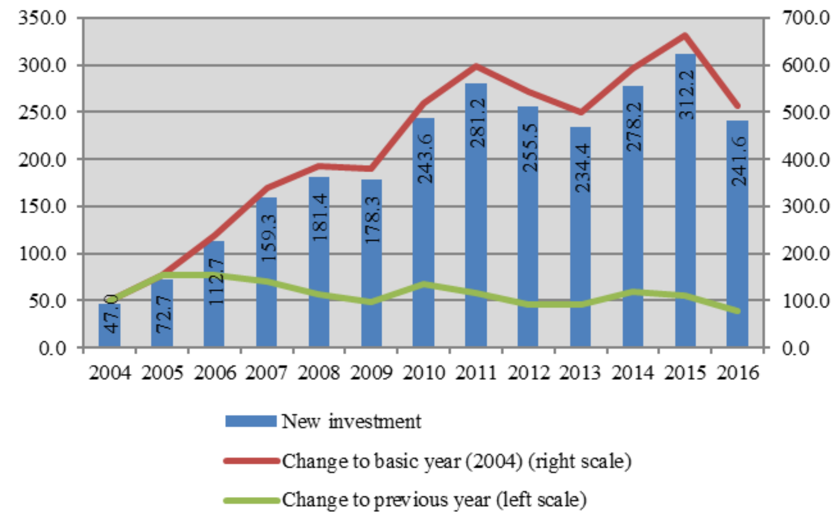

Figure 1.
New investments in the renewable energy sources (bnUSD)
Source: FS-UNEP, 2017

If we review the changes in the value of investments, we can find that it has almost quadrupled during the examined ten years, which represents a serious growth. Comparing the growth to the base-year (2005) we can establish that even the mortgage crisis could not really break the strengthening of this field, contrary to every other project and investment. There had been a little downturn in 2008 and 2009, but after that the pace of the investments expanded with a record speed. The Mediterranean crisis, on the other hand, had a much bigger impact on the investments. This crisis primarily hit Europe and the developed part of the world, which muted the incentive to invest. We can see a decrease in comparison with both the base-year and the previous year, which can be explained with the advanced risks. Every Mediterranean country is a crucial actor of the renewable energy market, so the crisis of their economy posed such a huge liability in the eyes of the investors that they were not prepared to take straight after the subprime crisis. If we compare the value of the investments to what it was in the previous year then there is a stable 14% growth. The downturns are much clearer in contrast with the previous years' data, but it can be stated that in this context the value only dropped in the years of the crisis, namely in 2009, 2012 and 2013.

The renewable energy projects can be funded in several ways. The most typical ones are asset financing1, and financing by private investors2. In most of the cases credit financing is behind these modes, since due to their high value the projects cannot be funded solely through equity. The following figure also clearly shows the methodology of the financing of renewable energy projects, introducing the possible funding sources for the certain stages from design to implementation.

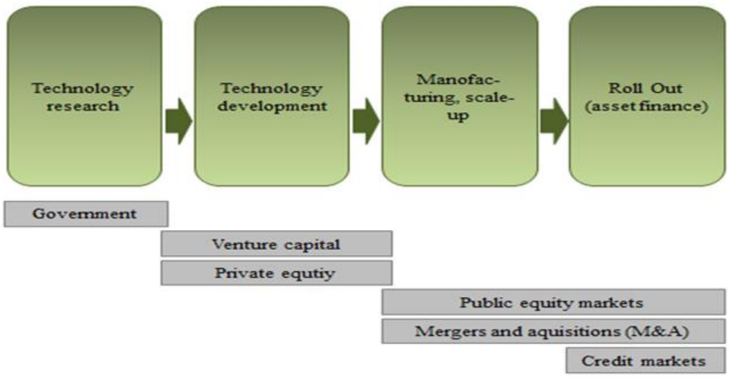

Figure 2.
The financial structure of the renewable energy projects

1 By asset financing we mean financing of the project's total assets, including both the necessary fixed and current assets.

2 Private investors are such non-institutional investors (companies, private individuals), who contribute to the project with smaller amounts, generally as secondary fund providers. The funds of private investors can equally come in the form of credit financing and share funding. The duration of financing is in line with the method of financing, and in the case of credit financing it can range from three years to a very long period of time.

Source: FS-UNEP, 2017

As the figure below explains, venture capital financing is not typical in the case of funding renewable projects, but the R+D costs are not significant either on this field, which justifies the further analysis of credit financing.

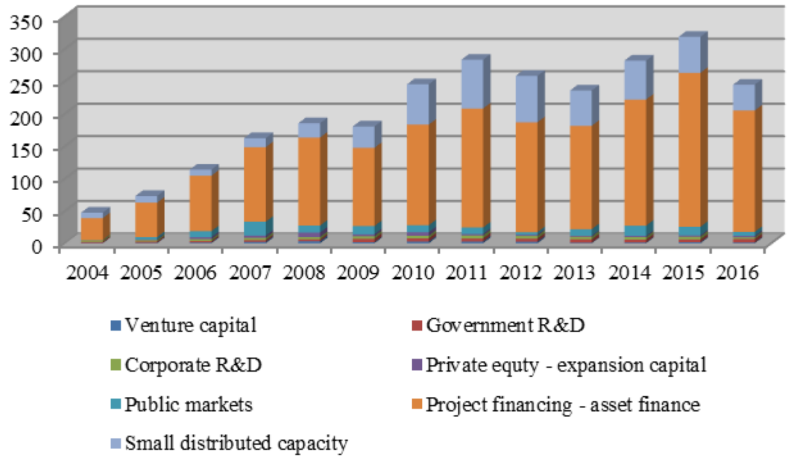

Figure 3.
New investments in the renewable energy sources by the financial structure (bnUSD)
Source: FS-UNEP, 2017

The renewable projects include numerous investment purposes, which may be the following (according to IJGlobal):

- biofuel development,
- use of biomass,
- geothermal energy projects,
- tidal power plant projects,
- offshore wind energy projects,
- onshore wind energy projects,
- photovoltaic solar energy projects,
- small hydro-electric power plant projects,
- solar collectors,
- waste recovery projects.

In the past ten years the wind and solar energy projects have accounted for the vast majority of the new investments. While between 2005 and 2008 they had represented 64% in average, from 2009 their percentage was over 80%, and what's more, from 2014 this ratio has been above 90%. Therefore we can say that the new investments focusing on this field mainly concentrate on these two energy sources, thanks to the developed technology, the experience and the more certain economic payback.

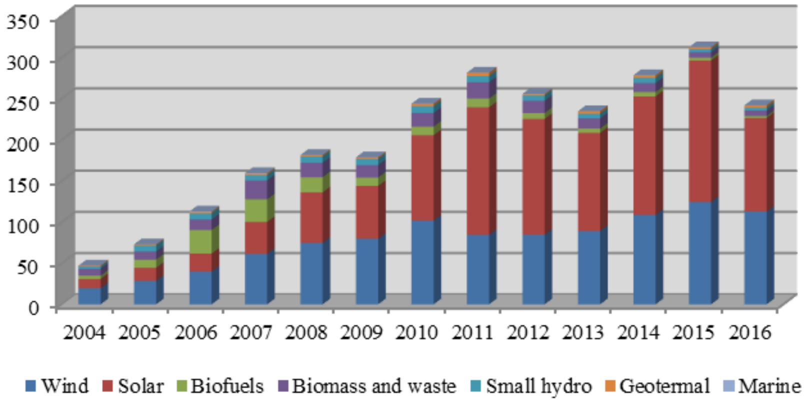

Figure 4.
New investments in the renewable energy sources by the target sector (bnUSD)
Source: FS-UNEP, 2017

In spite of their benefits the investments into renewable energy sources do carry risks as well, as the future cash flows only have a limited predictability, they are usually strongly weather-dependant and are often beyond control, and thus a strategy can only be adopted for their risk management partially or not at all [Lee – Zhong, 2015]. The challenge of the future will not only be found in the management of renewable energy projects, but more specifically in the creation of the risk management methodology too. This is particularly important for the reason to engage as many investors as possible, because the providers of funds also make decisions on the basis of future risks and returns. For the sake of the promotion of projects the governments have tried many incentives, from PPPs to interest subsidies. From here onwards we will analyse in detail one of the available financing methods of the renewable projects: project financing, a form of credit.

1.2. Project financing as the funding source of green investments

Project financing is a relatively new area among the forms of credit. When we hear the word project finance, we usually identify it with the large variety of funding projects, but the latter is a much wider category, as on top of bond financing it also includes venture capital financing and community financing, to name just a few. Project financing – despite its significance – receives little attention in the Hungarian economic literature, although international researches and articles deal with several dimensions of it. According to the literature available in our country, the essence of project financing can be described by the following definitions:

– Newitt és Fabozzi [1997]:

„The financing of a given economic entity, which is considered by the creditor as its cash flow and revenue, serves as the source to pay the credit back, its assets being the collateral."

– Yescombe [2008]:

„ Project financing is the method of long-term crediting of larger projects where the granting of loans is carried out entirely based on the cash flow of the project."

– Nádasdy, Horváth és Koltai [2011]:

„ By the concept of project financing we mean the financing of such individual business investments in which the owners and external investors primarily consider the cash flow and assets of the given investment as a basis when they examine the return of their invested capital and the opportunity of paying back the granted credit.

The key target areas of project financing are assessed by Fight [2006] as follows:

– energy sector,
– oil and gas industry,
– mining,
– construction of highways,
– telecommunications,
– other projects (paper projects, chemical industry, construction of hospitals, schools, airports, prisons).

In view of the above it can be said that project financing as a form of credit is a funding method of such projects spread out over several years where the borrower is a project company3. This project company is only entitled to carry out the project in question, it cannot have any other activities, and its lifetime is the same as the lifetime of the project. Since this SPV will be the borrower and the debtor, the loan can be separated from the balance sheet of the sponsor4. When the provider of the fund makes a decision about granting a credit, every single time it evaluates the future cash-flow of the project, and will only decide positively if the cash-flow is adequate. The size of the loan is a multiple of the amount of the equity, and even a 90/10% debt/equity ratio is not rare in the funded projects5. Because of the long term and the high bank exposure, the loan margin is quite high as well, compensating for the risk-taking. Due to the risks and the high leverage, this form of financing was influenced by the mortgage crisis and the Mediterranean crisis too, especially from the side of the banks and the bond investors [Csiszárik-Kocsir, 2016], as it has been mentioned earlier.

Consequently, the infrastructure projects, the oil and gas industry projects and the conventional energy projects are all primary target areas for project finance, since in the event of these the return is foreseeable on account of the stable market outlets [Gatti et.al, 2007]. In order to reduce the risks of project financing the loans are usually not provided by only one bank, they are granted in a joint form instead as syndicated loans. The development finance institutions6 also often join the syndicate. They are to point out the effects of the political hazards for the fund providers, along with financially supporting the top projects [Hainz – Kleimeier, 2012]

2. Material and method

Numerous organizations gather and examine project financing deals and transactions. The Thompson Reuters Project Finance International and the International Financing Review both measure and evaluate the transactions. In addition, the IJGlobal database run by Euromoney has an all-inclusive database as

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3 Special Purpose Vehicle (SPV)

4 Normally project financing is non-recourse, which means that the sponsor does not provide guarantee in the case of default. Only limited recourse makes the sponsor’s partial liability possible for the debts of the project company.

5 According to the 2015 data, the average debt/equity ratio was 83/17%.

6 Development Finance Institutions (DFI)

well, which gathers the deals by not just financial characteristics but by target areas, regions and actors too. The IJGlobal also collects the detailed financing data of the recorded transactions, to see if they were fulfilled via project loan, with PPP help or through corporate financing. The present study relies on this latter database. Its characterisation concerns every transaction that was made, failed or is currently running within the framework of project financing. The figures and tables clearly illustrate the regions that are the key target areas of project financing. The study introduces six geographical regions: Europe, North and South America, Asia, Middle East and North Africa (MENA), and finally Black Africa (Sub-Saharan Africa). The analysis focuses on the financing details of the renewable energy projects, and more precisely the details of the projects carried out through project finance, checking the examined ten years by regions. Apart from the IJGlobal database (as the figures above have showed) I used the FS-UNEP database too, highlighting the data regarding the new investments.

The analysis of funding renewable energy projects executed via project financing follows. There are four known statuses of the projects carried out through project financing as a form of credit.

– The pre-financing stage, which finances the projects from the very beginning, from step zero. Here there are no investments yet in assets of any kind, and the project is still at the planning stage, or at the end of the planning stage.
– The projects under funding are the ones in which the banks have not made returns on their capital yet, meaning that the loan is not closed and therefore the outcome of the project is not certain either.
– In the case of the financially closed projects the credit transaction can be deemed closed too.
– The cancelled projects are the failed projects, where the banks have either stopped the disbursement of the loan, or subsequent to the disbursement of the loans they have failed to recover their investment.

After discussing the stages we need to analyse the types of financing. There are seven possible types:

– Primary financing, which finances the project first, normally in the form of syndicated loan, when the project has not received any other funding yet, apart from sponsorship contributions and State aids;
– Additional financing, which is used for a project when the primary financial sources are not sufficient due to unforeseeable costs or design faults;
– Re-financing, which is taken into consideration when the primary fund providers abandon the project, or if the project proves to be unsuccessful, and thus the primary providers of funds are replaced by someone else;

– Portfolio financing, which is chosen by the financiers for investment purposes to yield a larger profit, and it is present in the project as a loan capital;
– Financing of equipment purchases[7] that provides an additional financial source to acquire machinery and assets;
– Share financing is implemented by the investors when the project promises a high enough return and – contrary to portfolio financing – they are willing to give the fund over as an equity capital; and
– Privatisation financing – which helps with placing the state projects into private hands.

3. Results

Lending for renewable energy projects is one of the most importatnt areas of project financing. Due to environmental degradation and environmental damage, it is no coincidence that renewable energy projects have come to the fore. This is also seen by the financiers as shown in the table below. Based on the date of IJGlobal, the total number of the renewable energy projects is 5 963, of which nearly 80% have been implemented through project financing. The value of project-financed renewable energy projects is similar in value, accounting for more than 70% of the total. The debt-equity ratio is also high, as in the case of project-financed investments, banking activity is 83% on average instead of 71% of the total. This shows banks' and financiers' courage to take on risk, so they trust the return on projects as well.

Table 1.
Project financing in the renewable energy market
Source: IJGlobal, 2017

	Renewable energy projects	**Renewable energy projects with project financing**	**Ratio**
Number of projects	5.963	4.737	79,44%
Total deal value (million USD)	1.134.497	799.198	70,45%
Debt/equity ratio	71/29	83/17	-

7 The financing of equipment purchases does not provide for the possibility of financing a property. It only offers help for the purchase of capital goods that are machines or tools.

Hereinafter, I would like to present investments in renewable energy sources by region according to the amount invested, the number of projects and the debt-equity ratio. First, have a look at the number of projects that are shown in the figure below.

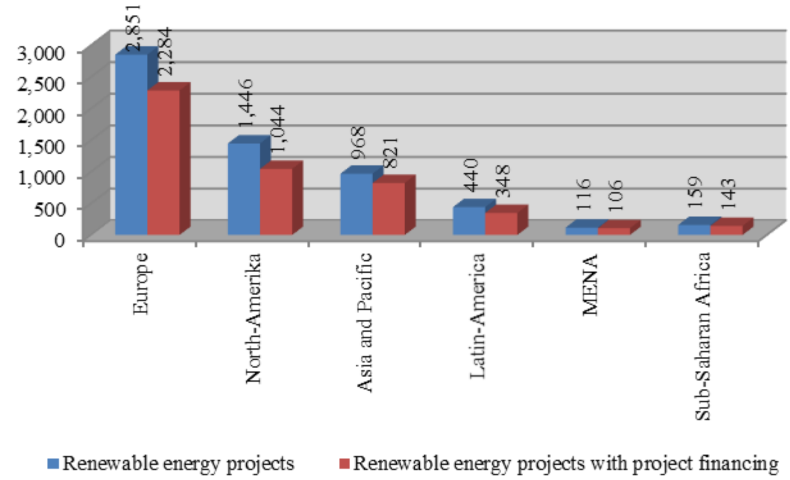

Figure 5.
Renewable energy projects by the region according to the number of project
Source: IJGlobal, 2017

As the figure shows, Europe is the first according to the number of renewable projects, both in terms of total project numbers and project financed projects. In Europe, 80% of the registered projects have been funded by project financing. North-America is ranked second, but the proportion of project-financed investments is only 72%. It is not a surprising thing, that the two mentioned regions are the first, as most of the resources are limited to these two continents. The proportion of project finance projects in the Asian region is the highest, 85%, and it is interesting that the African region is on the latest places in the queue, though its capacity in renewable energy sources is huge, but it can not be exploited in the absence of financing. However, in the two African regions, the share of renewable energy projects implemented with project financing is the highest, around 90%. After it, I would like to present the picture according to project value.

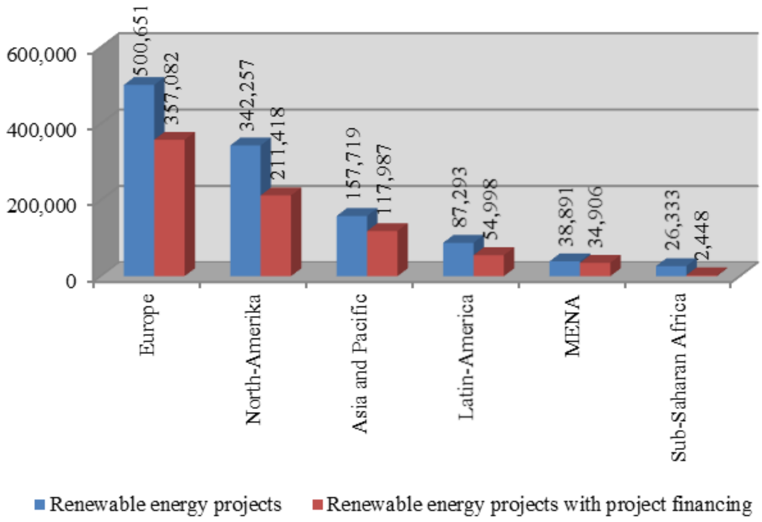

Figure 7.
Renewable energy projects by the region according to the deal value
Source: IJGlobal, 2017

Similarly to the value of the projects, it seems that Europe is again the first, and the second in the line is again North America, and Africa is again the last according to the deal value. If we measure Europe by the deal value, it can be seen that 71% of the total value invested in renewable energy projects financed by project financing, in North America this is only 62%, and in the Asian region this ratio is relatively high, 74%. The MENA region boasts the highest project financing rate, which is 90%, although it is just 1% of the European project-financed value.

It can be stated, that Europe and North America are the leaders in project financing for renewable energy projects. This caused partly by the funding sources and the recognition of the importance of renewable energy sources. It is also clear that the potential of the African region is not exploited, so there are still plenty of opportunities to finance.

4. Summary

In light of the information above it can be established that from the perspective of project finance the renewable energy projects are getting more and more significant, because the future demand for them is becoming more and more definite. Due to the economic priorities and the criticism against the conventional energy sources, the renewable projects are given more emphasis nowadays then the previously favorited fields. According to the figures cited above, North America and Europe are both at the forefront of financing, thanks to the number of the banks, their capital intensity and the financial knowledge. The African and Asian regions have huge potential, and they could be the future targets of the project financing transactions with the help of American and European capital allocation. Nevertheless, because of the long payback period project financing requires a stable economic and political environment, which is an indispensable precondition for allocating resources. This is why it is important that the financiers could plan ahead in terms of not just the resources but the economy of the targeted region too. Still, Europe and the developed world will have to face many potential crises – and hopefully with lesser impact than the subprime or the Mediterranean crises – (migrant, brexit and frexit crises), which will inevitably slow down project financing again. In view of the importance and necessity of this capital form we have to trust the forethought of the fund providers and the political actors, which hopefully will rather boost than hinder the project financing of renewable resources in the future.

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How do we pay tax? - Taxation-related behaviors

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Abstract: The tax systems, the taxation are usually complicated and complex asset systems, the taxpayers' behaviour is complex too, behind the tax evasion, tax avoidance and tax denial there are also very complicated, intricate phenomena. The purpose of this paper is to describe the possible patterns of behaviours and attitudes in the background of this phenomenon from the aspect that - by economic psychology and behavioural economics coming into the foreground how the classical economic model changed (maximizing the expected utility) over the past decades.

Keywords: tax evasion, tax denial, tax avoidance, tax moral

1. Introduction

Tax is one of the largest source of income in state budgets, so taxation plays a significant and determining role in the life of all economic actors. It affects all members of society without exception, directly or indirectly. Taxation is a very complicated and complex system of tools, so behind tax evasion, tax avoidance and tax denial there are often very complicated, tangible phenomena. Taxation has been a concept since the birth of states. Different and very varied forms of tax evasion have evolved in different historical periods. In a rapidly changing economic environment, tax-related abuses are difficult to classify because human ingenuity knows no limits. In order to reduce or eliminate abuses, it is important for organizations and public bodies assigned to taxation to be more prepared and efficient.

The 1988 tax reform has resulted in a complete economic and social change of regime in Hungary. In our economy, there was a noticeably gradually chaotic situation. Based on an analysis of data of income tax declarations and VAT returns, it seems like there is still a very high level of tax avoidance, the series of

VAT scams are typical, the lack of social security contributions and also the high level of black employment. "The ratio of the black economy rose sharply after the change of regime and then declined somewhat in the turn of the millennium, but it is still high from an international aspect, but it fell below 20 percent in 2007" (Belyó, 2008).

Because of these, a very important economic policy objective is to reduce the level of tax evasion and to increase the efficiency of taxation.

"The hidden economy is one of the phenomena that can be found in every market economy, but its level is varied from country to country, and this difference is an important information about the state of the economy, the behavior of economic operators, the acceptance of government and government measures" (Szántó -

Tóth, 2001).

In this study - the behavior that goes beyond the microeconomic examinations of tax evasion - I am studying the tax aspiration from an economical point of view, examining the reasons for the decision of individuals to avoid tax payment and the ways in which the hidden economy can be reduced. My aim is to explore as deeply as possible the taxing habits, tax avoidance, tax denial, tax evasion and the behind-the-scenes techniques, causes, behaviors, attitudes and tax moral on the basis of international literature. After the analysis, I expect the cultural environment and the demographic factors (gender, age and marital status) affect the tax moral, and national pride also has a positive impact on it. I combine my hypotheses with studies carried out by researchers on the subject, taking into account the most important international research and synthesizing the results obtained.

2. History, special literature review

I find it very important to analyze, interpret and define concepts of tax avoidance, tax denial and tax evasion. It is likely that we cannot draw a sharp line between these concepts, but we must be able to distinguish completely illegal forms of tax evasion from the preferential taxation options and the "loopholes" even provided by the tax system which are more likely to be attributed to gaps in the tax law. Action against the latter category is also somewhat simpler than in the case of tax evasion, since it is possible to modify the tax rules by making it more difficult to avoid any rules. However, the fight against tax evasion is much more difficult, the extent of which can only be reduced by increasing the effectiveness of official controls, or by improving tax morals. However, the actions behind all categories result budget deficit, so in these terms these concepts become more confused, while legally, the boundaries may be much sharper. The concept of tax evasion is constantly changing in laws, psychology, sociology and economics. Already in the ancient periods and in the middle Ages there were various sanctions for tax evasion.

Tax revenues are the major part of our budget, to which we all have a civic obligation to contribute in the ratio of our assets and income. The tax is in fact a statutory, non-refundable, non-repayable, general, financial service intended to finance expenditures of the state. Taxpayers perform their tax liability according to the rules of self-taxation, which means that taxpayers themselves determine the tax base and the amount of tax payable and then send the tax return to the tax authority and we, for ourselves will arrange the payment of the tax to the appropriate treasury account. However, the amount of tax levied can be influenced if we do not provide data on the real tax base or we do not include the actual tax base in the contracts. However, this system of tax declaration and tax payments may give reason to very serious abuses. All this, differently, but affects all members of the society. International experiences also show that reducing the tax burden itself does not reduce the size of the hidden economy, in the long run, only improving the autonomy and motivation of actors can bring lasting results. While most of the companies are struggling to mere existence in Hungary today, they want to keep as much as possible of the revenue they generate and therefore introduce more inventive techniques to tax evasion. Based on statistic estimates, we can see that a tax base corresponding to one-third to one quarter of GDP disappears in our country after the comparison of the tax returns and the amount of tax payments. "According to the CSO's report, the size of the black economy in the ratio of GDP is now 15%. Similar results were obtained by Zoltán Pogátsa (Pogátsa, 2012), who defined this ratio at around 11-18%. However, according to research by Pál Belyó, the size of the hidden economy is around 20-25% (Belyó, 2008, p. 114)" (Hauber, 2013). On international level, we can see that "the proportion of the informal economy in the United States is the lowest, about 8-9 percent of the gross national product. In the Western European countries, the share of the gray economy is higher, near to 15 percent. According to calculations, the share of illegal economy in the Czech Republic and Slovakia is below 20 percent, while in the other Central and Eastern European countries it is higher with 5 to 10 percentage points" (Belyó, 2008). Observing this data, we can conclude that fighting and reducing the scale of tax evasion and the hidden economy is an important political tool for all countries. However, it is to be noted that there is an optimum level of hidden economy in every economy, where it is not worth to increase further and to reduce the fiscal expenditures on tax audits" (Szántó-Tóth, 2001). The main question is whether the willingness to pay taxes or the tax moral can be improved and, if so, how.

"Motivations, preferences, interactions, passions make economic games much more complicated and colorful than the textbooks used in basic economics courses show. However, the extension of preferences does not constitute an unbreakable barrier to economic analysis. Economics can handle altruism as well as selfishness, likewise envy and benevolence" (Hámori, 1998).

Due to the analysis focuses on economic actors, individual decision-makers, and the behavioral characteristics, decision alternatives and economic reactions of these actors, the classical economics claims must be expanded with sociology and behavioral fields, too. "To understand how economies work, how to control them, and how to prosper at the same time, we need to understand the conceptual schemes that animate people's ideas and their feelings, those are, spiritual factors. We will never really understand important economic events unless we are faced with the fact that these reasons are mostly psychological (Akerlof-Shiller 2011). Akerlof and Shiller consider themselves the devotee of Keynes. "Keynes writes in his epoch-making work published in 1936, General Theory of Employment, Interest and Money, that the motives behind economic and investment decisions are far from being rational. Keynes of course accepted that most of the business activity was born from rational considerations - but he also thought that many of these were motivated by animal spirits" (Akerlof - Shiller, 2011). Spiritual phenomena have to be considered as effective economic factors" (Garai, 2003).

3. Measurement possibilities of the shadow economy

In general, the shadow economy can be measured in two ways: by micro-level surveys, questionnaires, interviews, or indirect approaches such as the demand for currency and hidden variables, using macroeconomic indicators. The direct estimation of the hidden economy is mostly based on the composition of the Multiple Indicators Multiple Causes (MIMIC) and the currency demand method. MIMIC means that there are more indicators, more reasons, that is to say, the shadow economy, taking into account more aspects. The MIMIC procedure assumes that the hidden economy is an observable phenomenon (a hidden variable) that can be used to estimate the measurable causes of illegal employment such as tax burden and regulatory intensity, indicators of illegal activity, demand for currency, and official working hours. The disadvantage of this method is that it is only a relative estimate of the development and size of the hidden economy. In addition, there is a large number of World Values Survey (WVS) and European Values Survey (EVS) data sets that enable the conduct of empirical studies within the subject. It contains factors on an individual level that may affect citizens' attitudes towards paying taxes. The WVS is a set of data on the world-wide survey of socio-cultural and political attitudes that contains the value of comparative data and across belief systems across the world. The EVS data set is a similar survey focusing solely on EU countries. Both surveys have been widely used by political scientists and economists. Using the World Values Survey (WVS) and the European Values Survey (EVS) data series, we can analyze the impact of social norms and government institutions by controlling the personal factors in a multiple regression analysis where tax morals are subordinated variables. Although all methods have weaknesses and strengths that will certainly prevail in the estimates of the hidden economy, it is obvious that the shadow economy cannot be measured accurately. Macro-level estimates from the MIMIC model and demand for currency are considered to be the upper limit of estimates, while micro-level estimates are considered to be the lower limit of estimates.

4. The relationship between tax environment and tax moral

In recent years, more research has been exploring that values, societal norms and attitudes differ from country to country, and that these differences have a measurable impact on economic behavior. One area where such studies are of particular importance is compliance with the tax liability (Alm - Torgler, 2005).

There is considerable evidence that coercion efforts may increase compliance with tax rules, but extreme punishments may even have counterproductive effects - resulting in lower tax payments and the loss of general trust in state institutions. Furthermore, it has also been observed that compliance with the tax liability is different in several countries and cultures. There is considerable literature that suggests compliance with the rules is influenced by social norms (Elster, 1989; Naylor, 1989). To develop tax-reduction policies, it is essential to understand the behavioral attitudes behind the decision-making of tax compliance. It is desirable to develop tax policies that encourage tax compliance within the existing tax system. If the individual attitudes of compliance are dependent on social and cultural norms, then improving these norms may be a desirable political option. Compliance with the tax liability is a complex behavioral problem and its examination requires to use different methods and data sources, as each asset has its advantages and shortcomings. (Cummings at al., 2004) report on their laboratory tests in South Africa and Botswana using the same tax reporting report in all experimental environments. The willingness to pay tax has been studied using both empirical data and data obtained from laboratory experiments. Survey data allows many socio-economic, demographic, and attitudinal variables to be included in the use of multivariate analyzes. Both empirical and laboratory data show that cultural norms have an impact on tax willingness to pay.

Kirchler's 1997 study also examines the attitude of taxpayers. Reliance on norms, egoistic and altruistic value orientation, tax mindset and tax morale, and demographic characteristics were assessed by questionnaires. The results show that value orientation, age and dependence on norms are also related to general tax attitudes. The taxation mentality and tax morale, as Schmölders (1966) have determined, depends on the age of respondents. This result was confirmed on several occasions in the relevant literature (Kirchler, 1996; Strümpel, 1966). Arriving to their older age, taxpayers can adapt to the tax system and learn to accept it. It can be assumed that these results are also influenced by the fact that older people rely more heavily on the pension system and other state support networks than young people do, who feel that their freedom is limited by tax payments and they do not perceive that the use of paid taxes or redistribution would be fair or feel inappropriate the government feedback on the use of tax burdens. In a latter Kirchler (1999) study, we find that personality characteristics, ideological and religious values influence tax moral.

Lewis (1982) and Groenland and Van Veldhoven (1983) report that personality characteristics (such as dependence on norms), ideological and religious values, and moral orientations influence tax behavior. According to Kirchler (1999), taxes limit the freedom of individuals to make autonomous decisions about their income. For this reason, they are likely to respond to opposition to their freedom of restraint or perceived limitations. This inductive resistance is due to the perceived restriction of freedom, probably due to taxpayers' attitudes, tax evasion and tax behavior changes. The age of respondents in the survey, the demographic characteristics of the participants, such as the gender of the respondents, also significantly influenced the tax attitudes.

According to (Kirchgässner, 2010) the taxation moral depends on religious traditions and the relationship between political and religious authorities. While McGeey R. W. points to subjective assessments directly related to the tax system, Torgler B. to specific factors such as age, gender, marital status and employment status and, moreover, more general assessment indicators such as trust in the government and the legal system. Both have a significantly positive effect on the tax moral. The same applies to the degree of decentralization, while the efficiency of the public sector has a negative effect. In addition, cultural factors and especially religious behavior play an important role: religious people have a higher tax moral. For example, research in Canada has produced results that Catholics have lower tax moral than Protestants, but this is still an open question because the difference is statistically not significant.

In 2006, Schneider and Torgler conducted an unique study of the moral of citizens in three multicultural European countries: Switzerland, Belgium and Spain; based on the World Values Survey data, using the Wald-test. The results show that cultural and regional differences affect tax dignity. Based on the Swiss survey, it has been found that culture plays a significant role in determining the individual tax moral. Examining national pride, they also came to the conclusion that they also have an impact on the tax moral. With respect to the other control variables, the trend was observed in the case of women that the tax moral was significantly higher than in case of men. In addition, people with 50-64 years of age tend to have a greater willingness to pay than for other age groups. In addition, pensioners and married people experienced a higher tax moral than single persons. In the case of the Belgian surveys, the role of culture in the tax willingness to pay, as well as national pride and democratic attitudes have been studied. The results do not show statistically significant differences between the different cultural groups as it is in Switzerland. Similarly to the Swiss results, national pride and democratic attitudes in Belgium have a significant positive impact on tax moral. It is worth to mention that national pride and democratic attitudes have more effect on the tax on the moral of the French-speaking population than among the Flemish population. As far as demographic variables are concerned, the particularly high taxation moral in the 50-64 age group suggests the positive impact of age. Moreover, women clearly show higher tax moral than men, and married people are also at higher tax morals than single people, like the Swiss example. According to the multivariable analysis in Spain, the Wald test shows that culture plays a significant role in defining individual tax moral, and national pride and democratic attitudes have a significant positive impact on it. The results on control variables suggest that women are more accountable for tax payments than men and widows show the highest tax moral from private individuals. The study's findings show that cultural and regional differences affect both taxation moral in Switzerland and in Spain. In addition, in all three countries, results have emerged that national pride and democratic attitudes have a positive impact on the willingness to pay tax, which can prove that the higher legitimacy of political institutions leads to higher tax compliance.

(Belyó, 2004) conducted studies on tax morale among the respondents, there were companies who were also in the conduct of economic actors to explore the factor that could help to suppress the hidden economy. According to 13 percent of the participant in the survey say, the current economic standards change requires at least one generation in time. While 9% say that this is not enough, there will always be companies that find and use the loopholes, and 4 percent of them do not see a company having any interest in changing the current situation.

Summary

Comparing my hypotheses to the investigations of the researchers dealing with the subject, I find that despite the fact that tax policy is the most obvious means of enforcing and regulating tax payments; the policy of deterrence, that is, the higher the penalty and the fines, the coercion or counter effect- from taxpayers. This is read in Cummings et al. (2004), that coercion and extreme high taxes and penalties may result in lower tax payments and, in general, loss of trust in state institutions. Based on their experiments in Botswana and South Africa, it is clear that cultural norms have an impact on the willingness to pay tax. (Kirchgässner, 2010), we find that cultural factors, especially religious behavior, play an important role in tax payment propensities. A similar result is obtained from AlmTrogler (2005) examining the differences between cultural differences and tax moral - the US and Europe - who have concluded that it is worth noting that the US tax moral exceeds each country’s because better treatment of taxpayers and authorities unavoidable interference, the tax moral proved to be more effective. The impact of cultural factors on tax morals at Schneider and Torgler (2006) also appear in surveys in three multicultural European countries, Switzerland, Belgium and Spain. Although there was less impact in Belgium, it can be demonstrated in Switzerland and in Spain that the cultural environment has a significant impact on the tax willingness to pay. For all three countries, the results show that in addition to cultural factors, national pride has a positive impact on tax moral. Within demographic factors, for all three countries, results have been achieved that women's willingness to pay for tax is higher than men’s. In the case of the Swiss and Belgian surveys, there was a higher tax moral in case of married people, and the Spanish results showed that the widow's willingness to pay tax was higher. In addition, there are countless studies on demographic factors that have a significant impact on tax willingness to pay. The findings of Kirchler (1996, 1997, 1999),

Schmölders (1966) and Strümpel (1966) also show that age, demographic characteristics of participants, such as gender, are also related to general tax attitudes, and tax moral, depends on the demographic characteristics of respondents. He also came to the same conclusion as regards the demographic factors (Kirchgässner, 2010), who in the context of tax moral also points to specific factors such as age, gender and marital status.

Based on these international research experience, my hypothesis can be verified, that is both the cultural environment and the demographic factors (gender, age, marital status) have an impact on tax moral. With regard to my third hypothesis - that national pride has a positive impact on the willingness to pay tax - fewer literature data are available, so this requires further research.

Conclusions

Because of their tax sovereignty, individual economies have their own tax systems, but because of the ever-increasing international trade relations they try to harmonize domestic legislation with international law. Due to the high level of globalization and the expansion of the member states of the European Union, competition has crossed borders, and competitiveness has become a determining factor in international relations. Accession to the EU requires a certain harmonization obligation for the acceding countries, so it is in any case a condition to modernize the tax system of the acceding countries. The institutional system of the European Union has a special place in the law of nations. Due to its special nature, it is not comparable to international organizations nor to the institutional system of the states, as both intergovernmental and supranational elements occur in its operation. Both the emergence of a single European market and the abolition of border controls and the development of Community trade have contributed greatly to the spread of tax avoidance, tax evasion and tax fraud. This will result in a reduction in budget revenue, a violation of the principle of fair tax burden and the distortion of Community competition conditions. For this reason, it is very important for Member States to develop tools for cooperation, mutual exchange of information, appropriate expansion and coordination of administrative and legal instruments, presence in tax inspections in other Member

States and ongoing exchange of experience. "In states where taxpaying is easier, more revenue can be achieved, there is greater confidence in the taxpayer. High tax rates, with high administrative burdens decreases the trust. States most often reduced tax administration burdens over the past few years by introducing selfsufficiency, electronic reporting, and stakeholder engagement "(Herich et al., 2011). There are countless Hungarian literature reviews and my own opinion is that the Hungarian tax system is very complicated, opaque, modified too often, with no predictability or predictability. In our country, tax laws varying frequently, year after year, sometimes even several times within a year, creates uncertainty for taxpayers and are difficult to adapt the changes. Perhaps this is one of the main problem of the Hungarian tax system today that there is no foresight. Gáspár et al. (2004), there is no unique appearance in horizontal and vertical equity in the Hungarian tax system due to the exceptions and exemptions, the different taxation of individual income, and the tax system cannot be considered effective, transparent and enforceable. According to Szerb and Ulbert (1998), the most frequently criticized feature of the Hungarian tax system is the high tax burden, the over-taxation of the middle class, the complex and continually more and more unsettled system, the tax system and the ratio of the black / gray economy to about 30% of the GDP, unsettled expenses, frequent wasting and corruption. According to Hetényi (2004), the tax burden of the Hungarian tax system is high, it does not stimulate development, and it is too complicated. Kátay (2009) also characterized the Hungarian tax system very complex and opaque. In addition, I consider it important from the view of tax moral to have good relations between citizens and the state, the reliability of the government and the stability of the tax system. It is very important for the willingness to pay taxes that citizens have greater role to play in managing the country, managing the government as a client, as a partner. Most importantly, for a tax system to be as reliable, stable and predictable as possible, taxpayers should be able to plan long-term and receive adequate feedback on the usage of the tax burden paid.

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Background Data Mining for an Information Security Awareness Education Program - Reasons, Possibilities, Methodologies

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Abstract: Nowadays we experience that the information is a very important thing. The information helps our days but sometimes it cause dependency. So the structure and the function of it is very complex. This is the main reason why we have to learn live with it. We have to develop out IT skills and competencies. But not enough just read and learn about the information. We have to change our attitude with the information if we want to be successful in the information society. Development of our information security awareness is the part of this process. But this part is a very important because for this not enough enroll to an IT security course. For this we have to change our learners attitude while we update their knowledge and forming their competencies. All of this require a highly complex training program. For plan this program we have to know a lot of input data and where are we able to find a lot of system usage date? The answer is: log files. So we if we use web mining tools and methods we are able to reach a lot of information about our user's behavior in our IT system.

Keywords: data mining, Moodle, users behaviour, security awareness, education

1. Background of an Information Security Awareness Educational Program

1.1. Why is it important to develop information security awareness?

We live in the information society where the information has value. However, the type of value is not only economic type but also it is social or power type.

In the information society the information itself and related activities, such as the communications, the data collections, the data processing, play a much more main role than before, and it significantly defines the relationship among the people, the culture, the functioning of state and other organizations, and the definition of time and space. [1]

We could say that we live in digital prosperity. [2] Like in any other case, we need to look after for this welfare. It is not enough just enjoy the benefits. We have to ensure maintain this prosperity and this is a serious and responsible task.

In a welfare society, everyone has a responsibility to learn to handle and use various public utilities (for example water, gas, electricity). In this case the information is no exception from these utilities. In a welfare information society, the information is one of public utilities so we need to learn how to manage, process and filter the information. We can say that, we must develop every citizen’s conscious using of information which includes the knowledge of information security and creating the appropriate attitudes and methods against the information vulnerability. [2]

1.2. IT security awareness development program is not equal teaching IT security knowledge

The developing of IT security awareness is not equal to a simple training. It is not enough to teach information security. The purpose of a security awareness program is that individuals are able to recognize IT security concerns and respond accordingly. The goal is here creating a behavior which allows the persons are able to pay attention IT security problem, and with wich they are able to perceive the dangers and are able to react consciously. [3]

Therefore, beyond the simple knowledge-transfer we are also need additional tools in order to produce the desired behavior change. We have to make a change of attitudes and that cannot be done through a simple educational program. A complex program is required.

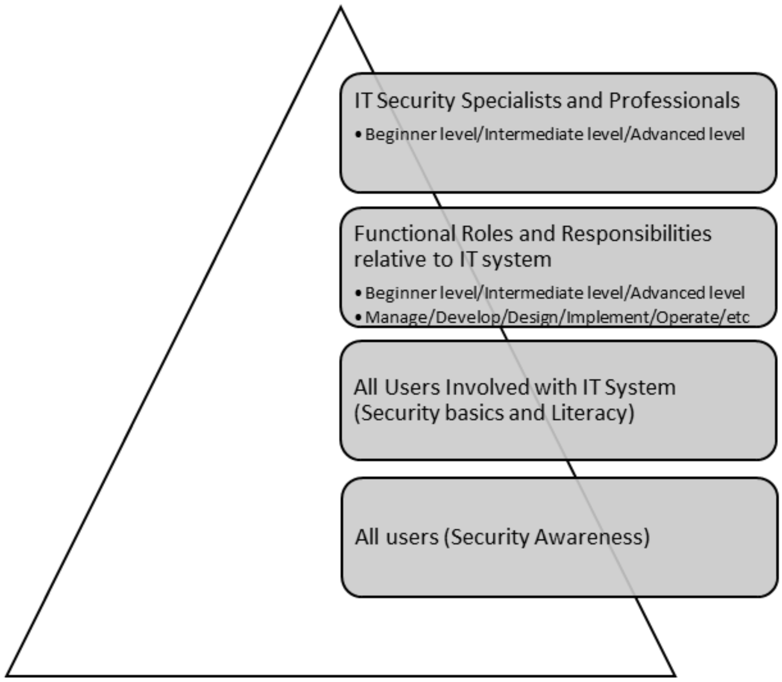

Figure 1.
Structure of a complex educational program
(adapted from [3])

1.3. The way to a good educational program

1.3.1. The factors of attitude

In order to understand how we can make a change of attitude, it is important to see what other factors affect the attitude of a person: [4]

Behavior intentions: Every person have a personal intention about own behavior in a certain situation under certain condition;

Real behavior: This means that actual behavior what the person are given in an actual situation. Expected this behavior will be different than the person's intention behavior;

Cognitions: Ideas, convictions and knowledge about how to need behave in a given situation;

Affective responses: that factors which affect the person's actual mood, social sensitivity in a given situation

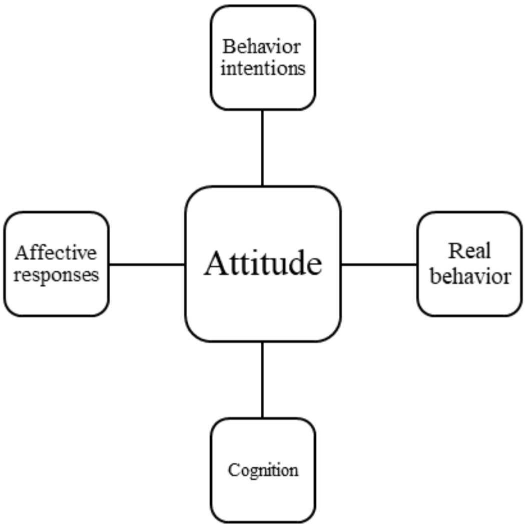

Figure 2.
An attitude system
(adapted from [4])

As we can see on the Figure 1 all factors are interrelated each other and it follows that, if one factor of them is changing, that cause changing the others.

1.3.2. The main areas of IT security what we have to focus on

During security awareness program development, always we have to highlight the areas which we would like to concentrate. This is influenced by environmental factors and needs (eg organizational needs). On the other hand, we need to focus on areas of IT security that affect the users in any case. Based on these the following areas can be identified where the security practices are recommended: [5]

Passwords

Patches and Updates

E-mail use and Antivirus software

Firewall, Spyware, and Popups

Backups

Physical Security

1.3.3. How to measure the awareness

In case of educational programs, we have opportunity to receive and adapt existing programs but lot of institutes develop their own unique program. [6] Regardless of whether, we develop a unique program or adapt an existing program suite, we should do measure the current level of security awareness of our affected target group. However, this level is not a simple indicator. We can not summarize our person's awareness with a grade or index. We have to find the weaknesses and the strengths of our employees' security knowledge and security problem management. For this we can apply a variety of research methods using the following five-step process: [6]

Knowledge about information security

Attitude towards information security

Normative belief towards information security

Intention for Information security

Information security behavior

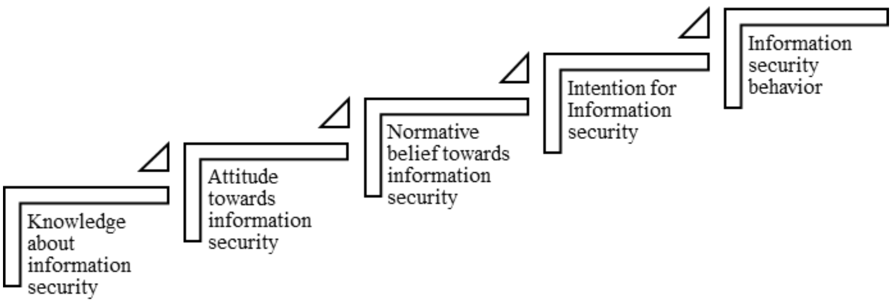

Figure 3.
Five step ladder model for measuring security awareness
(adapted from [6])

There is an important question about every measurement: what do we want to measure at all? Assume that, we should measure the global information security awareness level of the organization. To achieve this, we have to measure awareness level at each region and there are many problems that can be identified in each region. Based on this we can build up a tree structure of problems as we can see in Kruger and Keaney article [7] where the authors' work relied on work of Belton and Stewart [8].

In this technique, the problem tree's root is the general level of IT security awareness and the next sublevel is the regional level. Such regions may be understood as organizational levels of the workplace or scope of job activities. Each regions are examined in three additional dimensions: knowledge (what you know), attitude (what you think) and behavior (what you do). It is important to note that, these three items are appeared when we define the awareness or these are connected to the five-step ladder model on Figure 2 because the figure's first steps are contain these. In the structure of tree every dimensions are subdivided into 6 focus areas and additional factors and subfactors are assigned to every focus areas:

Adhere to policies

Keep passwords secret

Email and internet

Mobile equipment

Report security incidents

Actions and consequences

We can see that the previously outlined safety areas are also displayed here, which also indicates to us which areas should be focused on the survey and the educational program.

1.3.4. How to change the attitude

Aforementioned, the assessments of the actual situation have a very important role and the expectations of organization with the safety. We could also summarize these areas that need to be focus in general. However, we have found that, security awareness can not be developing within a simple course, in this case a much more complex solution is needed, in which we can mark three main objectives: [4]

1. Directly changing the behavior (ignoring existing knowledge an attitudes) In this case we transmit same knowledge to each participant (eg in case of frontal training that describes the content of the information security rules of company);
2. Changing the attitudes of people through behavioral change. In this case, we have to build on previous experiences. The roleplay is very important in this level. It help to resolve incompatibility conflicts and establishes the self-opinion.
3. Attitude change through persuasion. In this case, we also build on past experience, but the persuasion gets an emphasis role.

In this point, it might be worth we are starting thinking about what tools we can use for this methodologies. Here we can use a wide range of information broadcast tools. We are able to combine the traditional techniques with ICT tools to make it more effective. For example, we have the following options: [6]:

Education with attendance form

Education with e-learning methods (eg in a LMS environment)

E-mail messages

Group discussion

Newsletter articles

Posters

Video games

Of course, every opportunities from aforementioned list have different efficiencies in the information broadcast changing the real behavior. It is important to underline, we don't have to choose one from the tools above, but it is advisable to apply them simultaneously and side by side.

2. Data mining as a measurement method

And now it is worthwhile to go back to the question: How do we explore the current level of awareness, and how we track the changing of this?

We can do a variety of ways to investigate information security awareness for a particular environment. On the one hand, we can do a lot of interviews. On the other hand, we can ask many people with different questionnaires. If we use the internet we are able to find a lot of templates what is good base for the investigation. (eg. [9] [10] [11])

However, these methods do not always give a true feedback about the real situation so it should be supported by other research methods, such as tracking the activity in an IT environment and analysing the stored user activity data.

The web mining basically covers three topics include:

Web content mining

Web structure mining

Web usage testing

The processing of datafiles what was created by an information system is classified into the topic of web usage testing. [12] This process is the data mining which can help us to gain valuable information from a large amount of data. [13] Based on these we can say that the data mining can be considered to a kind of methodology of the web mining. [14]

2.1. Log files in Moodle system

We have seen before that the establishment of security awareness involves the behavior and attitude change and in this process, there are given an important role to the investigation of actual behavior characteristics. The log files of information systems contain the imprints of user behavior patterns, so we can conclusion from them by data mining.

If we would like to develop an educational program for upgrade employees of an organization, we have to design some questionnaire but we have to examine log files of that system what employees are using. For example, we are able to examine the log files of organization’s educational system where every users learn about security. In this case, the real activities of students in the training environment may be differ from given student answers in the course exam. In addition to the learning outcomes we get information about the using frequency of each course's items, we check when these were opening, downloading. So, we can gain information about learning time and we can draw their behavior within a course, within an IT system. [15]

Moodle is a one of the most popular learning management system. There are more than 91000 Moodle registered sites in 233 country. [16] The National Tax and Customs of Hungary is used Moodle system for support their education and the examined security course was built within this system. Therefore, we should list what kind of data were extracted from the log files [17]:

The exact date of the activity performed in year/month/day and hour/minute.

The IP address of the computer that the activity was performed.

The full name of the person whose performing the activity

The activity itself.

Information metadata what was recorded for the activity.

In Summary, we can say that we are able to read more from the logs than the pure educational data (eg. quiz results, activity scores or grades, etc.). We get information about the participants of course when, how and how many times have reached the course items. [18]

2.2. Analyzing a log file

The accumulated data in the log files are very large numbers. To analyze the data, we need a suitable method, such as the following [17] [19]:

1. Pre-Processing: Collecting, processing, or producing data files.

    Select data: Which data we will use and how we will group these.

    Production of summary tables: Assigning data to the participants (eg How many times has a participant solved the test successful?; How many times has a participant reached an resources? ; etc.)

    Data discretization: We generate data ranges from the discrete data.

    Data Transformation: We have to convert the available data to ann other form what can be interpreted by the data mining algorithms.

2. Data mining: Selecting a data mining algorithm from the following:

    Statistical algorithm: Each individual element is grouped and given a quantitative value.

    Decision tree based algorithm: It represents a hierarchical structure of the conditional system. In this case to reach a leaf item from the root item all conditions must be met.

    Rule based algorithm: The decision has been by IF-THEN procedures. Each rule consists two parts: First part is the condition (IF) and the second part is a consequence (THEN). The condition part can be complex and based on logical algebra.

    Fuzzy logic based algorithm: There is a complex sets of rules which define a number of parameters for each variable.

    Artificial neural network based algorithm: This attempts to model biological neural networks.

3. Post processing: Interpretation of data produced by the above mentioned algorithms.

Of course, analysis is supported by a number of data mining tools which can be commercial (DBMiner, SPSS Clementine, DB2 Intelligent Miner) and publicly available (Weka, Keel). [19]

3. Data mining through one case – An example

3.1. Background of case

The National Tax and Customs Administration of Hungary has a lot of educational program within which the employees have to get to know an internal regulation. We have seen it before, these type of trainings are very important but these have got only role of knowledge broadcast and knowledge growing. They build up the theoretical knowledge to behavior which are expected by the organization. As we have seen before there is advisable to examining the current attitudes and behavior especially in case of a security policy teaching course.

In order to show how the web mining works in an attitude investigation we choose a Moodle course from the NTCA LMS system: Description of Guarding Safety Regulation. The form of this course is e-learning. Every participants have to get to know the contents of all regulation and then they have to solve a quiz and declare about learning of rules. Every employees must know the central regulation and the local regulation what extend the central rules with local specialties. So within the course every user was able to reach two resources (pdf file) which contain everything about the central and the local regulation and two quizzes.

3.2. Step 1: Pre-processing

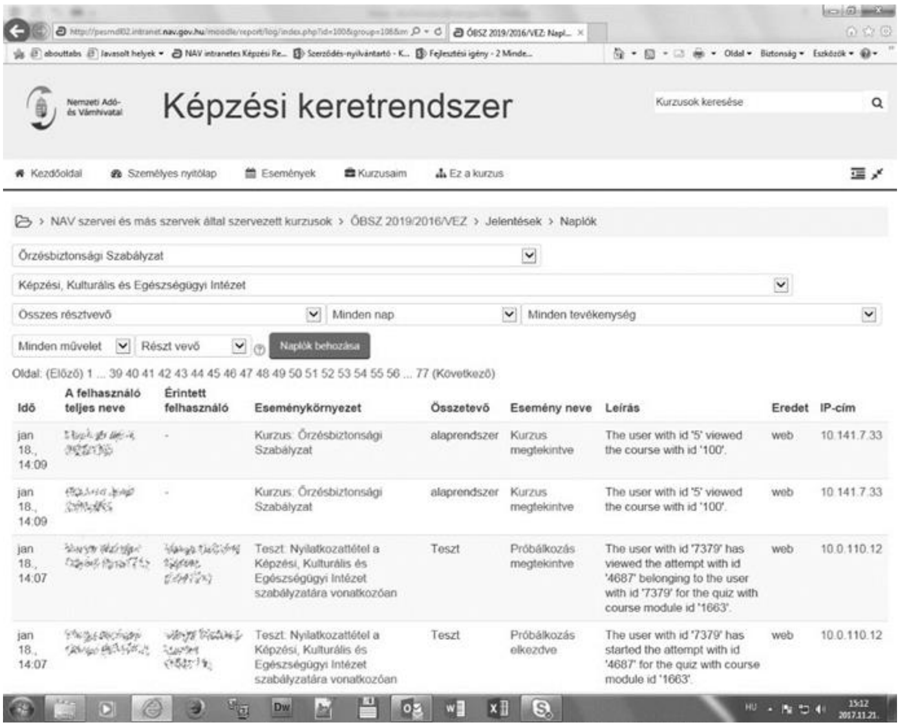

Figure 4.
Statistics on the use of the course elements

The figure 4 contains an example about this course log file (we have seen the ingredients of this file before).

First, we have to clean these data. We filter all items because we just need that rows what was written by Quiz and Resources module.

Then we have to do data transformation for the calculations. We transform every date and time record to minutes passed since 1 January 2001. It was necessary because with this we can examine the time spent between each activity. Next step, we restructured the data structure with a script. This script produced a user object. This object stored every user's attempt on the selected item of the course. With this we get a user base dataset where every rows contain is one user and their data.

```
<textarea rows="10" cols="100" id="input"></textarea>
<button id="start">start</button>
<textarea rows="10" cols="100" id="output"></textarea>
<textarea rows="10" cols="100" id="output2"></textarea>
</textarea>

$(document).ready(function(){
     $("#start").click(function(){
            var lines = $('#input').val().split('\n');
            var users = new Array();
            for(var i = 0;i < lines.length;i++){
            var lineArray = lines[i].split('\t');
            var user = new Array();
            objIndex = users.findIndex((user => user.TASZ ==
            lineArray[4]));
            user.TASZ = lineArray[4];
            user.times = [];
            user.times.push(lineArray[2]);
            if(objIndex < 0) {
                   users.push(user);
            }else{
            if(users[objIndex].times.indexOf(lineArray[2])<0){
                   users[objIndex].times.push(lineArray[2]);
            }
            }
            var outputString = new String();
            var output2String = new String();
            $.each(users, function(index, user) {
                   outputString += user.TASZ+"\t";
                   output2String += user.TASZ+"\t";
                   var beforeTime = 0;
                   $.each(user.times, function(index, time) {
                          outputString += time+"\t";
                          if (index == 0) {
                                 output2String += "0\t";
                          }else{
                                 output2String += time -
                                 user.times[index-1]+"\t";
                          }
                   });
                   outputString += "\n";
                   output2String += "\n";
            });
            $("#output").val(outputString);
            $("#output2").val(output2String);
     });
});
```

Figure 5.

Data transformation script

3.3. Step 2: Selecting a statistical algorithm for data mining

With the pure data, we are able to run some statistics test. First, we can verify that how many person open the resource content (it means they used the education content about the security regulation) and how many employees just filled the quiz without open the resources files. Second, we can calculate the descriptive statistics in relation to elapsed time between open the quizzes and open the resources. Of course, we can do an frequency examination on the data. With crosstabs, we can view the details on the elapsed time between opening contents and the participants' reached grade on the quizzes. We have the opportunity some complex examination on the preprocessed data. Before these we have to do normality test with for example Kolmogorov–Smirnov test. Of course we can search correlation between our variables too.

3.4. Step 3: Post processing

Within this study is not goal to deduction of conclusion about the behavior of employees of NTCA in terms of security awareness. Within this structure, we would like to give you some examples of data analysis. Therefore every examples below use one directorate data (NTCA Training Healthcare and Cultural Institute).

3.4.1. Some comperative statistics

To the course there was enrolled 282 employees from the Institute. Pre-processing the log files we get that 204 user solve the exam quiz about the central regulation and 202 user solve the exam quiz about the local regulation. From these participants there were 75 person who opened resource of central regulation from the course page 66 person did same with the resource of local regulation.

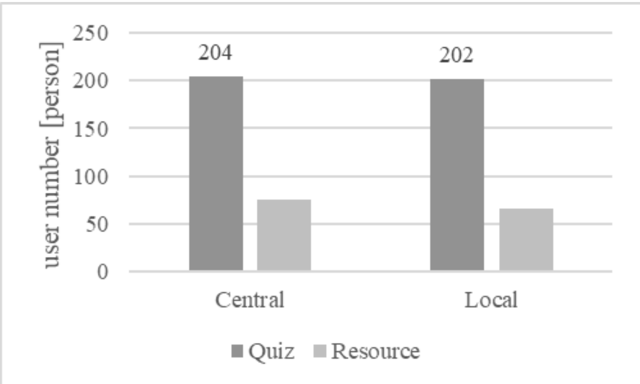

Figure 6.
Statistics on the use of the course elements (n=205)

We can see that just quarter of participants used the learning contents about the regulations but if we check the submitted cognition statement, we will discover that, every user signed it so they say that they have known the regulations.

In this point we have a conjecture: We have found a bad behavior pattern, because the employees could solve the quiz without got knowledge about the regulations. This conjecture is growing strong when we are drawing the difference on each users between the first open of the resource and the first quiz solving. (difference = first resource opening - first quiz solving)

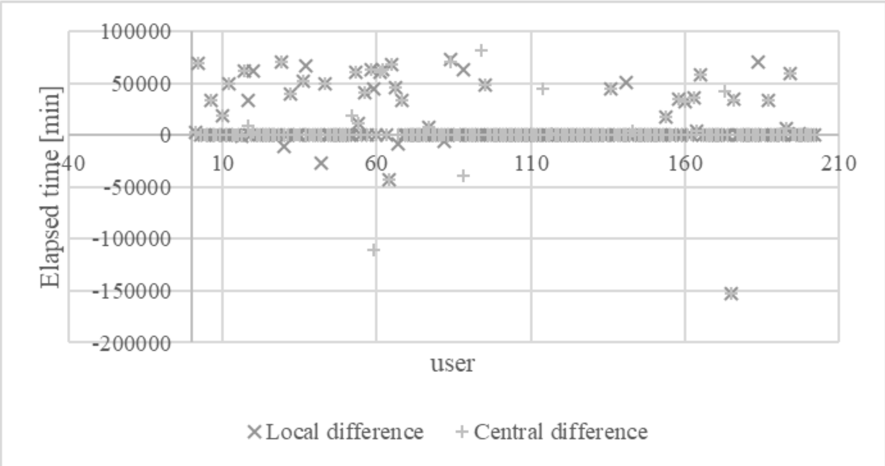

Figure 7.
Elapsed time between course elements (n=205)

We see that there are a lot of minus value and very rarely when the elapsed time is big between the resource opening and quiz solving. This is confirmed by the crosstab of differences.

Elapsed time between resource and quiz (central) * Elapsed time between resource and quiz (local) Crosstabulation

Count

		Elapsed time between resource and quiz (local)				
		<1 hour	1 hour > < 1 day	1 hour > < 1 week	> 1 week	Total
Elapsed time between resource and quiz (central)	<1 hour	154	0	1	5	160
	1 hour > < 1 day	0	4	0	0	4
	1 hour > < 1 week	2	0	4	2	8
	> 1 week	4	0	0	29	33
Total		160	4	5	36	205

Figure 8.
Elapsed time between resources and quizzes

3.4.2. Searching behavior pattern

In this point, expedient to examine our variables are normal distribution or not.

One-Sample Kolmogorov-Smirnov Test

		Elapsed time (central)	Elapsed time (local)	Quiz point (central)	Quiz point (local)
N		205	205	205	205
Normal Parameters[a,b]	Mean	6007,8146	7416,0634	95,5011	94,8544
	Std. Deviation	23599,30505	23152,01136	9,47702	14,00083
Most Extreme Differences	Absolute	,396	,420	,400	,439
	Positive	,396	,420	,317	,357
	Negative	-,375	-,340	-,400	-,439
Kolmogorov-Smirnov Z		5,664	6,019	5,721	6,278
Asymp. Sig. (2-tailed)		,000	,000	,000	,000

a. Test distribution is Normal.

b. Calculated from data.

Figure 9.

Examination normality

If we run a One-Sample Kolmogorov-Smirnov test, we experience that elapsed time between the resource opening and quiz solving neither in the central nor in the local in the variable not show normal distribution (K-S=5,664, p=0,001; K-S=6,019, p=0,001) Interestingly, we run this test on the result of user and we can see that these variable are neither normal distribution. (K-S=5,721, p=0,001; K-S=6,278, p=0,001)

Could be interesting if we compare the user's result with the elapsed time between resource and quiz.

Elapsed time between resource and quiz (central) * Quiz result (central) Crosstabulation

Count

		Quiz result (central)			Total
		Pass	Good	Excellent	
Elapsed time between resource and quiz (central)	<1 hour	3	40	117	160
	1 hour > < 1 day	1	0	3	4
	1 hour > < 1 week	0	5	3	8
	> 1 week	0	9	24	33
Total		4	54	147	205

Figure 10.

Compare ellapsed time with quiz result

We can see that the most users were successful in the quiz without learning the regulation because they opened the resource not long before the quiz. So they didn't have enough time to learn the connected knowledge.

Now it would be important examining there are any connection between our variables.

Correlations

		Elapsed time between resource and quiz (central)	Elapsed time between resource and quiz (local)	Quiz result (central)	Quiz result (local)
Elapsed time between resource and quiz (central)	Pearson Correlation	1	,824**	-,026	,065
	Sig. (2-tailed)		,000	,713	,352
	N	205	205	205	205
Elapsed time between resource and quiz (local)	Pearson Correlation	,824**	1	-,001	,082
	Sig. (2-tailed)	,000		,990	,241
	N	205	205	205	205
Quiz result (central)	Pearson Correlation	-,026	-,001	1	,020
	Sig. (2-tailed)	,713	,990		,773
	N	205	205	205	205
Quiz result (local)	Pearson Correlation	,065	,082	,020	1
	Sig. (2-tailed)	,352	,241	,773	
	N	205	205	205	205

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 11.
Correlations between variables of elapsed time and variables of quiz result

We examined the elapsed time between open the resource and solve the quiz events, and we experienced that the correlation between the central and the local variables are strong. (r=0,824, p= 0,001) Between the result of quizzes in central exam and local exam are not any connection. This means that the users follow same learning strategy in the central and local course elements but it did not lead to the same result.

3.5. Conclusion

Based on the examinations presented as an example we can make the following observations:

The users followed similar strategies for complete the course in the central and the local regulations.

The users' goal was to successfully complete the course. The result achieved was not important.

Many users didn't want to know anything about the regulation, just "put a pipe next to the course".

We have seen that in the factor of attitude, if we change any factor the attitude will be changing to. We have examined the actual behavior of our users (for more serious conclusions, a more detailed examination is required) but now we can suspect that if we modify this course that will be inducing a behavior changing in the user.

For example, if we modify the learning resources to an interactive e-learning application or we will using some gamification elements within the course (eg. badges, coin gathering or storyline, etc.), maybe the users goal will be change and this case they don't want to just finished the course. If the users are able to sink into the learning content, we think their behavior will change unnoticed.

4. Summary

In this study, our goal was that we investigate how help for us the data mining if we would like to build a successful educational program for upgrading employees' IT security awareness in an organization. First, we collected why it is important and then we investigated how we can measure the actual states. The next section we briefly described data mining as a measurement tool and methodology and the last we show some examples with real data.

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How can the competitiveness of a Hungarian agricultural enterprise be increased? The mushroom verticum in focus, in light of the employees' contentedness

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Abstract: The population increase across the Globe made humanity reach 7,5 billion by 2017. The expected population assumed by 2050 is only higher, meaning our planet will be shared by 9,1 billion humans. Never have so many people lived on Earth before at the same time, and as these people have to be fed, a simple question comes to mind: how will we take up the challenge, and what tools will help to keep, and to increase the competitiveness of the Hungarian agriculture sector? Hungary is a country with strong roots in agricultural tradition. The result of the instances of innovation completed in the XX.th and XXI.st Centuries was that the ratio of added value gained during production made a turnaround. While this ratio was 80-20 between basematerials and processing, currently, it's 20-80. This also means that foodstuffs production, which has its basis in the XIX.th Century, but aims to support the demands of the XXI.st Century, has to be keptcompetitiveatallcosts. Ouranalysisfocusedononepeculiar part of the Hungarian agricultural sector, th emushroom verticum, as we believe that this sub-sector began a dynamic development recently. This is due to the tendency of consumers, wishing for more functional and healthy foodstuffs. Additionally, we can find mushroom not only as traditional foodstuffs, but in the shape of coffees, chocolates, and immunesystemstrengthening supplements aswell. Waste management also uses mushrooms on the producer side, which clearly validates its usefulness. As this sector is firmly dependent on physical labour, we began to analyse it from the employees' perspective, which is also the basis of our results to be introduced in thestudy.

Keywords: Porter's Diamond model, valuechain of mushroom verticum, role of vertical relations.

1. Literature sources

Human resource management differs significantly from other resources. Its positive attribute is that it's a special kind of resource, which has a long lifespan, and has a possibility to increase its productiveness as the time goes by. Furthermore, this is the resource which is capable of renewing itself. Its danger, however, is that it's not the possession of the company, therefore, it can freely decide if it wants to leave the organisation, or does not. The possible reason for leaving is either the low rate of motivation, or the offer coming from another place (Magda et al., 1998). Before determining the contentedness of employees, I think it's important to familiarise ourselves with characteristics of different attitudes. Staw and Ross' (1985) research results show us that employee contentedness is a firm attribute of people which can be replaced with extreme hardship only. We can only gather information on it through the behaviour of employees. Kieser (1995) stresses in his book that Smith, Kendall and Hulin differentiated the importance of wages, the kind of work done, the possibilities of promotion, colleagues, and leaders as important to the employees' contentedness. Locke determined that employee contentedness is a positive sentiment which comes from evaluating their work experiences. Ladahl and Kejner thinks that burying oneself in work can be interpreted as the level the person can familiarise themselves with their work, and the importance of the work they're doing (Ladahl-Kejner, 1965). Greenberg and Baron state that contentedness is the emotional and behavioural reaction of a person to their work. (Szlavik, 2010). Kieser says that until the XX. Century, nobody was interested in the fact that people can actually be content with their work (Kieser, 1995). Bakacsi's opinion is that one of the most important attitudes related to work is employee contentedness. This relates to how much the employees find their work a challenge, and how advantageous they consider their wages earned for it, furthermore, how cooperative their colleagues are (Bakacsi, 2000). Klein stresses that employee contentedness is a general attitude, which comes from the following attitudes' mix: specific work factors, workplace group relations, and unique characteristics (Klein, 2006). According to Porter, being dedicated to the organisation has the elements of accepting the organisation's goals, initiative to reach the goals of the organisation with loyal work, and the wish of the employee to remain part of the organisation. He thinks that employees with high devotion will remain in the organisation even if they are sometimes unsatisfied with various aspects of their work (Porter, 1974). Levy wrote that employees work for their livelihood, therefore, most of their time is spent on work. Employers have the obligation to reward people for this devotion (Levy, 2003). Dawis, Lofquist and Weiss created the work adaptation theory, according to which there's a mutual abiding between employees and organisations. A part of their theory is motivational factors, human necessities, unique competencies and work requirements coming from work activities (Dawis et al., 1968). Juhász improved on this, and thinks that two processes of acceptance are conducted at the same time. The employee's competence, personal characteristics, abilities and knowledge adapts to workplace requirements, which have to be kept. Furthermore, the employee's needs and wishes are satisfied by the organisation and the work (Juhász, 2006). Eskilden and Dahlgaard believe that when determining the motivational potency of a given workplace, the potential for change and importance of work tasks is added together, and their average value is what's really important. Even if one factor is missing, the employee's motivation won't necessarily decrease (Eskilden-Dahlgaard, 2000). Cohrs, Abele and Dette state that the attributes of workplace atmosphere, and the satisfaction of employees have a correlation, which is higher for people who have a higher development demand. They believe employees, who are content with their work, can evaluate their own work better than those who are not satisfied (Cohrs et al., 2006). Employee contentedness is significantly impacted by the quantity of tasks to do, as overwork will sooner or later make employees dissatisfied. Mello believes that employees have to be given work which won't make them overworked, but keep them motivated (Mello, 2006). Greenberg and Baron think that employees are content with their work if they're neither overworked, nor given simple tasks (Szlavik, 2010). In light of Greenberg's and Baron's opinion, we can say that those having a higher position are more content, compared to those in lower positions. Furthermore, employees content with their work usually stay with their organisation for more time than their dissatisfied colleagues, who usually leave their workplace before they could achieve a promotion to a higher position. Drafke's interesting argument is that employment affects the satisfaction level of employees. This means that some people are more content if they've been with their corporation for longer, whereas some people are exactly opposite, as after they reach their career goals, they can't find a challenge, and are almost bored at their work (Drafke, 2009) (Szlavik, 2010). If we take a look at Gyenes' and Rozgonyi's research, we can see that hierarchic relationships have a significant effect on employees. The when and how of superior's intervention is a fundamental factor (Gyenes-Rozgonyi, 1981). Luthas stresses that as far as superiors' behaviour goes, we should analyse how much they consider the performance of their employees. Furthermore, he informs us that leaders have to include employees in any kind of large decision (Luthas, 1998). Choo and Bowley concluded that training can only increase contentedness if the presenter aims participants of the postgraduate course, and has exceptional professional knowledge. We need training and education courses where employees can learn things they may implement during their operative tasks (Choo-Boweley, 2007). Vaught and Pettit declared that if there's a strong connection between the employee and their work, neither vertical, nor horizontal communication has a strong effect on said employee. However, if the employee and their work has a weak connection, vertical communication coming from above has a stronger effect on performance (Goris et al., 2000). Milkovich and Newman believe that the wage system fundamentally affects if the employee remains in position, or chooses another workplace to migrate to (Milkovich-Newman, 1999). Fraser thinks that after a certain level of income, wages won't shape employee contentedness (Fraser, 1983). Poór believes that flexible wages are in selection and justice. When introducing cafeteria, one has to take the needs and requirements of employees into consideration (Poór, 2005). Garai states that there are employees, whose work can also be their hobby. Those challenging more work are most notably those of more knowledge and higher wages, and if they're rewarded by their performance, the market relationship between employer and employee is what's important (Garai, 2003). Co-worker relations can be seen in information exchange during working, in cooperating with colleagues during work, and in personal interest in each other (Héthy and Makó, 1981). Group effort can affect contentedness. Well-organised teams enjoy working together, however, if they work in a team where it's hard to cooperate for members, employee contentedness will not increase at all (Luthans, 1998).

Spector and associates analysed the conflicts of work and family, and they concluded that it has different effects in different cultures (Spector et al., 2007). Geurts and Mauno also prove that females have a harder time than males, because they have to make a better balance between work and raising children (Kinnunen et al., 2004). Work conditions have to be appropriate in order to do tasks efficiently, and generate contentedness. Such work conditions are the physical factors of the workplace, its technological level and used technological solutions (Bencsik, 2004).

According to Luthans, only extremely disadvantageous workplace conditions lower the employees' contentedness (Luthans, 1998). According to Levy, personal performance and contentedness is better, the higher position someone works in (Levy, 2003). Porter believes that the rewards of completed work are the key, because the employees will only be as content with their work, as possible it is for them to be, according to their wages (Porter, 1978). The physical condition of employees, and their contentedness have a connection, of course. When taking a look at this, multiple instances of research support the view that this exists, and is important. Employees that are dissatisfied with their work usually have more health problems. Dissatisfaction may generate mental and emotional problems, and may appear as signs in f. e. worrying, which derails our concentration from efficient work. If dissatisfaction is paired with larger stress or higher workplace loads, sooner or later, physical illnesses may surface. In more serious cases, depression and burnout syndrome may happen (Rozgonyi, 2000).

Being late shows negative attitude towards work, and dissatisfaction. If someone leaves before their work is over, we might want to suspect (Koslowsky, 2009). Sometimes, there are theft cases of employees in the organisation, which Kulas and associates consider a manifestation of dissatisfaction (Kulas et al., 2007).

2. Source and Method

The goal of our research is to analyse the given agricultural sector, and see how contented the employees are with their work, what motivates them, and how efficient their work is.

Our research is structured as follows: we determine the topic of the research and out target goals, then create hypotheses for it. As part of processing international and domestic expert literature sources, we conduct a secondary research, and during the primary research, we use an empirical data collection to build a database. We employ statistical methods to either validate, or invalidate our hypotheses. Sampling was non-representative. During the quantitative research, research target goals can be identified, where the research translates data to numbers, and using statistical methods, helps us evaluate them (Corbin et al., 2008). We constructed our qualitative primary data via questionnaire. The standardised questionnaire makes sure that data can be subjected to comparative analysis (Malhotra, 2001). The employee contentedness analysis was targeted at employees working in our domestic mushroom verticum, using random sampling. The questionnaire contained 25 questions for three topics, the results will be introduced in detail. The questionnaire underwent a preliminary test with 30 participants, originally faulty questions were fixed. During the time period between September 2017 and October 17, a nationwide sample was collected. The programme used for data evaluation is the SPSS 15 programme suite.

MORAKUSZI and associates (2015) deal with the research topic of consumer satisfaction, however, the statements they made are just as applicable to employee satisfaction. According to their description, contentedness can best be measured by questionnaires, focusing on different areas. However, evaluating the data received can only happen if they're converted properly into the format of Likert's scale.

3. Results

We can see on the Chart that the generation and willingness to learn of the mushroom verticum's employees have a significant relation, as the significance level is below 0,05. Most of the 31-40 employees at 65,5% would like to learn at a training related to mushroom production, whereas 34,5% would not participate.

The age of employees, and the effect their work has on the organisation's operation has no significant relation to each other, as the significance value is above 0,05. Based on our analyses, we determined that those employed in the Hungarian mushroom verticum don't know the actual value of their work, and are not clear on the fact that the competitiveness of the organisation is very dependent on the quality of their work. One of the reasons for this is that in the mushroom verticum, physical labour are employed in the majority, and they have elementary education at most, therefore, they don't understand the connection between the work they do during their operative tasks, and the competitiveness of the enterprise. During the questionnaire, we concluded that those employed in the mushroom verticum would like to learn at training related to mushroom production, thereby beyond production of healthy foodstuffs, mushroom production could also operate as one of the economy's pulling sectors. Our hypothesis, which states that those employed in the Hungarian mushroom verticum have a need to participate in postgraduate training, which would help their everyday work, holds true. The ages of employees, and the importance of their work within the organisation has no significant connection, as the significance level was above 0,05.

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Challenges of starting a success career from the aspect of the Z generation

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Abstract:In this way, it's considerably hard to create a workplace atmosphere and tasks which are optimal, attractive and motivational for all employees having different value systems and social backgrounds. It's no coincidence that in the later decades, more and more research was aimed at understanding how the ranking of tools which can motivate employees changed. In light of how the HR field experienced an increased intensity in change. In this study, we introduce partial results of a research project, which was made with the support of the New National Excellence Programme (code: ÚNKP-17-4) of the Ministry of Human Resources. [1] As part of the two-phase project, we analysed the factors influencing the choice in career and workplace of the Z generation using both qualitative and quantitative techniques. The results - in our eyes - can be used well for companies which wish to broaden their horizons in creating new jobs, in order to reach the Z generation, as they can receive information on the important details that make the workplace more interesting and attractive for the younger generation.

Keywords: employer branding, generation marketing, primary research

1. Intruduction

In this way, it's considerably hard to create a workplace atmosphere and tasks which are optimal, attractive and motivational for all employees having different value systems and social backgrounds.

It's no coincidence that in the later decades, more and more research was aimed at understanding how the ranking of tools which can motivate employees changed. In light of how the HR field experienced an increased intensity in change.

In this study, we introduce partial results of a research project, which was made with the support of the New National Excellence Programme (code: ÚNKP-17-4) of the Ministry of Human Resources.

As part of the two-phase project, we analysed the factors influencing the choice in career and workplace of the Z generation using both qualitative and quantitative techniques.

The results - in our eyes - can be used well for companies which wish to broaden their horizons in creating new jobs, in order to reach the Z generation, as they can receive information on the important details that make the workplace more interesting and attractive for the younger generation.

Generation marketing might be of assistance in fields where this high level of sophistication is not an option, where large segments and large groups are targeted throughout the elaboration of the marketing strategy. The essence of the concept is to become familiar with the characteristics of each generation’s time period, and based on this, their behaviour might be predicted more or less, thus explaining their decisions of today. Generations are bound together by their joint experiences, life sensations, and finally, mutual values. Generation researchers define generations based on the cohort experiences of youth age: the mutual experiences, which could later influence the shaping of the personality and value system of the age group. (Törőcsik, 2003).

Researches claim that the economic-social environment, in which that particular generation was socialized is a rather important aspect. The impulses, influences they have experienced, or the objects characterizing their environment, and the events defining their lives greatly contribute to their performance on the labour market, and attitude towards work and career. Accordingly, professional literature reveals the following generational peculiarities (Tari,2011):

“Veteran generation”

Usually work for one employer, on one field throughout their whole life. It is true that they have built a new world, in which they have gathered valuable knowledge and experience, however many times they stick to solutions which worked for them in the past. Their presence on the labour market is not typical today.

“Baby-boomer generation”

They desire new ways, knowledge, information, action, they build careers. This is what makes them different from their parents. They are the great rebels, the “flower children” of the seventies, who wanted to live in peace and happiness. Then they grew up and started to work. Though they still question the world created by their parents, sometimes the old habits they were taught emerge. Today they are characterized by discipline, respect and persistence. They are attached to their workplace, and their desk. Horizontal career paths have great importance for them.

“Generation X”

The messenger, or transient generation. They have encountered the world of Internet already in their teen and youth age, and their work and life is basically defined by the web. Most of them are typical “salary man”, who let others tell them what to do and how, they follow the company rules to the letter, and become incorporated into the organization. Nevertheless, they are able to renew themselves again and again, and keep up with the fast pace of today’s world. The name X does not only refer to the people, but also to a certain kind of social hierarchy, in which people are prisoners of the sacred triad of status, money and social ladder, with an emotionally and intellectually empty life.

Members of generation X are not those ripped jeans kids who “sleep together out of wedlock, did not learn that in God we trust, and do not respect the Queen and their parents”, as quoted by the Time magazine in 1990. Generation X is at the peak of its performance now. Their knowledge, experience, wisdom, discipline in work and loyalty represents such a value which could make any type and sized company one of the top ones.

This was the generation, who was most affected by the 2008 crisis, most of whom experienced on their own skin that how to worry about their jobs and how to be vulnerable to economic cycles. (Csiszárik-Kocsir – Medve, 2012a; 2012b; 2013a; 2013b, Csiszárik-Kocsir et.al, 2013).

“Generation Y”

They are the first wave of the digital generations, internet is present in their everyday lives. Generation Y brings a serious challenge for the labour market, since they represent a new level of quality compared to their predecessors, the messenger generation. They confront long existing rules with an even greater confidence than that of the previous generation, and they also have different abilities. Esoteric literature says that they are on a mission: their task is to open the spiritual eye of mankind, and to form a critical mass with the duty to initiate changes.

They grew up together with computers, they are quite practical, and know their way well around the internet. Generation Y shapes and forms the workplace themselves to fit their needs. The millennium generation wants to enjoy their workplace: it should be modern, different from ordinary, with spacious rooms and with a kitchen to spend meals together while chatting. (Ali, Szikora, 2017)

The Y generation is more aware of the financial issues, they are more interested in their finances, and they clearly know, what is the value of the money (Csiszárik-Kocsir et.al, 2016; Csiszárik-Kocsir – Varga, 2017a; 2017b).

“Generation Z”

Members of generation Z – the target group of our primary research project – were entirely born into the world which is more and more defined by the various digital technologies: they are the IT, or Digital X (DY) generation. Generation Z, who entered the labour market in the first years of the 21st century, is characterized by rapid changes. It is not by chance that they got their name from the expression “zappers”, or “switcher, hopper”. They live their lives in a much faster pace than their predecessors, and if there is something they don’t like – such as a job – they are ready to change immediately. Compared to the previous generations they represent an entirely different world: modern technology, IT, the online world reached the adult age at the same time with them, becoming a part of their personalities.

They live their social relations in the real and virtual world at the same time. For them it comes natural that their everyday communication, emotional and social life, creative spirit and playfulness are performed on the internet, with the help of mobile phones and other digital devices, with each other, and shared in front of the greatest audience (Facebook, Twitter, iwiw…). Members of the digital X generation practically never knew a world without internet, telecommunication or television. Maybe this is why they are battling with the lack of interpersonal skills, and the inability for active listening?

While in the life of previous generations, actual and online presence existed separately, it goes hand in hand harmonically in case of generation Z, for whom technology has become one of the most important tool of expressing their identity.

Fast access to information is vital for this generation, and they are typically characterized by multitasking.

The qualitative research conducted by Hotwire amongst 400 communication experts from 22 countries on 5 continents reveals that it has become outdated to deliver messages to a great mass of people, and personalized messages have become much more important; the new communication channels and new tools (engagement tools) have transformed communication habits (Molnár, 2016).

This attitude is specifically true for generation Z. Those who were born in the end of the 1990-ies, prefer multimedia contents instead of written texts, which means that their processing methods are basically non-linear. They want to see the result of their work immediately, and expect instant feedback. They are able to manage several things at the same time, and they reach the information they are interested in rapidly, through a variety of channels. Regarding the self-development of generation Z, their internal motivation to learn and consciousness are the most significant traits. Their interest is diverse, they gather an increasing proportion of their knowledge from outside of school, and though it is important for them to obtain information in an entertaining way, at the same time they are critical and reflexive media users. Throughout their information gathering mechanisms, they prefer simultaneous interaction, and knowledge of practical use. (Rumpf, 2014)

Experts also highlight that in case of young people born after 1995, there is a much thinner line between childhood and youth age, and also between youth age and adult age. It is explained by the fact that these children who explore the internet in an increasingly conscious manner are practically operate in the very same environment as adults, therefore the boundaries of entertainment and work blend in: the range of skills and competences considered to be valuable has also transformed: in the society of the 21st century, working in a rapid, precise and productive manner is in the focus. The increasing complexity of tasks demand creativity, advanced communication skills, flexible attitude and an ability to work in groups from young people who are becoming experts around the millennia. This new expectation of the labour market naturally affects education as well: members of generation Z require completely different methods and syllabuses, providing a constant challenge for those who intend to modernize formal education. (Pintér, 2015.)

The 18-24 years old age group consists of about 850 thousand youngsters, the majority of who (about three quarters of them) is already, or soon will become an active player on the labour market.

The fact that this age group shall enter the world of work much sooner than the generations ahead of them means that domestic employers will begin to meet more and more gen Z employees.

As a result, it is important to understand how the young people of today choose their workplace. What kind of incentives work for them and how, where would they prefer to work, and what kind of a workplace and career they dream about.

Since there are a number of studies confirming that the attitude and value system of the Z's differ from the previous generations from several aspects, it is worth taking note of their peculiar characteristic as employees. (Profession.hu 2015)

The appearance of generation Z has restructured the domestic labour market as well. (Csehné et al., 2017).

An essential criteria for employers who attempt to reach out to them is to be able to deliver targeted strategic solutions intended for this specific age group.

There are several studies examine the motivation and attitude of youngsters (Lazányi, 2014), generation differences are not the focus points of these.

1.1. How can be characterised the generation “Z” as a potential workforce

Job-hopping is natural for generation Z. They move on without compromises, they are jumping between workplaces just like a monkey jumps from tree to tree, anytime they feel like they need to, they won’t get stuck at a company, they will not worry about having a steady income or a fix desk somewhere. They are brave, initiative, they have less doubt regarding their own abilities and limitations. They have a practical mindset, and appreciate the freedom of the individual, and indirect, informal environments. They are building a new world, since they do not represent a traditional office work culture, as they are able to perform their tasks in any part of the world with the help of internet, and they create their own virtual communities. Spiritual literature identifies them as the star or crystal generation. They are characterized by being rather smart than wise, and they feel comfortable in the world of technology. They are not good with words and emotions, and they are able to realize their desires even if the cost is high. They will not implement their revolutionary ideas individually, but they will rather serve the society in collaboration with each other. 97 percent of young people considers the protection of the environment to be important, and 74 percent of them already practices green behaviours such as recycling or selective waste collection, and purchasing energy-saving light bulbs. When having to choose between two workplaces, they rather prefer the one with a conscious CSR strategy and an environment-conscious way of thinking. (Ridderstrale, 2004)

For members of the digital generation, personal relations are decisive, and they use the internet as a tool facilitating the maintenance of existing friendships and relations. The five most attractive occupations according to them are veterinarians, teachers, policemen, doctors, and of course football players, though 64 percent of them aspires to become their own boss as an adult instead of having to work for somebody. This is an important information for companies. They will have to establish such an organizational structure and culture, which supports individual work and has a flat hierarchy. The trend of “flattening” of organizations will continue in the beginning of the 21st century. Compared to the size of the organization, the levels within the hierarchy will decrease. The number of employees reporting to a single leader, and the number of employees supervised by the leader will increase, however hierarchical levels will disappear. The number of positions reporting to the CEO will grow, while the number of hierarchical levels in between will fall. Divisional leaders will get closer and closer to the CEO, they will work under a tougher control, but at the same time for a higher salary, and with an incentive that stimulates their long term interest. (Kissné, 2010; Tari, 2010)

2. Methodology

In this present study, we demonstrate the partial results of the second phase of a research project.

Within the frame of this two-phased project, we analyse the factors influencing the career and workplace selection of generation Z, via qualitative and quantitative techniques. Our objective is to be able to provide a certain guideline for employers focusing (also) on generation Z, which will contribute to the definition of the milestones of a target group oriented employer branding strategy.

In the first phase of the research project we have conducted a qualitative analyses via thirty mini focus-interviews with a semi-structured interview guide. Respondents were recruited with the snowball sampling method, using one filter criteria: based on their age, respondents must belong to generation Z.

The maximum number of respondents in one focus group was 6, in all cases we have arranged heterogeneous groups based on gender, to be able to confront and compare opinions.

Interviews were audio recorded. The results were processed with the help of regular content analysis methods.

The goal of the qualitative phase was the exploration and the definition of hypotheses, and to prepare for the second phase, the qualitative research.

The main questions of the first phase of the research focused on the followings:

What is the opinion of this age group on career, success, and preferred and undesirable workplaces?

What is the importance of a career and success in work, and what are the factors that help them most in the realization of their individual goals?

What do they expect from a good workplace? What kind of activities, programs offered by the employer would suit this target group best?

What kind of generational problems does this age group see, perceive? How open are they towards working together with other generations, what are the advantages, disadvantages they feel and experience?

In the second phase, the qualitative survey has been implemented. Again, the non-representative snowball method was applied during the sampling process, and we have recruited respondents with the same filter criteria regarding their age. Throughout the conduction of the survey, we have used a standardized questionnaire designed by the results of the qualitative results. With the application of the CAPI method, we have received 1178 valid questionnaires as a result of the survey.

In this phase we attempted to find answers to the following research questions:

What are the preferences set by respondents when selecting their place of work?

How efficient are the motivational factors we analysed in case of this generation, in order to stimulate them for a more efficient performance at work?

What are the information channels this generation prefers when gathering information about workplaces and careers?

How and with what conditions would they use the "assistance of a career-supporting mentor" defined as a result of this research, or what are the services they consider to be really useful?

In this present study we aspire to demonstrate the partial results of the quantitative and qualitative phases, focusing on the requirements and ideas concerning to a successful carrier from the aspect of the generation "Z".

3. Findings

3.1. Opinions about a succesfull career

We have asked students about what they believe to be necessary for a successful career of a young beginner.

Many of them emphasized knowledge, determination and strong motivation.

They feel that in order to be successful in a particular field, one must be persistent, motivated and determined. However, a number of external factors is also necessary, such as relations. "To be at the right place at the right time", to be able to exploit opportunities, and also that the workplace should enable appropriate opportunities and a suitable environment for career and development.

According to participants, a beginner can only be successful today, if he is flexible, able to cope with load, up-to-date, well-informed, enthusiastic and motivated, can take up the "constant speed" of work and adapt to the expectations demanded by an ever accelerating world.

In order to obtain these characteristics and competences, and generally for a successful start, mentors play a significant role.

Young people agreed that it would be quite useful to have a supporting person (mentor), who would prepare them to be ready for work.

They feel that the best possible way to implement this is within the frame of education (as an optional course), or to offer it at an affordable price as a training session, where managing directors, HR experts, successful people in particular fields would present the most important advices based on their personal experiences.

Beginners could receive personalized information and instructions about how they should prepare for an interview as a beginner, and from where they should gather information about job opportunities. What should they take into consideration when having to fit in at a workplace, and what kind of rights and obligations does an employee have, thus receiving practical and useful information and guidance.

With the management of such training sessions, corporations might obtain a high level of awareness and recognition from the young generation – who are otherwise quite difficult to reach and persuade. We believe that sponsoring these professional programs could not only serve as an effective means for building relations for an employer who in many cases face the challenge of skills shortage, but it is also an excellent tool to build commitment towards the brand.

The currently available alternatives, limited to workshop-like open days and a few hours long ad hoc presentations do not offer comprehensive solutions. Though these are refreshing initiatives, a systematically built professional program focusing on the requirements of the target group might operate with a much better efficiency. And based on the findings, it seems that the demand from the future employees exists towards such events.

3.2. Preferencelist in case of selection a worplace

The results of the quantitative research are in accordance with the conclusions of the qualitative research, where during the discussions about how they select their workplace, the first factor respondents mentioned was the payment as well, and the most frequently mentioned drivers also included a good working atmosphere, attractive environment, and a good team, where they feel good while performing their job.

The results of the qualitative analysis show that fringe benefits and more free time also serve as great motivational factors, being on top of the preference list. While these were also important in the quantitative research, they were not perceived as the most important ones. A creative working environment and the opportunity to implement their own ideas seemed to be more important than a good cafeteria system. (Table 1.)

Table 1.
Ranking of proper motivation tools

To what extent do the following factors motivate you for a better performance at work?	average
higher salary	3,64
opportunity for promotion at the workplace	3,46
opportunity for a career abroad	2,60
greater independence in decisions	3,08
more free time, less work	3,21
opportunity to implement own ideas	3,25
to work in a good team	3,47
opportunities to take part in training sessions, professional development courses	2,97
other fringe benefits (cafeteria)	3,22
modern, creative working environment	3,32

The opinion of experts also confirm the conclusions of our research, that even though the salary is important for the younger generations, it is not enough to retain members of this generation at a certain workplace. The employer brand is becoming more and more important for them, and consequently, their desire to be proud of working for that particular company. A pleasant atmosphere, and development and career opportunities are also important, as well as the fact that they should enjoy their job. If they are satisfied with these factors, there is a chance that they might spend longer time at a workplace. (Kissné, 2014)

Respondents explained that in order to achieve their goals and dreams, they are able and willing to work hard, but only if their efforts are recognised and compensated.

Self-fulfilment, self-management and an inspiring working atmosphere are also significant factors. A number of experts have already highlighted that these young people show the greatest level of sensitivity towards receiving not only a salary, but an identity from the company as well.

We have asked participants to describe how they imagine their perfect workplace.

The results revealed that at an ideal workplace, there is a good team, an expert leadership, there is no stress, yet a high-paced and diverse work awaits those who wish to work there.

They also wish to perform their duties within flexible working hours, in order to be able to coordinate their career with their personal hobbies, families, and they desire to spare time for themselves as well.

At the ideal place, a motivated, creative employee is enabled to implement its ideas and plans, and their personal career path is supported, since there are several opportunities for improvement and advancement.

There, a good performance is recognised financially with a proper salary (according to participants, it is around net 300-400 thousand HUF), and other allowances.

The employer has a good reputation, and implements significant developments on its relevant market and industry, therefore the employer might get to know the latest industrial innovations first hand.

3.3. Importance of reference person

From the aspect of marketing, it is an important issue throughout the elaboration of a target-group specific communication strategy, to get to know those who are able to influence our subjects in their decisions, and whose opinion is significant for them, who they consider to be a reference person.

On one hand, it was important for us to know who these surveyed youngsters regard as their role model in terms of a successful career.

On the other hand, it provides a feedback of the value perception of the generation: the fact that who they consider to be successful also reveals what kind of values they attach to the notion of success.

One characteristic of generation Z is the lack of socialization. Though they are active users of social media, where they have many friends, they live their social life day by day mostly on these channels. The classic social network which still existed for the X, has now transformed in case of the Z. It greatly reshapes the process of learning for them, and also it influences who they perceive as a role model, a good advisor, or a competent person worth listening to within their environment.

Bases on the results, we were able to differentiate two entirely different groups.

For one group, the parents of members represented the example of a person with a successful career. These parents are seen by their children as satisfied people, who are successful and recognized in their work. They considered them to be successful, since they managed to establish appropriate living conditions, and also were able to spend quality time with the family – with them, the children. Young people see their own parents to be balanced, happy and satisfied.

They wish to be successful in a similar way, either continuing what they have started (for example a family business), or to pursue another profession, but with similar results and feedback.

Most of the parents considered to be successful run their own business, while those who work as employees represented a smaller proportion.

The most important positive values were the fulfilment of dreams and independency in case of the former, and appreciation and stability for the latter.

The fact that these role model parents keep on improving their skills and find pleasure in doing what they do are also dominant factors for success, irrespective from what position they have.

The other group however did not perceive the career of their parents to be exemplary. They see tired, shattered people, who in many cases cannot or do not want to make a change, and who though work, still fail to receive the well-deserved or expected compensation, neither financially, nor morally.

Therefore in case of these young people, it was much more typical to seek for a role model outside of the family. The majority named well-known public figures, media personalities, or a singer-performer, where the common feature of being perceived as successful was their popularity, because they create, “do something good, unique”, they love what they do, at the same time providing them a proper living.

Those who did not mention actual persons, described the example of a person who is successful in work: “who is able to get into a high position within a relatively short time, with a high salary, but who also has time for other things as well besides work.”

Though respondents named reference persons from two different social groups (parents-family, well-known people-media personalities), there are overlays between the values associated with success: financial and moral recognition, self-fulfilment, development and sufficient time for themselves.

Since the majority are curious and open towards new things, they would prefer a slightly more practical approach in education: to have more opportunities for proving themselves, to be included in actual projects throughout their training. It would give them a certain knowledge which they would be able to make use of effectively in their work as well. (GKI, 2016)

They demand interactivity, diversity, the application of technical devices, and they prefer to manage their own time even during their education.

Education should adapt to these demands, with the application of an entirely different approach, method and structure.

Conclusions

In our study we have focused on generation Z, and throughout our researches, within the frame of qualitative and quantitative surveys, we have attempted to find the answer to the question, what makes a workplace appealing for the Z's, and what they think about the successful carrier path, how can we characterise the ideal workplace for them.

A successful career path, a good working atmosphere and team spirit, and a good salary are the most important drivers during the selection of a workplace.

In case of those who already work there, a high salary and promotional opportunities serve as the best incentive.

A workplace is considered to be ideal if employees are paid well, and if the company has the reputation of a reliable employer.

The results of the research revealed that the major milestones of an employer branding strategy focusing on generation Z are flexible HR, a diverse and interesting scope of duties and tasks, opportunities promising a higher status, greater financial benefits, and a responsible corporate behaviour.

Considering the fact that the opinion of friends and relatives is an important attribute of an ideal workplace, it is also essential to focus on the internal target group of employer branding during the course of communication, since employees will become opinion leaders, ambassadors, those friends and relatives who actively shape the opinion of future, potential employees.

We believe that all of this requires a two-way, active communication from HR, and those who already work for the company must be reassured that they represent an active contribution to the reputation of the company. Results of the research also concluded that for generation Z, the nature of the corporate ownership (multinational, domestic) or the size of the company (a lot of or a few employees) do not matter, they are much more driven by a diverse scope of duties, team spirit and career opportunities. It creates a great opportunity for small and medium enterprises to become an attractive workplace for youngsters, since not only multinational companies, "the big ones" have the opportunity to design individual career paths, mentoring plans or the creation of a good team spirit. In many cases it might be implemented easier at a workplace with a lower number of staff.

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How should I tell you - enterprise communication in the sme sector

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Abstract: Enterprise communication and information flow are popular research topics of economists, sociologists, and linguists. Naturally, they all have their own perspective on their research, and seek different faces of the key to efficiency. Researchers however found a middle ground regarding the fact that successful people and enterprises communicate with their environment effectively. Therefore, it's natural to ask, is the secret of success the way we communicate? How can we tell things of importance to the enterprise's life, in a way that it reaches the recipient via the most efficient way? Or what form of communication can be adapted successfully to certain sectors, in order to optimise information flow? These questions awakened our curiosity, and lead us to starting a primary research to shed light on the communication channels of different sectors, like construction, agriculture or healthcare. We also tried to find a connection between f. e. the communication channels of enterprise culture and the internal communication channels of employees. Another interesting question is: which communication channel holds what level of efficiency? Also, what preferences do people who accept information through them have? How much do they prefer them as ways to reach private or business goals? We will introduce the results of our research in this study.

Keywords: employer branding, generation marketing, primary research

1. Intruduction

In reality, human communications contain signs in many channels, which are mostly arranged in a way that's impossible to decode, and full of double meanings. Different codes can be grouped depending on the choice of communications channel.

The direct human communication process can be conducted through two distinct channels:

-Sight

-Hearing

Apart from speech and written language, which are the most basic communication channels, used most widely, non-verbal communication also has a distinct system of signs. (Forgó , 2011) According to Budai (1986), direct human communication can be defined as a fundamental phenomenon of all communications, which happens between two human beings directly, during which all perception organs have a role, but the most notable are eyes (sight) and ears (hearing). During indirect communication, there's no personal connection between the two people, only through technological tools and channels does information flow. (Budai , 1986) (Forgó , 2011) Human beings use their voice to state more than any other tool. (Les , 2001) believes that voice is the most advanced communication tool, and it doesn't simply facilitate the throughput of thought and information, but can also serve as a way to transfer feelings. Speech, verbal communication has the most notable effect in that it's conducted with a perpetual control, and is the communication channel most widely used. (Les , 2001) (Budai , 1986) Language acts as a code system, and speech is a verbal communication type, which can be used within transferring information, while speech itself plays the role of middleman, along the non-verbal signs. Its development is mostly influenced by abstract and complex definitions, words and other descriptions, both in their appearance and usage. (Budai , 1986) Written text is an indirect type of communication. During written communication, replies may have a significant time difference, or in the worst case, no reply may come at all. Below, we'll introduce the advantages written communication has over dialogue:

Using written form, the message becomes lasting. It has an increased responsibility on the side that tells. Writing makes it possible to plan and detail text creation. We have an opportunity to find the most applicable form for transferring thought and information, along the optimum style, tone, format and tool. (http://www.kozlesmodok.hu/)

Ray Tomlinson was the one who invented, and first used e-mail in 1971. The fallacious thought that internet came into being before e-mail is widespread, however. This communication tool was first personified in primitive form by simplified text messages, which made it possible for the supercomputers of that time period to communicate with each other, after which it appeared in the internal network of the American research institute in question. The first messages which appeared around 1965 were indeed very primitive, and had no unified standards. (Bátky , 2016) In 1972, Tomlinson introduces the general usage of the @ symbol in electronic mails' recipient field, and during the same year, Larry Roberts creates the first e-mail management program, which made it possible to use today's well-known activities (send, receive, respond, forward) (Meixner , 2004) During the early 1980's, American enterprises introduce, and use the e-mail system. In these years, this innovation technology was considered incredible, by which they were capable of sending and receiving messages and information from all around the world. (Trout, és mtsai., 1997) In the 1990's, the usage of general electronic mailing was more widespread, and due to the sudden increase in fame, the first spam appeared as well. These are e-mails containing advertisements, web addresses, contents, and in the worst case, viruses which the recipient didn't want to receive. In 1993, the first mobile phone capable of sending and receiving e-mails was introduced to the market, but these tools were very inferior compared to today's smartphone. Free e-mail exists since 1996. In this year, a married couple introduced an e-mail service system named HoTMaiL, which was free to use. After this, multiple free e-mail systems were created, like gmail and yahoo mail. (Bátky , 2016) With the advent of social media platforms, and due to the applications related to them being developed for smartphones and similar gadgets, traditional e-mail systems found multiple contenders. In 2009, Google introduced their immediate messaging system, which didn't bring the glory the company wanted it to. In 2010, Facebook introduced the Messenger, which almost immediately became a hit. Nowadays, Facebook has close to 2 billion active users, which is always increasing, and in great strides. (Tamás , 2017) In Hungary, Social Adventures (2017) conducted a research, according to which, 5,4 million people are active users of Facebook, and though they revealed that growth actually stagnates, Messenger is used by nearly 4,7 million people, whereas Viber has 225.000 users, and WhatsApp has 355.000 users respectively. (Lévai, 2017) Soon enough, the age where social platforms, and social media completely integrates into the operation of enterprises, furthermore, to a degree where efficient and competitive operations will make it a requirement will dawn upon us. (Powell, és mtsai., 2011) Nowadays, social media is not only the new platform of marketing-communications, where enterprises can reach their clients at any time, with low cost, in a proper selection, and in a concentrated manner. It will reach a role big enough for the internal and external communication, and PR of the enterprise to make it indispensible. (Smith, és mtsai., 2011)

2. Methodology

We used both qualitative and quantitative research toolsets to make a solid background for the research methodology. The target group of the research were people employed in Hungary. In order to conduct the research, we used pre-tested, standardized questionnaire, snow-ball sample taking methodology. As the result of the recruuiting 171 applicable responses could be analised. During the statistical analysis process SPSS programme has been used.

3. Findings

3.1. Sociodemograficcal background of the sample

Looking at the age groups, and generations, the Y generation is represented in the highest number in our sample, with 40%, whereas the X generation got 27%, and the Z generation got 24% of the overall numbers. The lowest number actually came from the Baby Boom generation, at 9%.
We also analysed the degree of education our participants have. Nobody had less than 8 grades of school from our participants, and merely 4% only graduated from primary school. 21% of the participants were workmen, while 29% graduated from high school. The highest number of participants at 30% were those who graduated from college, and 29% graduated from university.

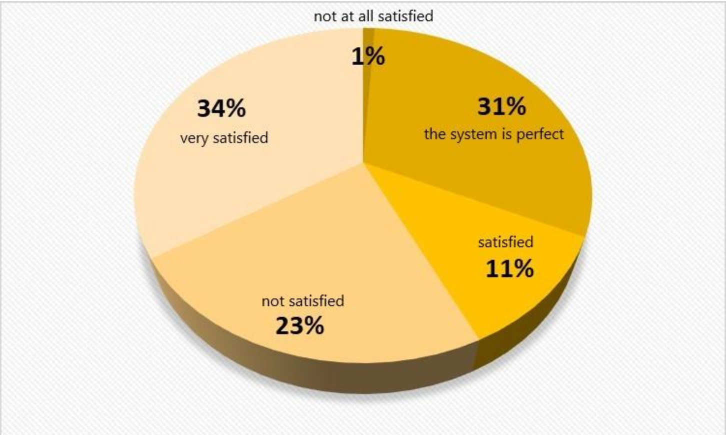

Figure 1.
Satisfaction of participants related to internal communications
Source: own research, 2017 N=171

The figure above shows the level of satisfaction participants had. We can clearly see on this figure that merely 1% of the participants were completely unsatisfied with the internal communication system of their enterprise. 23% were not satisfied with the used internal communication system, whereas 11% rated information flow and internal communication average. 34% of the participants who returned the questionnaire considered the internal communication system satisfactory, and 31% were completely satisfied with information flow, and the communication system.

Our hypothesis was that Viber is mainly used by females. Our questionnaire clearly showed that there's a significant relation between communication with the leadership and genders, as the level of significance is below 0,05. Males consider using Viber as a communication channel with their leaders more efficient and possible, compared to females. 23,3% of females never communicated with their leaders using this platform. This number for males is 0.

Our second hypothesis was that with unknown people or departments, establishing connections, or communication is more efficient and better using Messenger, Viber, and other modern tools and channels, compared to traditional e-mail systems.

Our research showed that there's a significant connection between generations, and the relation between modern communication tools and channels and e-mail systems when connecting, or communicating with unknown people, or departments. Our numbers showed that with the advance of generations, up to the Y generation, trust in modern tools increases, but the Z generation suddenly started to lose this trust established in its preceding generations.

In order to make organisations successful, an maximising the efficiency of the internal communication system is indispensible. With the advance of modern technological solutions, internal communication systems are mostly incapable of keeping the tempo of the perpetually changing and developing innovation. In the XXI. Century, everyday communication introduced tools and channels, which are not only used by mainly innovators and the younger generations. According to employees, the most efficient tool-channel for communication with leaders is the personal meeting, however, they consider event sharing platforms to be barely known and used. According to our beliefs, if the companies could integrate event sharing platforms into their operations properly, they could significantly increase the efficiency of their meetings, and the information in the hands of their employees and members. Messenger, Facebook and Viber are used, and considered efficient by most employees as communication tools and channels. Not many of the leaders mentioned these platforms as well-known communication tools, and they don't consider them efficient either.

Appearing on these platforms should be a priority for leaders, because most of the participants consider the vertical upward communication on them the most usable, and most efficient. In the case of the Z generation, we consider the fact that they see e-mail as more reliable than the modern tools and channels of the XXI. Century interesting. However, they think that these tools/channels are better for

vertical, and lateral/horizontal communication. Then again, they favour e-mail for communication with unknown people/departments.
These let us conclude that if the members of the Z generation have to share information which can be called priority, they prefer e-mail, whereas if they have information which isn't all that important, they choose the modern tools. We think that the members of this generation consider e-mail messages to have a more distinct prestige, compared to those sent via modern tools. Most of the participants that have at most workman education consider te internal communication system to be inefficient. Based on the interviews conducted with their leaders, we concluded that managers prefer e-mail, personal meetings and phone calls the most efficient tool/channel, whereas workmen mostly (most notably in agriculture, construction and mushroom production) don't have tools and platforms, which could operate the above mentioned tools and channels effectively.
We believe that if organisations could find the common ground between the leadership and these employees, they could benefit the operations of the organisation as a whole. In order to make this middle ground happen, these employees have to be educated, so that they can understand these tools, and become capable of using them on an elementary level. Organisations in different sectors can't be clearly differentiated between in our research based on internal communication systems, and applied channels and tools considered efficient by employees.
This makes us believe that negative stereotypes, which are mainly aimed at the internal communication systems and information flow of agricultural organisations, and fiscal institutions, have no basis. However, in order to clearly prove this, it's indispensible to conduct further research.

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Changes in former industrial areas

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Abstract: Industry and mining are major economic sectors. Decline and shutdown of these sectors caused a lots of negative impacts. Due to the formation of „rust belts", they could not get out of their negative situation. I examined a few settlements, which are located in Central Europe and at Northern Hungary. My diverse surveys are based on calculations, secondary data, overview of professional studies, results of previous researches. The differences of their development-trends were well discernible.

Keywords: industry, mining, post-socialist places, economic development

1. Introduction

As a student of regional sciences, it was important for me to evaluate and analyze an area not only from one point of view, but also to examine a complex issue from another points. I considered of importance, so I chose the examination of the change in former industrial areas. The subject is personalized. I had previously worked with a specific mining village, so I chose it as my doctoral research. This study is only a little part of my research. In my perspective aims there are the examination of more towns and industrial areas (zones). The primary research locations are Eastern-and Central Europe. I plan comparing roads and directions of development, overview of the international examples and modelsystems. I would like to setting up a model system in the domestic context

2. Actuality and significance of the topic

Today it has a lot actuality and significance. Industry and mining such as work systems had a prominent role for a whole time in the life of the countries and continents. These countries were revived by technology development.

Industry and mining had a bigger role in Central- and Eastern Europe before 1989. After the change of the regime, the economy of the former industrial settlements, mostly declined.

Mining and industry as an activity has long defined the image of some regions. With the development of technology and technology, I. and II. industrial revolutions have significantly advanced this sector.

Later, however, this progress has led to significant environmental and economic problems due to the shortage of mineral resources, the increasingly difficult exploitation, increased production costs, unmanageable extraction methods, excessive mining, world market prices and world trade (Wenzel 1880, Goodland 2012).

Due to the changes that began in the 1980s, the exploration of inventories and the rise in the world market price of crude oil, problems in the 1990s that led to the rapid demolition of mining have also appeared in Hungary. More and more mines and factories have been closed so many people became job seekers. Privatization of the sector, with only one or two exceptions, can not be considered as successful. Along with the economic problems, the social problems associated with it have also been compounded. In the most cases they were not able to recover from the bad situation in this twenty-thirty years and huge debts were also accumulated. Nowadays these are backward areas. Their catching-up must be helped. (Siskáné Szilasi et al. 2013).

In rural development such areas are called peripherical, semi-peripherical zones. National supports are important. These zones must be helped both economically and socially.

The opening and closing of the mine can result in enormous changes in the employment conditions of a region, leading to a significant employment migration. These changes can occur very quickly, which places enormous burdens on the local service sector and infrastructure. Accelerated migration processes change the living environment, shake the cohesive power of local society and make the community vulnerable (Haney-Shkaratan 2003).

3. Material and methods

In my study I examinated five Hungarian settlements and one other town in Slovakia.

Hungarian settlements: Ózd, Kazincbarcika, Sajószentpéter, Bátonyterenye, Lőrinci.

Town in Slovakia: Dubnica

They have common traditional socialist and industry past. I analyzed different directions. I examined their general position based on literature and indicators.

3.1. Display of the settlements

The five Hungarian settlements are at Northern Hungary.

Ózd

Ózd is located in Borsod-Abaúj-Zemplén county, Ózd district. It is cca. 60 km far from the centre of the region, Miskolc. The population of the settlement was 33 141 people in 2015, based on the data of Hungarian Central Statistical Office (HCSO). The town has several centuries of mining and metallurgical past.

After 1945, as an industrial town revived. The most people worked here from the neighbourhood. After the change of the regime (1989), it got into a difficult position with complex social and economical problems. It is the biggest town among the examinated settlements.

Kazincbarcika

The town can be found in Borsod-Abaúj Zemplén county, Kazincbarcika district. It lies near to Miskolc, cca. 25 km. The population of the settlement was 27 078 people in 2015, based on the data of HCSO. It has been developed in the socialist decades. After 1989 there was a strong decline and then gradual stabilization. There was a big chemical factory, Borsodi Vegyi Kombinát. After the change of the regime, it had successful privatization and transformation. Now it is working as BorsodChem Ltd.

Sajószentpéter

The third town, among the examinated settlements, can be found in Borsod-Abaúj-Zemplén county. Sajószentpéter is part of two different administrative area. It belongs to the Kazincbarcika district and Miskolc small region. It causes a lot of problems (more information on the Results chapter). It lies very close to Miskolc, 16 km far. The population of the settlement was 11 491 person in 2015, based on the data of HCSO. Its mining and industrial past is several centuries old, the main sectors were the coal mining and glass production.

Bátonyterenye

Bátonyterenye is in Nógrád county and centre of the Bátonyterenye district. It came to be fusion of different settlement parts (Nagybátony, Maconka, Kisterenye and Szúpatak). The population of the town was 12 221 person in 2015, based on the data of HCSO. The settlement has typical folk („palóc), industrial and mining traditions. When the extractive industry has been declined, tourism developed. It caused progressive economic relations.

Lőrinci

Lőrinci lies in Heves county and Heves district. It is very near to centre of the district, Hatvan, cca. 10 km far. Among the examinated settlements, it is the smallest town. The population of Lőrinci was 5 446 person in 2015, based on the data of HCSO. It owns rich economic image in its history. There is a decisive factory, the Mátravidéki Power Station.

4. Results

4.1. Results in connection of Ózd

Ózd is in many viewpoints out of the scheme. The settlement has negative social and economic indicators. It has been not able to stabilize its position in the past decades.

Figure 1.
Number of the registered unemployed people in Ózd (person)
(Source: Based on the data of the Central Statistical Office, own editing.)

By closing down plants, a lot of people have lost their jobs. Over the last decades, this has become the most serious problem in the settlement. The figure shows the number of registered unemployed people in Ózd between 2000 and 2015. Between 2000 and 2008, their numbers have risen steadily. The highest was in the time of the global economic crisis.

The public work program has slightly improved the unemployment indices of the settlement. But it is not value-creating, so those who work in it do not work in an area corresponding to their occupation.

This option does not contribute to increasing national income. It is also worth mentioning that this will bring more positive values to shorter periods. Its impact is not long-lasting and unfortunately does not help people get back to the real world of work.

4.2. Position of Kazincbarcika

Kazincbarcika has been developed in the last decades. The closure of the plants caused a lot of problems in the life of the settlement and its surroundings. Nitrogen fertilizers and PVC and related products were produced at the plant. It is a unique phenomenon among the settlements that successful privatization and transformation took place in the plant. Later, with the help of foreign direct investment capital, it was partly a change of profile. Since 2011, Wanhua Industrial Group, a member of the world's fastest growing polyurethane feedstock manufacturing and sales group. New factory parts have been developed and launched. Further developments are planned in the near future. Thanks to the positive effects, they were able to hire more and more people to work.

Figure 2.
BorsodChem Ltd.
(Source: http://www.borsodchem-group.com/)

In 2007, Barcikai Ipari Park opened its doors. Over the past 10 years, more and more businesses have settled in this area. Industrial and economic developments will also enable companies to engage in by-products and related businesses.

4.3. Position of Sajószentpéter

Sajószentpéter is a stagnating settlement. It has negative social and economic indicators. The unemployment rate is high.

Hungary joined the European Union on 1 May 2004 together with other European countries. There have also been changes in the country before and during the process of accession. As a result, regions and small regions were formed. The small regions had a complex functions, including administrative, tender, development and cooperation tasks. System of the districts was established in 2013, which have an administrative functions. They have taken over a lot of tasks from local governments and other institutions. In today's analyzes, in most cases, the interpretation of the district level is primary.

If the formation of the district level did not have any territorial change, it has resulted in simpler processes. But in some cases, the opposite can be observed. It belongs to the Kazincbarcika district and Miskolc small region. The two different administrative records cause problems in many areas. There are problems with cooperation and administration. Despite being close to Miskolc and Kazincbarcika, the town can not take advantage of these economic benefits to strengthen its position.

4.4. Results in connection of Bátonyterenye

Bátonyterenye has a special position. Change of the view of the settlement brought gradual development. The number of the guests and guest nights are increasing. By changing market conditions private accommodations have been strengthened. It is in connection of tradition and culture.

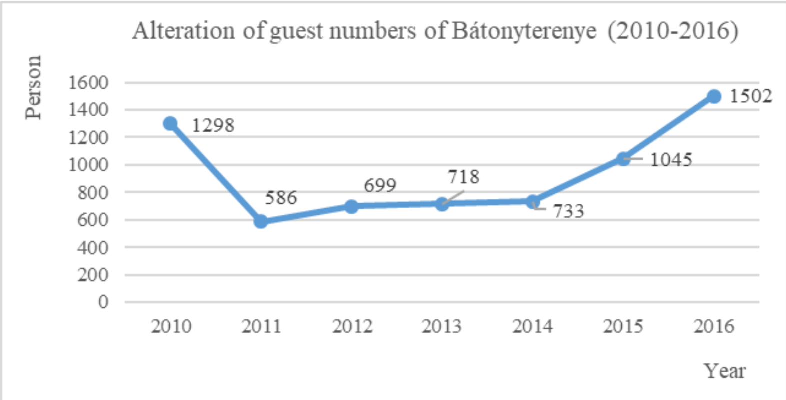

Figure 3.
Alteration of guest numbers of Bátonyterenye (2010-2016)
(Source: Based on the data of the Central Statistical Office, own editing.)

As a former mining settlement, it has completely disappeared. The city seeks to fulfill its everyday tasks with more or less success. In the case of the settlement, they reverted to the original traditions. Those sectors were developed that similar investments are not required in the same way as in an industrial establishment. They try to exploit the resources and attractions of the neighborhood.

4.5. Position of Lőrinci

Lőrinci had early developed transport opportunities and economic image. The life of the settlement was characterized by diverse economic sectors. This also determines the development direction of the settlement today. Steam mill, cement factory, brick factory in the city.

As I mentioned in the display of the settlement, the main industrial part of the town is the Mátravidéki Power Station. Earlier it was coal-fired. In 1995 it has been joined to the Hungarian Electrical Works. It became thank to the technological change a gas turbine power plant.

The older, coal-fired working needed cooling water. A lake belongs to the power station, which is now useful for fishing and entertainment activities. Tourism developed after that.

Figure 4.
The Mátravidéki Power Station
(Source: www.geocaching.hu)

Lőrinc's stability is also due to the proximity of Hatvan. In the centre of the district there are an advanced transport, industrial, commercial and service sector.

4.6. Hungarian domestic income per capita (HUF/person)

Over the past two decades it has grown in the country and in the settlements. The conditions of incomes have been better, but their real value was stagnating. Prices have been grown to. The national average grew from 787 579 HUF / person to 983 732 HUF / person.

Table 1
Hungarian domesctic income percapita (HUF/person)
(Source: Based on tha data of Országos Területfejlesztési és Területrendezési Információs Rendszer, own editing.)

	2010	2011	2012	2013	2014	2015
Ózd	501 783	477 034	511 701	544 262	601 295	657 084
Kazincbarcika	808 678	796 754	811 158	861 376	939 092	1 005 343
Sajószentpéter	560 465	551 075	581 269	615 664	686 211	746 051
Bátonyterenye	608 131	581 546	630 974	666 919	738 956	791 580
Lőrinci	766 243	759 430	785 369	823 409	912 380	986 024

Regarding the level of districts, these values were scattered and dropped overall (negative social and economic effects). When analyzing data, account should be taken of the deterioration of the value of money, inflation.

Settlements have much less tax revenue. At the population level, the reduction in real income and the reduction of purchasing power parity (PPP) are observed.

Changes in Hungarian domestic income data reflect urban development trends. Kazincbarcika is in the first place and the second is Lőrinci. The worst situation is in Ózd.

5. Dubnica (Máriatölgyes, Slovakia)

Dubnica is located in Slovakia, in Ilava district, Trencin region. The population of the town is approximately 25 000 people. After the World War II had a prominent role during the time of Czechoslovakia. It had outstanding production for military and army.

The socialist countries had a lot problems in the eighties. In 1989 the factory was closed and not soon later Czechoslovakia was divided into to parts (Czech Republic and Slovakia). After some unsafe years, it has been beginning a gradual developing process.

View of the town transformed completely. There were only for a short time negative effects. It became other important point of the district.

Dubnica has several district offices and branches of commercial banks. Compared to other areas, it found new directions of life. Commercial, economic and service strongly have been developed. The Industrial Park is available for companies and factories from the December of 2016.

Figure 5.
Green and modern part of Dubnica
(Source: www.treking.cz)

Conclusions

Examination of former industrial areas remains timely. There are plenty of tasks to solve. Although only a few cities have been included in the test topic, different life paths are well-observed. Although they have a similar past, they have to meet completely different challenges. They can not be treated uniformly, unlike previous practice.

Ózd currently does not have the right strategy, the severity of the problem is due to its size. Sajószentpéter has similar problems, but to a lesser extent. Kazincbarcika has made significant advances, exemplary settlement. Bátonyterenye builds on its existing opportunities. In Lőrinci can be found a very useful solution: the old investment has gained new meaning. Dubnica shows a successful transformation, Kazincbarcika is similar.

The examples can be interpreted as a scale, from the worst-placed settlement to the most successful. It can be said that very few settlements with positive examples (such as Kazincbarcika), both at micro and macro level, are experiencing further stagnation and decline. Helping partner and local co-operation can strengthen the position of towns. Positive examples can provide a good basis for other settlements in difficult situation.

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The consumption of organic products according to a survey

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Abstract: The history of organic agriculture started in the 1920s, the ever-expanding production method has taken even greater momentum by the health conscious customers of the 80's. Thus we now see that it accounts for 3-4% of all food consumption, accounting for more than 5% of all agricultural production areas. Initial researches have shown that they have begun to consume such products for fashion, health or the recovery of health. Today, awareness and environmental protection have also come to the fore. Production is scattered throughout the world. Australia, South America and Europe show the highest volume of production, while consumption is most typical in North America and Western Europe. In the latter countries, the rate of consumption increases year by year. What do customers expect from these products? What factors should producers show to their demand for their products? In Hungary, this growth in consumption and production has stopped in the last 8-9 years. What are the reasons for these? What does a consumer motivate to look for and buy this product scope. Firstly, I asked students from our university through a targeted questionnaire on what features, motivational factors, what they know about organic products, whether they are consumed or not, and why not why or why they do it. After answering a number of questions, he states that the health of the students is not of paramount importance. Typically, they do not look for this product scope. They think these are too expensive, there is mistrust. The products are sold in small quantities, rarely buy and mainly with their everyday shopping. To boost trust, lower prices and, above all, strengthening information. At this point, there is a chance that we will get a little closer to the western trends in the consumption of organic products.

Keywords: organic products, consumption, organic markets, motivation, mistrust, high price.

1. Material and methodology

I used the domestic and international literature of recent years to write, but it was also my own research. In addition to a questionnaire survey by consumers, deep interviews with producers were also given. Based on these lessons learned, we have analyzed changes in recent years to find the underlying causes.

My hypotheses are the following.

H1 One of the main causes of the downturn is the decline in household spending on food, with particular reference to the prices of organic products. That is, in terms of household income / consumer price, organic products are in a worse position.

H2. Another major obstacle to the procurement of domestic organic products is the scarcity, time and distance of purchasing opportunities, especially in rural areas.

H3 Another important cause of low consumption is mistrust and related ignorance. Awareness could improve the consumption of this product range.

2. Introduction

Approximately 20 years ago, the growth of organic farming was significant. Then, according to several authors and surveys, it seemed that, besides significant traffic growth and production growth, this alternative farming method has taken a significant part in the agri-food trade and its related food trade. Despite this great expectation, it did not happen. More to say, it only took place in a few countries. From the side of production, in the countries with large free pastures (Argentina, China, Australia), there has been great gains in sales, while in the developed countries with more knowledgeable and prosperous purchasing layers.

The crisis appeared in 2008 had a great impact onto the food consumption, especially the orgainic farming products, which was mostly negative. (Csiszárik-Kocsir-Medve, 2014., Csiszárik-Kocsir-Fodor-Medve, 2014.) But after 2013. there was an increase again in the food consumption in the world.

We have stastical data from 2015. That year 50.9 million hectares of organic farming were cultivated worldwide of the total 48.626,4 million hectares. (data.worldbank.org) This means 0,1% of the total. And it is 6.5 million hectares increase compared to the previous year and 20.7 million hectares increase compared to 2005 figures. We can see the largest territories in Australia and Oceania and Europe. But today the recordes is Australia. Australia has achieved this large growth, involving 97% of organic areas, with large-scale pastures. Significant land area growth of 17% was found in free pastures, which make up 2/3 of the organic areas. So, not a high-tech horticulture or cereal production is a major part of the area, but the easy-to-expand, accessible, migratory pastures. There are typical in this continent and South America. The proportion of areas is 20% of all organic areas, typically with rice growing, green fodder, oil seeds and cotton, and seed production. The share of the permanent crop is 4 million hectares, accounting for 8% of the total area. It includes coffee, olive oil, walnuts, grapes and tropical fruits. Australia and Oceania has almost half of the world's organic rated areas, while Europe has one quarter and Latin America with 13%. The size of the wilderness areas amounts to 39.7 million hectares. This means that these areas may not be owned by the farmer, but are typically in the hands of a forestry, and the collection and collection of crops (eg mushrooms, forest berries, raisins, etc.) sell or process and so on. This activity is typically a way of earning income for the poorer countries. For these people, their own land is impossible to own in many cases, but owners of large land or forest areas contribute to the exercise of this activity, they can offer herbs and forest crops.

The number of producers reached 2.4 million in 2015. Producers typically come from Asia, Africa and South America. This also indicates that Africa and Asia have smaller plant typically, and South American producers do not have large areas on average, apart from livestock farming. Not surprisingly, most organic farmers came from these continents. India (585,000), Ethiopia (203,000), Mexico (200,000) are counted as leaders. Compared to the previous year, there was a 7% increase in the number of growers, which numbered more than 160,000 plants. It is typical that only a quarter of the territorial growth, but 89% of the producer increase is affected by the developing countries and their respective markets. That is, these producers can sell their products on a non-domestic market but are typically exported and the developed markets and consumers can buy them. (Willer, Arbenz 2018)

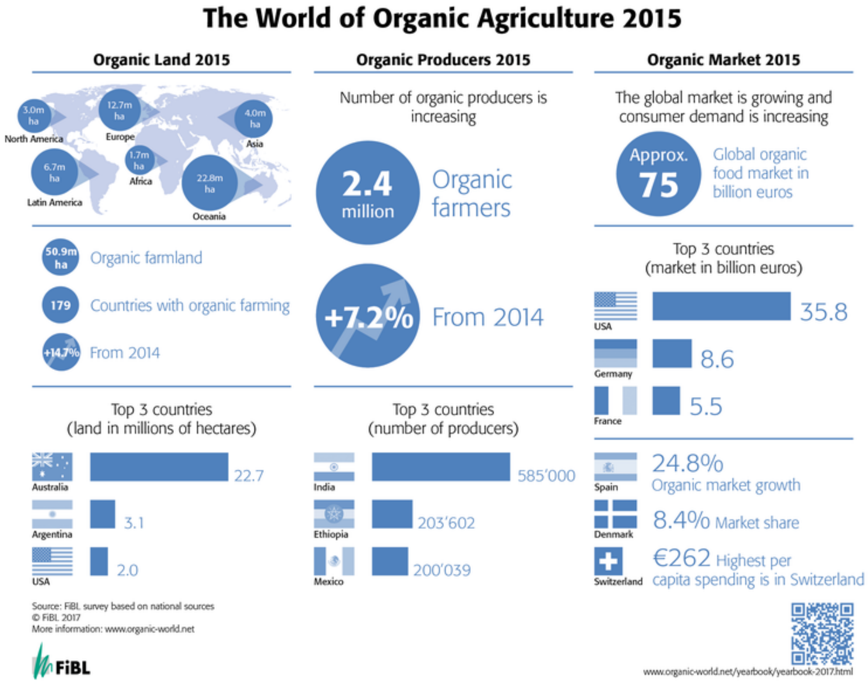

Figure 1.
The world of organic agriculture 2015.
Source: FiBL in Willer, Arbenz 2018.

The conclusion is that organic agriculture can only contribute to world's food supply if there will be some conditions realized. It is necessary a well designed food system in which reducing the number of animals and using feed and food wastage. In global level reducing animal product consumption in human diet is a strategy for more sustainable food systems to help the strengthen of natural resource use, human health and environment protection. If the production side reduce the animal product output we would be able to affect this system. organic agriculture can contribute to providing sufficient food and improving environmental impacts but it is important to use high levele of legumes and reduce the food competing feed use, livestock product quantities and food wastage. But changes in the side of consumption are important because these changes can help to reduce the important of the need for yield increases. It can help to provide an optimal food system. The main tasks are increasing yields, organic production and reducing watage and animal numbers and product consumption. And we need these to combine to reach these goals. (Muller et al. 2017.)

3. Markets in the world

In 2015, organic food and beverage sales amounted to $ 81.6 billion in global markets. Not surprisingly, North America and Europe accounted for 90% of this. Help of the solvency demand. So, production is scattered across the globe, while consumption is concentrated on two continents. The other is that the number of consumers in these countries is not large, that is, the solvency of the narrow layer and the change in their consumer preference affects demand and supply. If we look at the country's turnover, we can see that the United States has a turnover of 35.8 billion euros, followed by Germany (8.6 billion euros) and France (5.5 billion euros). The European Union's turnover is below the US's total turnover, but it is still significant, as it accounts for 35.1% of the world's total organic turnover by 27.1 billion euro. China is next with its 4.7 billion euros turnover. It is also worth examining the per capita consumption. It shows what countries are concentrated on consumption. In this indicator, we are not examining the countries with the highest consumption in the absolute value but the magnitude of individual consumption. We have more than € 170 average personal consumption per year in Switzerland, Denmark, Luxembourg and Sweden. In these countries, the market share of organic products is well above the 7% in the world. 8.4% in Denmark and 7.7% in Switzerland, for example.

North America has the largest organic product market in the world. With an annual turnover of 43.3 billion dollars (39.03 billion euros). The United States is the largest market for which the market for organic products accounts for up to 5% of total food turnover. Indeed, in the category of fresh vegetables, fruits reach 10% of organic food. This is followed by the turnover of dairy products, with a similar percentage, of which milk and yogurt are the leading products. As domestic supply does not reach demand levels, organic products are imported from almost all continents. Only vegetables and fruits can satisfy demand, and for all other products the import is decisive. At the same time, both the US and Canada have appeared in international organic trade, typically with EU, Swiss and Far Eastern exports. Major commercial units are characterized by their own branded products in the organic product market. (Willer, Lernoud, 2017.)

In Europe, the organic product range was 31.1 billion dollars (28.03 billion euros). Typically, Germany, France, Italy and Switzerland have the highest turnover, but Denmark has the largest market share, with 8.4% of organic food being harvested. Europe is also characterized by the fact that its largest retail company stands out with its own branded organic products with its own label. For example, Dennree has more than 200 units in Germany and Austria, or Biocoop with approximately 400 stores in France, but 300 Collobora B'io units in Italy, while many large chain stores have opened an organic supermarket such as REWE or Auchan. It can be seen that the markets of organic products are developing very dynamically, and we can see that this development seems to be unbroken.

At present, the following trends are observed in EU organic products markets.

- Dynamically strengthening retail markets. This market is growing steadily every year in Europe. It accounts for 3-4% of all food consumption today.
- Consumers spend more and more on organic food in absolute terms. For example, between 2005. and 2014. this increase was 110% and from EUR 22.4 (2005) to EUR 47.4 (2014) on average per person. During this time period, all food and non-alcoholic beverages consumed by households remained virtually constant, rising by only 13%.
- Some premium organic products have achieved more than the average market share in their product categories. Organic eggs have 11-22% share in Austria, Belgium, Finland, France, Germany and the Netherlands.
- Milk products have a 5-10% share in Austria, Germany or the Netherlands, for example. Biotech alone reached 15.7% in 2014 in Austria.
- In the fruit and vegetable market, 20% of the products in many countries are organic products. Italy, Ireland, France, Germany and Sweden, for example.

If we want to combine the size of organic areas with the size of the market, we can state the following. Organic cultivation accounts for 5.7% of the EU's total cultivated land. So the size of the cultivated land is higher than the turnover. Average area growth has fallen to 1.1% in 2014. The number of producers increased by 0.2% over the same period. In many countries we find stagnation in the number of producers, especially in pioneering countries such as Denmark, Austria, or Germany, the United Kingdom. (Meredit, Willer, 2016)

This is also confirmed by Luczka, which is behind the spatial growth of traffic growth. Many organic farmers in Poland are forced to sell their product as a conventional one because they do not meet demand for supply. In Central and Eastern Europe, the main reason for this is the average price of high ecological products. (Luczka, 2016)

In Hungary we can see a stable situation in the turnover of this kind of production. Hungarian cultivation territories and turnover have not changed largely for last years. There is no market gap in the western European countries for the Hungarian products because their quality and process level of these products is not too high. In the domestic market, import is typical. There are fresh vegetable anf fruit producers with premium prices and large exporters, but there are no producer supplying the middle class consumers with not too expensive organic food.

Table 1.
Organic production and market by country groups Source: Meredit, Willer, 2016.

Country group	Retail turnover (billion euro)	Consumption per person (euro)	The number of producers	Area (million ha)	% of whole area
EU-28	24	47.4	257 525	10.3	5.70%
Europe	26.2	35.5	339 824	11.6	2.40%
World	62.6	8.3	2 260 361	43.7	1%
EU-15	23.5	58	194 979	7.8	6.10%
EU-13	0.5	4	62 546	2.4	4.70%
CPC	0.005	0.1	73 375	0.5	1.50%
EFTA	2.1	154	8 500	0.2	4.40%
Other european countries	0.1	1	424	0.7	0.20%

4. Subsidies

Support for organic production can be found in the new Rural Development Program. This rate varies from one country to another. We can observe a big scattering. 0.2% in Malta and 13.2% in Denmark, for the total Rural Development Program for organic agriculture. The purpose of the support is to encourage the conversion of conventional areas into organic areas and, secondly, to preserve it in areas already organically cultivated. The purpose of the support is twofold. On the one hand, the protection of the environment is a guarantee of beneficial effects, for example preserving biodiversity, protecting the soil from lower environmental loads, protecting the water bases and promoting higher nutritious foods. Until 2020, Hungary intends to allocate a total euro 207,589,705 in the amount of HUF 64.4 billion. 80% of this can be used for ÖKO support. The supporting intensity is 100%, no degression is applied. Support is a field-based, non-refundable subsidy. The purpose of the aid is to compensate for over-costs and to compensate for lost profits and revenues. (NAK 2016)

5. Issues of the efficiency of organic supply chains

Supply chains suffer from shortcomings in supply and demand, logistical problems that do not allow supply and demand to be coordinated. Studies on organic supply chains address a number of issues that include:

- characterized by high operating costs,
- the lack of consistency between supply and demand, not meeting the two,
- poor reliability of supply
- lack of cooperation between the members of the chain
- different values and motivations between different actors in the chain
- lack of information flow. (Meredith, Willer, 2016)

Organic farming developed primarily at the level of primary production, since at the beginning of the 20th century it started to use cereals, vegetables, fruit and vegetable raw foods, and the regulation was associated with it. At this level the regulation is detailed and traditional. For example Hungarian producers can use surely these kind of regulations in the practice. In the product level, the processing is less regulated than the primary production level. This unregulation cause insecurity and the system can be easily circumvented. Since control fees in this sector are a compensation for rating, producers and traders would be more vulnerable as a result of detailed disclosure. However, retail chains with existing detailed data will treat this information as business secrets, and will not voluntarily outsource it restore confidence while reducing costs.

Further development of the agri-food systems and the development of knowledge transfer require additional private and public investment in the field of agri-ecological research and innovation. Systems that follow the deepened practice of organic farming can achieve 20% higher profits, so innovation returns in the results. (Dinis et al., 2015)

6. Sales and marketing channels

Channels in different countries differ from country to country. France, Italy and Germany have achieved strong market growth in recent years. Typically, specialized retailers perform a larger sales slice. Expertise and the size of sales space play an important role in sales. Nevertheless, we can see that the supermarket countries have been able to continually increase the sales of organic foodstuffs (eg Austria, Denmark, Sweden, Switzerland and the United Kingdom). At the same time, in countries such as Germany, specialist marketing channels (organic shops) have grown significantly, while the sale of supermarkets has stagnated before 2014.

Almost half of retailers engaged in the trade in mass products increased the turnover and supply of natural products. The most successful merchants have developed their own labeling product line to designate and differentiate their natural products. (Richman, 1999)

There are many products that have a significant share of the entire sales market (some examples):

- In many countries, organic eggs are one of the success stories of the entire retail market. For example, Switzerland and France have a market share of more than 20%. In most other countries where data is available.
- Organic fruits and vegetables continue to be very popular with European organic-consumers. After the egg, organic vegetables have the highest market share, which is 9 to 15% of the sales volume of all vegetables sold in Switzerland, Austria and Germany. For example, fresh carrots have only 30% market share in Germany.
- In some countries, organic dairy products account for about 5% of all milk production. In Switzerland, they still reach 10%. (Meredit, Willer 2016)

7. Consumer' habits and trends

The habits of different consumers were reported recently. But only some research tests the consumers of organic farming. Xie found that consumers knew very little about the organic food in the aspect of knowledge of concept, law and brand. (Xie, 2013) More writers (Ellen, 2011, Haghjou, 2013) studied that the consumers are willing to pay more for organic food but not more than 30-40%. The attitude of consumers can be affacted by the place of the purchase, the education, age, religion of consumers, the quality of organic food and their emitional factors. (Lockie et al, 2004.) Health consciousness affects positively to organic food's consumption and social consciousness has negatively affect to it. There is no connection between environmental consciousness and consumption. (Hansen et al, 2018). According to Mondelaers et al, (2009) health is more important in the choice than sustainability. (Mondelaers et al., 2009) Hansen et al. (2018.) has the same opinion. Organic food identity had a positive influence on food behaviour with low levels of openess to change. Organic food ivolvement was positively connected to both organic food and its behaviour and female are more likely to build a positive organic food identity than males. Age negatively influenced intentional organic food behaviour. Females and younger people are more likely to intend to be a positive attituders toward organic food behaviour. Consumers" social surroundings and food types affected the willingness of purchase of organic food. (Hansen et al, 2018).

My research wants to repeat Hofer's research from 2006. and analyse whether there would be differences and changes according to 2006. research, I compared what happened and what has happened in the past 11 years. In addition to the demographic data, the questionnaires examined household income and the typical consumer and consumption habits. The questionnaire asked about the qualification of organic products, such as their beneficial and disadvantageous properties. She has been researching what kind of foods typically are placed in the basket of consumers and what are the main purchasing locations. She also looked at the motivations of consumption, and sought out the possible even more acceptable surcharges. in 2017 102 students of Óbuda University were riported in this research.

Table 2.
Basic data of the survey Source: own research

Age	23,29
The number of persons living in the household	3,02
Children under 18 age	0,40
Net income of the household in thousand HUF	326,60
Consumption of food in thousand HUF	53,84

The target consumers of Hofer's research was habitants around Győr and students of Győr. 571 persones were asked in 2006 by Hofer's group. Hofer supposed that the low level of the consumption of organic food was caused by the lack of knowledge of consumers and the consumption of organic products also plays an important role in the health and environmental aspects of economic competitiveness. However, he adds that the cause of health is due to the consumption of organic products, while the other two aspects are the consequence. Because of the health reason, consumption can be increased, with the consequence of increasing production, which calls for the product structure to improve, with which competitiveness also increases. This also implies a more environmentally friendly technological presence, which will improve the environmental performance of production. Hofer thinks that the main motivation factor of consumption is health protection and the environment protection and economical competitivenes is consequence. (Hofer, 2009)

The survey consisted of a questionnaire of 20 questions, both on the one hand and on the other by selected consumers. The topics of the questions were environment pollution, helathy nutrition, awareness of consumers, self sufficiency, marketing tools. The survey is still ongoing, so at the time of writing this article only the processing of 102 questionnaires was possible. Over time, this number will increase and reach the hundreds of magnitude. The survey is true that it can not be considered representative at this time, but its results are similar to those of Hofer's research conducted 11 years ago.

Table 3
Some basic data from the 2 difference surveys
Source: own research and Hofer 2009.

Category	2006. Hofer	2017. Óbuda
Ratio of gender	29,6 % male	50% male
Average age	28,8	23,3
Ratio of organic consumers	56,40%	74,50%

My research consisted of more males and younger responders. Today higher ration of responders try the organic food than in 2006. This would mean openness and the easier achievement of this kind of food, better supply chain. What are the main factors for consumption of organic food. Hofer's answer is health, prevention and marketing tools. But health protection and children health protection are the main answers. According to this survey marketing tools can affect lower level for the consumption. Our research said that the better quality (marketing tool possibility) and health reason are the main causes. The reason of the difference would be increase of awareness and higher knowledge of organic food compared to 2006. The next question is the motivation of organic consumption. As the responders in 2006 are older than in Óbuda's survey and therefore most of them have family having children and child's health was more important than today. Own production, food security, healthy life, offer of a doctos was similar in the 2 surveys. In Hofer's survey the responders thought that organic food is healthier, having good price-value ration and they know producers and trust them. The only one different is that Óbuda's survey shohs me that the good supply in supermarkets can help the organic consumption. Hofer showed the knowledge of consumers about organic meaning is incomplete and misunderstanding. This causes confusion and the consumers do not appreciate this kind of food properly. The consumption basket of 2 surveys is similar. Cereals, fruits and vegetables, meat, dairy productions.

The main problem of organic products was the higher consumer price according to the respondents in both of survey. She followed the question of reliability and non-domestic affiliation. Among its benefits, it is clear that its chemical non-chemical properties and its environmental impact are considered. So the positive effect on health has come out in this case. Reliability and quality are also important for consumers. So, an important aspect of the consumption of organic products is how far the producer and the goods are trusted. So there is not enough certification here, credibility and confidence in the qualification process and in the qualifiers are important for the consumer.

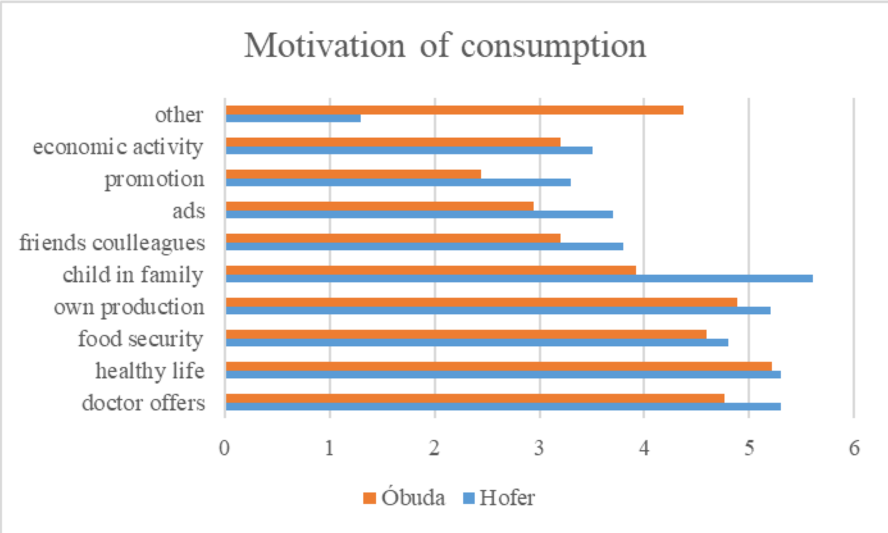

Figure 2.
motivation of consumption
Source: own research and Hofer 2009.

The location of the place of purchase for the interviewees was of the utmost importance and, accordingly, many people buy hyper- or supermarket products if they are consumed at all. These were similar in both of survey. Typically, they only consume organic products on a monthly basis and the amounts to be paid for them did not reach 10,000 HUF (35 euros) per month in 2017. The role of specialty shops in Germany seems to be negligible. Typical purchase of organic products is that when shopping in the shopping cart is sold in the basket.

What would the plus price be what the consumer is willing to pay for the organic food? According to Hofer it would be 15-20%. in 2017 it was 23%. But the sense of plus price was more. Tha average was 88% plus price. What they would tolerate for consumers is very similar to the 20-30% premium known according to the literature. So the interviewees are very price-sensitive about this product range. In order to spread the product range to lower prices, confidence-building and a good example of friends and acquaintances are needed to make these products more appropriate.

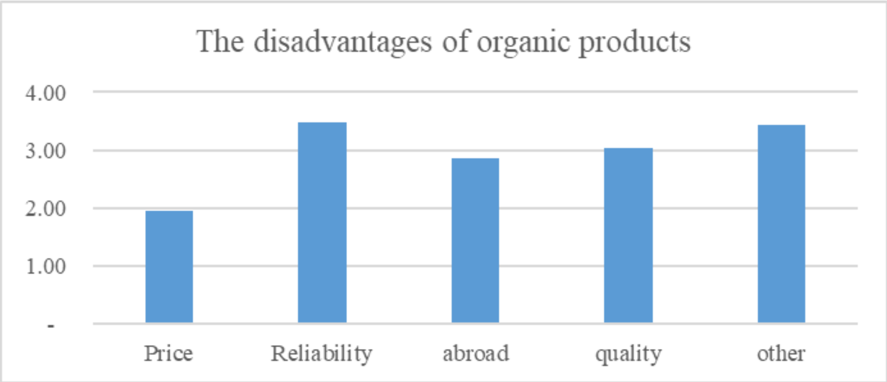

Figure 3.
The disadvantages of organic products (where 1 means most typical value 4 the least typical value)
Source: own research

Indeed, it is also apparent from consumers' inquiries that, in order to promote better distribution, it is essential to broaden and deepen awareness, to strengthen and apply advertising campaigns. In addition, with the help of unique marketing tools, the consumer can be increased by using more modern, digital means of marketing. (Cairns, 2013)

Conclusions

The health factor of domestic organic-products is the great importance, but the consumer price of the product range is one of the biggest obstacles to widespread use of these products. The role of mistrust is significant. The surveyed consumers are skeptical as to whether the product is truly organic or not reliable. This fits in with the fact that consumers do not have reliable and thorough knowledge of organic production, its rules and procedures. Developing awareness should definitely be given more emphasis if we want to exploit the market potential of this segment in our country. Indeed, over the past decade, consumption of organic food has not increased in terms of quantity and turnover in HUF, in proportion to domestic food consumption. This was also confirmed by the questionnaire results. One of the main reasons for the downturn in particular a decline in food expenditure of households on organic products. This is partly true, as the respondents were not justified by the income situation as reducing their spending, but with the scarcity of sales channels, excessive consumer prices and the scarcity of knowledge on organic products was still the cause of the decline. Another major obstacle to the procurement of domestic organic-products is the scarcity, time and distance of purchasing opportunities, especially in rural areas. This is true in the region, the capital is becoming less and less. Hyper- and supermarkets are becoming increasingly popular in these products.

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Adoption of biometrics in mobile devices

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Abstract: Mobile phones are quickly becoming the most popular and widely used form of communication. Mobile phones are commonly used for web-surfing, products and services payments as well as storing of sensitive data and information. The increasing number of users and security risks imply a need for an improved protection of users' personal data, such as health information, personal identifiers, financial data and so on. One useful tool to address this need is biometric authentication. In this work we will analyze the adoption of biometrics in mobile devices by describing the past and present applications and how the future is shaping regarding this technology.

1. Introduction

Over the last years, information access from mobile devices has become mainstream both in business and personal environments. The world is becoming more and more connected and every mobile user wants to be sure about personal data security. For many years, the only secured way of authentication was the password. During the last years and we have seen a significant rise in the use of biometrics to replace passwords because the technology has proven to be much more convenient and less time-consuming than passwords. There are several concerns related to mobile phone security such as information loss, phone theft and mobile services usage that biometric systems help to address them. So as a result we have a winning combination of mobile devices and biometrics in the mass market which allows the technology to become much more widely accepted.

Mobile biometrics refers to the deployment of biometric authentication methods on mobile devices such as smartphones and tablets. The rich set of input sensors on mobile devices, including cameras, microphones, and touchscreens enable sophisticated multimedia interactions [1]. A biometric system can measure physical or behavioral characteristics such as fingerprint, palmprint, face, iris, retina, ear, voice, signature, gait, hand vein, odor, or the DNA[8] information of an individual to determine or verify his identity [2]. It consists on the following units:

- A sensor: represents the interface between the user and the machine;
- A processing: where the acquired biometric is sampled, segmented and features are being extracted. It also includes quality assurance to determine if the quality of the biometric is good enough to be used further in the process. If the quality of the acquired biometric is poor, the user may be asked to present the biometric again;
- A database: where all the enrolled biometric templates are being stored and where the templates are being retrieved from in the authentication process;
- A matching unit that compares the newly acquired biometric template with the templates stored in the database and based on decision rules determines either if the presented biometric is a genuine/impostor or if the user is identified or not.

2. Implementation of Biometrics

There are two modes that biometric systems can be integrated in mobile devices:

a. *Network mode (as an on-line device):* device collects data and passes it online via Internet to a remote location where it is processed and compared. This proves useful for remote transactions when the identity of the caller has to be proven. As an example when a user calls his/her bank to make a transaction, he/she is going to introduce herself and in order to verify identity is asked to recite a pass-phrase. The voice recording is then processed and compared to the sample that was collected when the user enrolled in the system. Other biometrics traits that smartphones have the capabilities to collect and transfer them to a remote location are face, fingerprint, signature, gait, gesture or keystroke.

b. *Standalone mode (off-line)*: to protect unauthorized use of the mobile phone, the entire biometric system resides on the mobile phone and it serves the purpose of preventing unauthorized access to mobile phone functions and data. Ideal for use with large databases. It quickly captures the fingerprint image and sends the encrypted template to the biometric authentication server. Implementations of biometric systems on mobile

8 DNA: Deoxyribonucleic acid, which contains the genetic information necessary for the development and functioning of living organisms.

phones include fingerprint recognition, voice recognition, face recognition, signature recognition, gait recognition, gesture recognition and keystroke dynamics.

2.1. Voice recognition

Voice recognition appeared in 1950 and was later implemented in PCs without success. Its functioning relies on performing statistical models of the spoken language. The introduction of this technology in mobile phones was very rudimentary due to the lack of phone memory capacity. The technology started performing basic functions such as: dialing digit by digit, recognizing names, and hands-free calling. Memory, processing capabilities and network speed increased rapidly throughout time, offering better recognition abilities to mobile phones. In 2005 Samsung launched the phone model SCH-p-207, which has speech dictation and voice dialing [3]. Google Now and Siri are voice powered assistants that use natural language processing, developed by Google and Apple respectively. Google Now was launched on 2012 as a mobile application, while Siri was presented on 2011 as a built-in feature in iPhone 4s. These two intelligent assistants can perform infinite tasks within the smartphone.

2.2. Face and Iris recognition

In 2005, ClassifEye and Omron developed the first face recognition biometric as security system in camera-enabled mobile phones. This technology didn't require any additional hardware because cameras already existed in most of the phones [4]. Android's face unlock was introduced in 2011. This face recognition system presented various flaws including security issues. It needed to be used in illuminated areas in order to unlock the phone [5]. Moreover, a printed or digital photo of the user's face was sufficient to gain access to the phone.

Samsung also offers in their phones Galaxy Note7, Galaxy S8 and Note 8 an iris scanning technology that functions by identifying the unique eye iris pattern. The phone possesses an infrared diode that illuminates the eyes regarding lighting conditions. An infrared narrow focus camera takes de iris pattern information, which is stored and processed in the phone [6].

2.3. Fingerprint recognition

It is the most popular form of biometric identification. Toshiba G500 and G900 in 2007 were the first mobile phones with a fingerprint scanner [7]. But Apple was the first company that launched fingerprint recognition in smartphones by investing $356 million to acquire AuthenTec, a company focused on fingerprint reading and identification management software [8] [9]. The iPhone 5S was introduced on September 10, 2013 [10]. It was the first phone on a major US carrier since the Atrix to feature the technology [11]. In that time was predicted that a fingerprint sensor in the iPhone 5S would help mobile commerce and boost adoption in the corporate environment [12].

During 2014 and 2015 other smartphone companies included fingerprint scanning in their high-end phones during 2014 and 2015 [13]. Starting with the Samsung Galaxy S, Android 6.0 (Android Marshmallow, released October 2015), in which the fingerprint scanner support was integrated into the operating system like Touch ID in iOS, then with HTC and Motorola. In September 2014 came with iPhone 6 and 6 Plus an expansion of Touch ID. The new feature was from being used to unlock the device and authenticating App Store purchases to also authenticating Apple Pay.

Use and implementation of biometrics in mobile phones is further enhanced by combining the technology with existing mobile phone security arrangements. For instance, a mobile phone user may have to authorize his mobile banking transactions through biometric recognition as well as using passwords and SMS codes. This is indeed a more and more elaborate security arrangement for the people who are highly dependent upon mobile phones for a variety of purposes that demand high-end security.

Previous research on using biometrics in mobile phones had already been introduced before. In 2005, Cho et al. [14] proposed a pupil and iris localization algorithm, which is apt for mobile phone platform based on detecting dark pupil and corneal specular reflection by changing brightness and contrast value. A year after, Okumura et al. [15] proposed a system where a subject could authenticate himself/herself by grasping and shaking the phone. In this study a normal accelerometer with the size of a mobile phone was used. In 2007, Hadid et al. [16] described and analyzed a face authentication system for person authentication by attaching the camera of the phone in front of the subjects face. At the same year a prototype was designed on how microphone in a mobile phone and its camera could perform voice and fingerprint recognition [17]. This work was continued by Wang et al [18] in 2009, who fused these two biometric features together retrieving acceptable results. In 2011, Conti et al. [19] proposed a biometric measure to authenticate the user of a smartphone i.e. the movement the user performs when answering a phone call.

3. Today and tomorrow

According to the International Telecommunication Union, there are more than 7 billion mobile subscriptions in the world [20]. This number is getting closer to the total world population. As the consumers are growing, biometric technology as an authentication system is wide spreading in smartphones.

The biometric characteristics commonly used in smartphones nowadays are: fingerprint, facial, voice recognition and iris scanning.

Fingerprint

Fingerprint biometrics has the biggest market share due to the increasing adoption of fingerprint reader technology by various smartphone manufacturers and according to Statistics MRC is expected to reach $52.61billion by 2022.

Apple pioneered the fingerprint feature in mobile phones which leaded to other companies to follow the same path and introduce this technology in the design of their products. Fingerprint authentication is the most popular biometric characteristic used in mobile phones nowadays. This technology is becoming very affordable for consumers, as an example T-Mobile’s Revvl phone possesses a fingerprint sensor. Its price is very convenient ($125), which will increase the propagation of this biometric technology [21].

Face Recognition

Face recognition is nowadays used in smartphones such as Galaxy 8 or Note 8. The latest face recognition introduction in mobile phones was presented in 2017 by Apple in its newest model: iPhone X which possess a face recognition system called Face ID. It uses a true depth camera setup which projects more than 30000 invisible dots and scans the face in 3D. The fact that the device is creating a 3D map of the face prevents forfeiting such as face printouts. Apple assures that the face authentication system will work in poor illumination conditions, when the person is not paying attention, if there are changes in the face such as facial hair or the individual is using accessories such as hats or sunglasses [22]. Even though these asseverations, the system failed to work on the demonstration stage in September 2017.

Apple shifted its biometric identifier from fingerprint to face recognition. As it happened with the implementation of Touch ID, it is expected that other phone manufacturers will follow the path into face recognition systems.

Voice Recognition

This technology has improved, by using big data and deep learning on its neural networks in order to obtain faster and accurate results. Nowadays, voice commands in smart phones can perform infinite tasks such as the basics: making a call, send a text or an email, set an alarm or more advanced such as set a reminder based on place or time, schedule a calendar entry, launch an app, get scores and statistics in almost any sports, play music, identify a song that is playing, get movie show times, post to social media, check the weather anywhere, search the web and answer any question. Moreover, according to a study done by Stanford, speech recognition software is faster and more accurate composing messages than humans when typing on a mobile phone. The results didn't change using different languages, for English the software was three times faster than typing and for mandarin it was 2.8 times faster [23]. Hence, this is a powerful technology that will be used for long time as an interaction between humans and machines.

As biometric technology is gaining acceptance by the public, in the near future, it will be a common practice to use biometric identifiers for authenticating an individual's identity using mobile phone as a tool. Its main usage will be for patient identification in healthcare, time attendance at the workplace and banking.

According to a study made by Gartner Inc, mobile users resist to use long and difficult passwords in their phones or tablets [24]. A market research done by Acuity, predicts that 100 percent of smartphones will have built-in biometric sensors by 2018 [25] in order to provide data security and enhance user experience. Moreover, it is expected that all smartphones in the future will integrate more than one biometric sensor. Hence the customer can decide what authentication method to use.

Regarding fingerprint technology, Apple and Samsung are developing fingerprint scanners that will be integrated in the screen replacing the button biometric built-in sensors manufactured in older phones. Additionally fingerprint sensors will be embedded in more than half of all smartphones by 2019 [26].

As for voice recognition, it is expected that more mobile applications use this technology, where voice commands are used in conjunction with a graphic interface.

Smartphones are becoming ubiquitous in everyone's life. They contain vital information regarding every aspect of a person's life. Consequently, in terms of security, privacy issues regarding the storage and usage of biometric identifiers is a major concern. According to phone manufacturers, the biometric characteristic is just stored in the phone and will not be uploaded to any remote server.

Conclusions

Using biometrics in mobile phones has expanded rapidly. In this work we presented the adoption of these systems by introducing the changes over the last years. Smartphones possess different biometric authentication systems and the technology is indeed surpassing traditional authentication methods such as passwords or pin codes. This has happened mostly for two reasons, security and convenience. But with comfort and convenience also come some security risks. Mobile phones are acquiring this technology, but it is important to use it in conjunction with a password or pin code in a multifactor security system in order to enhance safety.

These systems are not infallible and are prone to be hacked. It is fundamental for manufacturing companies to develop devices that prevent these security risks and protect information stored in the mobile phones. Security concerns regarding biometrics on mobile phones is a possible direction that in the future could be an extension of the work we presented in this paper.

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The role of change management in sustainable operation of organizations

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Abstract: The biggest challenge companies nowadays face is the management of change, which can be sustainably handled through continuous improvement of the organization's capabilities for learning. It is inevitable for all organizations to find their way for coping the difficulties concerning the rapidly changing world. If they are able to properly manage the most important resource, which I believe to be not simply the human resource, but much rather the knowledge and knowing which manifest in their employees, the knowledge workers, they can achieve such a high level of adaption, where they can proactively react to most changes of their environment. For this continuous learning has to be implemented as an everyday method and behaviour amongst the employees. To achieve a sustainable level of continuous improvement, a firm basic for workers commitment and satisfaction must be guaranteed.

Keywords: change management, knowlegdge management, organizational development, sustainability

1. Change and its management

In our era one of the most exciting questions is, how can for profit and other organizations maintain their operation in a sustainable way. The topic of sustainibility can be investigated from many aspects, but it is trivial in all cases, that its neccessity is backed up by the fact, that these organizations don't operate in a static or slowly changing environment any longer, but in a dinamic and radically accelerated world, where the results of yesterday can't guaratee even the operation of tomorrow.

The life of organizations are determined by a much bigger number and complexity of factors than even 10 years ago. The constant change of the outer environment and the inner features created a power filed, which forces organizations to handle changes in a proactive way, and to respond adaptivly. It is a cliché, that if a corporation is unable to adapt to changes, it won't be able to maintain its operation on the long term. The new situation is, that this long-term is getting shorter and shorter, and it is true concerning any organizations, that these rapid changes can make operation impossible even in the short term, if the managment is unable or unwilling to deal with it properly.

According to the opinion of Pieters and Young [1], 'The pace of change is faster than organizations ever had to face, and it is getting even faster.' Not to mention the fact, that most employeescan easily agree that 'the only thing we can be sure of is continuous change'. The authors consider it another problem, that the present structural form of organizations won't be able to react properly for changes of such pace, which are expected in near future. Cascio and Aguinis [2] think, that in stead of the forms of hierarchy of the 20th century, the structural forms of the 21th century will be like a 'flat, complexly weaved net'', which connects different persons. It would also worth a thought to compare this to Handy's shamrock model [3].

If we take a look at the outer environment of organizations, we can see, how many factors and agents influence their operation. Most of these factors can't be sharply seperated from the inner srtucture, because it is strictly connected to it in many plains, and even the terms of outer and inner can't be easily seperated in case of an organigram [4]. Even though, if we try to list these, it is obvious, that the innovation of technology, the expectations of society, the political interests and the even stricter legislation, the increasing number of regulatory authorities, and the ever changing processes of markets all enlight, that organizations must deal with the management of these changes on a systemic level, and not in a way, when these changes are isolated from each other.

So the management of changes deals with analysis and mapping of factors on a systemic level, and aims to give proper answers for them. In the literature of change managment the term of change and making a change is never defined, only the difference between these is given.

Two basic types of change can be seperated. The primary or morphostatic change concerns to the change of way of working of a system (settings, mode), while the structure (morphology) of the system stays unchanged (static). Secondary or morphogenetic change on the other hand, changes the structure of the system, so a new, different morpohology of the system is established. Change management deals with secondary changes [5]. The system to be changed can vary in many ways: the form of incorporation, the business strategy and mission, type of organizational culture, the range of products and services provided, the technology applied in manufacturing, the manufacturing system itself, the system of quality assurance, the IT system, the HR policy, etc.

In our present era, using the term F-Era by Baracskai – where 'F' stands for both freedom and flexibility – the most important characteristic of a successful organization, that it is capable for rapidly react to changes, so as operating flexibly is highly empathised [6].

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 [7]. Freedom is of crucial importance in many fields of our lives, just like free flow of capital, goods, workforce and knowledge. 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. The knowledge obtained this way will necessarily be shallow, so it is the person's responsibility who longs for knowledge to check the validity of it, and also to contextualize it properly [8].

2. Key to sustainability: the life long learner organization

The basis of organization's capability for reacting quickly and sufficiently is given by the management of the most important resource by now. An organization is able to operate efficiently, if it continuously improves its capability for learning, never stops on this path, and searches and finds new challenges, and brings actions for these. From the aspect of safe operation of organizations the human resource which is able to apply its knowledge according to the context is of crucial importance, because in the F-Era knowledge itself has become the most valuable resource. It's reasonable to admit, that unlike traditional resources like capital, knowledge isn't scarce, but on the contrary, an abundance of it appears, even if it is shallow.

An organization which believes in continuous improvement and knowledge management, which is built up of constantly evolving, learning employees – knowledge workers – will be able to subsist, because through providing knowledge, new ideas, and continuous innovation it can achieve sustainability.

An organization is capable of handling the radical changes of its environment only, if it develops its ability to adapt, and furthermore, can come before changes, and influence its environment itself. That’s the reason why organizations try to establish and operate educational institutions on their own, because this way they can provide themselves competent workforce for their safe operation.

The other of way of adaption, which focuses on the development of existing human resource, is an inner department of the organization, which concentrates on supporting change management. This usually means a team of experts contracted for one project. Even though these project teams are established for a given period of time, and to achieve an increase in performance by implementing a program of organizational development, due to their operation, the methods and tools of change management are often associated with them. The concerning development programs can vary in many ways, but it is true in general, that their purpose is to develope the learning abilities of the organitzation by training leaders and colleagues.

3. Organizational development for sustainable change managment

Speaking of organizational development I use the classical definition of Beckhard [9]. Organization Development is an effort that is planned, organization-wide, managed from the top, increases organization effectiveness and health, through planned interventions in the organization's processes, using behavioral-science knowledge.

If a project as such mention above aims to achieve its goals it has to face many risks. It is well known, that big companies of the world try to react to the changes of their environment by establishing such projects, but yet approximately two thirds of these fail. Over more than a decade by investigating more than a thousand organizations, the change management experts of Boston Consulting Group found, that two out of there initiations for change fail [10]. The great number and frequency of failures inspires me to thoroughly deal with the risks of managing change.

The question is, why will the two thirds of these attempts for change end in failure? According to the researcher firm ProSci, by examining 254 organizations, the reason for these failures are mostly the initiators of the change themselves [11].

In change management there are there types of theoretical mistakes [12]. The first is when the management tries to find solutions by dening the problem itself being a problem, while they clearly see, that there is something wrong, but they simply don't act at all. The next type of mistakes is when they try to change a situation which can't be changed at all, or the problem doesn't even exist, so they apply change management in a situation where it can't be the solution. The third type derives from wrong understanding of the problem and the type of change neccessary: they try primary change instead of secondary, or the same in the other way round.

Examining the difficulties of practice could also be interesting for a better understanding [13]. This is based on the fact, that organizations often can't handle complexity on the proper level, and determine only foggy purposes. If we would like to develope the organization's ability to react to change by enhancing its capabilities for learning, a multi-dimensional thinking is neccessary.

There are many projects that fail due to unclear purpose and oversimplified focus, just like when they concentrate solely on the financial results only, which are harder to achieve in a changed environment. This purpose in itself won't be able to achieve a sustainable change, and can bring results on the short term only. A typical example of it is, when costreduction is important only, forgetting about the opportunities of expansion and the search for alternative income sources. In this case the dramatic decrease of employees' satisfaction appears as a collateral damage, just like the failure of collegues' moral, which affects sustainable operation in an adverse way.

Another frequent mistake is, when the project focuses solely on the development of leaders. In this case the leaders participate at many trainings, individual and group coaching programs. This often can be useful, but usually after this intense training period the leaders won't be able to perform on the expected level in their original working enviroment. This derives from two reasons. The first is, that they can perform well in a safe training environment, but they are unable to apply the new knowledge, capabilities and methods in the old, familiar environment, so the re-conceptualization of the new knowledge can't happen. The other reason is strictly attached to this one, because when the leader finds himself in the environment where nothing has changed at all, then there won't be an appropriate medium for the application of new methods and tools.

As I see it, a development program as such can be fruitful only, if in the first round it focuses on the training of leaders, but after it doesn't stop, but pays attention to the informing and training of employees as well, considering the level of employees' satisfaction and commitment for change. If the aim of development of leaders is more complex than to conform to the (financial) expectations of the owners, so the satisfaction of the employees is to be increased too, then the knowledge increase can be sustainable on all levels of the organization. If we imagine the continuous development of the knowledge workers of the organization as described above, it's easy to see, that the satisfaction of the clients of the organization will increase too. Based on this change, the owners can rightly expect the financial results to impove.

Conclusions

The F-Era requires new ways of thinking about change. We must realize, that change is more faster than ever, and influences the operation of organizations at all levels. If an organization wants to maintain its operation in a sustainable way, it must focus on the management of change. Nowadays change management is strictly attached to both knowledge management and organizational development. Knowledge and much rather knowing has become the most important resource, so organizations have to deal with it, which is often handled by implementing projects for complex organization development [14]. These projects on the other hand face many risks, so should have a clear purpose and a complex approach of change management to be successful. If an organization is able to continuously improve its capabilities for learning, it has good chances to cope with today's challenges. After all, there are still many questions to be answered concerning the appropriate way of managing changes in the F-Era.

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Development opportunities of the short supply chains

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Abstract: In the concentrated commerce it is problematic for the small-sized agricultural producers to join into the modern chains. Taking parts in short supply chains (SSCs) is a supported alternate opportunity for them. The most typical form of the direct producers' sale in Hungary is the trades of local markets. The more innovative SSC-forms are less spread than for e.g. in some countries of West Europe. The present study show positive examples of well-functioning SSC trading from abroad and presents the producers' advices about the improvement of the producing and SSC-trade in Hungary.

Keywords: producers, producers' satisfaction, consumers, producers' market, marketing

1. Introduction

Todays in Hungary, and in the developed countries, the food commerce means a concentrated and overstocked market. Concentration of the market took place about in a decade (Dobos 2009), and according to Kartali and his contributors (2009) this process started from the second third part of the 1990s. In accordance with study of the GfK Hungária (2016) analysing the first half-year of 2016, 59% of the shares of the consuming goods' market were held by the hypermarkets, supermarkets and discount stores (by the units of the modern retail). The tendencies in the European Union are similar. According to the EPRS report's data (2016) on the level of the Union, 54% of the total edible grocery sales was done in supermarkets, hypermarkets and discount stores. In the case of fresh foods, the share of the direct sales was about 2% in the EU-level.

In the food-commerce, shopping centres owning the greatest market-shares typically have strict conditions towards their suppliers. According to Kartali and his contributors (2009) one way of supplying into these chains, that producers sell their wares through cooperation (for example in producers' organisations) to them. Another practice of getting into these chains is the supplying of niche products. Apart from these two ways, the conventional, traditional sales channels remains for the producers. But the cited authors wrote that these conventional sales channels offers a decreasing opportunity. In accordance with Jankuné Kürthy and her contributors (2012) it is probable that market shares of the modern commercial chains increase in the future. This process consistently involves the further decrease of the conventional sales channels. It is a somewhat opposing tendency that according to Benedek and Fertő (2015) the claim for directly sold products and for alternate supply chains has increased worldwide. In accordance with Kneafsey and her contributors (2013) that local food culture remained strong in Hungary even after the change of the regime, especially in the remote rural areas. The Hungarian Rural Development Program (2014-2020) qualifies the products sold through the short supply chains demanded in Hungary. On the other hand, the News-portal of the Hungarian Government (kormány.hu) shares the information that in the European Union the solution have been searched for a long time that can increase the agricultural producers' shares in the gain comes from the food chains. A possible and obvious concerning solution is the supporting of short supply chains.

2. Literature review

2.1. Defining the short supply chains

The "shortness" of the short supply chains can be interpreted basically in two approaches. On the on hand by the low numbers of the participants of the supply chain. The European Parliament an Consul defines the short supply chains in the following way: "a supply chain involving a limited number of economic operators, committed to cooperation, local economic development, and close geographical and social relations between producers, processors and consumers" [Regulation EU No. 1305/2013, p. I. 347/499)]. According the Hungarian Rural Development Program (2014-2020), this definition of the short supply chains can be termed as general. For this reason it offered the opportunity to work out thematic subprogram that adjust flexibly to the local needs of the member states. The Hungarian Rural Development Program defines the short supply chains as a supply chain in wich the producers or groups of producers sell to consumers or groups of consumers on a direct way or by the intercession of maximum one intermediate actor.

On the other hand, shortness of the short supply chains can be defined on the basis of the phisical distance of the production, processing, transport and consumption.

(Benedek et al. 2015). This kind of distance in the case of “local food systems” is determined by international sources and reflections in between 20 and 100 kilometers typically. (Kneafsey et al. 2013)

The different channels of short supply chains can be categorized on the basis of different topics. The topics can be seen in the *Table 1.,* is presented by the Rural Development Program (2014-2020).

Table 1.
Grouping of SSC-types in innovate and conventional context.
Source: Own, unofficial translation and own edition on the basis of the Hungarian Rural Developement Program (2014-2020); 735.p

Type of the SSC	**Conventional forms**	**New, novel forms**
Sale to retailers	- Processor who sells in direct way	- Hospitality. - Institutional catering, - Retail trade
Sale at the customers’ house	- Door-to-door selling, - Moving shop	- Box scheme
Opened farm	- Shop in the farmyard, - „Pick yourself” - Rural guest-table	- Community supported agriculture (CSA)
Trading points	- Market*, fair, - Temporary „settling out”	- Producers’ market, - Festival, - Farmers’ shop in the settlement - Automat

* Remark: according to an opinion of an expert, the traditional market as a sales channel cannot be classified as a SSC sales channel, because traders and retailers also sells in these markets, who do not correspond with the criteria of *maximum one intermediary actors.* But apart from this, it can be really said that conventional markets have a significant role in the producers’ direct sales. It can be mentioned as an intrest, that according to Benedek and Fertő (2015) separating and distinction of the conventional and traditional markets are not typical in the Hungarian literature.

This topic presented above does not include it, but internet-based commerce can also be meintioned as a modern form of SSC. (Benedek -Balázs 2014)

2.2. Presenting some aspect of the short supply chains on the basis of the producers sale and the producers market.

2.2.1. Factors of the direct sale and market-sales in the producers' point of view

This present study is based on a research was made with producers, primarily in producers' markets, and secondly in conventional markets. For this reason, I present in the Literature Review the general advantageous and disadvantageous aspects of the direct sales and the market sales, with the help of the literatures examining this subject. In the case of direct sale or marketplaces, the producers get their incomes in the time of the selling, in the form of cash (and not by delayed payments). Compared to the retail sale, they can achive higher price levels and they have freedom in the determination of the prices (in contrast with the strict price-determining behaviour of some engrossers). They are free from engrossers, they can sale in a flexible way. Thye can make relationships with the consumers, they can obtain a returning circle of customers. On the basis of the consumers' feedbacks they can get market-information, and information about the consumers' needs. There are also disadvantageous aspects of the direct or market sales, for example the producers have to do all of the marketing- and sales-duties for themselves in this case; there are no traders to deal with them. The product-volumes can be sold in this way are limited. Selling at marketplaces are often circuitous (the "marketing in the early morning" , and the exposition to the weather conditions can be mentioned here for example). The shopping circumstances are also worse than in the shopping centres. Lastly, it is an important viewpoint, that because of the commerce-concentration, the share of the market-trades decreased in Hungary. (Kiss/a 2017; 166.p., on the basis of summarised information from Csíkné (2011), Csíkné - Lehota (2014), Szabó - Juhász (2012); Horváth (2010), Mastronardi et al. (2015)).

2.2.2. The factors of direct sale and market sale from the customers' point of view, and from marketing side

According to more literature reviews examining customer attitudes it can be pronounced that customers do prefers buying in (producers') market and buying from producers because they attributes good quality to the products can be bought from producers (Benedek 2014, Benedek – Balázs 2014) or in marketplaces (Kiss – Nagyné Demeter 2016, Szabó – Juhász 2012) But on the other hand the main disadvantages of the producers' markets from the customers' side are the higher price-levels, the uncomfortable shopping circumstances, the relatively small selection (and furthermore, payments can be done only in the form of cash, and there are markets that are only seasonal). (BENEDEK – BALÁZS 2014). In my opinion these characteristics can be also true in the case of other SSC sales channels, for example in fairs. I think it is an important question that what causes the positive consumers' judgement of these products. It can be pronounced on the basis of Benedek and Balázs (2014) that customers know the origin of the product, and by the producers-consumer personal relationships, the consumers' trust can be evolved. The intent of supporting local farmer can be obtained. Benedek (2014) makes the reasoning of *Edward Jones and his contributors (2008)* known, that "being local" cannot be an absolute pledge of the "good quality," because all of the products can be considered somewhere as "local". They mentioned that viewpoint too, that the conventional chains with more participants can also be able to take the products to the customers quickly (due to their efficiency). This can query for example the advantage of "freshness" comes from the short transport (in the case of SSC).

Szabó and Juhász (2012) examined the marketing activities of the marketplaces. In their wording, the right information of the consumers have an important role in the increasing of thrust towards to the markets and in the increasing of the trade. It is not typical of the market-operators to use marketing tools in order to make the offers of the marketplaces known. There are possible solutions to promote and advertise the markets (beyond the expensive community medias), for example (according to the authors) the use of opportunities offered by the internet, or the use of prospects, information sheets or leaflets to present the sellers, producers and their wares. The authors make it know that mainly in the case of well-functioning producers' markets from abroad, experinces exceeding the shopping, and additional services are offered to the consumers. For example product- and cooking demonstrations were held, perhaps seasonal recipes or attached shopping lists were offered. They wrote that it is not typical of the Hungarian markets.

2.3. Presenting some SSC-practice based on cooperation

Kalmárné and Vargová (2010) mention the cases of Austria, France and Germany, where trade of local products have a great importance, and local products are connected with village tourism. In Hungary, they qualify the organisation-level of farms offering local product low. They recommend to set up cooperatives, clusters as a solution opportunity. Positive example of direct sale from abroad that in Austria there are a regional and national short food supply chain (SFSC) system, that name of "Gutes from Baurenhof" can be translated in English as "Good things from the farm" (Kneafsey et al 2013, 76.p.). It's important aim is to make contact between the producers and consumers, and to support the unique, traditional, traceable products, with taking the customers' need into consideration. At present (data from 2013) it contains 1520 producers. In France, according to data from 2010, about the 21% of farm businesses (about 107 000 businesses) sell a part of their products through the "circuit courts." (Circuit courts can be interpret as the French equivalents of the short food supply chains.) These circuit courts are not limited to direct sales. (Kneafsey et al. 2013). The Dutch example brought up by

Takácsné György and Takács (2016) shows also that, by the cooperation of small producers a quiet unique way of sale opens for them but individually they could not take part in it. The Beemster Dutch milk-processor, and cheese producer, farmer owned cooperative can be a catering-supplier of an airline company having a world-network like the Dutch KLM. *(beemstercheese.us)* Galli and Brunori (2013) presents 19 case studies about the succesfull SSC-initiations from different European countries. For example, it makes the Russian LavkaLavka internet shop known, that is present with its branches in St Petersburg, Moscow, Kaliningrad and Kiev. This organisation buys product from the farmers (nearly at retail price) and delivers them to the customers' house. It offers opportunity to register for box scheme. Its price level can be pronounced high. The authors' other example is the "Oregional" farming cooperative, that is consisted of 22 producers (the shareholders), and functioning in the area of the Dutch Nijmegen city. The producers are all located within an area of 50 km from Nijmegen. The "Oregional" sell products directly to restaurants, shops, caterers and care institutes in the region. They opened a webshop in 2012, where they sell fruit- and juice- boxes and boxes with an assortment of regional products. An other example is the Austrian "SpeiseLokal!" organisation which is a "community supported retailing". Generally, five persons work in the organisation and they are in contact with about 40 farms in the region of Lower Austria. They serve about 70 families each week. The producers get a high percentage from the final product price (about two-third part from it). The organisation sells products that the producers want to sell, and only local, traditional products are sold. (examples of Galli and Brunori, 2013)

3. Material and Method

The aim of this study is to make suggestions about the development opportunities of the direct sale and producers' markets (and generally of the short supply chains).

The conclusions of this study are based on the literature reviews and on a primary interview-survey made with producers, by me personally, in the spring and the early summer of 2017. 22 small-sized agricultural producer and 1 food-processor small entrepreneur took part in my survey. The interviews were made in the "Liliomkert Producers' Market" of Budapest (with 14 persons), in the "Nagytarcsai Producers' Market" (with 3 persons; in Nagytarcsa village, in the near of Budapest), and in the (conventional) market of Gödöllő town (5 persons) and in one case over the phone. Primarily I searched the answer to the question that how the producers were satisfied with the sale-opportunities used by them. Further aim of the survey was to examine that according to the small producers, how the conditions of the production and sale can be increased, in general in Hungary, and also in their own situations. The demographic data, calibrating data, and the detailed satisfaction-results were explained in the publication of “Short supply chains – from the viewpoint of the producers” (Kiss, 2017/b). The results were presented here, are partly post-publications, furthermore the further expansion of the producers’ favourable suggestions.

4. Research results

4.1. Judgement of the producers’ sale opportunities

I asked the producers to assess that how they are satisfied with their sales opportunities in general, on a 5-rank Likert scale. It is an important result that none of the responders had pronounced negative assessment (1 or 2 values on the Likert-scale). 47% of the responders assessed this factor at middle level, and 32% of them were moderately, and 21% were clearly satisfied with it. Middle level (in the case of this sample; the worst) assessments were given in the greatest proportion by the producers of the conventional market (relatively by the older responders). I asked the respondents to assess the certain factors of the producers’ sale, given by me. They could answer in their own point of view. In the time of the interviews, only the factors were given by me, and the responders could interpret and assess freely, independently from the others’ answers. On the basis of the answers, it could be seen that which factors had positive and wich ones had negative assessments (2. table). (Full-scale answers were presented in the study of Kiss 2017/b).

It can be said in general, that the responders were dissatisfied with their demand. This dissatisfaction came primarily from the low numbers of the customers (11 responders were dissatisfied in the case of this factor and only 3 were satisfied). It came secondly from the volumes of saleable products (on the basis of 7 dissatisfied and 4 satisfied responders). 6 respondents said that they did not experience differences between the sales channels used by them, relating to the numbers of the customers. In the producers’ markets more of them mentioned that they sell products of premium-quality and for this reason, the prices of the products are also high. During a conversation I made with a certain producer, I got to know that according to his opinion, their substantive customers are not necessary from the rich people, but who have the willingness to spend on the more expensive food-products, from their income-surpluses. (And for example not on expensive consumer electronics). The numbers of these customers are certainly low. Negative assessments could be observed in the case of the circumstances of the sale also. More of them disapproved the infrastructural lacks (6 mentions), for example the lack of power supply. 5 responders pointed out the exposition to the weather conditions. For example the rainy weather can have effects on the numbers of costumers in the marketplaces. According to a responder, (mainly in the case of greater festivals and fairs) the false weather-forecast can also cause problems. Just a 4 responders said, that the conditions of the marketplaces can or should be accepted; saying, marketplaces are like this, and it is not about the comfort.

Table 2.
Assessment of some factors of the producers' sale, on the basis of the responder producers
(Source: own editing, on the basis of Kiss 2017/b)

<table>
<tr><th colspan="2">Factor</th><th>Numbers of positive opinions
(+)</th><th>Numbers of indifferent, non-committal opinions (0)</th><th>Numbers of negative opinions
(-)</th></tr>
<tr><td colspan="5">(+): Factor were assessed in mostly positive way by the responders</td></tr>
<tr><td colspan="2">Quality of saleable products</td><td>7</td><td>7</td><td>-</td></tr>
<tr><td colspan="2">Price-levels can be achieved</td><td>9</td><td>3</td><td>7</td></tr>
<tr><td colspan="2">Costs of the sale</td><td colspan="2">9 (those opinions that think the cost levels are acceptable, real or positive)</td><td>5</td></tr>
<tr><td colspan="5">(-): Factor were assessed in mostly negative way by the responders</td></tr>
<tr><td rowspan="2">Height of the demand</td><td>Numbers of customers</td><td>3</td><td>-</td><td>11</td></tr>
<tr><td>Quantity of saleable products</td><td>4</td><td>2</td><td>7</td></tr>
<tr><td colspan="2">Circumstances of the sale</td><td>4</td><td>3</td><td>12</td></tr>
</table>

4.2. The producers' suggestions of development

During the survey, I asked my responders to tell me, that in their opinion what would cause positive change whether in the producing or in the sales conditions; in their own situation and also in general. A lot of responders could not give substantive answer to this question. More of them referred to the strong market-competition. The substantive answers could be classified into 4 categories:

1. Doing marketing-activities (in general) – 7 mentions.
2. Product-quality is a great a strength of the producers' wares. It should be utilised in a better way (4 mentions) - for example, by shaping attitudes or promotion.
3. Making cooperation. (4 mentions)
4. Organizing markets in a better way. (3 mentions)

Referring to the Literature Review (Szabó and Juhász 2012), and as it can be experienced also in the practice, that the market-operators generally do not use marketing-tools in order to inform the customers about the wares can be bought in the marketplace or about the unique offers. Although one of the respondents said that the operator of the examined producers' market, dealt with marketing-work seriously. According to an other producers' opinion, this kind of marketing could be done in all kind of possible ways: for example by (local) television, by opportunities offered by the internet (e.g. by community media), by leaflets, advertisements and so on. Referring again to the Literature Revies (Benedek 2014, Benedek and Balázs 2015) in the case of producers' markets, the demand for producers' goods is related to that the costumers attributes good quality to the producers' wares or they perceive them as having good quality. This results was also presented by the research of Kiss and Nagyné Demeter (2016) that examined the producers' and the customers' judgement of the conventional markets (among others). 4 producers mentioned the suggestion that product-quality as a strength should be utilised in a better way, to call the customers' attention to the values offered by the producers' goods. Some of them mentioned the idea of shaping attitude. The third substantive group of opinion draw the attention to the cooperation of the producers. But it is noticeable that on the basis of the literature examining this subject, and on the basis of the practice, the producers' cooperation and willingness to cooperate have a low level in Hungary. The question concerning to the cooperation were asked from 17 responders, and only 3 of them took part in any kind cooperation. Altogether 3 of them suggested the better market-organising as an opportunity for solution.

Conclusions

Both from the research results and from the literature reviews can be seen that the basic problem of the producers and producers' market is the low demand. According to my opinion this statement are valid in the cases of the SSC-channels with higher price levels. On the basis of the research, the second main problem are comes from the circumstances of the sale and from its characteristic, for example the exposition to the weather conditions or the infrastructural lacks.

Seven responders suggested the doing of marketing activities in the short supply chains. According to my knowledge only a low part of the producers deal with individual marketing-work. It goes with extra work and cost, furthermore it can be typical that the producers do not thrust in the returns of this kind of investments.

Szabó and Juhász (2012) show examples for the marketing-activities can be done by producers and market-organizers, for example information tables can be placed next to the stands, catalogues including maps, opportunities offered by the internet, and the intense personal contacts.

Four responders pointed out that producers' goods have additional values and it would be important to utilise them in a better way, for example by product-promotions or by shaping attitudes. Literature sources mention that todays there is an increasing demand for the producers goods and for the local foods. It can be observed in the practical life that that the healthy nutrition become more and more important amongst the consumers. On the basis of more case studies it can be stated that consumers think producers goods have good quality and this is one reason or perhaps the most important reason that they do prefers these products. In my opinion it can be a basis of a further research topic, that on what basis the consumers attributes good quality to these products or what "good quality" means for them at all. There can be consumers whom extensive cultivation or extensive keeping technology means an advantage for example. Or the ingredients of the processed products or their (possible) handmade origin can be an important factor for them. It is a fact, that producers' goods can represent an important "marketing-value" from this kind of viewpoint. These values can catch the attention of susceptible consumers, and they can offers them a point of reference during their shopping decisions.

A further four responders pointed out the significance of the producers' cooperation, collaboration and/or its necessity. More literatures examined the advantages of the cooperation and the factors are hindering them. According to the experiences got on the spot, the small producers' collaboration are greatly hindered by the mistrust amongst the producers. Probably, producers who know each other from the past and trust each other are more willing to cooperate. One of the respondents told, that he can imagine cooperation concerning the procurement, but not in the sale (because of mistrust). Furthermore, about two responders mentioned that they can imagine smaller cooperation (of four or five participants for example) but not greater ones. The "Literature Review" chapter made some positive examples known about well-functioning SSC-sales from different countries of the EU. From the examples it can be reasoned out, that a strong intent and collaboration stands behind their success or at least an actor who is able to coordinate and harmonize the producers of the given region and their supplies. From the producers' side there is a kind of openness and from the customers' side there must be a certain level of willingness to purchase and preference towards producers' wares, I think.

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Analysis of the Young Farmers' Assistance Initiative among Young Farmers of the Homokhatsag

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Abstract: It could be stated of the member states of the European Union that the proportion of workers in agriculture is steadily declining which in addition is also coupled with a low proportion of young farmers. Young farmers are playing a key role in the "Europe 2020: Smart, Sustainable and Inclusive Growth" strategy, because young people are indispensable for the future of agriculture. In my research, I looked at the young farmers of the Homokhátság (Sand Ridge) region seeking an answer to the question: how successful were the Young Farmer' Assistance Initiative programs amongst young agricultural entrepreneurs.

Keywords: young farmers in Hungary, Homokhátság,

1. Introduction

The proportion of the workers in agriculture in the state members of the European Union is said to be decreasing. This process goes together with the low proportion of young smallholders. According to the survey carried out by Eurostat in 2013 smallholders of age 65 or over 65 represent 31% of all the holding managers (Figure 1).

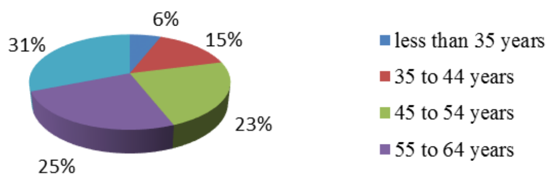

Figure 1.
Distribution of holding managers by age groups in the EU, 2013
Source: Eurostat, 2015.

As far as the age structure of farmers is concerned (Table 1). Hungary gives a similar picture to the EU average. The survey of Eurostat in 2013 showed a proportion of 30,3% of holding managers aged 65 or over and 6,1% of holding managers aged 35 or less. The interviewed farmers are on average 32.1 years old (EU average is 29.4). The needs of young farmers have been identified by interviewing 75 young farmers (max 40 years old) in Hungary and 2 205 across Europe. The farmers have been interviewed about their needs, which have then been confirmed through a focus group in Hungary (EUROPEAN COMISSION, 2015).

Table 1.
Distribution of holding managers by selected age groups in the EU Member States, 2013
(share of total managers - %)

Country	less than 35 years	35 to 44 years	45 to 54 years	55 to 64 years	65 years over	Country	less than 35 years	35 to 44 years	45 to 54 years	55 to 64 years	65 years over
Austria	10,9	24,4	36,5	19,6	8,6	**Latvia**	5	14,5	26,2	24,1	30
Belgium	4	15,2	32,9	26,8	21,2	**Lithuania**	5,6	13,9	25,6	20,9	34
Bulgaria	6,4	13,2	18,5	25,2	36,7	**Luxembourg**	8,7	17,3	32,2	27,4	14,4
Croatia	4	9,9	21,8	29,1	33,3	**Malta**	3,8	12,9	24,8	33,4	25,1
Cyprus	1,7	6,9	21,5	30,1	40	**Netherlands**	3,1	16,3	32,7	26,9	21
Czech Republic	4,6	14,8	23,8	33,9	23	**Norway**	8	21,2	31,3	26,5	13
Denmark	2,5	14,7	31,2	27,6	24	**Poland**	12,1	23,7	30,2	24,3	9,6
Estonia	7,5	16,8	23,4	21,8	30,4	**Portugal**	2,5	7,2	16,6	23,6	50,1
Finland	8,5	22	30,1	29,2	10,2	**Romania**	4,7	13,9	16,9	23,5	41
France	8,8	19,1	32,7	27	12,4	**Slovakia**	8,1	15,4	24,9	30	21,6
Germany	6,8	19,7	37,2	29,8	6,5	**Slovenia**	4,8	14,4	26,4	29,1	25,3
Greece	5,2	14,7	23,9	24,9	31,3	**Spain**	3,7	12,7	25	25,2	33,3
Hungary	**6,1**	**14,9**	**19,4**	**29,2**	**30,3**	**Sweden**	4,4	12,8	24,8	28	30
Ireland	5,7	15,2	23,7	26,1	29,4	**United Kingdom**	3,9	11	26,6	27,9	30,6
Italy	4,5	10,8	21,6	23,3	39,7	**EU**	6	15,2	22,9	24,7	31,1

Improving the age structure of agricultural production, the resilience of rural areas and increasing the ability to generate income is a fundamental objective within the framework of economic and rural development policy. The support of young farmers and the promotion of their activities in the agricultural sector are of the utmost importance since their ability to innovate and their attitude towards the market isa laready strong and could be further strengthened. The current situation can only be changed if start-ups have adequate capital facilities and / or receive loans with preferential interest rates. The purpose of the start-up program for young farmers was to help young entrepreneurs establish their businesses. Another objective is to create a change in the structure of farms by improving the age distribution of the agricultural labor force, improving the population retention capacity of rural areas and ensuring long-term sustainability of agricultural activities.

The problem of generational change is being facilitated by the government through the involvement of EU funds and grants (EMBER – MIHÁLOVITS, 2007). Only 5.6% of all European farmsare run by farmers younger than 35 while more than 31%of all farmers are older than 65. These figures raise concerns about the future competitivenessof European agriculture and guaranteed food production in the coming decades. Young farmers in the EU can be characterised by: a low proportion in total farm numbers, agricultural land and standard output;average-sized farms;higher levels of professional qualification than older farmers below-average income levels, low capital stocks and land ownership; high levels of net investment, below average levels of liabilities and average debt to-asset ratios; high return on assets ratios. At the beginning of their farming careers, they are thus positioning their farms for the future but may be constrained by lack of access to land and credit (EUROPEAN COMISSION, 2017).

The main objective of the rural development policy in the EU is to intensify the viability of the countryside with the help of active communities, strong economy and good public services so as people living in the countryside could have a better quality of life (SZÖRÉNYINÉ, 2015.) SZÖRÉNYINÉ (2015.) emphasises even the following: “The rural territories in Europe are highly afflicted by the decreasing role of agriculture, the problem of ageing, the conflict between development and conservation and immigration of people with poor qualification in addition to the highly qualified workforce leaving the countryside. We should react to these challenges with activating the impulsive forces (enterprises, expertise, competition, investments, innovation and knowledge) necessary to modernize rural economy.”

2. Material and method

2.1. Material

I have selected the Homokhátság (Sand Dunes) area because in my opinion, farmers here are facing increasingly worsening specialized problems and challenges. The Homokhátság lies in the plains of the Danube-Tisza interfluve (Figure2). It is often listed as part of the Danube-Tisza or Kiskunság regions but it is not included in the systematic division of Hungary's natural landscapes and thus it is not part of the classical landscaping categories. The area is not clearly defined by the administration either. It mainly covers the county of Bács-Kiskun but also extends to the counties of Pest and Csongrád (KOVÁCS et al., 2017). During my research I used the help of the Hungarian landscape register to delimit the area. The landscape of the Ridges is unique, characterized by excellent climatic and soil conditions for agriculture, a coherent settlement structure and exceptional landscape values (running sand, primordial junipers, salty lakes, etc.). The area is characterized by rainfall dependence, desertification, and a slowly falling behind, depopulating area which leads to population migration and aging.

Figure 2.
The Homokhátság lies in the plains
Source: Kovács et al., 2017.

2.2. Method

I have personally visited the farmers under 40 thus I got to a total of 124 young farmers using the snowball sampling method. The snowball method is a non probability selection procedure which builds on gradual accumulation. Subjects already reached suggest newer people among their acquaintances. This procedure is usually applied for exploratory purposes (BABBIE, 2008, p. 207). The questionnaires or interviews were conducted between October 2016 and March 2017. The data was evaluated with SPSS. I searched for links between questions by cross-table analysis that investigates the relationship between two or more variables. The analysis seeks to find out whether two nominal or ordinal variables are related to each other. Between the two variables, the Pearson Chi-square table shows the answer.

3. Research results

My first question regarding the applications was whether the respondents ahve heard of the start-up support for young farmers. Of the 124 respondents, only one single person stated that he had not yet heard about the application. Most were familiar with the tenders through acquaintances and friends, or from another young farmers who had prior experience with the application process (Figure 3).

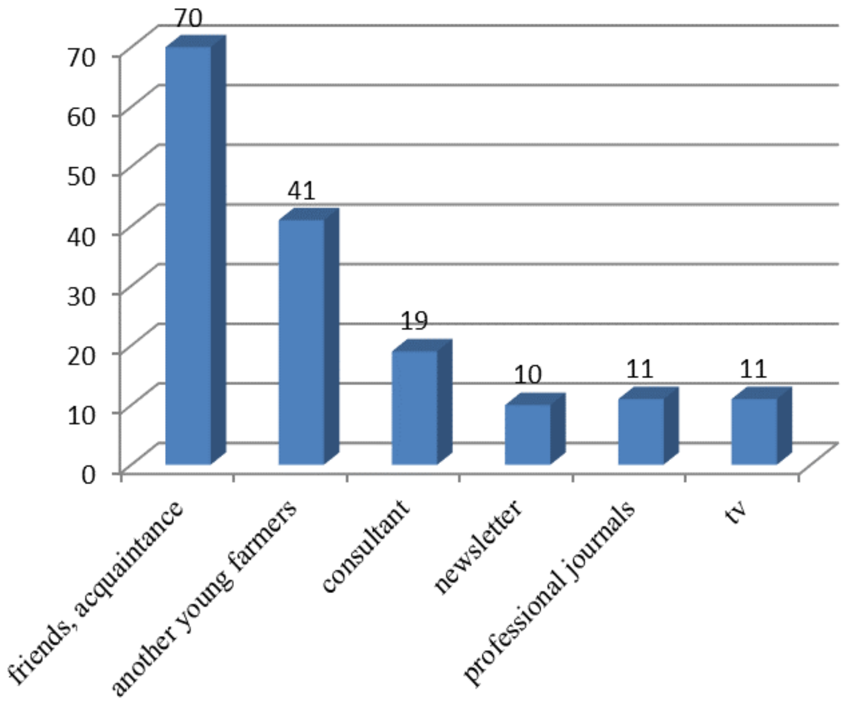

Figure 3.
Distribution of information sources about the Young Farmer's Start-up Support Program
Source: the author’s own reasearch and editing, 2017.

Of the farmers participating in my sample, 54 people submitted a tender for the start-up grant for young farmers. 51 people did not apply, while 15 people planned to submit the application in the next cycle. 3 people submitted a bid but failed (Figure 4).

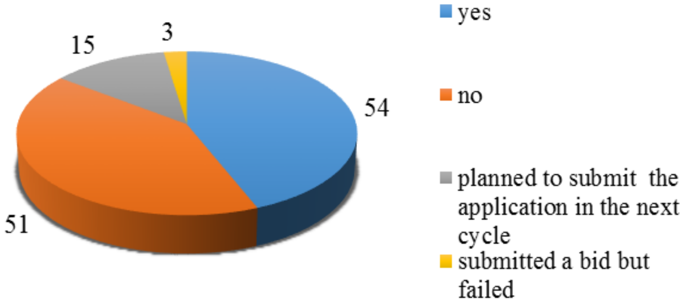

Figure 4.
Distribution of the submission of applications among respondents
Source: the author's own reasearch and editing, 2017.

I did a cross-table analysis to see if there is a correlation between the educationl level of interviewee and the actual grant writer. I have examined whether young farmers who have a higher education degree have written their own application or have utilized a professional grant writer.

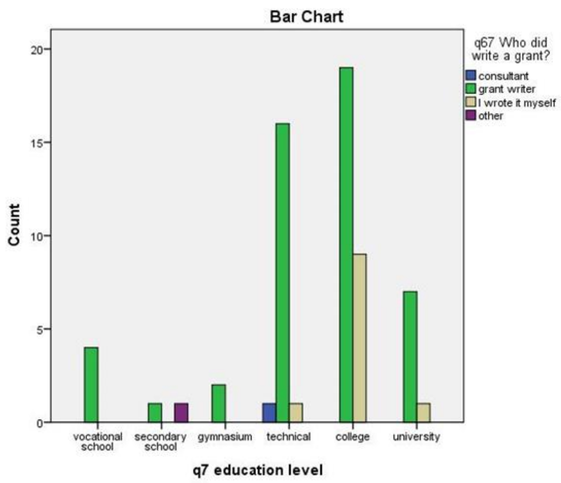

Figure 5.
Cross-table analysis of correlation between the educationl level of interviewee and the actual grant writer

Table 2. Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40,051[a]	15	,000
Likelihood Ratio	18,316	15	,246
Linear-by-Linear Association	,662	1	,416
N of Valid Cases	62		

[a] 21 cells (87,5%) have expected count less than 5.

The minimum expected count is ,03.

Source: the author's own reasearch and editing, 2017.

Figure 4. shows that most of them have employed a grant preparer, irrespective of their educational qualifications. (62 people in the sample have already had their application prepared because at the time of the survey, the 2016 young farm bid was already published).

Those respondents who prepared the application themselves would not change anything on the application material or business plan (6 people). However, young farmers who did not prepare the applications themselves, but through a grant writer, had negative experiences, and opinions were divided. One respondent said he would expect to receive more information from the application writer, while 10 respondents made a lot of commitment in the application, largely due to the suggestion of the proposal writer, because the proposals would not have been successful without these commitments. 4 people would not submit the application at all, which was mainly explained by administrative difficulties. One of the interviewees in the 2016 call had to take on more obligations than in the previous application, as their previous submission did not win due low commitments.

Young farmers who did not apply for support explained that they did not meet the requirements of the application because they had already applied for area-based support prior to the call (36 people). The second reason was the unacceptable conditions (17 people), followed by "I do not trust the calls for tenders" (7 people). 6 people blamed the lack of education, or missing information (4 people), and 2 people did not apply due to administrative difficulties.

Conclusions

Of the 124 respondents, only one person stated that they had not yet heard about the start-up support for young farmers. Most heard about the program from acquaintances and friends or from another young farmer who previously had experience with the application. Less than half of the farmers involved in the sample, 54 individuals, applied for a grant for young farmers. 51 people did not apply, while 15 people planned to submit the application during the next cycle. 3 persons have submitted a bid but failed. Young farmers who did not apply for support explained that they did not meet the requirements of the application because they had already applied for area-based support prior to the call (36). The second reason was the unacceptable conditions (17 people). Using the cross-table analysis, I have found that most of them have used the services of a professional grant writer regardless of the educational qualifications of the respondent.

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Methods of alternative dispute resolution - from conflict to connection

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„With whom happens deliberate case, that person will not experience injustice." (Ulpianus)

Abstract: In the relationships between persons, the conflict appears by nature. Mediation is one kind of procedures to solve a conflict. Mediation is based on the voluntary participation of the parties. Mediation is a voluntary process in which an impartial person (the mediator) helps with communication and promotes reconciliation between the parties which will allow them to reach a mutually acceptable agreement. Mediation is a procedure facilitated by a neutral third-party who assists the parties in moving to resolution. The neutral third party has no control over the outcome of the case and conflict, but controls and directs the process itself, he or she is responsible for the procedure. While court proceedings are authoritative, formalised and claim-oriented, mediation offers a flexible, self-determined approach in which all aspects of the conflict -independent of their legal relevance- may be considered. Against this background, mediation -in contrast to court proceedings- is described as alternative dispute resolution (ADR). The question is: to solve the conflict and find a solution or to transform a conflict and reshape the connection between the parties? What is the matter when the mediation process has to be conducted between parties, who live in different countries or when one person of the parents just want to go abroad with the common child or children. How can cross-border mediation help? This publication tries to show a possible answer and researches the methods of mediation, which can be evaluative, restorative or transformative. This study examines, which fields of ADR use more often, either one or the other method.

Keywords: evaluative mediation, restorative and transformative mediation; cross-border mediation; intermediary; neutrality; confidentiality

1. Regulation in Hungary

In the relationships between persons the conflict appears by nature.[9] Parliament has adopted the Act LV. of 2002 on Mediation in Hungary in order to facilitate the out-of-court settlement of civil disputes. The objective of this Act is to offer an alternative for natural and other persons to settle their disputes arising in connection with personal and property rights where the parties are not bound by statutory provision.

Mediation is a special non-litigious procedure conducted according to this Act to provide an alternative to court proceedings in order to resolve conflicts and disputes where the parties involved voluntarily submit the case to a neutral third party (hereinafter referred to as 'mediator') in order to reach a settlement in the process and lay the ensuing agreement down in writing.

If the mediator accepts the invitation, he/she shall send the parties a statement of acceptance, as stipulated in Subsection (1) of Section 24[10] of the Act, inviting the parties to the first mediation hearing and informing them of their right to obtain representation.[11]

Where either of the parties fails to appear in the first mediation session, the mediator shall not start the mediation process. The representative may be a person of legal age and legal capacity or a legal counsel acting under a power of attorney. The parties or, if the party is a legal person, the authorized representative must appear together in person at the first mediation hearing and for the conclusion of the agreement. The mediator shall hold the mediation hearing in the place indicated in the register as the official location of mediation activities or at some other location subject to the parties' approval.

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9 Dr. Kohlhoffer-Mizser Csilla: Mediáció a jogi személyek életében II.-munkaügyi mediáció Vállalkozásfejlesztés a XXI. században VII. tanulmánykötet, 2017 Óbudai Egyetem Keleti Károly Gazdasági Kar, Budapest 2017, http://kgk.uni-obuda.hu/publikaciok p. 293.

10 (1) The invited natural person or the employee acting in the name of a legal person, following consultation with the director of the legal person, <u>shall communicate his acceptance or rejection in writing within eight days following receipt of the invitation.</u> Acceptance of the invitation shall constitute the right of the invited natural person or the employee acting in the name of a legal person <u>to function as the mediator in the mediation process.</u>

11 Act LV of 2002 on Mediation, Section 28 (1)

The mediator in the first mediation session shall inform the parties

a) of the basic principles of mediation and the major stages of mediation negotiations,

b) of the process effectively leading to an agreement,

c) of the costs of the process,

d) of the confidentiality requirement encumbering the mediator and expert who is involved,

e) of the option that parties may agree on the confidentiality to which they are subject,

f) of the mediator's obligation to present only those legal materials and facts that directly pertain to the case, where it is so warranted by the nature of the case,

g) of the contents of Subsection (4) of Section 32[12] and Subsection (3) of Section 35 -(3)[13]

In Hungary, there are four known ways for alternative dispute resolution in civil law: (1) mediation by the courts-judicial mediation; (2) arbitration; (3) conciliation; (4) mediation.

The new civil code imported the legal institution of mandatory courts-judicial mediation in the hungarian justice practice with the Act V. 2013 on Civil Code, primely inland and cross-border cases connected to parental custody..

While in 2014 there were conducted 656 pieces of courts-judicial mediation and they finished with agreements in 363 cases.[14]

The system of court mediation furthers the resolution of legal disputes in the shortest possible time and to the satisfaction of the clients. This option has been available in the courts of Hungary since the second half of 2012. The way for court mediation was paved by those judges who were retired in 2012 but

12 The mediator may convey any information received from one of the parties to the other party for reply, unless the party supplying the information expressly forbids the mediator to convey it to the other party.

13 Where the mediator of a mediation process is a legal advisor, a notary public or an attorney, the mediator shall not be permitted to prepare a legally binding document on the basis of the written settlement, nor shall he/she be entitled to endorse such document in his capacity as a legal advisor or attorney.

14 Annual Report of the President of the National Office for the Judiciary -2014, Hungarian Version, p. 67. http://birosag.hu/sites/default/files/allomanyok/obh/elnoki-beszamolok/elnoki_beszamolo_2014.pdf,

continued to practice as law clerks. Owing to the continuous training, an increasing number of law clerks could be appointed as mediators. The aim of providing the clients with direct access to court mediation at each of the courts having a staff exceeding seven persons was met by the first half of 2015.

This system may be an efficient instrument of the resolution of legal disputes in a timely manner and of the nationwide spreading of a new approach to dispute resolution. At the end of the first half of 2015 at 20 regional courts, 48 judges and 89 law clerks have been appointed as mediators, 657 cases were referred to mediation, out of which an agreement was reached in 285 cases, 293 orders were issued compelling parties to jointly enlist the assistance of a mediator in their lawsuit concerning parental responsibility. Mediation was conducted in a total of 197 cases, out of which an agreement was reached in a total of 88 cases.[15]

At the end of June 2016 74 judges and 84 court clerks were appointed for court mediation activities. In the framework of the tender for the setting up and furnishing of the mediation rooms initiated by the president of the National Office of Justice in November 2015, 18 regional courts and one regional court of appeal set up or arranged court mediation rooms in courts of larger size in the first half of 2016 and equipped the court mediators with mobile phones and laptops.[16]

In 2016 court mediators altogether proceeded nationwide more than 1600 mediation cases (1664), more than 55% of those cases (919) court mediator process were conducted. 54,4 % of the conducted processes (500) conducted with the written agreement of the parties. 419 court mediation process closed without a written agreement, in the 40% of the continuous court trials (approx.160) the parties agreed in the lawsuit, in the the process, not much after the close of the court mediaton process.[17]

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15 Annual Report of the President of the National Office for the Judiciary -2015, English Version, p. 16-17.

16 Semi-Annual Report of the President of the National Office for the Judiciary -2016, English Version, p. 17.

17 www.birosag.hu Annual Report of the President of the National Office for the Judiciary -2016 Hungarian Version, p. 75.

2. Rules of the European Union

'Mediation' means a structured process, however named or referred to, whereby two or more parties to a dispute attempt by themselves, on a voluntary basis, to reach an agreement on the settlement of their dispute with the assistance of a mediator. This process may be initiated by the parties or suggested or ordered by a court or prescribed by the law of a Member State.

It includes mediation conducted by a judge who is not responsible for any judicial proceedings concerning the dispute in question. It excludes attempts made by the court or the judge seised to settle a dispute in the course of judicial proceedings concerning the dispute in question.

'Mediator' means any third person who is asked to conduct a mediation in an effective, impartial and competent way, regardless of the denomination or profession of that third person in the Member State concerned and of the way in which the third person has been appointed or requested to conduct the mediation.18

The objective of securing better access to justice, as part of the policy of the European Union to establish an area of freedom, security and justice, should encompass access to judicial as well as extrajudicial dispute resolution methods. This Directive should contribute to the proper functioning of the internal market, in particular as concerns the availability of mediation services. [19]

Mediation can provide a cost-effective and quick extrajudicial resolution of disputes in civil and commercial matters through processes tailored to the needs of the parties. Agreements resulting from mediation are more likely to be complied with voluntarily and are more likely to preserve an amicable and sustainable relationship between the parties. These benefits become even more pronounced in situations displaying cross-border elements.

In order to promote further the use of mediation and ensure that parties having recourse to mediation can rely on a predictable legal framework, it is necessary to introduce framework legislation addressing, in particular, key aspects of civil procedure.

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18 The DIRECTIVE 2008/52/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 May 2008 on certain aspects of mediation in civil and commercial matters. *Article 3 I.*Definitions

19 The DIRECTIVE 2008/52/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 May 2008 on certain aspects of mediation in civil and commercial matters. (5)

The provisions of the Directive should apply only to mediation in cross-border disputes, but nothing should prevent Member States from applying such provisions also to internal mediation processes. The use of modern communication technologies in the mediation process is allowed. The Directive should apply to processes whereby two or more parties to a cross-border dispute attempt by themselves, on a voluntary basis, to reach an amicable agreement on the settlement of their dispute with the assistance of a mediator. It should apply in civil and commercial matters. However, it should not apply to rights and obligations on which the parties are not free to decide themselves under the relevant applicable law. Such rights and obligations are particularly frequent in family law and employment law.[20]

The rules should be applied to cases where a court refers parties to mediation or in which national law prescribes mediation. Furthermore, in so far as a judge may act as a mediator under national law, the Directive should also apply to mediation conducted by a judge who is not responsible for any judicial proceedings relating to the matter or matters in dispute.[21]

Mediation should not be regarded as a poorer alternative to judicial proceedings in the sense that compliance with agreements resulting from mediation would depend on the good will of the parties. Member States should therefore ensure that the parties to a written agreement resulting from mediation can have the content of their agreement made enforceable.

The content of an agreement resulting from mediation which has been made enforceable in a Member State should be recognised and declared enforceable in the other Member States in accordance with applicable Community or national law.[22]

20 The DIRECTIVE 2008/52/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 May 2008 on certain aspects of mediation in civil and commercial matters. (6)-(10)

21 The DIRECTIVE 2008/52/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 May 2008 on certain aspects of mediation in civil and commercial matters. (12)

22 The DIRECTIVE 2008/52/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 May 2008 on certain aspects of mediation in civil and commercial matters. (19)-(20)

3. The returning question: „why mediation?”

There are a lot of reasons why to choose an alternative dispute resolution method, in several fields of the society. From family law, conflicts in the family through consumer's law, of course in the filed of criminal law. Mediation is very confidential and secret, because the mediator has to keep the privacy of the clients. We often meet the question (in publications, in the literature, during conferences, written on several websites): *„why mediation?”* There are a lot of possible answer, why it is positive, why it is favorable and profitable to choose mediation. Some aspects below.

3.1. Because of relations, relationships

Court verdicts distinguish parties of a dispute. After issuing a judgment by court we have got a winner on one side and a looser on the other side. This builds a psychological barrier between the parties. Moreover the real conflict often remains unsolved as only compensation of loss is adjudged without consideration of needs and interest of the other party. This can result in several consequences especially in cases regarding family issues (divorce, division of assets, children custody). Court reality is black-and-white and court judgment always makes one party frustrated and discouraged to maintain further relations. Mediation offers a win-win solution. To work out a consensus make the involved parties feel satisfied with their own work. As parties make arrangements on their own, they are more committed in implementing them and obey established rules in future relations.

3.2. Because of business

Mediation is a procedure which may benefit the business. Parties which worked out a consensus are more willing to maintain further relations. Moreover mutual trust is maintained. It may be even bigger than before the dispute as parties are more likely to perceive their business partners as reasonable and responsible people, with whom they can go through conflicts and resolve the problems in a proper manner, without court.

3.3. Because of emotions

Mediation resolves conflicts not only by taking into consideration problems arising from division of resources such as assets, estate, time - but tries to go much deeper and deal with emotional misunderstandings. Mediation is successful when the agreement between parties appeases not only their material but, more importantly, their emotional needs. This guarantees the stability of the agreeement.

3.4. Because of good reputation, „image"

One of the main rules of mediation is confidentiality. It guarantees that nothing what is being said will be used outside the room where mediation is being held. This rule makes mediation very attractive in particular for companies. It allows the parties to keep in secret crucial information about their firms, management, assets, and contracts. It also allows to resolve conflict on the line company-client without publicity, what often deteriorates the image of the company and can have further going consequences in its financial outcome.

3.5. Because of comfort of making our own decision

Mediation allows parties to influence their actual state. In mediation parties decide on their own how the problem will be solved and what rules will govern their relations in future. This is much more comfortable situation in comparison with a court procedure in which decision is made by a stranger (judge) who does not always have the full view of the problem. This makes mediation much less stressful.

3.6. Because of money

In most of the Europeans countries mediation procedure is faster than court trial and less expensive. Most often parties of a dispute share the expenses of mediation in half what makes it fairer. Of course during mediation other agreements may be agreed.[23]

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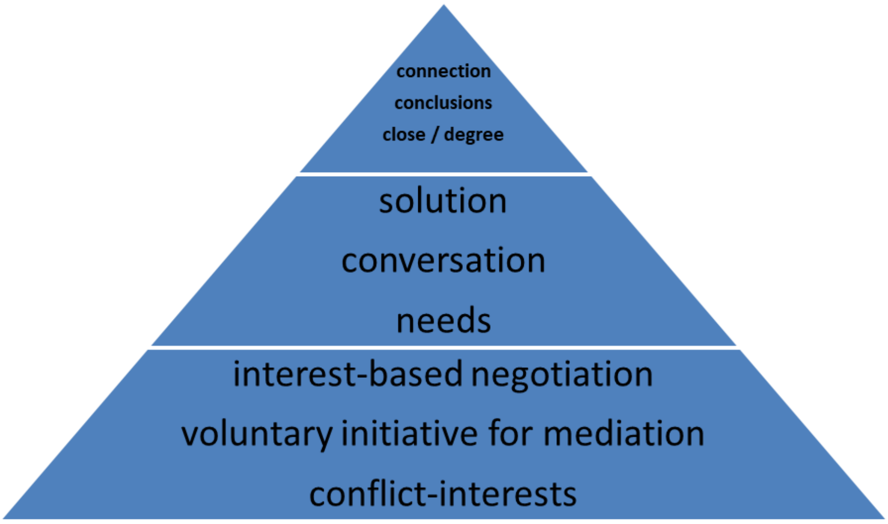
23 http://www.european-mediation.eu/mission/why mediation 201.10.03 12:54



1. Figure
From Conflict to Connection – on the grounds of graph
Dr. Kohlhoffer-Mizser Csilla: Mediáció a jogi személyek életében I.Vállalkozásfejlesztés a XXI. században VI. tanulmánykötet, Óbudai Egyetem Keleti Károly Gazdasági Kar, Budapest 2016, http://kgk.uni-obuda.hu/publikaciok p. 201[24]

4. Stages of mediation:

1. Opening: the mediator sets the stage

The mediator starts by explaining the purpose of mediation, the process and the mediator's role within it. The mediator sets rules and asks of each party to agree to this specific process.

2. The statement of the problem by the parties

The mediator listens to each party when they tell their story.

He acknowledges feelings and assures parties when needed and he identifies the concerns of each party.

24 Dr. Kohlhoffer-Mizser Csilla: Mediáció a jogi személyek életében I.Vállalkozásfejlesztés a XXI. században VI. tanulmánykötet, Óbudai Egyetem Keleti Károly Gazdasági Kar, Budapest 2016, http://kgk.uni-obuda.hu/publikaciok p. 201

3. Identification of the issues and determination of the agenda for negotiation

During this stage, the mediator sets the agenda for the negotiation by summarising areas of agreement (similar concerns) and disagreement. The mediator determines in consultation with the parties the issues to be discussed.

4. Generating options/solutions

The mediator helps the parties, by brainstorming with them, to consider a variety of options/solutions for their situation.

5. Considering the options and selecting the most workable/acceptable option/solution

During this stage, the mediator helps the parties move toward an agreement by considering the options generated and selecting those most workable and acceptable to each party.

6. End of mediation

Reaching an agreement

The mediator assists the parties in the writing of a clear and detailed agreement.

Legal representatives can review the mediated agreement to ensure that this agreement has legal effect in all the legal systems concerned.

No agreement

If parties do not reach an agreement, the mediator summarizes issues identified and any progress made. The mediator thanks the parties and ends the mediation session. Parties are free to file or pursue a lawsuit in court.[25]

The conflict transformation theory regards the focus not on case, but it considers the case as an opportunity: as such kind of entrance, wherethrough the transformation of the conflict genering environment can be set in motion. The tarnsformation approach regards the conflict as the catalyzer of the progression.[26]

In all procedure I would stress the four-part Nonviolent Communication Process. Clearly expressing how I am without blaming or criticizing; empathically recieving how you are without blame or criticism.[27]

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25 https://e-justice.europa.eu/content_key_principles_and_stages_of_mediation-383-en.do?clang=en 2017.09.27 16:39

26 John Paul Lederach: The Little Book Of Conflict Transformation, Good Books 2003 p. 15.

27 Marshall B. Rosenberg PhD: Nonviolent Communication: A Language of Life 3rdEdition p. 231. Puddle Dancer Press 2015 ISBN: 9781892005281/189200528X

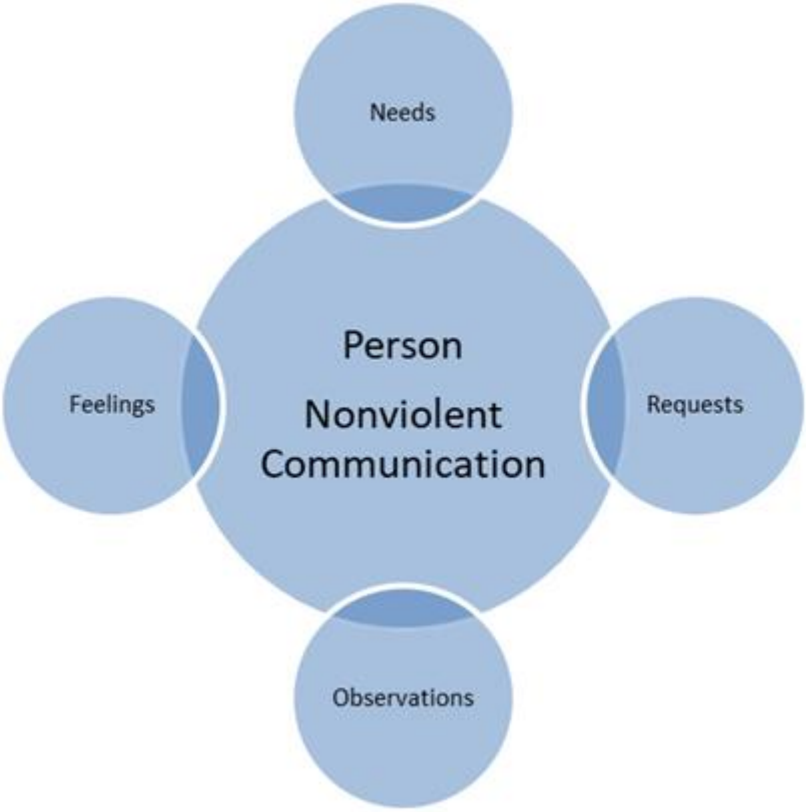

Figure 2.
On the grounds John Paul Lederach:
The Little Book Of Conflict Transformation, Good Books 2003 p. 15.

5. Mediation beyond borders

As family mediation has its own characteristics, therefore the management of the characteristics has to manifest itself in the working process of mediators.[28] Making an agreement in special cases, in special life status is sometimes a harder task than to think only about mediation as it were a scheme, a bianco process, in which everything repeats itself and can be replaced. It is especially true for cases, where

28 Sáriné Simkó Edit szerk.: Mediáció-Közvetítői eljárások. HVGOrac Lap- és Könyvkiadó Kft., Budapest 2012 p. 174.

the parties take part in the case from different countries. Cultures, customs, customary law and of course the written law are different.

For the purposes of the Directive a cross-border dispute shall be one in which at least one of the parties is domiciled or habitually resident in a Member State other than that of any other party on the date on which:

(a) the parties agree to use mediation after the dispute has arisen;

(b) mediation is ordered by a court;

(c) an obligation to use mediation arises under national law; or

(d) for the purposes of Article 5[29] an invitation is made to the parties. [30]

If the question is when to use a cross-border mediation, we shall know about some type of cases. (1) When a child is taken abroad; (2) When a parent wants to move abroad; (3) When the parent has a fear an abduction of the other parent; (4) When a parent want the child live abroad with him/her.

Cross-Border Family Mediators is a network that brings together family mediators specifically trained to deal with cross-border family conflicts. In the EU approximately 130.,000 international couples file for divorce annually. In 2015, 37% of cases dealt with by European hotlines for missing children were parental child abductions.[31]

Conclusions

If a conflict is managed, it is an activity, which was conducted by the parties int he case and by the mediator. Conflict-management is an activity and a kind of communication. When people are able to understand and communicate their needs clearly, and with empathy for the universality of those needs, conflict leads to connection. The illusion or life period of separation from self and others disappears, and as a result people become able to work together to respond to the challenges they and the society face. People have a common sense, that to solve, resolve, transform a conflict is better than live with or in it. It is also a common sense, that nonviolent communication leads to effects, it is productive. This short

29 Recourse to mediation 1. A court before which an action is brought may, when appropriate and having regard to all circumstances of the case, invite the parties to use mediation in order to settle the dispute. The court may also invite the parties to attend an information session on the use of mediation if such sessions are held and easily available.

30 The DIRECTIVE 2008/52/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 May 2008 on certain aspects of mediation in civil and commercial matters. Article 2 Cross-border diputes

31 www.crossbordermediation.eu

study would like to show some of the resources, some of the living instruments, from which we can choose. We can decide. The task, the mission is to know well, how, where and when to make the right step in the space of alternative dispute resolution solutions.

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Assimilation-Contrast Theory: Support for the Effect of Brand in Consumer Preferences

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Abstract: This experimental research measured the contribution of brand and product to the globally perceived quality of two well-known brands – namely, Coca-Cola and Pepsi. The assimilation-contrast approach was used to analyze the effect of brand on consumer perceptions. The experimental design elicited consumer preferences through liking scores in three different information conditions. Consumers did not differentiate in a blind test between the two tested products. In the label test, Coca-Cola received a higher score than Pepsi, indicating a stronger preference for the Coca-Cola brand. However, in conditions of full information, Pepsi received a higher score. From a methodological perspective, this research suggests that the assimilation-contrast approach is appropriate for evaluating brands from a consumer perspective in different cultural contexts.

Keywords: taste experiment, brand, consumer preferences, liking scores, repeated measure ANOVA

1. Introduction

Products and services are bundles of attributes (cues) that shape consumer opinions about expected or experienced product quality (Veale, 2006). Intrinsic cues are any product characteristics such as flavor or taste, while extrinsic cues are product characteristics that are externally attributed to a product, such as price, brand, etc. Previous research shows that consumers rely both on extrinsic and intrinsic cues in their decision-making processes (Zeithaml 1988, Richardson et al, 1994). Cue utilization in product perception is viewed as a form of complex information processing (Acebron–Dopico, 2000), involving a process of making inferences about products from the cues that are available. Product brand is one of the extrinsic cues which influences perceptions, and consumers use their knowledge of these to make product quality inferences. In this framework, knowing more about consumer brand preferences represents an important step in understanding consumer behavior. Marketers have long been interest in understanding how consumers form their preferences, and how brands play a role in consumers' decision-making processes (Keller, 2001, Aaker, 1996).

The general objective of this study is to describe an analysis of the importance of extrinsic attribute information, such as brands, on consumer preferences. The experiment that is described involved a tasting valuation using three information conditions. Results indicate that consumer liking scores can be improved with brand information and the sensory characteristics of a product.

Cola drink was chosen as an appropriate product on which to examine the selected features of interest. From its market launch in 1886, Coca-Cola spread all over the world, even though its chief competitor, Pepsi Cola, also entered into competition quite early, in 1898. There are worldwide naming discrepancies regarding the product: it is called Coke in its homeland, but Pepsi in India, and mainly Cola in Europe. As cola is the part of compulsory store selections, many brands of cola exist across the world. Seeing their success, micro markets have tried to produce similarly highly positioned branded products, such as 'Tikkadt szöcske' (Parched grasshopper) in Hungary, which according to its slogan seeks to be "the Coke in Hungary". Advertisers promote its high quality and its many medicinal ingredients. 'Kofola' has also already had some success and now has a remarkable share of the market in the Czech and Slovak Republic. There are also several private labels on the market that compete on price but appear to have no other market advantages. The question is whether it is the recipe or rather the story behind Coca-Cola – and the related feelings – that explain its success.

Trout and Ries (1986, p. 34.) refer to "a major marketing disaster" that occurred when Coca-Cola wanted to extend its brand by launching 'New Coke' in 1985. The taste of this product had been evaluated more highly in earlier research, but consumers insisted on buying the original brand with its traditional features. Emotional engagement and involvement can stimulate loyalty, which is the basis of 'lovemarks' (Roberts, 2006) such as Coca-Cola (Kelemen, 2013). A non-representative, but large-sample (N=17000) blind taste test conducted during the summer festival season in Hungary in 2017 found that 58% of participants favored Pepsi Black over Coca-Cola Zero (Pepsi, 2017).

This paper analyses the effect of the two globally well-known brand names Pepsi and Coca-Cola and the impact of their recipes and tastes among Albanian consumers. Many blind taste tests among cola brands have already been conducted (such as Stanley, 1978; Maison et al. 2004; McClure et al. 2004; Méndez et al. 2011), but the present research assesses the unique Albanian market, where cola is not a traditional drink, having only been launched twenty years ago, because during the comunist era, the import of beverages was not allowed.

The paper uses the theory of Expectations - Disconfirmation to identify to what extent the fame of such brands is perceived and how this affects consumer behavior. This paper is structured in four sections: The literature review (first section) describes brand effects on consumer choice and some of the theory that describe the mismatch between expectations and the sensory qualities of products. The second section presents the methodology used in the research, and the third describes results. Conclusions and recommendations are drawn in the final section.

2. Literature review: The disconfirmation model and its theoretical basis

The influence of extrinsic cues in consumer evaluations and expectations has been analyzed for a number of food products using different methods: hedonic scores (Deliza–MacFie, 1996; Fornerino–Hauteville, 2010; Schifferstein–Mojet, 1999), incentive compatible mechanisms such as auctions (Boxall et al, 2007; Hayes et al, 1995; Huffman et al, 2003; Jahaveri et al, 2007; Lecocq et al, 2004), and a combination of auctions and hedonic scores (e.g. Lange et al, 2002; Stefani et al, 2006).

Consumer expectations derived from extrinsic cues such as brand are not always met. Scholars (Anderson–Sullivan, 1993; Deliza– MacFie, 1996; Schifferstein, 2001, Ong et al, 2017) call the discrepancies that can be observed in terms of consumer satisfaction and expectations and objective quality (i.e. the real satisfaction generated by the product) the 'disconfirmation of expectations'. Expectations provide a baseline or anchor level of satisfaction (Anderson –Sullivan, 1993). In the case of verified disconfirmation, the level of satisfaction may be lower or higher than the threshold level. Disconfirmation is positive if objective performance exceeds expectations, and is negative if objective performance fails to meet prior expectations. According to Schifferstein (2001), three alternatives can be used to elicit sensory and non-sensory preferences: (1) Blind tests with the product; (2) Expectation tests, which involve the supply of non-sensory information; and (3) Full information tests (provision of sensory and non-sensory information regarding the product). Results are defined by comparing scores or prices as a proxy of expectations in the blind test and full information situation. Tests may be evaluated (Schifferstein, 2001) as follows: (1) Full information test liking score (F) – Expectation test liking score (E) = Degree of Disconfirmation; (2) Expectation test liking score (E) – Blind test liking score (B) = Degree of incongruence; (3) Full information test liking score (F) – Blind test liking score (B) = Degree of Response shift. Response shift represents a promising measure for singling out the direct impact of an extrinsic cue such as brand (Fornerino–d'Hauteville, 2010) in product evaluation. It has been reported that consumers cannot differentiate between two products in blind tests but reveal a strong sensory preference for branded products in full information tests (Fornerino–d'Hauteville, 2010; Aaker, 1996).

Assimilation theory is a theoretical framework which provides more insight into consumer behavior. This theory states that assimilation occurs when unconfirmed expectation discrepancies are assimilated by aligning perceptions with expectations (Anderson, 1973; Deliza– MacFie, 1996; Schifferstein, 2001). In the case of absence of assimilation, extrinsic cues do not interfere with sensory perceptions in overall evaluations. In this case, no difference is observed between blind scores and full information scores. An assimilation effect (positive or negative) is verified if the change in the product evaluation corresponds to the change in the expected value of information. On the other hand, a contrast effect is identified when the change in product evaluation is in the opposite direction compared to the expected value of information. In the case of assimilation-contrast theory, the theories of contrast and assimilation are combined. In this case, there are some levels of consumer preferences regarding acceptance and rejection. In some cases the disparity between expectations and performance is small enough and consumers can assimilate it. If the discrepancy is large enough to fall into the zone of rejection, then a contrast effect arises (Anderson, 1973; Schifferstein, 2001).

Table 1.
Assimilation and contrast cases
Source: Fornerino and Hauteville (2010)

Information conditions	**Assimilation**			**Contrast**	
	Partial Positive	Partial Negative	Complete Assimilation	Positive	Negative
E – B	>0	<0	>0	>0	<0
F – B	>0	<0	>0	<0	>0
F – E	<0	>0	0	>0	<0

This model is a generally accepted theory utilized by marketing managers to analyze consumer satisfaction and likelihood of purchase (Teas–Palan, 2003). It implies that consumers purchase goods and services with pre-purchase expectations about anticipated performance (Yüksel–Yüksel, 2001). The theoretical approach understands that the size of the discrepancy between expectation and actual performance may determine final consumer behavior. Expectation level becomes a standard against which the product is judged. However, according to Yüksel and Yüksel (2008), the use of expectation as a baseline comparison is considered to be one of the shortcomings of the expectation-disconfirmation model. The dynamic nature of expectation, its meaning to respondents, the use of different scores for assessing satisfaction, and the type of product are some of the shortcomings of the model. The meaning of expectations represents a methodological problem because expectations are defined differently by consumers. Zeithaml (2011) reviews four types of expectations: (1) the ideal - how something might best perform; (2) the expected - likely performance; (3) the minimum tolerable performance; and (4) the desired performance. In this framework, varying expectations (from a tolerable minimum to the ideal product or service concept) can create a misleading indicator of expectations. Another important problem is linked with the assumption that all consumers have prior expectations. This may not be true of inexperienced consumers, or those who are faced with unfamiliar products. A lack of previous experience with the product may result in uncertain expectations, and consequently less stable, real and inaccurate expectations (Yüksel–Yüksel, 2001, 2008). In the study described herein, these effects are negligible because of product penetration and reputation.

Table 2.
Research Hypotheses
Source: Authors' construction.

Number	Hypothesis
H1	***Consumers award higher liking scores to the most preferred brand in a blind test.***
H2	***Consumers 'disconfirm' taste for the most preferred brand that has higher perceived quality.***
H3	***Consumers award higher scores to the most preferred brand in full test conditions.***
H4	***Consumers do not change liking scores in the three test conditions.***

3. Materials and method

3.1. Experimental protocol

The experimental design opted for in the present research classifies respondents into three different cognitive situations. Firstly, respondents evaluated a product in a blind taste test. They awarded a 'liking' score using a Likert-scale from 1 to 5, where 1 means "I don't like it at all" and 5, "I like it very much". In this framework, sensory analysis was performed by serving small glasses of Coca-Cola and Pepsi. In the second step (labeled test), the brand names of both beverages included in the experiment were presented to participants who were asked to provide an evaluation. Labels only contained brand information.

Finally, after tasting the products again, participants repeated the evaluation and matched sensorial information with brand information (full information test). Nine sessions were organized with a maximum of ten participants in each session. The sessions were held on the premises of the European University of Tirana. The differences in liking scores between blind, labeled and full information tests are presented as follows:

(1) Full information (F) – Expectation (E) = Confirmation/disconfirmation of expectations for the perceived product;

(2) Expectation (E) – Blind (B) = Liking score for the product;

(3) Full information (F) – Blind (B) = Effect of brand on expectations.

This type of quantitative research method is considered to be appropriate for measuring gaps and discrepancies, but psychological effects should be further analyzed using qualitative interviews (involving a study of conducting cognitive dissonance). This is a task for further research.

3.2. Statistical analysis

First, a Paired T-test was performed to examine differences in liking scores between Pepsi and Coca-Cola. Then a means T-test was applied to each difference in information (i.e. (1) E – B; (2) F – B; (3) F – E) to detect significant differences. To interpret how the liking score was affected by brand information, the incongruence indicator was calculated as E – B (Expectation-Blind). If incongruence was found to be E – B > 0, this indicated that the brand attribute had affected consumer preferences. Repeated measures ANOVA was used to analyze the effect of brand information on product evaluation. The effect of brand on consumer behavior (the liking score) was estimated as a within subject factor as the means that are tested derive from measurements of the same subject in blind, labeled and full information tests with the product.

3.3. Sample

The experiment was conducted during May-June 2015 using 85 participant surveys on the premises of the European University of Tirana. Only consumers of Coca-Cola and Pepsi were selected, the majority of whom consume these drinks regularly. For the purposes of the study, the participants had different socio-economic characteristics. The sample selection process was appropriate for the characteristics of the study. Individuals usually lack the time to participate in such studies, but as regular, loyal customers who like cola drinks our respondents were open to taking part in the experiment. The sample description is presented in Table 3. The research is not representative due to research sampling method and in terms of sample size.

Table 3.
Tabulation of independent variables
Source: Authors' construction based on survey results (N=85)

Variables	Description	Mean	Mode	Sd
Gender	1 males, 2 females	-	2	-
Age categories	18-24, 25-34, 35-44, 45-54, 55-64, 65+	1.8	1	0.8
Educational level	1=1-4 years; 2= 8 years; 3= 8-12 years; 4=university degree 5= post university	4	4	0.7
Marital status	1=married 2=single 3=Other (divorced)	-	1	-
Income EUR/monthly	1=10000-30000 ALL 2=30001-60000 ALL 3=60001-90000 ALL 4=90001-120000 ALL 5=120001+	4.4	6	1.2
Frequency of consumption/ week	1=1-3 2=3+ 3=0	1.8	2	0.7

4. Results and main findings

A means T-test was conducted for each differential of information: (1) (Expectation – Blind); (2) (Full – Blind); (3) (Full – Expectation). As expected, a statistically significant ($p<0.01$) difference between Expectation and Blind was detected, meaning that the information about the brand was important in the consumer evaluations. Paired comparison in blind conditions between Coca-Cola and Pepsi did not show a significant effect (difference mean = -0,153; t(value) = -0.858; p(value) 0.393), thus participants did not differentiate between the two products in terms of their sensorial evaluation. Further paired comparison with brand information indicated the significant effect of brand information on consumer preferences (difference mean = -0.694; t(value) = 4.420; p(value) 0.000). Finally, in full information conditions there were no statistically significant differences among the liking scores for the two brands (difference mean = -0.094; t(value) = -0.591; p(value) 0.556).

A repeated measures ANOVA was conducted to evaluate the null hypotheses that there would be no change in participant liking scores in the blind, labeled and full information tests for Pepsi and Coca-Cola.

The results of the ANOVA indicated a significant information brand effect for Coca-Cola (Wilks Lambda=0.8; F(7.532); $p<0.001$) offering strong evidence for rejecting the null hypotheses of equality of liking scores in blind, labeled and full information tests (Table 4). Follow-up comparisons indicated that two differences were significant in the pair comparisons. The label test indicated higher scores for the labelled product than its blind counterpart, showing the effect of brands on product evaluation. Meanwhile, the mean score for Coca-Cola in the full information test was lower than the label test, significant at ($p<0.05$), showing the effect of the brand on sensory expectation as reflected in consumer preferences. Product liking scores in full information conditions were lower than those awarded in the brand test.

Table 4.
Liking scores in three information conditions for Coca-Cola
Source: Authors' construction based on survey results

	Mean	**Std. Deviation**	**N**
Blind Coca-Cola	3,35	1,152	85
Brand Coca-Cola	3,86	1,104	85
Full Coca-Cola	3,58	1,004	85

Repeated measures ANOVA for Pepsi show the significant effect of brand in consumer preferences (Table 5). Wilks' Lambda value F(13.879), p value<0,0001, indicates that the null hypotheses that there is no change in liking scores in the three test conditions should be rejected. Follow-up comparisons indicated that with brand information participants decreased their mean score from 3.5 to 3.1 ($p<0.01$) in the label test. Comparison between full and blind test conditions does not reveal a significant effect at $p<0.05$. This indicates that even though consumers expressed higher liking scores for Pepsi in the blind tasting, the brand name had a significant effect on consumer preferences.

Table 5.
Liking scores in three information conditions for Pepsi
Source: Authors' construction based on survey results

	Mean	**Std. Deviation**	**N**
Blind Pepsi	3,51	1,109	85
Brand Pepsi	3,16	1,045	85
Full Pepsi	3,67	1,073	85

The second part of the analysis deals with the differential (Full-Blind) of consumers' evaluations. This differential is important in our analysis because it shows if assimilation occurred. Assimilation is absent when liking scores given during full information conditions are the same as those offered during blind conditions (i.e. there is no effect for brand in the overall evaluation of the product). This difference is not statistically significant. Liking scores decrease compared to in the first step of our analysis (E – B). The explanation is that participants like Coca-Cola less than they expected to (i.e. less than average consumer expectation). The third differential (F – E) or disconfirmation shows if assimilation or contrast is partial or complete. When this differential equals zero it means that assimilation or contrast is complete. The liking scores for Coca-Cola decreased in full information conditions, showing that the product did not meet expectations.

The results do not support the hypotheses: H1 is unsupported because the favored drink does not match the favored brand. Coca-Cola was the favorite in relation to brand association, but its taste was not the most preferred. Higher perceived quality was associated with the most preferred brand, which outcome does not support H2. Consumers were less satisfied with Coca-Cola in the full information situation, so H3 may also be rejected. In the case of Pepsi, the liking scores for blind tests were higher, although the brand name is less well liked than Coca-Cola among test participants. Results in full conditions compared to blind tests show that the brand does not interfere with perceived quality, since scores in the blind situation were not statistically different to scores awarded in full information conditions. In the case of Pepsi, taste dominates in product evaluations, while the Coca-Cola brand has a higher effect on perceived product quality.

5. Conclusions

The assimilation-contrast approach was used in the research described in this paper to evaluate the role of brands in perceptions about products in the case of two soft drinks. The 'disconfirmation' of taste (E-B) reveals the informational value of brand information. Consumers scored the Coca-Cola brand higher than the Pepsi brand. In sensory testing, participants gave the same scores to both products. Results of pair comparisons in full information conditions show that consumers did not significantly differentiate in their evaluation of the tested products. This approach can be used in further research into the brand equity evaluation process and brand management. Even though participants did not indicate a preference for one of the two brands during the blind tasting process, liking scores increased when the Coca-Cola brand was evoked. This may have happened because Coca-Cola was introduced to Albanian consumers before Pepsi, and also because the Coca-Cola brand is associated with a specific and desirable way of being through its link to social status.

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Gradual recovery of small and medium-sized enterprises in Serbia

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Abstract: In this scientific research paper, we are trying to draw attention to the gradual recovery of the small and medium-sized enterprises sector in the Republic of Serbia, as well as to give an overview of all the factors that affect it. The development of the SME sector and entrepreneurs and the level of their competitiveness are key determinants of the Serbian economy successful future. Thus, we reach the main hypothesis in this paper: SMEs are affected by the crisis but are rapidly recovering and they are an important indicator of improved business conditions and several individual ones such as: knowledge and innovation are the key factor for the growth and development of small and medium-sized enterprises in modern economic conditions. The performance of SMEs has been improving over the past several years, small and medium-sized enterprises, in accordance with all European Strategies and Strategies for small and medium-sized enterprises within our country, in the future will contribute to increasing employment and productivity of the workforce. The sector of small and medium-sized enterprises in the Republic of Serbia is developing in the good direction, achieves better results and certainly achieves progress in this regard. This can be especially seen in the innovative performance of small and medium-sized enterprises that are improving year after year. Using the theoretical and empirical facts of the study, the main hypothesis of this scientific research paper was confirmed: The sector of small and medium-sized enterprises is emerging from the recession and is entering the phase of gradual recovery.

Keywords: small and medium-sized enterprises, innovative performance, business environment, sources of financing, competitiveness.

1. Introduction

The World and European economies are in crisis and facing unfavourable economic conditions for the last decade, which resulted in a decline in a number of capital markets, the labour market, the private and public sectors, the primary and secondary branches of industry. Having all this in mind and the need to emerge from the crisis, the conclusion has been reached about the introduction of new alternative solutions that would greatly change the situation. Precisely the fact that in the European economy, and we can openly say also in the World economy, the SME sector, known in our country as a small and medium-sized enterprise sector – SME, has been promoted and highlighted in recent years as a factor that could greatly improve the standard of living, create business conditions, ensure competitiveness, better employment, greater labor mobility and other business conditions.

In economic practice present is an opinion that the SME sector can reach excellent results and be an adequate substitute for big companies, which we consider frivolous, because a successful macroeconomic situation of one country does not provide good economic relations if all groups of economic entities, either micro, small and medium-sized or even large, are not included in the market economy cycle. In our country, but we can freely say also in other world's and European business flows, SMEs got the greatest significance and attention in the past 10 years, out of which the last 5 years very intensively (this is mostly shown in the strategies implemented by the Republic of Serbia). The last two strategies appropriately emphasis issues and relations that need to be modified in order for the SME sector to be further developed in our country. Many world economists and authors, but also the authors in our country, believe that the SME sector cannot rely solely on the state support, but must count on numerous factors, for example, the so-called network capability, and other measures, complex support such as business angels, grants, etc. Many world authors consider small and medium-sized enterprises to be the main force and engine for the progress of a healthy and growing economy.

Thus, the following main hypothesis is imposed in this research paper:

H1

Small and medium-sized enterprises are affected by the crisis but are rapidly recovering and they show an important improvement of economic conditions.

Certainly, specific individual hypotheses also arise from this.

Individual hypotheses:

H2

Knowledge and innovation are the key factors for the growth and development of small and medium-sized enterprises in modern economic conditions.

H3

SME performance has improved over the past few years.

H4

Small and medium-sized enterprises, in accordance with all European Strategies and Strategies for small and medium-sized enterprises within our country, in the future will contribute to increasing employment and productivity of the workforce.

H5

The sector of small and medium-sized enterprises in the Republic of Serbia is developing in the good direction, achieves better results and certainly achieves progress in this direction. This can be particularly seen in the innovative performance of small and medium-sized enterprises that are improving year after year.

2. Methodology

This research offers the dialectical methodological approach, due to the complexity of the subject of research and the set goals, which requires the application of a number of research methods and techniques. The basic analytical and basic synthetic method will be used in this research. The research will also apply a deductive research method, as well as statistical and comparative analysis.

The analytical methods used are:

- Method of Analysis,
- Method of Abstraction,
- Method of Specification.

The synthetic methods used are:

- Method of Concretization,
- Method of Generalization,
- Method of Induction.

The theoretical-epistemological section, often referred to as „the general theoretical-methodological approach", includes prior theoretical knowledge of the subject under investigation, as well as the basic principles that serve as a benchmark and general guidance in the research.

The standing we are trying to prove in this research paper is that the small and medium-sized enterprises sector in Serbia is improving its position as the years go by, that this sector has undoubtedly made progress and has better development trends. Small and medium enterprises represent the outline of the Serbian economy development and it is expected that they will continue to achieve higher presentable framework. They represent an improvement factor of the Serbian economy via increased employment, orientation to export, improved and mobile functioning in the domestic market. Small and medium-sized enterprises will occupy a wider economic range in the future and will have great success potentials and opportunities.

The Republic of Serbia SME sector currently is facing a number of development issues that need to be addressed in the future:

1) Lack of capital, focus,

2) Lack of managerial knowledge and skills,

3) Lack of information about what to do and which activity to start and which not,

4) Lack of plan,

5) Poor procedures,

6) Ignoring the risks in the process of assessing alternatives and opportunities,

7) Inability to plan issues that absorb too much time .

We also emphasize and add that we can complement the abovementioned network capability as an exceptionally important factor, but also as one of the factors and issues crucial for the development of the SME sector in our country. It is crucial that we are able to recognize these issues and to monitor and analyze them in this way because they are the subject of the SME sector growth and as such, they must be very significant if we want to improve the environment in which this sector will make further progress.

3. Rising trend and improvement of performance of SME operations

The sector of small and medium enterprises and entrepreneurs represents an important segment for the development of Serbian economy, and thus their share in 2014 represents 99.8% of the total number of active enterprises, with a note that they have more than 2/3 employees in the non-financial sector and participate with over 30% in the formation of the GDP of the Republic of Serbia. Taking into consideration all the relevant factors, we can say that their participation in growth and development of the Serbian economy is extremely important for our country.

According to the Ministry of Economy report, the sector of small and medium-sized enterprises and entrepreneurs in 2014 achieved a turnover of EUR 51.1 bn, out of which EUR 8.8 bn. GVA, EUR 4.9 bn. of export and EUR 8.6 bn. of import and a foreign trade deficit of EUR 3.7 bn. Since these results are not negligible and represent about 40% in the economy of the Republic of Serbia, we must mention that this sector experiences a constant growth .

However, the main development problem is their financing, which will be explained more thoroughly in the elaboration below. What is clear, compared to 2013, is that the SME sector is slowly developing and has shown some progress. When comparing the indicators, a leap in the improvement of business performance has been recorded, also an increase in the number of SMEs by 2.8%, which represents a figure of about 8860 enterprises, then an increase in business activity. In 2013, the SMEs had declining performance indicators, thus 2014 is certainly taken as a better year compared to 2013, since it is both crucial and structurally very important for further growth. It is here that we are returning to the beginning when we say that the SME sector in Serbia is growing each year.

By inspecting the macroeconomic operation of economic entities in the Republic of Serbia, we reach the conclusion that all flows and segments of growth and development of the SME sector must be monitored in order to provide better chances of gaining benefit and success of the SME sector. The Republic of Serbia tried to improve the SME sector when the Government of the Republic of Serbia adopted the strategy on 23 October 2008 entitled "Strategy for Development of Competitive and Innovative Small and Medium-sized Enterprises for the period from 2008 to 2013". This was a good strategy that greatly improved the SME sector and gave a strong boost to this sector.

Table 1.

Basic performance indicators of the non-financial sector in 2014 (billion dinars)*

	Enterpr.	Micro	Small	Medium	SME	Large	Total	Participation in the non-financial sector					
								Enterpr.	Micro	Small	Medium	SME	Large
2014													
No. of enterprises	231.616	81.327	9.198	2.131	324.272	494	324.766	71,3	25,0	2,8	0,7	99,8	0,2
No. od employees	207.748	147.641	185.206	220.944	761.539	413.408	1.174.947	17,7	12,6	15,8	18,8	64,8	35,2
Income*	958.563	1.363.463	1.727.909	1.949.462	5.999.397	3.168.851	9.168.248	10,5	14,9	18,8	21,3	65,4	34,6
GVA*	236.081	179.422	279.323	334.737	1.029.563	808.058	1.837.620	12,8	9,8	15,2	18,2	56,0	44,0
Export*	11.932	126.745	159.422	279.708	577.807	713.325	1.291.133	0,9	9,8	12,3	21,7	44,8	55,2
No. of exporters	2.380	6.942	3.266	1.089	13.677	300	13.977	17,0	49,7	23,4	7,8	97,9	2,1
Import*	11.228	234.901	349.987	418.150	1.014.266	765.591	1.779.856	0,6	13,2	19,7	23,5	57,0	43,0
No. of importers	2.887	12.053	4.422	1.386	20.748	370	21.118	13,7	57,1	20,9	6,6	98,2	1,8

Source: Ministry of Economy based on SORS data32

In 2015, the Government of the Republic of Serbia, in coordination with the Ministry of Economy, adopted a strategy of a five-year plan from 2015 to 2020 under the title "Strategy for supporting the development of small and medium-sized enterprises and entrepreneurship and competitiveness for the period from 2015 to 2020". This strategy covers the following domains of action in line with the Europe 2020 strategy and the Small and Medium-sized Enterprises Act being the crucial European form for the development of the SME sector. Measures and activities under this strategy are grouped into six pillars:

- Improving the business environment,
- Better access to sources of funding and easier mobilization of funds for the SME sector,
- Continuous development of human resources,
- Strengthening the sustainability and competitiveness of the SME sector,
- Improving access to new markets,
- Development and promotion of the entrepreneurial spirit and encouraging the entrepreneurship for women, the young and social entrepreneurship .

The percentage of small and medium-sized enterprises in GDP increased by 2% in 2015, which is an expected increase.

In comparison to 2014, the number of SMEs increased by 0.5%, which makes a figure of 328 companies per year. However, a 1.5% decline in the growth of micro-enterprises was recorded, which makes approximately 1205 enterprises. When speaking about the growth of the SMEs, it should be noted that a very good result of the SMEs was recorded for 2015, EUR 52.2 bn. of turnover, EUR 9.1 bn. of GVA, EUR 5.3 bn. of export, EUR 9.0 bn. of import, the foreign trade deficit amounted to EUR 3.7 billion.

The employment rate of enterprises within the SME sector increased by 5.3% compared to 2014 in the following order: in the medium for 2561 workers, in the small for 5730 workers and in the micro for 3278 workers. The business activity of the SME sector is increasing. Namely, an increase in the volume of turnover was recorded at 3.1%, GDP growth of 4.5% and an increase in the overall profit of the sector of 2%.

32 Ministry of Economy of the Republic of Serbia, Report on Small and Medium Enterprises and Entrepreneurs for 2014, Belgrade: Professional publication, (2015), pp. 3.

Table 2.

Basic performance indicators of the non-financial sector in 2015 (billion dinars)*

	Enterpr.	Micro	Small	Medium	SME	Large	Total	Participation in the non-financial sector					
								Enterpr.	Micro	Small	Medium	SME	Large
2015													
No. of enterprises	232.765	80.122	9.531	2.182	324.600	494	325.094	71,6	24,6	2,9	0,7	99,8	0,2
No. of employees	236.359	150.919	190.936	223.505	801.719	418.538	1.220.257	19,4	12,4	15,6	18,3	65,7	34,3
Income*	1.040.226	1.358.207	1.786.105	2.118.332	6.302.870	3.197.616	9.500.486	10,9	14,3	18,8	22,3	66,3	33,7
GVA*	261.343	171.156	293.711	370.541	1.096.750	805.147	1.901.897	13,7	9,0	15,4	19,5	57,7	42,3
Export*	13.770	132.653	156.974	331.916	635.312	804.486	1.439.798	1,0	9,2	10,9	23,1	44,1	55,9
No. of exports	2.604	7.073	3.447	1.145	14.269	309	14.578	17,9	48,5	23,6	7,9	97,9	2,1
Import*	12.306	238.712	352.739	483.323	1.087.080	835.919	1.922.999	0,6	12,4	18,3	25,1	56,5	43,5
No. of importers	3.097	12.023	4.538	1.445	21.103	369	21.472	14,4	56,0	21,1	6,7	98,3	1,7

Source: Ministry of Economy based on SORS data33

4. Financing the development of SMEs

The situation is facilitated and provides a positive intention to the operation of the SME sector by slightly increasing the number of participants in the foreign trade exchange, the level of participants in exports is increased by 4.3%, and the import participants by 1.7%. In general, the SME sector has an export increase of 7.9%, with the note that there was the above average increase in imports with an increase of 1.6%. However, we have to emphasize the fact that the unfavourable SME sectoral concentration remains problematic, the influence of non-tradable sectors is dominant, and the manufacturing industry has the priority, 15.7% of enterprises, 27.9% of employees, 27.5% of the turnover . In addition, we must mention that the state, the scientific community, businessmen and employees in the SME sector must work at the level of competitiveness of SMEs in the future years because the comparative analysis shows a stagnancy in comparison to the EU average. However, the SME sector was generated in our country in 2015 and participated in 65.7% of employment, 66.3% of goods and services. The main interest to which attention should be paid in the SME sector is financing it. Namely, like everywhere in the world and in Europe, this sector must have many alternative sources of funding. SMEs are usually experiencing limited access to favourable sources of financing both in the money market and in the capital market, especially with regard to the conditions and price of their use . Formal financing of SME sector in our country is executed by the state and its institutions, both from domestic commercial banks, leasing companies, and other foreign global and European financial institutions. Below we will list those that took part in financing the SME sector in the Republic of Serbia:

- Development Fund of the Republic of Serbia,
- Agency for Insurance and Financing of Exports,
- Agency for Foreign Investment and Export Financing,
- Development Fund of the AP of Vojvodina,
- Guarantee Fund of the AP of Vojvodina,
- National Agency for Regional Development,
- The World Bank Program and the Revolving Loan Fund,
- European Bank for Reconstruction and Development program
- The European Investment Bank Program,
- Bilateral programs of the credit line of the Government of the Republic of Italy and donations of the Kingdom of Denmark - LEDIB .

33 Ministry of Economy of the Republic of Serbia, Report on Small and Medium Enterprises and Entrepreneurs for 2014, Belgrade: Professional publication, (2015), pp. 3.

We can truly say that there are many programs financing the SME sector in our country, and we can consider this to be a good framework in which the SME sector will function in the future.

At the moment, the greatest importance for the SME sector lies in foreign investments through the credit lines of the European and International Financial Organizations, the World Bank and other business entities within the country and abroad.

The European Bank for Reconstruction and Development invested EUR 4,428 million of cumulative investments in Serbia, a total of 206 projects, out of which, the ongoing projects portfolio of 105 with currently EUR 2.367 million, with operational funds amounting to EUR 1,588 million, out of which 40% for the private sector. The EBRD has concentrated many of its investments in the SME sector, primarily through the Tam/Bas programme, which had a fair share and this could be considered to be one of the most successful programs for the SME sector.

Illustration 1 - TAM / BAS projects of the EBRD, financing of small and medium-sized enterprises.

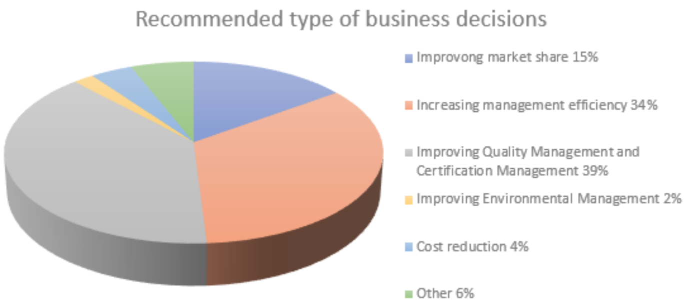

Illustration 1 - TAM / BAS projects of the EBRD, financing of small and medium-sized enterprises

It focused on the following characteristics: improving market share, increasing management efficiency, improving the environment. 290 projects were implemented through the BAS program in companies in the Republic of Serbia.

By reviewing these projects in the BAS program, the following facts were established:

- 54% increased their employment,
- 68% of enterprises achieve higher incomes,
- 61% of enterprises had increased productivity,
- 78% of enterprises re-engaged consultants,
- 34% of enterprises had an external investment.

The European Investment Bank has also invested heavily in the SME sector in Serbia and had quite a success. Since it has been operating since 1997 in the countries of the Western Balkans, it had EUR 1.077.799.878,00 million worth of curremt investments. In the period from 2008 to 2011, the EIB invested EUR 700 million, and this resulted in concluding 13 agreements for small and medium-sized enterprises. Today they have many financial intermediaries and partners in the Republic of Serbia.

The order of application for the project up to the moment of final realization and payment is as follows:

Illustration 2 - A cycle of the European Investment Bank project, 2017

We must note that the EIB achieved EUR 80 bn. for loans in the SME sector and as such represents an important partner in the improvement of the market economy of the Republic of Serbia.

It becomes clear from the above that the financing of SME sector in the Republic of Serbia is not feasible without the help of foreign financial institutions.

Small and medium-sized enterprises must work on their competitiveness so that they can participate in the market game and achieve greater profit, and therefore a better possibility of future financing.

5. Conclusion

The small and medium-sized enterprises sector faces numerous challenges in the domain of business policy, which will certainly be overcome in the future. In recent decades, the SME sector has had a great deal of difficulties in achieving the profit, limiting it to its own market and a real high price of capital, and not to the desired degree of developed relationship with commercial banks, which is quite normal considering the overall economic situation in the country.

The general conclusion emerges that the promotion of this sector is still under construction and that more work should be done in order to bring this sector closer to the basis for labor force employment, as it would contribute to a better and faster growth of the population in Serbia life standard.

Small and medium-sized enterprises are affected by the crisis, but they are rapidly recovering and show an improved economic conditions , which we have evidenced in our paper, bearing in mind all the relevant elements and development factors exhibited. The SME sector has been undoubtedly progressing over the past 5 years and acts as a very important signal for both foreign investors and potential foreign partners and domestic ones, that the economy of the Republic of Serbia is recovering from the recession.

We have also proved the thesis that knowledge and innovation are a key factor for the growth and development of small and medium-sized enterprises in modern business conditions, because it is precisely in this segment we cannot imagine a different kind of this sector's prosperity. Under no circumstances, modern business flows do not allow the lack of knowledge and innovation, and the forerunner of this is a factor of competitiveness, because it has the biggest influence on the SME sector to innovate as much as possible and have faster and more accurate information in order to gain more profits. Serbia has successfully dealt it because we had a professionally oriented teaching staff structure that was monitoring this phenomenon, and therefore we have reduced the risk of failure. This is an estimation of great deal of entrepreneurs.

The SME performance has been improved over the past few years; particularly, this is an assessment of the EBRD, bearing in mind the Program for supporting development of small and medium-sized enterprises in Serbia. The performance of the SME sector is largely influenced by the financing of it, and therefore it must be taken into the account that the biggest step forward was given by foreign investments, as they improved the mobility of capital, provided the conditions for the availability of funds and as such helped going to the foreign markets. It should be noted that the institutional and legislative framework was of great assistance since it arranged the legal regulation of the market and in this way it has ensured better functionality.

Small and medium-sized enterprises faced the negative effects of the global economic crisis, and this was automatically reflected in the level of their competitiveness. However, in the last few years they have emerged out of recession and openly act on the domestic and foreign markets. We constantly come to the point that it is necessary to take part in changes in the surrounding in order to reduce the distance between potential and realized performance in the business.

We have to understand that this sector can be the trigger of development and must be given enough attention if we want to see our industry recovered and with greater potential for advancement.

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Financial independence of commune as a determinant of local development by the example of Poland

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Abstract: Financial independence is one of the most important determinants of sustainable local development. It provides ability to implement commissioned and own tasks by the communes. The goal of this article is to present the essence and level of financial independence of communes in Poland. As a result of the survey, the index of communes financial independence does not exceed 50% and it is different for various types of communes.

Keywords: commune, local development, financial independence

1. Introduction

Be classified as a high developed country - this is a target of every state all over the world. Affiliation to this group gives a prestige on international area. Attainment this level of growth is strongly related with local development. Term of local development doesn't have one common definition. It depends on the factors that shape it. According to M. Ziółkowski and M. Goleń it can be defined as process of evolution of object from basic level to more advanced one in many ways [1]. J. Parysek claim that local development can be regarded as social-economic growth related with creation of new work places for regional society and formation of the best term of leaving in local environment connecting with development of organization , structure and functioning of local society system by using local resources of development. Other view on Local Development have R. Brol who describe it as harmonized and systematic actions of local society, local authorities and other entities functioning in commune aiming to creation and improvement of values for local economy and provides the spatial and economic order [2]. L. Wojtasiewicz consider that local development is process of positive quantitative and qualitative changes related to needs, preferences and system of values in particular system. In relation to A. Nelson it is changes in regional productivity which are measure by number of population, employment, income and value of market production [3].

Compere whole definitions we can conclude that local development are quantitative and qualitative changes on local territory related to standard of living of the inhabitants and functioning of economic entities.

According to definition we can define the main areas on which influence local development:

improving the competitiveness of economic entities and quality of life of inhabitants,

growth of economic potential of the region,

development of competitiveness of regions [4].

Achievement the best results of local development is very hard and time consuming because every commune have specific factors that influence on it. We can divide them into two groups: dependent and independent factors. To first group we can classify geographic localization and exterior help. To geographic localization we can include localization in rich region, distance from the board of other country, distance from agglomeration. As exterior help we understand us possibility to obtain for region financing from European Union. To the second group we can classify activity of local government and society. Activity of local government is represented by how many companies are in region, municipal infrastructure, reductions for companies from region. To activity society we can include voting in elections, percentage of people with master degree.

Besides the specific factors that characterize and have an impact on local development there are also determinants which play a major role on growth of every region. To this group we can include decentralization and financial independence. First term refers to transfer of goals, competencies and funds from state government to local government to realize everything more effectively [5]. The second determinant specify as acquisition of own resources from local economy to fund and realize important aims [6]. Financial independence of commune is describe in polish constitution as right to own assets, property and acquire income [7].

Moreover we can describe it in two ranges. In wide range financial independence is juridical possibility to decide how to manage funds of commune. In short range is define only to funds that commune can possess by its own. On financial independence of commune not only influence the sum of funds but also possibility to shape level and scope of costs, organization of local budget, planning and execution of budget.

Possession by communes financial independence have a huge impact on local development. Funds gathering by commune government can be directed for realization of social-economic aims which lend to improving the situation of commune according to national level. Commune also receive transfers from national government but time money should be spend directly on delegated task which mostly have no impact on development of particular commune.

2. Methods and materials

The aim of this article is to define the essence and level of financial independence of communes in Poland.

I assume that urban communes have higher level of financial independence than other two types of communes in Poland.

My article will consist of two parts. In first I will describe the aim of financial independence and methods how to calculate the level of it. The second part will contain the analysis the level of independence of commune.

To write this article I use descriptive and analytic method. In descriptive method is use information from scholarly books, legal acts, articles and specific literature refer to local development and public finance. In analytic method I use the reports of budget execution of polish communes published by Ministry of Finance to analyze the level of financial independence over time of 5 years.

3. Results

3.1. Methods reflecting the financial independence of commune

To write about financial independence of commune in Poland we need to focus previously at the administrative structure of the country, types of communes and a role which they involve. Poland have three-tier division of state in which commune is describe as basic government unit [8]. According to definition commune is community of citizens that lives on homogenous territory regarding to settlement and spatial system as well as social and economic relations that allows to realize public goals [9]. Commune have legal entity.

Communes in Poland are divided into three types according to number of citizens and type of territory. We distinguish rural commune, rural-urban commune and urban commune. The first one is a set of dwellings that does not belong to an urban community, it is a continuous building area with less than 2000 inhabitants. Rural-urban commune is a territory which includes city and several villages. Urban commune is territory with urban sprawl and more than 100000 citizens who works in production and services [10].

Currently in relation to the report of Central Statistical Office from 2016 in Poland we have 2478 communes [11]. We involve to them 303 urban communes, 616 rural-urban communes and 1559 rural communes. Each of them have some level of financial independence.

To define level of financial independence we need to use one of the index which was created to solve this problem. In literature they are name as [12]:

- index of participation own funds of commune in units of public sector funds,
- index of participation own funds of commune in general funds of it,
- index of participation own fund.

To define first index we need to set the sum of commune own funds and divide it by the sum of funds of units of public sectors [13].

Communes get own revenues from [14]:

- local taxes,
- local fees,
- incomes of local communities,
- assets,
- participation in PIT and CIT taxes,
- commune property,
- donations,
- penalties and fines,
- donations from other communes.

The highest income from this group of impacts commune affecting from local taxes, local fees, assets and general subsidies [15].

Receiving the sum of all revenues of commune we need to compare them to level of funds of units of public sector. Units of Public sector are describe in article 9 of the Public Finance Act[16]. Each of this entities obtain own revenues. The sum of them is necessary to calculate level of financial independence of commune. To get a level of financial independence we need to use this formula.

$$FI = \frac{OF}{\mathcal{E}PSF} x100\%$$

FI - Level of financial independence, OF - Own Funds, EPSF - Sum of Public Sector Funds

According to information of own funds of communes contained of page of Bank of Local Date [17] and information of Public sector funds contained by Ministry of Finance [18] I will define financial independence of communes in Poland in 2016.

$$FI = \frac{91\ 003\ 803\ 672{,}80}{190\ 600\ 000\ 000{,}00} x100\% \approx 48\%$$

Communes in relation to Public Sector in 2016 have a finance independence level at 48% which is high indicator.

Second Indicator of financial independence of commune define relation between own revenues of commune to its total revenues. To total revenues of commune we classify own revenues and transfers from state government such as general subvention and core grant [19].

To calculate this index we need to divide own revenues by total revenues as it is write in formula.

$$FI = \frac{OR}{TR} x100\%$$

FI - financial independence, OR - Own Revenues, TR - Total Revenues

By example I will calculate the level of Finance independence of all communes on Poland in 2016 based on data published by Bank of Local Data [20].

$$FI = \frac{91\ 003\ 803\ 672{,}80}{176\ 214\ 961\ 241{,}37} x100\% \approx 52\%$$

Second indicator of financial independence of communes in 2016 amounted 52%. It means that whole communes in Poland have significant independence from state government. What is more according to this index communes can independently realize and spend funds for own targets.

Third index of financial independence of commune is pretty common to second one but the main difference is that own funds are reduced by value of participation in PIT and CIT taxes [21]. To calculate this indicator we compare reduced own revenues to value of total revenues of commune. This relation present formula:

$$FI = \frac{rOR}{TR} x100\%$$

FI - financial independence, rOR - reduced Own Revenues, TR - Total Revenues

As example I will calculate the level of Finance independence of all communes on Poland in 2016 based on data published by Bank of Local Data.

$$FI = \frac{53\ 251\ 547\ 825}{176\ 214\ 961\ 241{,}37} x100\% = 30\%$$

According to this method and data the indication of local independence of whole communes in Poland in 2016 is only 30%. We can interpreted it as relation with big influence of state on finances of communes. What is more this method show that participation in taxes PIT and CIT have huge impact on revenues of commune.

3.2. Analyze of financial independence of Communes

To analyze the financial independence of Communes in Poland we need to define the indicator based on reports of budget execution from 5 years published by Ministry of Finances. We need to calculate them for examples of rural, rural-urban and urban commune and compere them to define which kind of communes have higher financial independence. Moreover we specify which is main source of revenue in every type of commune.

Firstly I will define the financial independence of rural commune in period 2012-2016 [22].

Table 1.
Financial independence of rural communes 2012-2016
Source: Own elaboration based on execution of budget published by ministry of finance

Year	Own Revenues PLN	Total Revenues PLN	Level of financial independence
2012	13 267 902 225,79	34 447 857 858,47	39%
2013	14 267 081 232,23	35 367 526 259,22	40%
2014	15 534 108 334,70	37 033 034 215,01	42%
2015	16 452 231 732,09	38 507 443 422,74	43%
2016	16 785 452 078,57	44 449 694 106,42	38%

According to table level of financial independence of rural communes in Poland in period from 2012 to 2016 had level from 38% to 43%. Taking 2012 as basic year with 39% of Financial independence there was a growth of 1 percentage point in 2013. In 2014 and 2015 we can notice increase of 3 percentage points and 4 percentage points in relation to 2012. 2016 is specific years considering that there was a decrease of 1 percentage point according to 2012. In relation to calculations rural communes in 2012-2016 had a low level of financial independence and they were dependent of transfers from state government.

Second type of commune is rural-urban commune. Its financial independence level will be define in period of 2011-2015 [23].

Table 2.
Financial independence of rural urban communes 2012-2016
Source: Own Elaboration based on execution of budget published by ministry of finance

Year	Own Revenues PLN	Total Revenues PLN	Level of financial independence
2012	12 717 465 176,29	26 323 708 630,50	48%
2013	13 468 934 207,78	26 868 274 490,43	50%
2014	14 534 889 706,15	28 454 985 453,18	51%
2015	15 192 091 591,70	29 628 892 098,85	51%
2016	15 835 075 436,59	34 669 046 082,51	46%

In relation to table we can define that level of financial independence of rural-urban communes in 2012-2016 had level from 46% to 51%. Taking 2012 as basic year with 48% of Financial independence there was a growth of 2 percentage points in 2013. In 2014 and 2015 we can notice increase of 3 percentage points in relation to 2012. In 2016 we can observe decrease of 2 percentage points according to 2012. In reference to date rural-urban communes in period of 2012-2016 had an average level of financial independence, so they had possibility to financial some of their own aims.

To define the financial independence level of urban commune I will use information of revenues in period 2012-2016 [24].

Table 3.
Financial independence of urban communes 2012-2016
Source: Own elaboration based on execution of budget published by ministry of finance

Year	Own Revenues PLN	Total Revenues PLN	Level of financial independence
2012	10 537 572 690,58	17 635 910 561,24	60%
2013	10 809 953 133,72	17 807 617 495,55	61%
2014	11 641 724 903,89	19 060 961 994,32	61%
2015	11 929 000 664,26	19 530 899 622,66	61%
2016	12 514 101 452,61	22 676 091 210,00	55%

According to table urban communes had in period from 2012 to 2016 independence level from 55% to 61%. Taking 2012 as basic year with 60% of Financial independence there was noticed growth of 1percentage point in 2013, 2014 and 2015. 2016 is specific years considering that there was a decrease of 5 percentage points according to 2012. This date demonstrates how huge independence from state government urban communes have. According to this they can decide how and on which aims they will spend revenues.

Defined the financial independence level in every type of commune in Poland, there is a necessity to compere this date to determine percentage relation between communes and specify which of them have the highest independence level.

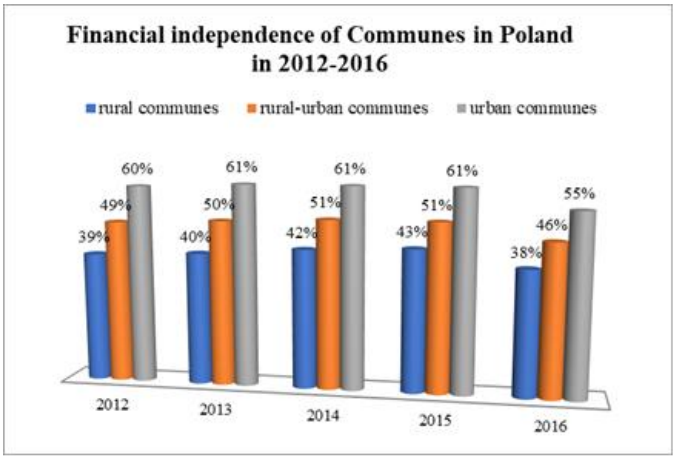

Chart 1.
Financial independence of Communes in Poland in 2012-2016
Source: Own elaboration based on execution of budget published by ministry of finance

In relation to diagram of financial independence Communes in Poland in 2012-2016 we can notice that the highest level have urban communes. The highest urban communes had in 2013, 2014 and 2015. In relation to this outcome rural-urban communes had a 10 percentage points less result and rural communes almost 20 percentage points less. This provides that urban communes have higher level of development than other two types of communes.

Conclusion

Financial independence is one of the most important determinant of local development of communes. It can be defined as possibility to decide which aims local government is going to finance to influence on social- economic growth. What is more financial development can be specify as possession of sufficient own revenues by communes to finance aims.

In Poland we can define financial independence as relation between own revenues of whole communes in Poland to sum of revenues of unities of public sector. Also it can be specify as relation between own revenues to total revenues each of three types of communes: rural, rural-urban and urban communes. In relation to first factor polish communes have 48% of financial independence. It means that they have moderate independence in realization of own aims.

By the defining the financial independence of urban, rural- urban and rural communes in relation to date from Ministry of Finance I confirmed my hypothesis that urban communes have the highest level of financial independence in relation to other two types of communes. To approve it in 2015 urban communes have 61% of financial independence which was grater by 10 percentage points from rural-urban and by 22 percentage points from rural communes.

Thanks to this level of financial independence urban communes can decide about spending own revenues on important aims which have a huge impact on social-development growth of this commune. What is more urban communes are more developed than rural and rural urban communes.

To sum up financial Independence can influence on improvement of social and economic development of every commune. In Poland only urban communes have a sufficient level of financial independence to influence on its development by realizing own aims. Rural-urban communes have moderate level of financial independence so in some way they may influence on development. Rural communes have low level of financial independence , so they are dependent on transfers from state government and they need realize commissioned aims which not always have impact of commune development.

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Examination of Economic Indicators Influencing Export Performance of Selected Countries Between 2006-2016

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Abstract: Certain components of the financial system and the regulation serve as framework to the corporate activity for longer run. Approaches to characterize the recent crisis and the protracting recovery of economic performance are quite different and disputes have not settled yet. This paper focuses on the time series of a few interconnected economic indicators of some European countries and the USA. The sudden fall and moderate recovery of the export markets require special attention in the light of the changing financial background. The analysis made it possible to draw parallel to some conclusions of previous empirical research studies based on corporate databases. In the light of the changing financial background more attention should be paid to the increasing importance of differences of underlying structural characteristics.

1. Introduction

When looking back to the first months of financial and market turbulences after September 2008 one can observe the changing character of the crisis. The appearance of financial problems and of those in the real sector were manifold and the speed of transmission from one to another segment was high. The signals are well known. In the nutshell: the liquidity disappeared from the financial markets making the trade finance and structured finance activities impossible for a while, demand and consequently the GDP plummeted, a brisk increase in unemployment that become continuous in several countries, the value of non-performing banking assets suddenly reached previously unprecedented amounts, all these led to series of bankruptcies and financial difficulties in the financial and in broad terms in the banking sector and the real economy, too. Repeated governmental interferences were required to avoid the consequences when the necessary capital adjustments faced difficulties. These actions required huge budgetary interventions and the spillover effects on the balance of payments and the monetary policy were almost instant, a second raid from the capital markets was directly targeted countries including the European Union facing fundamental problems in the banking sector and with its single currency. Numerous emerging economies have been playing a balancing role since then as less direct consequences of the crisis hit them, with a few exceptions: they have generally been suffered from similar problems in trade finance as their developed partners, but the declining commodity prices and the consecutive balance of payments problems seem to be continuous for them. However, our focus now is on a sample from some developed countries.

1.1. Dumping of Measures and Regulations

The deepening crisis triggered coordination very soon not only by governments but at international level of G20 and relating high level international institutions. It became obvious soon, that the problems are severe, inter-connected and could be solved only with close cooperation of institutions and countries, and became clear, too, that it is time consuming task. Notwithstanding the numerous measures and proposals were aimed to be interim, extraordinary, the effects of those carried significant uncertainties. It is reflected by the “definition problem”: whether the crisis is simply subprime or liquidity, then banking and financial, or from 2010 on adjectives followed, like sovereign debt, or general economic, and so on. Different types of inter-connected problems of the economy and economic policy emerged at different levels and nearly at the same time to be solved. The time pressure required to set priorities, focusing mainly on the financial sector. The far-reaching problem of frozen liquidity and the regulation of financial markets’ behaviour were ranking first. The work was carried out with the lack of some essential information and data of the problem products and markets, and it seemed to bring to novel distortions in different market segments in the future. One of the first such discrepancies was related to the exports and its financial background.

1.1.1. Trade policy

The number of trade barriers and restrictive measures, mainly other than tariffs and quotas have increased reflecting to omit deterioration in the market conditions. Debates on trade policy and practices became continuous, disputes frequently unsettled and restrictions continued (irrespectively to the barriers with direct foreign policy considerations behind, that started only some years later). Not only the traditional institutional background, like the WTO and ICC[34] was the scene, but the issue was regularly raised up to the G20 meetings. The traditional institutional framework has been extended with forming of several new regional organizations for closer economic and financial cooperation, mutual investment finance to remedy the problems. The divergence within the existing institutional system for the international trade relations has increased.

1.1.2. Specialities of main currencies

For simplicity's reason let's have a look first at the Real Effective Exchange Rates (hereinafter REERs) of selected economies in the period of 2005-2016, based on monthly unweighted (and not smoothed) data [Figure 1].

At a first glance it is obvious that the US dollar was depreciating against its trading partners until 2008 and after a hiccup this tendency continued until 2011. Then a three years period of moderate appreciation followed that turned into a sudden and strong increase until 2016. The movement of the USD REER can partly be attributed to the start and the closing of quantitative easing program, and that may also be the explanation in the case of the Euro.

The position of the Euro has regularly changed in the contrary direction, as it is basically expected. A long process of gradual depreciation of the Euro started in 2011 after a swift fall in 2010 by mirroring the uncertainties and crisis of the common currency because of the accumulated debt problems in several member states of the EU, and from this aspect the Euro Area (EA), but the tendency is similar. The process of depreciation has been continuing until now, that can also be considered partly as result of the European style QE program[35], that started with considerable delay in contrast to the USA.

[34] The role of these fora will be discussed further in 1.1.3.

[35] The speciality in this case is the lack of possibilities to devaluate a common currency by member states without hurting the integrity of the Euro-system and the legal consequences of that for the Euro and the EU. The legal uncertainty of the ECB to interfere such a way caused significant delay in the introduction of that type measure in the Euro Area. This time lag can be felt in other indicators, too.

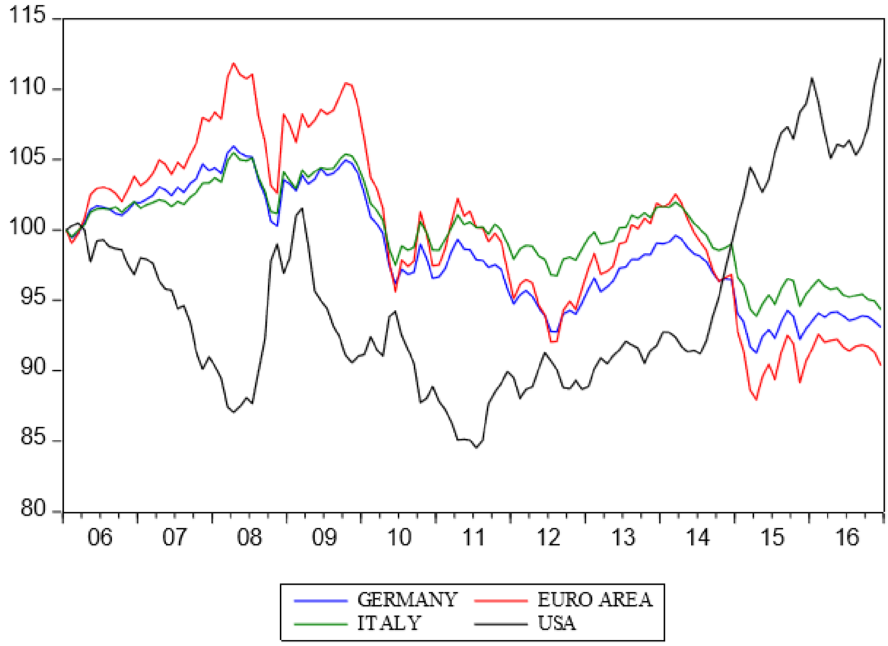

Figure 1.
Real Effective Exchange Rates of selected economies, 2005-2016

The quantitative easing cannot be considered coordinated means of monetary policy concerning the connection of the USD and the Euro. The introduction aimed at avoiding the archetype of 1929 when financial markets dried up with its consequences. But the concentration on maintaining the liquidity basically in the USD as well as that in the financial markets meant at the same time the flooding markets with huge quantities of USD. The proportion of the USD denominated payment transactions in the financial markets is decisive [1]. But the proportion of the trade related transactions denominated in USD is much higher [7]. That is why the direction of the USD exchange rate's movement is contradictory, it served the liquidity first, and had only moderate influence on the exports with a lag. It contributed to the decrease in the commodities' prices and the transmission of the "internal problems of the USD" to the balance of payments of commodities' exporters. At the same time, that contributed to the decreasing import prices to all the importers of such goods. Such a way the QE of the USD exerted its primary effect on the capital markets prices rather than the indirect influence on the exports through exchange rates.

It should be stressed that appreciated position of the Euro was sustainable against the Euro Area's trading partners (including the EU internal trade) despite the problematic market situation of the Euro about 2010 and the depreciation that followed. Taking all that in consideration, the export performance of the EU is due to other influencing factors, too. At the same time the appreciation of the USD started in 2014, means a phenomenon different from traditional expectations.

1.1.3. Some aspects of export financing

Availability of financing is critical to export despite the fact, that several components of that should be included in a comprehensive model to assure the comparability of exporters, countries and traded goods and services etc. Such a complex approach would be far beyond the volume of this paper. The topic is mirrored in some comprehensive studies based on corporate data [3] [5]. These surveys are important firstly, because of the micro level database they used, secondly, because of the years of their preparation. Those were the first years of the recession and the collapse of export financing facilities. This can be observed from the strongly different opinions of corporate leaders, and sometimes from the accordance of statements.

The Basel 2 regulation of capital adequacy of banks came into force[36] fully from 2009 and caused difficulties for companies seeking for debt financing or refinancing and for their banks, as well. That regulation has been quite flexible in a way, but required the banks to form more capital to finance riskier assets. An export transaction is frequently valuated being risky because of the standardized classification of the partner risks. As banking transfers became less regular and often stopped, there was practically no external financing behind the majority commercial contracts with supplier or buyer credits. This caused credit insurers to withdraw or lower the limits on several importers, too, that accelerated the process toward the collapse of export-import markets. The next set of stricter regulations for the banking system had been prepared meantime at record speed, and the regulators were not open to any mitigation of rules, despite the facts making evident the very low risks of export and its financing.[37]

[36] CRD III, Directive on the execution of the principles in the EU.

[37] A comprehensive empirical study was prepared on the issue with the support of the Asian Development Bank and several commercial banks and international organizations to achieve some easing of the regulation, with some success at the end of 2011. This exercise made evident the lack of database even for a correct assessment of inherent risks of exports.

A correct regulation would have had more detailed research and previous collection of relevant data. The problem was (has been) that decision makers missed data even on products and procedures triggering the crisis. But the lack of significant data from products and transmission channels still exists and frequently hinders execution of well based analyses – and probably decision making, too.

2. Elements of the analysis

2.1. Characteristics for consideration

The endeavour of empirical studies was to base their analyses on indicators derived from corporate balance sheets which might have contents in accordance with aggregated macro data. These researches extended their scope beyond the export in narrow terms, so their databases are extensive and include general basic data. With keeping the same basic goals, our purpose has been to examine the export with composite indexes that are available in public statistics and their contents might be characteristic at corporate level in the future.

Transmission role**:** About the end of 2011 and during 2012 export reached the precrisis level, but the growth rate is far below the previous ones. All these suggest that the relatively short period of the fall in export activity was only limited episode in the crisis and could have been resolved in a separate way. As a transitory channel it transferred other financial fields' problems to the real sector [2]. The export did not play an independent transmission role in bringing on the crisis. This issue does not require actual study from the export's perspective.

Merchandise and services export: The dynamics of aggregated merchandise and total export was not different significantly during the past 10-12 years in Europe and the USA, but the structural breakdown by countries demonstrates traditional characteristics. It is satisfactory right now to limit the examination to the export of manufactured goods.

The examined period for this study is: January 2006 until December 2016 to have a stable basis until the economic situation reached a relatively stable position. A reason for that is the duration of setback in exports: the period was relatively short and after a sharp fall the export value and volume reached the pre-crisis level. The question was whether general economic consistency of indicators is valid during the total period, or there are significant deviations in the first years.

The empirical studies' conclusions were different concerning the significance of financial difficulties (significant in western countries, no difficulties in Hungary). The reason is a special treatment for the subsidiary banks in the CEE countries, Hungary was finally omitted.

The frequency of data: required more careful treatment. The export business is overwhelmingly for short term generally without bank credit facilities. Almost all available and public statistics publish annual and quarterly data. The general series contain indexes or growth rates and absolute value or volume data are rarely found. The custom payment terms for these transactions is 90-120 days. For this reason, we preferred the monthly frequency instead of the quarterly ones, and the original absolute number because of the problem of irregular reweighting, where this was possible.

Because of the limited extension of the paper only a few and not too different countries or group of countries could be handled without difficulties, where differences did not require lengthy explanation. The countries in the sample: Germany, the Euro Area, the USA, and Italy. The only outlier country has been Italy with its large export potential and a corporate exporter structure different by size. This factor could be easily identified in the statistics and its influence on the indicators, too. As this paper concentrates on some limited, however characteristic examples, the trade flows to and out of Asia have not been included this time.

The indicators are the following: value of merchandise export as dependent variable, expressed in USD (the volume of merchandise export was applied in two cases), and the independent variables are: Terms of trade index (calculated as export price index/import price index), Real effective exchange rate (for 178 trading partners, CPI weighted, index), GDP/hour worked, Unit labour cost. (Basis: 2006 M 01.) These indicators are complex, comprise effects from two to four basic factors, that can be further analysed in the future.

2.2. Data sources and methods

Sources of data:

OECD — Unit Labour Cost, quarterly data, USD basis
GDP/Hours Worked, index, quarterly data, USD basis
https://data.oecd.org/gdp/gross-domestic-product-gdp.htm

WTO — Export value, monthly data, USD basis
https://www.wto.org/english/res_e/statis_e/short_term_stats_e.htm

Bruegel Institute: Darvas, Zsolt: Real Effective Exchange Rates for 178 Countries: a regularly updated database, Bruegel Working Paper 2012/06 www.bruegel.org

CPB Netherlands Bureau for Economic Policy Analysis: World Trade Monitor: Monthly export – import price indexes, export volume and index. www.cpb.org

All calculations for graphs in Figures 1-3. and the graphics works were made by the author. For the calculations and the graphic works software E-views 9 was used. The stylized data and graphics in Figures 2-3. were prepared with Hodrik-Prescott filter, (λ= 14400).

3. Time series with monthly data

3.1. Expectations and results

At the beginning of the work it was uncertain to get even some meaningful results. Whether the series reflect the regulators' interventions into the processes for a longer period, or these actions proved to be interim as planned? All in all, is there any signal of deviation from the basic economic principles? The representations and tests satisfactorily supported the results of computations.[38]

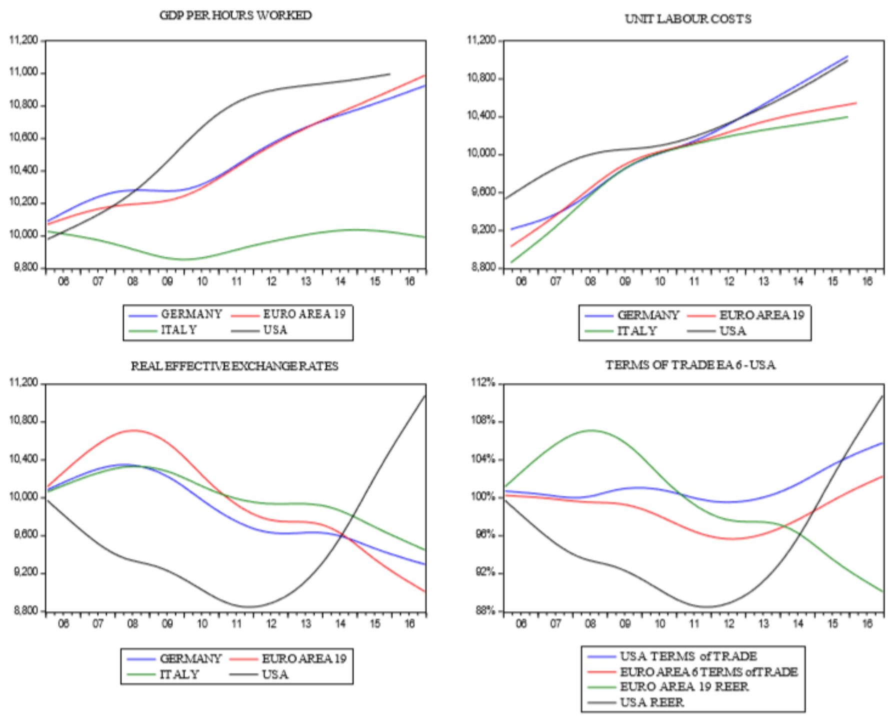

Figure 2.
Dependent and independent variables by countries

The indicators perform that could be expected and move together close in the same direction. It is valid almost for all with two significant exceptions: the GDP/hours worked indicator, representing productivity, stuck in for Italy and following a 6 year slope an unprecedented upheaval of REER started in the USA

[38] The results are available at the authors.

in 2012. Both indicators mirror the economic background of these countries. The unit labour cost increased both in Italy and the USA. The initially improving export performances started losing momentum, because of the different structural basis of corporate exporters in Italy. The appreciation of the USD is a more complex issue, but expresses the improving economic environment after the trough of the crisis.

Indicators expressing competitiveness of exports show their contribution to the moderately growing export activity – except for the REER in the case of the USA.

However, the improvement of the terms of trade in the Euro Area set in really after 2012, reflecting a lag between the USA and European countries in general.

3.2. Results and parallels with previous researches

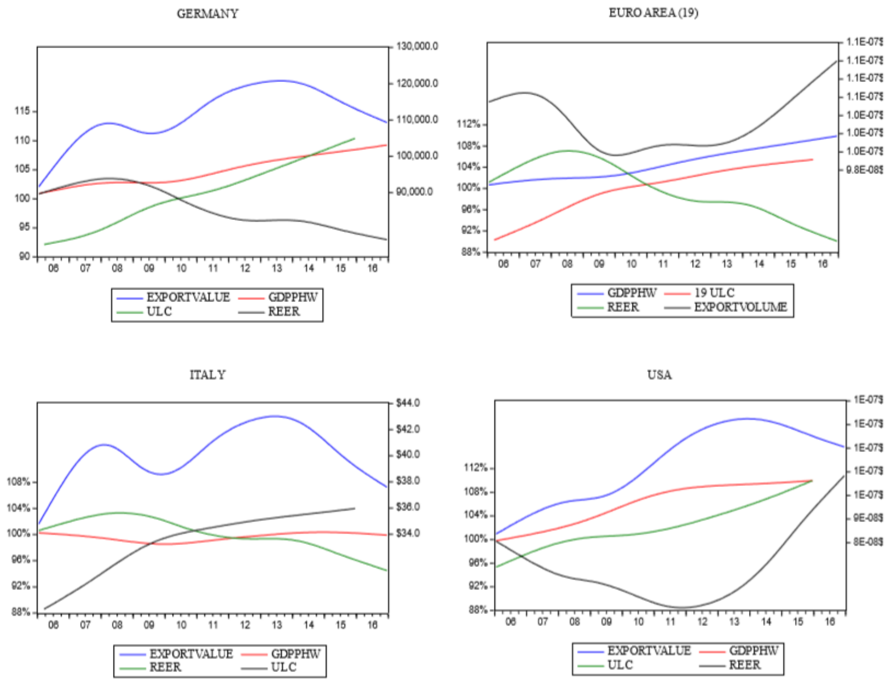

Figure 3.
Countries by dependent and independent variables

Graphs in the Figure 3 provide generally convincing picture on the positive relationship between the productivity indicators and the export value as well as the effects of the constraining factors by countries. Generally, appreciation of the currency against the relevant trading partners contributed to the slowing growth rate of the exports, while the productivity related indicators and the terms of trade generally supported the expansion[39]. The set of the indicators reflects that increasing labour costs had positive effect on the selected countries majority, but for Italy the different structure hindered the improvement (leave the existing financial constrains from the piled up non-performing loans to the corporate sector unmentioned, actually). These features support the arguments of previous empirical researches from the early years of the recession [3] and partly [5], with respect the role of the measure of companies and the significance of high wage level in the successful appearance in export markets.

The factors for the companies are as heterogenous as the companies themselves, but policy measures generally need unified approach. The rough data come from the accounting while aggregates go through statistical procedures. It was difficult to elaborate indicators with the same content (e.g. TFP) [5]. It is encouraging, that the two aspects are frequently well balanced at high level decision making of large international groups and in the financial sector, too.

The lack of relevant data had been a very significant constraint for the global decision makers, too, mainly in the first phase of the crisis: there was no previously collected information or data from the most critical products, procedures carrying the bulk of risks in the financial system [1] [2] [8]. This problem is getting to be improved since 2013 due to coordinated efforts.

Conclusions

An essential result of the study for consideration is that the influence of traditional factors stimulating the international trade could remain effective during the whole period in the middle of dumping of interfering financial and other regulations with the aim to mitigate the harmful effects of the market shocks, while the number of restrictive measures on trade increased, too.

Because of the close relations of the wage level and the competitiveness of exports it could be useful to study this from the aspect of the changing proportion of unemployment and the ailing productive investments both at corporate and policy levels.

A conclusion confirmed by micro-level studies, too, it is neither efficient nor correct to evaluate export performance based on separately picked-up indicator. This aspect is relevant for the macro-economic approaches as well: when several problems should be treated in a limited period, and the relevance of the problems

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[39] The investments in the manufacturing industries of the selected economies failed to contribute to the increase in the productivity during the period, according to the relating gross fixed capital funding indicators in the OECD Statistics. The role of utilization of the available workforce was outstanding in the improvement that generally could overcompensate the effects of growing wages.

are different, the applied unified measures could lead to different than expected result.

Several economic problems of different types caused shocks within a short period of time, out of which there were some that could have been treated more easily by separating them from those, that required a more complex and time-consuming treatment. This unsolved complex caused sometimes unexpected spill-over effects.

The regulation itself could have contributed to a kind of procyclical process through the complex series of restrictive regulations of the financial sector.

Acknowledgement
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Gender and generational investigation of shopping locations

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Abstract: Investigating shopping behavior is frequently the topic of academic or business researches. The examination of shopping locations is a special case of the shoppers' behavior research because it requires special methodology. The aim of this study is to present differences of men's and women's generations in case of their opinions and habits about shopping locations. According to the results of the quantitative analysis involved in the article gender and generational differences exist in shopping and shopping locations. This research was supported by the ÚNKP-17-3-IV. New National Excellence Program of the Ministry of Human Capacities.

Keywords: shopping location, gender, generations

1. Introduction and objectives

Recent surveys and articles show that men and women behave differently in their everyday life. People usually agree about this statement, but that is an important thing to say that men's and women's way of life is different and the differences appear concerning lots of areas of life, such as shopping, free time activities or even housework.

Not just in case of gender but also in case of several other aspects researchers investigate the differences of shopping behavior of the given segments. Generational approaches is one of these aspects which is commonly in the focus of researches. In this article the different attitudes of male and female shoppers, and the differences of generations will be examined. The focus of this article is to see if differences exist in case of shopping locations.

227 in-depth interviews were conducted – as a part of this qualitative research a short paper and pencil interview (survey) was prepared about shopping locations. The results will be presented in this paper.

2. Literature review

2.1. Generations

The experience of our everyday and the environment around us shape how we think, act and react on different stimulus and actions (Oblinger-Oblinger, 2005). Generational way of thinking appeared in the middle of the 20^{th} century when Mannheim (1952) drafted the definition of generation. Later the topic appeared in case of marketing as well. In the followings, parallel with the topic of this article several marketing-focused generational approach is presented.

According to the approach of The Center for Generational Kinetics (no year) a generation is a group of people who were born more or less the same years and the same geographic region. This approach counts on age and geographic area. Howe and Strauss (2000) think that there are three factors which are more effective than age in case of definition generations:

- perceived membership: it means what individual thinks about the generation he/she belongs to.
- common beliefs and behavior: attitudes and decisions about different values such as family, career, private life, politics, religion.
- common position in the history: the common experiencing of the most important incidences of history (war, crisis etc.) in the determinative years. According to Parment (2013) these years are between the age of 17 and 23.

Meredith et al (2002) descibed the generational cohorts, they say that a generational cohort is a group of people who experienced the main happening in their life more or less in the same time.

In the United States of America there is traditionally a long existance of investigating generations. The Yankelovich-reports show the changes of generations from time to time. In these reports people can gather information about the differences in consumption, values and the way of thinking. The generational way of thinking came to the fore because of the growing interest about the behavior of different target groups (Pál-Törőcsik, 2015).

In case of Hungary the conclusion is that the behavior of generations is different than in other regions of the world. The reason of it is the different determinative experiences in the aforementioned ages (Törőcsik, 2006).

Based on the highlighted definitions generations include similar individuals but the different generations' members differ from each other.

An own literature review were conducted about generations – in Table 1. the main researchers, writers and the number of generations they identified are presented.

Table 1.
Different generational aspects – based on own literature review

researchers, writers	number of identified generations
Howe – Strauss, 2000	4
Lancaster – Stillman, 2002	4
Martin – Tulgan, 2002	4
Oblinger – Oblinger, 2005	5
Zemke et al, 2000	4
Reeves – Oh, 2007	5
Törőcsik, 2011	3
Zick – Mayer – Glaubitz, 2012	4
Pál – Törőcsik, 2015	4
The Center for Generational Kinetics, no year.	5
Meredith – Schewe – Karlovich, 2002	7
Tolbize, 2008	4
Glas, 2009	3
Hoffmann, 2007	4
Redmond, 2011	3
Smith – Clurman, 2003	3
Lake, L. A., 2009	4
Solomon et al, 2010	4
Tari, 2010 and 2011	5

2.2. Shopping and gender

There are lots of researches dealing with the differences of male and female shopping behavior. These researches investigate the problem by using different tools. Brosdahl and Carpenter (2011) recognized that male shoppers are an important and distinctive market segment. According to lots of writers the male shopper segment is a single, homogeneous market segment. Brosdahl and Carpenter recognized that this segment should be identified as the sum of smaller and more homogeneous sub-segments. They used Generational Cohort Theory (GCT) as a framework to examine the shopping attitudes of men from the USA. They analyzed four generational cohorts identified by Strauss and Howe (1991):

- Silent Generation: The term “Silent Generation” refers to the conformist and civic behaviour of the people of this generation.
- Baby Boomers: This term refers to the rise of the birth rate when young males returned home after the Second World War and the Korean War.

- The 13th Generation: They were born between 1961 and 1981. With increases in the divorce rate and an increasing number of women working, so this generation was the first to experience kids who came home to an empty house after school.
- The Millenials: They were born between 1982 and 2000. Three out of four Millennial consumers come from families with working mothers and have already demonstrated more liberal spending patterns than any previous generation.

The main aim of Brosdahl and Carpenter's analysis is to compare the shopping orientations of male shoppers among four generational cohorts in the US. Data were collected using an online survey among a panel of US male consumers aged 18 years and older. In the sample there were 560 male consumers from the USA, including 140 males from each of the four aforementioned cohort segments.

The most important results from the point of view of this article is that although each of the four generations of US males has a neutral stance to shopping enjoyment, Millennials are likely to enjoy shopping significantly more than their counterparts in the other cohorts. According to the findings of Brosdahl and Carpenter (2011) the GCT method can be used to support the market segmentation for male shoppers.

Bauer Media's research (2010) is called 4D Men. It was designed to highlight the new aspects of men's motivations, needs and pressures. The study searched for insights by using a complex research design. It included focus groups, online blogs, video diaries and a brand tracking study. 1500 men between their age of 15 and 40 participated in the research. According to this research nowadays men try to live a more health conscious life. There is also a gender crisis which means that men do not feel themselves safe in their position; they feel stressed about their identity, their masculinity and their gender roles. They are pressed by the side of women, the family and by their job as well; they have to behave as others would like to.

According to GfK NOP research (2010) men are more confident about the recovery after the crisis than women. 19% of men stated that the impact of the crisis will affect them after the crisis ends. 28% of women think the same, so the proportion of uncertain people is higher in the women group. The results show that men are more optimistic than women.

Gender differences have been of interest to advertisers and marketers for decades. Alreck and Settle (2002) examined online, catalogue and store shopping behaviour of men and women. The result of their study indicated with substantial clarity that women do hold markedly more positive and less negative attitudes toward the shopping experience. Women have a more favourable view toward shopping and they more often use a value to optimize the shopping strategy than men do. According to the study of Alreck and Settle women hold a much more positive image of store and catalogue shopping than men. Moreover, they found that women's attitude towards internet shopping were approximately the same as men's perspective.

The segment shows a higher level of shopping enjoyment, especially the younger members of it. Typically men-products appear. Men who do shopping, they do it for a longer time on average (Németh-Jakopánecz, 2014). Men are becoming a more and more important market segment. That is why retailers should to treat them as a significant target group as a shopper, but it is important to get to know the habits and venues of their shopping and that is important that there are segment within the men shoppers as well – they cannot be treated as one homogeneous target group.

As a summary the segment of male shoppers is becoming more and more relevant segment on the consumer markets. On one hand it is because of the changes of the market, but on the other hand it is the result of the changing attitudes of people about gender roles (activities, requirements of this segment etc.).

2.3. Shopping locations – the concept of shopping hunting fields

There are quite a lot of source available about the factors of shopping decisions and shopping location choice. In this review the focus is on Törőcsik's concept of shopping hunting fields (2013). According to this concept the individual who makes shopping has a concrete space and time system. There are characteristics of the individual which have effect on the behavior before/during/after shopping, such as the purchasing power or the knowledge of the market. The shopping of an individual cannot be treated generally because every shopper has different financial possibilities. That is why the circumstances of shopping-decision are different as well which means that there are different priorities for different shoppers. According to Törőcsik (2013) there are 3 main factors which should be taken into account when investigating the possibilities and barriers of shopping:

- the shopping hunting fields of the individual
- the financial situation, the purchasing power of the individual
- the knowledge about the market levels.

Every individual has his/her own hunting shopping field which means that there are different shopping venues where he/she usually do the shopping. There are lots of different factor which affect the choice of shopping venues, in the interpretation of Törőcsik (2013) these are: type of the store, image of the store, location and size, level of prices, retail advertisements, products offered, the characteristics of the given store, the characteristics of the consumer.

There are different store choice models which show the circumstances of the individual’s shopping. It contains lots of different factors which have effects on how the individual make his/her shopping. According to Törőcsik (2013) these main factors are: the nature of the purchases, shopping/purchasing possibilities, retail marketing activities, the shopper him/herself. Based on these factors a store choice is made. This choice has a consequence – the future choices depend on the quality and direction of the past purchasing’s consequences.

Figure 1. shows the evolution of the shopping hunting fields. In the beginning there were traditional, ancient marketplaces. Nowadays shopping can have lots of different functions, it used to be the activity of sustainment, but nowadays the functions of shopping widened. In the modern world shopping means much more than ever before, it can be enjoyment, a leisure or relaxation activity, but also it can be the area of ‘hunting’ for the best offer, the best prices in order to be successful.

For these different functions of shopping different venues of shopping are created in the direction of efficiency/simplicity or adventure/experience. That is more and more common that shopping of the individual is located between these two functional areas that is why the evolution of shopping hunting fields are still evolving, because new venues appear and become a venue used by almost everyone (e.g. convenience shops, online shopping etc.).

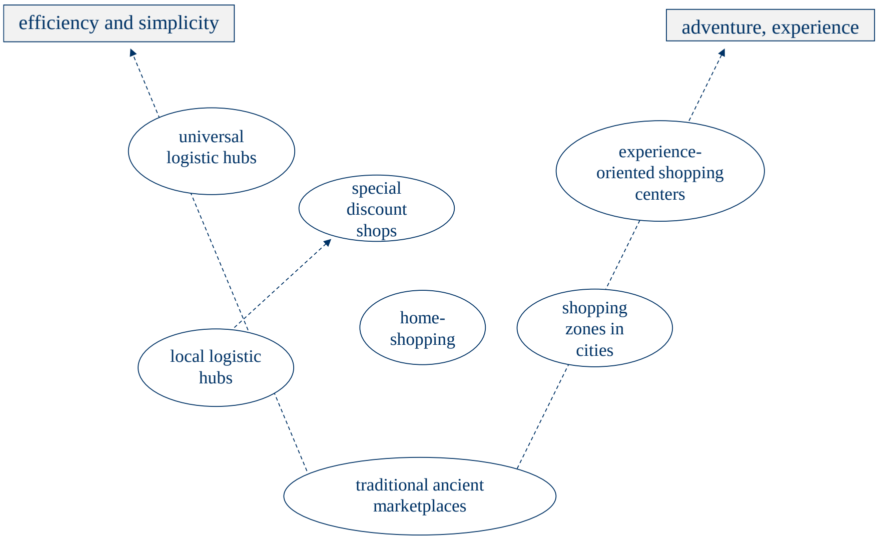

Figure 1.
The evolution of shopping hunting fields
(Source: Törőcsik, 2013)

Every shopper has a kit of venues where he/she shops with some regularity. This kit depends on the aforementioned factors of store choice. There is a kit of brands not just stores/shopping venues (Törőcsik, 2013). These kits determine the shopping of the individual but depends of the market level where the individual 'moves' or simply the financial situation.

There are other aspects and researches of investigating and characterizing shopping locations such as shopper travel patterns from Hägerstrand (1975) and Miller (1999) or investigating the factors of shopping decisions and shopping location from Földi (2012). In the literature review the focus is on shopping hunting fields because the presented empirical research deals with the individual's shopping location kit.

3. Research method

227 in-depth interviews were conducted in October 2017 about food shopping behavior of people, especially about shopping locations. In the beginning of the interviews short paper and pencil surveys were filled out by the respondents. In this article the main results of these surveys are presented – those results which are connected to food shopping and food shopping locations.

112 men and 115 women participated in the research. Approximately one-third (77 respondents) of the respondents were young generation member (between age 18 and 29), one-third (77 respondents) was middle generation member (between age 30 and 59) and another one-third (73 respondents) was older generation member (at least 60 year-old respondents). 9% are from Budapest, 44% are from county towns, 33% are from other smaller towns and 14% are from villages. Based on their economic activity the biggest groups of respondents are:

- intellectual workers (34.4%),
- pensioners (26%),
- student (21.1%),
- physical workers (15.9%).

The proportion of respondents living in a single household is 14.5%. 27.8% live in a household including two people, 24.7% live together with two other people, and 25.6% is the proportion of those who live in a household including four people. The average number of people living in a household is 2.9 in case of all respondents.

4. Findings

Research analysis was focused on the gender and generational differences about shopping. The following topics were involved: sympathy about shopping generally, sympathy about food shopping, number of routinely used shopping locations, attitudes about retailers in Hungary, and shopping frequency at retailers.

Table 2. shows that women and younger generation like more shopping generally. Men like the least this activity.

Table 2.
Shopping sympathy – gender and generational differences
(Source: own editing)

How much do you like shopping generally?

			gender			
mean	5.99		men	5.23	women	6.73
n	226		n	112	n	114
F=24.571; df=1; p=0.000						
generations						
	young	6.59	middle	5.68	old	5.68
	n	76	n	77	n	73
F=3.783; df=2; p=0.024						

According to the results on table 3. respondents do not like food shopping that much than shopping generally. Women like more food shopping than men but the difference is not that big than in case of shopping generally. Men' attitudes are the same in case of shopping generally and food shopping, women like more shopping generally than food shopping.

Table 3.
Food shopping sympathy – gender differences
(Source: own editing)

How much do you like shopping food?

			gender			
mean	5.74		men	5.27	women	6.20
n	227		n	112	n	115
F=9.883; df=1; p=0.002						

The gender and generational differences were analyzed in case of the number of shops routinely visited but there were no statistically significant differences found.

Shopping frequency was also investigated – the respondents were asked to indicate the given retailer where he/she do his/her shoppings most frequently. According to chi-square test there are significant differences in case of generations

($\chi2$=49.504; df=20; p=0,000) – in the followings those retailers are listed where the given generation do their shopping over the average proportion:

- young generation: Tesco, Spar, InterSpar
- middle generation: Lidl, Metro*, Aldi*,Reál*
- older generation: CBA*, Coop*, Metro*, Penny Market

The sympathy about given retailers were the part of the investigation; the following question was asked from respondents: “Which one of the following retailers is the most likeable for you?” Chi-square analysis showed significant differences in case of gender ($\chi2$=22.650; df=10; p=0,012) and generations ($\chi2$=42.940; df=20; p=0,002) as well.

Men found more likeable Tesco, CBA* and Auchan*. Women found more likeable Coop*, Lidl and Aldi. For young respondents Tesco, InterSpar and Lidl are more likeable than the average. InterSpar, Lidl and Aldi are more likeable than the average for middle-aged people. For older people Coop* and Penny Market are more likeable than the average. (In case of those cases marked with * the expected count was less than 5.)

There are similarities in case of the most frequent shopping location and the most likeable one. In order to see if there is a relation between these two variables a crosstable analysis were made. According to the chi-square test ($\chi2$=937.981; df=100; p=0,000) there is a relation between the aforementioned variables. From among those respondents who indicated the given retailer as the most frequent shopping location the proportion of those respondents who indicated that given retailer as the most liked:

- InterSpar: 83.3% (n=30)
- Lidl: 82.5% (n=40)
- Penny Market: 80.8% (n=26)
- Tesco: 63.9% (n=36)
- Spar: 51.0% (n=51)

The presented differences show that it is worth to treat these segments differently when planning as a retailer. These results show a slice of the shopping behavior of the aforementioned segments, but there is no information about the reasons – for example: why young respondents go for shopping to Tesco, Spar and InterSpar with over the average frequency. To understand these behavioral patterns there is a need to see more analysis.

In order to see the reasons of choosing a retiler the qualitative part of this research was analyzed by Zurvey text analysis methodology (Zurvey website, 2017). Table 4. shows the main result of the question: *‘What is the reason of visiting the given retailer most frequently’.* According to the results in table 4. quality, product range, prices, availability (mentioned as residence in the interviews) and the speed of shopping are the most important factors of choosing a retailer for consumers.

Table 4.
TOP 10 labels – result of Zurvey text analysis

TOP 10 labels				
Label Hungarian	Label English	Frequency (pcs mentions)	Frequency (pcs rows)	Frequency (% - in all rows)
minőség	quality	65	59	26%
választék	product range	60	56	25%
vásárlás	shopping	69	48	21%
áruház	department store	46	42	19%
bolt	store	42	38	17%
üzlet	store (business)	38	34	15%
akció	sale	38	32	14%
ár	price	34	30	13%
lakóhely	residence	28	27	12%
sebesség	speed	26	25	11%

This analysis requires further investigations such as to see the gender and generational differences in this case as well, but this investigation is not part of this paper.

Conclusions

As the research result show gender and generational differences in case of shopping attitudes and behavior exist.

First of all, there is difference between men and women: women are more positive about shopping generally and food shopping – this is similar to Alreck and Settle's (2002) findings. On the other hand, it seems that women distinguish different types of shoppings because their attitudes about shopping generally and food shopping are different. They like shopping generally more (6.73 on a ten-point scale, compared to 6.20). In case of men these categories do not count, they have the same attitudes about these two types of shopping (5.23 generally, 5.27 food shopping). Results also show that men like stores with big floor area, like Tesco. For women stores with smaller floor area – such as Lidl and Aldi – are more likeable.

Generations show differences as well. Younger respondents are more opened about shopping generally, they like this activity more than other generations. Generations do not show differences based on the floor area size in case of sympathy of given stores, but significant differences exist: younger respondents indicated Tesco, Spar and InterSpar as those stores where they do their shoppings the most frequently, in case of middle generation these stores are Lidl, Metro, Aldi, and Reál. Older generation do their shoppings most frequently over the average in Penny Market, Coop, CBA, and Metro.

The results about the reasons of choosing the most frequent shopping locations show that the highest proportion of respondents mentioned quality, product range and prices, sales as reasons for visiting those retailers which they visit most frequently.

Acknowledgement

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Project management practice in the Hungarian bank sector

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Abstract:The main goal of my thesis is to present the practice of banking project management in Hungary. Firstly, my thesis tries to position the role and macroeconomic signification of banking sector in our country. Secondly, it introduces what role projects play in the operation of corporations. Furthermore it provides a look out on special features of project management methodology in banking environment, comparing it with features of methodologies of other industries. Next, it analyses and assesses the success and failure factors of projects. In order to achieve my goal I conducted a questionnaire survey especially focusing on the answers of stakeholders and project managers in banking and other industries. My survey was aimed at project managers and other related stakeholders in the field of IT, software development, telecommunication, automotive industries, oil companies, international financing corporations. The scope of my questionnaire was requirements of organizational structure of a project, risk planning and management, optimal schedule of a project. Based on the responses to the questions my thesis gives an indepth analysis of risk planning and managing. Finally, considering my prime sources of research and recommendations of the related literature I outlined a project management methodology giving a summary of theoretical knowledge and practical experience witch all in all can be considered optimal.

Keywords: projectmanagement; risk management

1. Introduction

Does bank specific project management exist? Are there any differencies in managing projects depending on wether we look at credit institutions or other industries? Project management is a new interdiscpilineary science based on strong economic studies, realting to engineering and social sienctific background. It has different schools, trends and methodoligies, its tools are still evolving.

Business players find it of active interest and a host of publications focus on cutting edge trends and innovations. Perhaps it might also be attributed to the fact that there is no one specific definition of project management.

My thesis is that there might be deviations not only in therms of definitions but also in terms of excecution, communication, risk management and defining success factors.

2. The conncection between banks and projects

2.1. Project managenent in general

2.1.1. Definition of project management

If we wish to define the project management by looking at factors a successfull project than we need to fully understand the goals of the project.

According to ISO the project deffinition is as follows: „Unique process, consisting of a set of coordinated and controlled activities (3.1) with start and finish dates, undertaken to achieve an objective conforming to specific requirements, including the constraints of time, cost and resources „ ISO 10006:2003(en) A successful project has a rational and business relevant ojective. The project needs to have allocated budget and timeschedule. A project manager's role is to controll the processes whose outcomes he is familier with of and is aware of the probability of the success and he is not acting as a fire fighter. Strong relationships and efficient people-management give the basics for succesful projects. [Melton, 2007]

The higher the agreement level is between the client and the project manager regarding project strategy the greater the chance is for success, which is also true in terms of other stakeholders. [Kerzner, 2013]

Kerzner recommends involving all the concerning parties in order to state the most punctual KPI definitions, by wich the organization is able to define the goals and success factors of the project. Looking at any deffinitions, the project management, in each case, is described as an activity which is focusing neither on the usual or everyday business operations nor the rutin daily tasks. Consequently, at a financial institution a divisional organization is not able to handle the responsibilities beyond active and passive banking activities efficiently[40]. Anything besides core activities is to be handled by temporary organizations set up for a particular time period with approved budged.

2.1.2. Project management methodology in banking environment

At banks tasks considered as projects bear so great significance that these projects are included in their half year or annual financial statements regarding the project's status, milestones, and the achievements of the successful projects. These statements can be found in the finnancial report of K&H, wich are tipically IT developments such as transition from HAS to IFRS, or IT-heavy product development like introducing Paypass service. Projects in a bank are received special focus in the organizational hierarchy. The project committee is the prime management level body, which is responsible for governing the project-like developments with full controll over the project management in the bank. [Raiffeisen Bank, 2014] Importance of project management in the banking and financial sector is confirmed by expert forums as well. In 2015 Balaton László as PM in Erste Bank Hungary Zrt. won the annul project manager award for his performance in terms of FX loan settlement project. [Project manager of the year, 2016]

2.2. The role and macroeconomic significance of banking sector in Hungary

According to the Financial Condition Index the bank sectors contribution to economic growth is currently negativ despite the fact that

the central bank is introducing newer and newer tools in order to boost lending activities, such as Market Lending Program (PHP) with the aim of increasing the credit-supply. [MNB, 2016]

Based on the authority given for performing a full scope of financial institutional activities a commercial bank accepts deposits, mortgage and lending deals and

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[40] The most common way of financing projects is credit financing, which is currently the first source of financing enterprises (especially SME's) in national and international level, of which a special area is structured financing, including project financing, as it was shown in may articles (Csiszárik-Kocsir, 2016a, 2016b; Csiszárik-Kocsir et.al, 2016a; 2016b). Debt financing may also be crucial for financing bank projects, but in their own case, there is also a great amount of own resources, which makes a much smaller emphasis on debt financing.

perfrorms at least nine of the totaly listed activities for financial institution. [Ligeti, 1994]

Commercial banks in Hungary are present at all stages of economic life from fulfilling the needs of private individuals to financing large corporations and public investments.The actors of the economy are funded and the necessary resources are collected in an organized way by commercial banks.

Partly due to the economic crisis, the European banking sector is forced to work in increasingly tighter supervisory environments, which, while reducing profitability, is highly desirable due to the stability of financial institutions and sustainability of economic processes.

3. Method of the analysis

3.1. Preparation for the survey

Using the results of my primary research, I analyzed the critical events and criteria from the whole project management activity, such as change in the organization's priorities, change in the goals of the project, inaccurate requisitioning (specification), opportunities and risks were not defined, inaccurate cost estimates, incorrect, poor communication.

Insufficient support of the sponsor, poor change management, Inaccurate task time estimation, resource dependencies, inadequate resource prediction, limited resources, inexperienced project manager, team members' delay, task dependency and others.

In order to identify the factors under investigation, I used PMI's most recent project management research results which included 2428 PMs, 192 senior executives and 282 PMO managers in a questionnaire form as well as 8 executives and 10 PMO leaders were interviewed. This outlook had a great impact on the formulation of my questionnaire statements. [PMI, 2016] I also took these examples when formulating, organizing or grouping my assertions

3.2. Method of the survey

I suppose that if I aim my survey particularly at project managers and stake holders, though I will be forced to work with a smaller amount of samples than a freely published open research, the validity of the answers will be higher, although the results will not be representative, their substantiation need not be questioned.

I contacted nearly 300 people, principally project office executives, former colleagues, project manager specialists, external partners who participated in bank projects. Among the banks, K & H, Erste, Raiffeisen, OTP, Citi project managers, stakeholders, and other industries, T-Systems Hungary Zrt., BSCE Informatics and Consulting Ltd., Loxon Solutions, ApPello, LEGO Manufacturing, Aeroplex of Central Europe Ltd., Bosch Hungary , IT Services Hungary, British Telecom Hungary, Audi Hungaria Motor Kft. Finally only 41 fulfilled questionaire were considered complete and were usable.

I have categorized my questions in a subjective way, but in my opinion I have collected criteria for the planning and operational lifecycle of the projects wich have a decisive impact on their success and I have named them as follows:

- Design of the project organization and the stakeholders of the project;
- Risk management of the project,
- Realistic scheduling of the project,
- Communication.

Within these groups, I formulated 8-12 statements in essence. I gave five grade Likert scales for each statement. In the identification criteria, I asked to provide a job, gender, age and school qualification, which I also used to perform correlation examinations.

3.2.1. Composition of the sample

Almost half of the respondents, 48.8% of the project managers, and other decision makers, experts, and staff members are defined as stakeholder. In the sample, bank and other industry project managers were on an equal footing. In terms of genders man were dominated by 65,5% from the respondants. 65.9% of the respondants. fall into the age range of 30-40. With regard to their education, tertiary education is absolutely dominant 92.7% of respondents have a bachelor's or university degree, which was expected due to targeted inquiries.

4. Results

4.1. Organizational expectations / comments

The success of the project depends more on the commitment of dedicated staff and management rather than the appropriate powers of the project sponsor. Bank project managers are more or less accepting the general organizational hierarchy within the project organization, while other industry project managers are clearly rejecting it. Respondents, however, agreed that, when building a project organization, it was more important to involve the operational level than the leaders. With an average of 2.8, none of the respondents completely agreed with the statement, they typically refuted or found it neutral.

During the correlation study of job and response, the significance level of the chi-square test is 0.071 it can be stated that our results are very close to significance. Among the respondents, when highlighting project managers, we can discover a visible difference in attitude.

Bank project managers are more or less accepting the organizational hierarchy within the project organization, while other industry project managers clearly reject it.

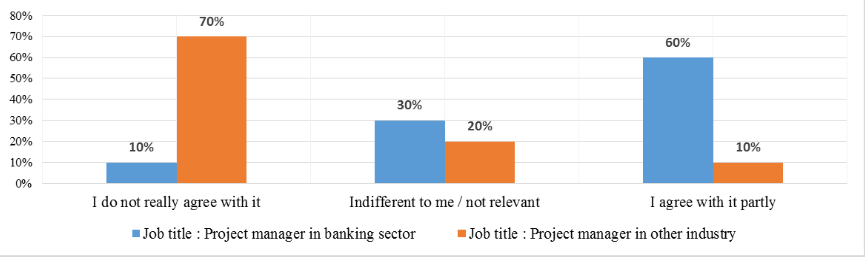

Figure 1.
The project's service path must be the same as setting up the organization's service path in the light of project manager positions.
Source: Author 2016, N = 20

The "periodically formed body needs to be led by leaders" It has an average value of 2.63, while "periodically organized organizations collect members at an operational level" with an average value of 3.9, meaning that respondents prefer the operational level when creating a project organization.

Table 1.
Compiling the project team is a comparison of operational / management level.
Source: Author, 2016, N= 41

Job title / Role	Average / periodically formed body needs to be led by leaders	Average / periodically organized organizations collect members at an operational level
Project manager in banking industry	**3,2**	**3,8**
Project manager in other industry	**2,2**	**3,8**
Stakeholder in banking industry	**2,5**	**4**
Stakeholder in other industry	**3**	**4**
Average score in total	**2,6**	**3,9**

4.2. Expectation of risk management, scheduling

The primary task of the project manager is to manage the risks that affect the project and threaten its success. Most project management methodologies are specifically related to risk assessment, avoidance and mitigation. (Verzuh, 2006) In the initial phase of the projects, an inevitable and crucial task is to assess the risks, both in terms of their nature, frequency and their expected impact. When writing my questionnaire, I placed four non-contradictory methodologies in a statement respectively, wich say one by one that the subject statement was the best method. I made the conclusions based on answer received from them.

My questions were as follows (refer to table 2):

- Risk assessment is the best way to brainstorm stakeholders. (a)
- The best way to assess the risks is to create a risk profile. (b)
- The best way to assess the risks is to find out the risks of previous similar projects. (c)
- The best way to assess the risks is to focus on the timetable and budget risks.(d)

Based on the answers received, the job and question "a" showed the lowest chi-square test result 0.088, but it did not even reach the 0.05 level from which the relationship could be considered significant. For this reason I have examined the average values of the answers, their standard deviation and variance.

Table 2.
Values of the statements regarding the risk assessment methodology.
Source: Author, 2016, N= 41

Question	Average	Standard deviation	Variance
a	3,59	0,87	0,75
b	3,29	0,9	0,81
c	3,98	0,61	0,37
d	3,51	1,03	1,06

I received fairly negative feedback on the risks, more than three quarters of the respondents thought that the risks were generally not sufficiently defined and 70% of the respondents claimed that the risks were not clearly defined. A detailed definition of the circumstances and consequences of the risks is inevitable in order to measure their expected impact and expected frequency. [Verzuh, 2006]

The use of milestones was considered to be of paramount importance by the respondents during the project management (high average value). According to the respondents, there is a critical path within each project.

Bank project managers considered projects with unexpected developments as balanced, while other industry project managers responded the opposite. Bank project managers tend to outsource projects due to external reasons, while other industry project managers are more likely to see greater risks in internal reasons.

4.3. Expectations / comments on project evaluation meetings

Based on the responses, the primary purpose of project status meetings is that team members share their knowledge. The operational work at the meeting was clearly rejected. The problems that could be resolved within 30 minutes were considered to be justified in dealing with such a discussion, but the problems that could be resolved within 10 minutes were acceptable to the respondents. Respondents clearly rejected the solution of problems that could not be resolved in 30 minutes.

Respondents also agreed that by increasing the frequency of project-position evaluation sessions (personal or video conferencing), the flow of information between project members becomes more effective, which is also a primary goal.

It is an interesting development that in terms of using a project discussion to increase the project team's coherence , 11.1% of male respondents, 50% of female respondents dismissed it partly or totally. Altought for 25% of men this statemenent was neutral.

5. Conclusion

Although my research and the related analysis are not representative, it only gives a systematic approach and presents the opinions of the respondents, but on the basis of the responses of the project managers my research has reached its primary goal: I have been able to link practical theories to theoretical approaches and literature. I manged to define generally stated project management definition in a more shadowed and ranked way furthermore some of them could be interpreted in context. In summing up my research I set out the key factors of optimum project management based on the answers. First, the key to the success of the project is to being support by management. Without appropiate management focus, projects would suffer from lack of resources. Second, the key to the successful project is the appropriate sponsor. His or her governance has critical impact on the project. Finally the key to the success of the project is the commitment of participating experts (team members). Project managers should take extra efforts in order to increase or keep the motivation and engagement. Based on the results, it can be observed that there is no apparent difference between the opinion and ranking of success factors among the banking and other industry project managers and stakeholders.

Akcnoledgements

Hereby I would like to thank all those colleagues, partners, managers and experts for taking their time to complete my questionnaire. Without their contribution the above-mentioned recognitions could not have been created.

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Relationship between Human Decisions and an Expert System

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Abstract: It could be hard to make decisions in the mass of information. Many stimuli veins us nowadays, we cannot choose from only one or two options, we must make as objective decision as possible. Due to ICT there are some software available on the market for supporting us to make decisions. The study shows the relationship between a quality manager's decision of an investment at an automotive supplier and a knowledge-based expert system's verdict of the same investment.

1. Theoretical background

In life, we always must make decisions. It could be about business, school, relationships, jobs or even buying jeans. This is actually a problem because if we make wrong decisions we will have to pay the price for it, one way or another.

We call it a problem when we would like to reach a particular goal but we do not know the way of it. Things become harder when we realise that these problems can be examine different way, depending on our thoughts and experiences. People like to choose the one that certify their way of thinking even if they do not know it. People are not looking for the best available alternative. They don't search alternatives, they choose the first thing that satisfy their expectations. This means that our choices cannot be rational enough. Herbert Simon realised this fact about human mind, that we have bounded rationality. He won Nobel Memorial Prize in Economic Sciences for "for his pioneering research into the decision-making process within economic organizations" in 1976 [1].

Daniel Kahneman is also a professional in behaviour economics. He said that people in their life choose mostly well. But sometimes we choose very fast in some cases. For example if someone is guilty or not. We say: "I think…, in my opinion… etc", so we are actually uncertain in that specific question, the decision is based on uncertain events. Kahneman won the Nobel Memorial Prize in Economic Sciences “for their analyses of markets with asymmetric information” in 2001 [2].

There are also some other scientists who also researches decision-makers’ behaviour. Richard Thaler who is an expert in behavioural science, he explains the differences between humans and so-called econs. How does he mean humans? Decisions can’t be modelled, because we are not numbers, not attributes, we are humans. We see concepts. On the other hand econs can decide the best possible alternative, and economists think that people choose like this, humans cannot. Thaler won the Nobel Memorial Prize in Economic Sciences for “for his contributions to behavioural economics” in 2017 [3].

There are some models that explain how we decide in everyday life. Rational model: It means that the decision makers make consistent, result maximized decision, trying to know every possible alternatives. Nonetheless, decisions are not that easy to make. People cannot know every alternatives or rank them. Bounded rational model: Simon and March said that decision makers satisfied with the first alternative. In theoretical level decision making includes many roles and people, it is quite a complex process. I will try to explain some factors of it in the following [4]. According to Simon there are two types of decisions:

1. Ill structured decisions: These decisions are always important, there are not any approved techniques making it, it is not a daily routine. In this situation the decision maker must define judgments, assessments, and assumptions.

2. Structured decisions: These decisions are routines, well known techniques to making it [1].

There are some roles in decision making: decision maker, problem raiser, decision preparative, analyst, expert and an executor.

- Decision makers have the most difficult role because they have to take responsibility for the decisions they have made. A decision maker can be a person or a team. They have the permission to take care of the resources, make the purchase.
- Problem raiser could be anyone or anything, a manager at the company or industrial trends in today’s competitive world.
- Decision preparative can be the one who has enough knowledge to distinguish among the possible choices. A new investment is not only an engineering question, it has financial, logistical, legal, environmental consequences. They have to offer alternatives, they cannot make the decision.
- Analysts and experts must have lexical and practical knowledge to help making the right decision. They can be inner colleagues, consultants or even a software.
- Finally, the decision has to be executed when it is possible [4].

There are four phases of making decisions: Recognising the problem, defining the possible solutions, choosing from the alternatives and apply the decision [4].

2. Supporting decision makers

There is a software called DoctuS which helps decision makers to choose as rational as possible. This is a knowledge-based expert system. “The term knowledge-based decision support refers to using software tools called knowledge-based systems (KBS), expert systems (ES), or knowledge-based expert systems – as they utilize knowledge bases and are expected to perform at the level of a human expert” [5]. DoctuS does not replace the decision maker it just helps him or her, it makes a suggestion. With this software decision-makers can evaluate all cases and after deductive reasoning can get a suggestion. This suggestion is explainable, and the process of decision making becomes transparent [6].

To map alternatives there has to be a theoretical background of it. “The knowledge base embodies the symbolic representation of knowledge, describing practitioner knowledge with concepts connected by “if... then” rules” [7]. Our mind is consisted of concepts, these are not concrete data because we do not see number or scales, and we think by concepts. That is why user of this program has to build the knowledge database of the alternatives. The choosing is based on if-then rules. This gives the logical rules for the decision. For example, if something is not important, the decision will be influenced that way. Finally, deductive reasoning, which is a logical notion. It is based on premises, with specified methods it converts attributes, wherewith we get a conclusion [8]. It is a top-down logic. It means that if something is important is one thing, then it will be important in other things too.

There is a specific process of using DoctuS, these are the following:

1. The decision comes up for the decision maker, and for an expert who is professional in that specific area.
2. Defining the problem.
3. Collect knowledge.
4. Define if-then rules
5. Get the result

3. Case study

The decision is about an investment of a 3D measuring device. It was at a Japanese owned automotive supplier, which employs about 100 people. It produces small sized plastic parts into cars, mostly check valves. The decision-maker is the quality manager of the plant. I made an interview with him about the already made investment, what were the aspects of the decision.

3.1. Deep interview with decision-maker

Before building a knowledge base, I had to explore the topic of 3D measuring and the background of the investment. I made a deep interview [9] with the quality manager of the company. With this qualitative method I could recognize the main attributes and values of the topic.

Q: Why did the company had to invest into a 3D measuring device?

A: Due to the improving technology, we produce smaller, more complex parts with narrower size tolerances." This is why measuring by hand is not an option anymore because measuring this way puts a lot of uncertainty into the measurement. There had been an old 3D measuring device but it is out of order and it is not profitable to have it repaired. Another important aspect of investing into a 3D measuring device is more proper and automated measuring of incoming goods.

Q: Which expectations were the most important in the decision?

A: These were the price, technical parameters, and maintainability.

Q: How could you define technical parameters?

A: It depends on expendability and accuracy. Expendability is important for the company to have a multifunctional device. It should has a probe and an optical sensor. Both are essential at a company which produces small plastic parts. And it depends also on accuracy. Due to smaller parts and stricter customer requirements we need an accurate and a high resolution measuring device.

Q: How could you define maintainability?

A: It depends on service network and reliability of the manufacturer. Service network? If the measuring device gets out of order it is important to repair it as fast as possible. Reliability of the manufacturer? This is a complex value because there are a lot of subjective thoughts in people's mind. It is important to have a wide product line because we know that the manufacturer is serious in measuring devices.

Q: Which manufacturers were considered at the investment procedure?

A: Nikon, OGP and Zeiss.

After this interview with the decision maker, namely the quality manager of the company, we watched the three devices. Figure 1 depicts them.

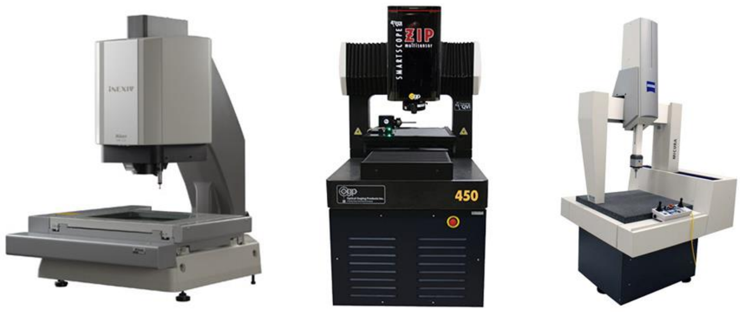


Figure 1.
Considered 3D measuring devices: Nikon, OGP, Zeiss

3.2. Building knowledge base

The main decision is choosing a measuring device. The decision-maker defined three important attributes: price, technical parameters and maintainability. Every aspect is important, and they depend on each other. Lower level of the knowledge base is also depending on each other. Figure 2 depicts the deductive graph of the knowledge base.

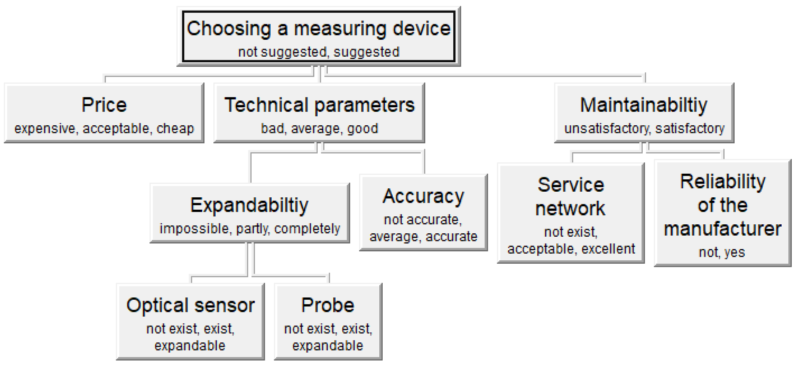
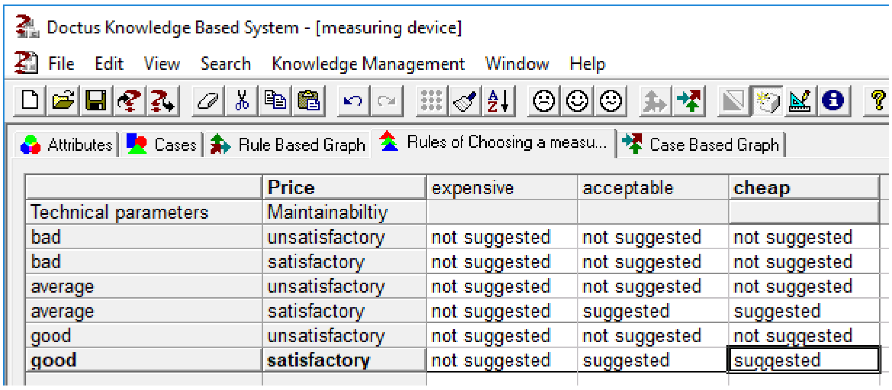


Figure 2.
Knowledge Acquisition

After drawing the deductive graph we have to define the if-then rules in every depending nodes. Figure 3 shows the rules of 'Choosing a measuring device'. For example:

> If 'Price' is cheap
> and if 'Maintainability' is satisfactory
> and if 'Technical parameters' are good
> then 'Choosing a measuring device' is suggested.



	Price	expensive	acceptable	**cheap**
Technical parameters	Maintainabiltiy			
bad	unsatisfactory	not suggested	not suggested	not suggested
bad	satisfactory	not suggested	not suggested	not suggested
average	unsatisfactory	not suggested	not suggested	not suggested
average	satisfactory	not suggested	suggested	suggested
good	unsatisfactory	not suggested	not suggested	not suggested
good	**satisfactory**	not suggested	suggested	suggested

Figure 3.
If-then rules

Figure 4 depicts the deductive reasoning of DoctuS and the conclusion of the decision. The main problem is choosing the appropriate measuring device. The final result is the OGP, the other two devices are not suggested. Maintainability is satisfactory of every measuring devices, therefore it is an irrelevant aspect in this specific case. Technical parameters are both good for two measuring devices, one of the three has only average technical specifications. These two parameters can be regarded as the same result. There is a great difference in one aspect, this is the price. The OGP is cheap while the other two devices are expensive. Examine the parameters we can see that this is the relevant attribute so the OGP is the appropriate measuring device for the company.

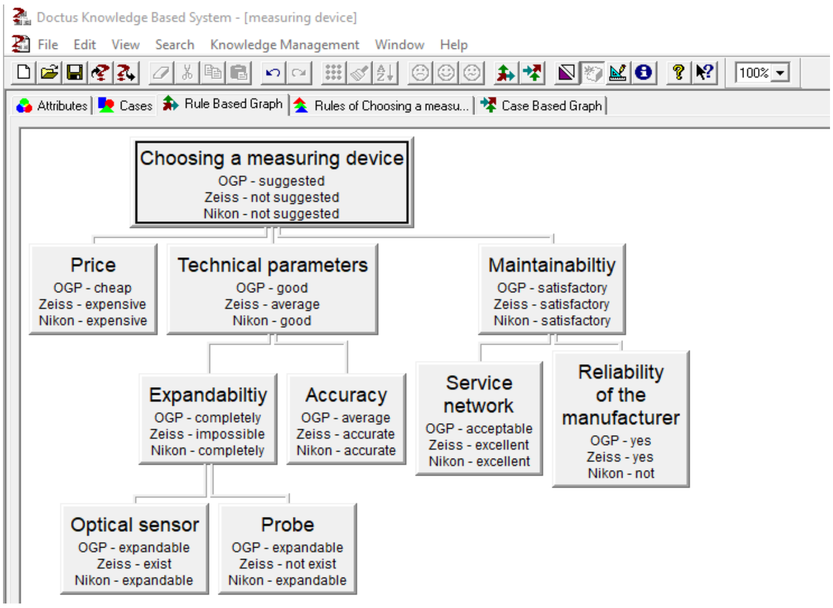


Figure 4.
Deductive Reasoning

The decision maker found the software very interesting and useful. He understood how difficult to put his expectations put into words. The decision making became more transparent due to this software so it is easier to explain for the shareholders. He also proposed the OGP, the main reason why he choose this is because it is expandable well and the price of it is cheaper than the other two devices.

Conclusions

It is hard to make decision in every part of life. When it is about money, decision-makers have to be as rational as possible. It is hard because many stimuli veins us nowadays and we are bounded rational. The study showed the result of a decision at an automotive supplier compared with the same decision made by a knowledge based expert system, called DoctuS.

The decision was about an investment of a 3D measuring device where the company's and the expert system's decision was the same which means a rational decision. If more attributes were explored then the result would be different. It is worth get to know more aspects of investments at companies because allocation resources is a major matter, further researches are suggested.

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Thinking fast and slow in business decisions

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Abstract: Economics is built on the assumption that humans are rational beings with clear and consistent preferences, based on which they can maximize utility. Behavioral economics aims to confute this view and explain why real-life decisions are often completely different from what classic economic theories would predict by finding patterns in what seems to be irrational behavior. In this article, I review significant pieces of literature and present the results of my research, showing that the heuristics, biases and fallacies described in the literature can be clearly predicted in advance.

Keywords: Behavioral economics, cognitive biases, decision fallacies, heuristics

1. Introduction

Despite some recent acknowledgements Behavioral Economics (BE) is still a marginal field in Hungarian economic and management discourse. I believe that the main reason for that is its human nature, since we tend to feel that the heuristics and biases being explored through BE are just so natural or even obvious – why bother with scientific research to study them? However, this in itself is a fallacy, resulting in the big gap between academic research and practical matters in life such as business. Economic models have to describe elegant theories, supported by complex mathematical substantiation, that cannot just be observed (or even understood) by *anyone*. However, the real subjects as well as beneficiaries of economics are mostly these "*anyone"* – employees and employers, executives of corporations or public officials, and this often decreases the relevance or even the validity of the elegant theories. Make no mistake, I am not speaking against the procedural correctness and high standards of scientific research. These are and must remain the basics of any emerging scientific field, but the complex procedures should not be "L'art pour l'art", and I would like to point to the contrast that the practicality of BE research is offering. I believe that BE can bring academic research closer to the "real world" thus contributing to the improvement of several areas such as business or public decision making.

The growing importance of BE is clearly shown by the fact that two of the most prominent figures of the area have been awarded the Nobel prize in economics – Daniel Kahneman in 2002 and most recently Richard Thaler in 2017.

In this current article, I will first summarize the basics of BE and point to the necessities that brought it into existence. I will introduce some of the most prominent researchers of this field and briefly discuss their contributions. After that I will describe in more details some of the basic biases and heuristics, which were also in the focus of my own research. In my primary research, I have created a questionnaire which was filled by people I know. It is possible to use quantitative methods to analyse the results of the questionnaire, but I decided to limit these to a minimum (such as expressing simple percentages). Also, my sample is not representative and random – therefore this study would just lack the criteria for producing valid generalizable results. After I closed the poll, I made short interviews with several respondents, to find out in a bit more detail why they made the decisions they made, to see if their answers could be predicted by the findings of BE.

The aim of my research was to prove the observability of these specific cognitive biases and heuristics. It was not aimed at finding overarching general conclusions about people or certain groups of them – this is certainly an interesting task as well but out of the scope of my current proceedings.

2. Behavioral Economics

BE is a relatively young discipline within social sciences which combines the elements of psychology and economics. Its most foundational features include the questioning of classic economic rationality, and the search for reasons behind irrational human behavior in decision making.

In mainstream economics one of the most prevalent principles is that people make their decision based on rationality. To define it in simple terms, rationality means that we make our decisions in a way that they serve our own best interests, so that they lead to a state which is most favourable to us, or as economists say, it has the highest possible utility for us. The theoretical background of this relies on utilitarianism, methodological individualism, rational choice theory and expected utility theory. The rational individual is supposed to have a system of preferences which can be measured on an ordinal scale, which means that in case a decision needs to be made, they consider the possible alternatives and their expected outcome, assign an expected utility for them and rank them based on this, eventually choosing the one with the highest rank. The preferences of a rational decision maker are complete – they can rank any two goods based on their utility, meaning that between goods “A” and “B”, it can always be decided that “A” has at least as high utility as “B” or the other way around. Their preferences are also transitive – if “A” is preferred to “B” and “B” is preferred to “C” then this implies that “A” must be preferred to “C”. Also, the system of preferences for an individual is revealed in their decisions, which implies that if they choose “A” in a given situation, where “B” is also available, they prefer “A” to “B” (or at least they are indifferent) and therefore in any other situation, where both “A” and “B” are available alternatives, “A” will be chosen again (except for the rare cases where they are indifferent). This system of paradigms became widely accepted by the end of the 1950’s and has been dominant in economics ever since [2] [3] [4]. Despite this dominance, various alternative ways of investigation on how business decisions are made have been emerging [14].

Herbert Simon was among the first to challenge these paradigms, coming up with bounded rationality theory. Simon argued, that for the analysis of human decisions, we should use models that consider the boundaries of gaining and processing information [10]. In economic theories, the decision maker is supposed to be able predict all possible outcomes of a decision, must be able to assign an expected utility to them and must make the decision based on ranking those into an exact order. However, there is just no empirical evidence confirming that this would really happen (on the contrary, empirical studies later have proven the opposite). Therefore, Simon suggest the formation of new models with significant simplifications. He also introduces the concept of aspiration levels – according to this concept the decision maker will not look for the optimal outcome (the one where utility is maximized), they will look for the first outcome which is „good enough” for their aspiration level. However, the aspiration level may vary in time and might be influenced by several factors not considered by the rational paradigm, such as the time available for a specific decision, the importance of that decision for the individual or just current mood of the decision maker.

Richard Thaler, a distinguished figure of BE, continued to lay down the foundations of the emerging discipline in the 1980’s by publishing BE articles in a dedicated section of the Journal of Economic Perspective throughout the decade. The first article in this section is about the “January effect”, an observation which is just not possible to explain with any rational model [11]. Thaler describes that based on the historical data of several stock indexes comprised of smaller firms, there is an obvious trend which shows that small firms’ shares bring substantially more profit in January then in any other month of the year. In fact, this contradicts the predictions of the generally accepted, rational choice theory based CAPM model. Thaler does not provide a definitive answer to the cause of this phenomenon, but suggest a few reasons which are based on the fallible nature of human beings.

Thaler in his later works [12] [13] also introduced the term “Econ” to describe the subject of the classic economic discourse in opposition to the Humans, who are actually making real life decisions. His most important contribution is arguably presented in his book co-authored by Cass Sunstein, *Nudge: Improving Decisions about Health, Wealth and Happiness* [13]. In this book, he builds on the findings of BE, and proposes solutions for making public and private decisions easier and resulting in more desirable outcomes. He promotes the view of libertarian paternalism, a somewhat paradoxical approach to those who influence decisions (whom he calls decision architects).

In this framework, it is suggested that governments and businesses who have influence on how individuals will make important decisions, should use nudges – constructing decision situations in a way that they push people to make better decisions, but at the same time leave complete freedom for them to choose any alternative they prefer [13]. One of the most prevalent examples of this is the use defaults. Due to inertia and the general lack of attention and mental effort, humans quite often choose not to choose, and stay with the default option even in case of very important and consequential decisions. Thaler demonstrates this through the health care contribution system in the United States. In many cases individuals could basically get free money in the form of employer contributions, which they miss out on because it is not granted by default. By changing the defaults, decision architects can contribute to a far better overall state without any enforcement or reduction in freedom of choice for individuals.

Another example of a nudge used the area of savings is the "save more tomorrow" [13] plan. When we make decisions about savings, it requires a lot of discipline to sacrifice current benefits for future ones, and therefore we often fail to save enough. However, if we do not have to sacrifice current pleasure, but we can do that with future ones, we are usually much more convincible to do so. The ingenious "save more tomorrow" plan consists of the following – when deciding about savings for retirement, the rate of savings is increasing with future salary increases, so we do not need to trade present day money for retirement savings, we trade less distant future money for more distant future money, which in general, we can much more easily commit to.

Kahneman's book, titled *Thinking, Fast and Slow* summarizes his vast amount of work done in the field of BE [6]. The basic framework of the book is provided by the theory, that in order to better understand our behavior, we can interpret the human mind as an entity formed by two systems. Kahneman describes the two systems in a magnified and even personalized manner, almost as if they were caricatures, in order to better facilitate the understanding of his message.

System one is responsible for thinking fast and it plays the primary role in our decisions. We can say that this system is used by default, since it does not require mental effort and the supervision of our consciousness. It varies form one person to another which decisions are made by system one. Part of this is inherited or acquired during physiological development (e.g. recognizing the direction and the source of a sound or our reactions to the manifestation of basic emotions of others), while some things are learnt but so deeply internalized that they become automatic (to understand a short sentence on our native language or the first impressions we form about another person based on their clothing). It is important to see that these things happen unconsciously, we hardly ever question or reconsider what we think or do with the use of system one.

System two works on complex situations which require our conscious efforts. Its operation has physiological signs (such a changing use of glucose by the nervous system and dilated pupils) and its operation requires increased use of resources. System two is in effect when we solve a difficult math problem, we force ourselves to pay attention on a lecture, or we consciously try to estimate if the price of a good in a transaction represents its true value. System two is also responsible for self-control, or we should rather say control over system one. However, the operation of system two is costly (the phrase “pay attention” captures it really nicely) therefore we often fail to activate it in situations, where it would be desirable. These situations, where we use system one instead of system two will lead to heuristics, cognitive biases and decision fallacies.

3. Heuristics, biases and fallacies

We often make mistakes in our decisions, and we are more or less capable (and hopefully also willing) to realize this. The realization might be intuitive, or could happen as a result of conscious auditing of ourselves – remembering what we did and comparing it to what we should have done in an optimal case. This audit process can reveal the heuristics we use or the fallacies we commit in our decisions and this provides the robust content of behavioral economics studies. It is not my intention to introduce all of these here, instead I have singled out a few of them, which definitely have great influence on our lives, and I will describe them in more detail. I will continue to use the framework of Kahneman [6] to illustrate how they work and how they impact our decisions.

3.1. Cognitive ease

According to Kahneman [6] in general the use of system one can be associated to a relaxed and good mood which we can describe as cognitive ease, while system two operates when we are somewhat uncomfortable and in need and he calls this state cognitive strain. When we are in the state of cognitive ease, we feel comfortable and content, our thoughts flow freely and without any supervision. Conversely in the state of cognitive strain, we are very much aware of what we think or do, we are sharp but we have a feeling of tension and we might experience a lack of creativity.

In my questionnaire, I wanted to test if respondents were in the state of cognitive ease and catch their system two off-guard with the following question: *A phone and a headset together cost HUF 110 000. The phone cost HUF 100 000 more than the headset. How much does the headset cost?*

No specific mathematical skills are required to answer this question correctly, still I expected several incorrect answers. I know, that every single respondent is capable to calculate the correct answer, but I assumed that lot of them would not slow down to really think this through, instead they would just give the answer that comes to their minds first. This is exactly what happened – one third of the respondents gave the *expected* wrong answer, HUF 10 000 instead of the correct answer which is HUF 5000. My assumptions were also confirmed by those whom I interviewed afterward. They just gave the answer that first came to their minds and certainly knew and admitted their mistake when they saw the question again. Those who gave the correct answer, also gave interesting feedback: despite my efforts to hide it, they realized I wanted to trick them, which summoned their system two to check the problem more carefully and make sure that they give the correct answer.

3.2. The law of small numbers and how stories trump data

To discover the world around us in an objective manner, we need to use the mechanisms of system two. Kahneman [6] refutes this with a daring example – he shows how often highly qualified and experienced scientists (including himself) fall victim of avoiding the strain of using system two when selecting sample sizes for their experiments: instead of the statistical calculations that would justify a certain sample size they select the size of their samples based on intuition, and this often results in their findings being statistically inconclusive. In most cases, however, this will not lead them to the conclusion, that they might as well be wrong, since the story behind their research and theory is there to make up for the lack of conclusive results in the experiments. This phenomenon was also described and confirmed by John P. A. Ioannidis [5]. Kahneman – not without a sense of irony – calls this the law of small numbers: scientists believe that in their experiments the law of large numbers applies to the small numbers of their samples as well.

We have to admit that we commit the same fallacy in our decisions in everyday life all the time. When we purchase certain items, we might not rely on rationality at all (impulse buying), but even if we believe we are being careful and thorough we often rely on the law of small numbers. What we quite often do when we buy a car for example is that we ask our friends and colleagues if they have good or bad experiences with that brand or model, we are considering and we will heavily rely on a few opinions when we make our decision. However, we need to realize that the sample we have is very small, and making a decision based on that is only slightly removed from deciding randomly.

Causal relationships and plausible stories are much easier to comprehend, therefore we are looking for these in our decisions instead of quantitative information. I wanted to test this in my questionnaire with the following question:

You are about to buy a new cell phone, and you managed to narrow down your decision to two models that you like, and you know the following about these:

- *Model “A”:*
    - *Three of your friends are very satisfied with the same type of phone*
    - *Reliable statics prove that one out of ten thousand pieces of this model is defective*
- *Model “B”:*
    - *One of your friends brought the same type of phone, but needed to return it due an issue with its camera*
    - *Reliable statics prove that one out of hundred thousand pieces of this model is defective*

If we look at this decision with the correct numerical mind-set, model “B” is certainly the better decision, since we have quantitative measurement with sufficient sample size about the chance of being defective. However, if we have contradicting information with insufficient sample size, but a plausible story, we can expect that the stories will trump statistics. My assumption on that was confirmed by the respondents, since 57% of them chose model “A”. I also had very interesting feedback during the interviews about this question, one person clearly said, that he knows that the first model was inferior in terms of statistics, but for him, it is more comfortable to listen to the advice of friends.

Sales experts, marketers or populist politicians are very well aware of this phenomenon, and rely on it every day to convince people to make decisions in their favour. When they want to influence people, they are not showing complex statistics and quantitative proof – they present relatable stories, and they often have great success. We have to realize that the reason why this works on so many people is not the lack of intelligence as often suggested, but simply the fact that our intuitive judgement relies on system one, which is able to process stories but not statistics.

3.3. Loss aversion and the endowment effect

Kenrick et al. [8] see our evolutionary development as the originator of our decision fallacies. They coined the term deep rationality, describing the concept that our reactions to the outside world were not developed according to the principles of microeconomic rationality. The picture that Sagan [9] gives about humans resonates with this idea – he explains that our brain is built on the same structure that we inherited from fish and reptiles, and these parts of the brain also operate the same way as they did for our long-time ancestors. These thoughts are reflected in a formalized manner in *prospect theory* by Kahneman and Tversky [7].

Prospect theory is built on the assumption, that when we weigh options in a decision, contrary to the assumption of expected utility theory, we are not considering the utility of states achieved by each possible outcome of a decision, but we are looking at the gains and losses compared to the status quo. One component of the theory is the certainty effect which shows that we are willing to choose certain gains over gains that have higher expected value but are not certain (e.g. it *seems rational* to take a certain gain of 500 000 HUF over a bet where we can win 600 000 HUF with 90% percent chance and win nothing with 10% chance). This effect is reversed in case of losses, where we are most often willing to take the risk of losing more in order to avoid a certain loss (e.g. most of us would prefer the chance of 10% for losing nothing and 90% of losing 600 000 HUF to losing 500 000 HUF for sure). This is called the reflection effect and it violates the predictions of expected utility theory.

The most prevalent finding of prospect theory is that “losses loom larger than gains” [7]. In more scientific terms, we value a specific amount of gain less than the same amount of loss, and X amount loss has a value of approximately the double of X in gains. When we represent this in a coordinate system, we get the value function first outlined by Kahneman and Tversky. The value slope is always considered against a definite point of reference (most of the time this is the status quo), it is concave on the area of gains and convex on the area of losses.

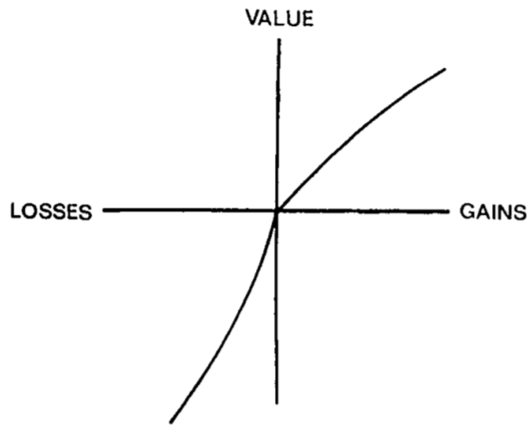

Figure 1.
The value function (Source: Kahneman and Tversky, 1979 pp. 278.)

Often contributed to our loss averse nature is the other strong cognitive bias – the endowment effect. It is described by Ariely [1] as our tendency to value certain objects, services, rights or any valuables higher when they are in our possession compared to when they are not. This can be attributed to three factors. The first one is that we are able to form an emotional bond to something that belongs to us very quickly and easily. The second, when we decide on a potential transaction, we see much more vividly what we can lose then what we can gain. The third that we tend to believe that the subject of the potential transaction has the same value to the other party then to us.

To test if the endowment effect is observable among the respondents, I have created a group of questions, where the relation of the answers shows whether people decide “rationally”.

In the first two questions, I set up the initial condition of paying HUF 3990 per month for a tariff plan. In the first question, I asked whether the respondent was willing to raise the available mobile data from 200 MB to 400 MB for an additional monthly fee of 1000 HUF. The second question contained a similar offer – raising the free minutes included in the package from 50 to 100 for additional 1000 HUF per month. Based on the answers we should be able conclude whether the additional 200 MB data or 50 free minutes is worth additional 1000 HUF for the respondents. In the third question, I asked the following: *If your current plan includes 400 MB mobile data and 100 free minutes and it costs 4990 HUF per month, are you willing to give up 200 MB data or 50 free minutes to reduce the monthly fee by 1000 HUF.*

We have to realize, that numerically, the third question is equivalent to the first two questions, the only difference is that in the first two questions the respondents were offered something additional, while in the third one they were facing the possibility of losing something. If we predict the results based on rational models, we will come to the conclusion, that those who were not willing to pay the 1000 HUF extra in the first two questions, value the 200 MB extra data and 50 extra free minutes less than 1000 HUF, so they should also be willing to give these up in third question for the offered monthly cost reduction.

Based on what I learned about BE though, I could predict that the respondents will be much less willing to give up what they already have (even if in the thought experiment only). Two third of the people answering my questions were not willing to give up the higher-level services in the third question despite the fact that they were also not willing to pay the extra money for them in the first two questions. This means that they valued the same thing differently when it was their own (or at least described so).

Conclusions

Classic economic theories are built on assumptions about Econs. Econs have a complete and transitive system of preferences, their computational skills are perfect therefore their decisions are rational and consistent. Looking at real world decisions, we have to realize though, that they are not made by Econs, but by

Humans. This does not mean that we are not able to predict the outcome of decisions, but that we need to step out of the classic economic paradigm to make viable predictions. The findings of BE provide a good basis for these different predictions, taking into consideration the seemingly irrational behavior of Humans, pointing to predictable patterns in heuristics, biases and fallacies. We have seen how BE can predict the results of cognitive ease, the preference of stories over statistics and the endowment effect on decisions.

We like to identify ourselves with the capabilities and operating mechanisms of system two, and classic economic theory is also built on this fallacy. We tend to think that our behavior is the result of our conscious decisions, we follow our rational thoughts and we have a more or less complete control on how we make decisions. The results of BE confute these views, and prove how little control we actually have. However, the moral we can learn from this is not that we are doomed to complete unreason and randomness, but that we should give up our idealistic views of the human mind when we analyse decisions and we should incorporate the fallible nature of human beings into our models.

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Financial awareness in retirement savings in a Hungarian survey

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Abstract: One of the most important social changes looming over the EU member states is the ageing of the population and its expected effects on the economy and the retirement security of citizens. A lot of research indicates that state pension will not be enough to cover expenses of retired people and therefore, in addition to state pension some kind of pension savings are necessary. This study consists of three parts. The first part shows the present and expected future populations of the EU member states based on demographic and statistical data, and ets effect on state pensions. The second part presents the possibilities and forms of savings, with special attention to pension savings. The third part summarizes the theoretical basics and results of the survey-based behavioural economics research project "The role of self-care in our lives".

Keywords: retirement security, financial investment, pension saving, behavioural economics

1. Examining the sustainability of the state pension system

1.1. Types of pension systems

Pension systems are for the long run and their effects are felt over the long run (Augusztinovics, 2014). The pensioner can get pension if the state has enough income and can pay the pensioner a monthly pension, or the individual sets aside some money for retirement, while they work. For us, the system that we live in and have got used to seems natural. However, there are three main systems that are used in different countries of the world:

1. Pay-as-you-go system (state pension, social insurance system): In Hungary the pension system until 1997 worked on the pay-as-you-go system. This means that active workers pay for the pensions of the elderly. In essence this is a kind of transfer between generations since the young generation can always be forced to finance the pensions of the elderly generation. This system can be sustained safely if the incomes cover theexpenses. This means that as the number of pensioners increase, the number of active workers have to increase, too. Nowadays, however, the tendency is that as life expectancy increases, there are more and more pensioners, while the performance of the economy decreases so incomes can cover pensions less and less. The state must get the extra money from somewhere else, which is not economically sustainable in the long run.

2. A fully funded system: This is one possible system instead of the pay-as-you-go system. It is a fully capitalized pension insurance. Here the contributions are collected and invested by a private or state pension fund, and the pensions are paid from the returns of the investment. There is actually no connection between the active and inactive population. The system includes a capital accumulation period, during which only contributions are collected and there are no pension payments. The contributions are determined based on the amount of expected pension. An example is voluntary pension funds, where old-age pensions are paid from the interest of contributions (Csontos, 1997).

3. A combination of the above two, a funded system. Most pension insurance works on the pay-as-you-go principle, but there is a private or state pension fund which invests some of the contributions into securities. In this system there is a connection between the active and inactive population.

The last two systems can be further divided based on what results they promise to the investor and whether contribution is a fixed amount. In one type, called fixed results, the amount of pension follows the income from work. In another type, the fixed contribution type, the members pay a fixed contribution, and the amount of pension depends on returns on the market. In the fixed contribution type the member takes all the risk, their pension depends on the returns. In the other type, where the results are fixed, the risks of invesment are taken by the owners of the fund. However, not even this system contains all the guarantees that members receive the amount of pension that is enough for a living (Csontos, 1997). The operating costs of the latter two systems are high, which reduces the returns of the investments. The pay-as-you-go system is cheaper but it carries the risk that the contributions of the active population decrease. This is why many countries use a combination of the two systems.

The Hungarian pension systems has two pillars. Pillar 1 is the state pension system working on the pay-as-you-go principle. Pillar 2 is fully funded systems (Novoszáth, 2014). The pay-as-you-go system is convenient when the economy is growing (Samuelson, 1958). The European Union displayed on its homepage its report on the changing number of EU citizens (Eurostat, 2015). Hungary is not in a good position. In 1995 Hungary contributed 2.1% to people living in the EU, bit in 2015 this ratio was only 1.9%. Fig 1 shows that the group of “below 2%” includes Sweden, Austria, Bulgaria, Denmark, Finland, Slovakia, Ireland, Luxemburg, Cyprus and Malta. All these countries have no more than 14% of the population of the EU, which is less than the population of Germany (16% of the EU). France has 13.1%, Britain 12.7%, Italy 12.0%, Spain 9.1%, Poland 7.5% and Romania has 3.9% of the population of the EU. The report states that development was fuelled by migration.

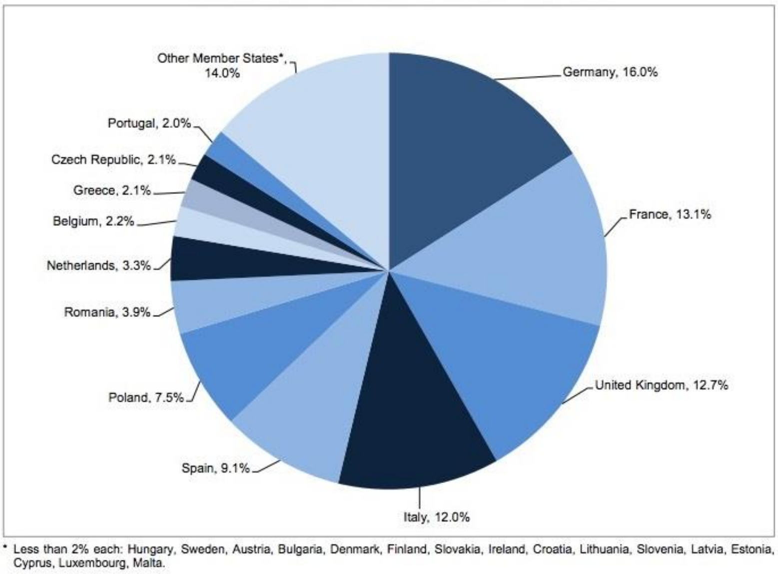

Figure 1
The population of individual countries as a percentage of the population of the EU (Eurostat, 2015)

The current Hungarian social insurance system is burdened by three problems, which can threaten the financial balance of the Hungarian pension system: the ageing of the society, low rate of employment and partial payment of contributions.

Table 1.
EPC calculations for the EU
(European Commission, 2015)

	2010	2050
Population of the EU	735 394 902	706 792 824
Population of Hungary	10 014 324	8 232 439
Life expectancy of women	82,1 years	89 years
Life expectancy of men	76 years	84,5 years
Number of births per family	1.5	1.6
working age population between 15 and 64 years of age	325 million	283 million
EU pension expenses{GDP %}	10,2 %	12,5 %
Hungary's pension expenses {GDP %}	10,4 %	13,8 %

The population of Hungary has not been growing for a long time, economic growth has slowed down, and pension expenes are growing based on the calculations (Banyár 2014, Mészáros 2016). Currently pay-as-you-go systems are in a serious crisis all over the world; the reform of the state pension system is inevitable. At the macro level an automatic system handling contributions and pension payments should be created which would ensure the long-term balance of the system (Holtzer 2010, Novoszáth 2014).

The simplified mathematical model of the pay-as-you-go system is the following (Simonovits 2002, Holtzer 2010, Szabó 2017a): Number of contribution payers x Pension contribution rate x Average annual salary = Number of pensioners x Yearly average pension

Forecasts show that the number of pensioners will increase drastically – this cannot be changed. Therefore the right side of the formula will increase and the balance will be upset. The question is how the balance can be reset.

- Increasing the number of contributors: demographic forecasts predict that this number will not increase, more likely it will decrease. A solution can be to motivate young people to have more children.
- Increasing the pension contribution rate: it would put a further burden on employers and employees, too.
- Increasing the average annual salary: productivity is low in Hungary, salaries cannot be increased very much.

- Decreasing the avarage yearly pension: pensions are low as they are; if they are further decreased, it can lead to a loss of votes, which the government wishes to avoid. Another possibility is raising the age of retirement, which was suggested and then introduced in many European countries.

Wherever the formula is changed, the system is upset. The two sides must be balanced macroeconomically. Experts recommend a mixed system. In the current system a supplementary way to ensure one's living in old age could be using a voluntary pension fund. This can mean that in retirement the individual can keep the standard of living (s)he has got used to in his/her active years. These institutions supplement other pension saving schemes, such as pension insurance.

Table 2.
The liquidity of financial savings
[own table, 2017].

product types	time periods	liquidity
cash, bank account	1 year	liquid
long-term investment account	2-5 year	least liquid
investment fund shares, investment fund, Building Society	6-10 year	least liquid
pension savings account, Voluntary pension fund, life insurance	from 10 years up to retirement	least liquid

2. Forms of financial savings and possibilities

There are many ways of saving (see Table 2). Young people in the X and Y generation, who are already able to learn financies, are already able use of these opportunities, according to their financial knowledge, take advantage of them, and make prudent financial decisions for their retirement savings as well (Csiszárik-

Kocsir, Medve 2013a, 2013b, Csiszárik-Kocsir, Varga, Fodor 2016, Csiszárik-Kocsir, Varga 2017a, 20017b).

Before choosing the product, the following questions have to be answered: does the employer want to take part in its financing; what time period are we planning for; do we want to set money aside regularly (monthly, quarterly, biannually, annually), or do we have a larger amount of money that we wish to invest now; how much liquidity do we want; how important are tax reliefs; guarantees of return or capital, how much risk are we willing to take in return for higher possible returns? Below are the forms of savings in detail:

1. Investment funds: These funds collect the savings of small investors to invest this higher wealth more advantageously and safely than small investors could individually. The fund is owned by the investors together and is created and supervised by the fund management. The share of individual investors is represented by investment fund shares. The net value of one share shows how much the share is worth on that day. That is, if the wealth of investment fund was sold on that day and the value was divided by the number of shares, we would get the value of one investment fund share. Investors can join investment funds by buying investment fund shares. The value of a share depends on the value of investments the fund owns.

2. Pension savings account (NYESZ): It is a supplementary element of the Hungarian pension system. Anyone opening such an account can decide what securities the money should be invested in (shares, bonds, or investment fund shares). Currently this is the only form of pension savings where in addition to state support, the individual can decide the concrete type of investment (s)he wishes to use.

3. Long-term investment account (TBSZ): Natural persons investing their money in a long-term investment account are partially or fully exempt from the 16% interest tax and the 16% exchange gains tax, if certain condition specified in the law are fulfilled. The goal of this account is to foster self-care and long-term investment.

4. Voluntary pension fund (ÖPT): The members pay regular contributions to the fund and when they reach retirement age, they receive various pension services from the fund. As opposed to state pension, the pension payments are covered by the contributions paid by the members and their accrued interest. Membership and contributions in the case of a voluntary pension fund is always voluntary. The contributions can vary but the minimum amount is a monthly 2000 Ft. A voluntary pension fund can be used to accumulat wealth for other purposes than pension. Voluntary pension funds are advantageous for members because the states give considerable tax relief after contributions.

5. Hungarian Building Society (LTP): It is a special credit institute which only collects deposits for the purpose of buying homes and only gives loans for this

purpose. Saving in Building Societies is supported by the government. After the time of saving expires, the Building Society provides a loan with low interest. All Hungarian citizens can use this service regardless of marital status or income. It can only be used to buy a home. The greatest advantage of this way of saving is the 30% state support, which can amount to 72 000 Ft yearly. With one contract the maximum amount of savings per month is 20 000 Ft.

6. Life insurance: In an everyday sense, life insurance is connected to events in the insured person's life: mostly death but also disability, operations, serious illnesses, permanent damage to health, incapacity or other event specified in the contract (reaching a certain age, wedding, having a child, retirement etc.).

3. The role of self-care in our decisions

3.1. Behavioural economics and decision making tipology

Behavoural economists can understand human decisions based on psychological traits better than normal economists who count on people making rational decisions. Adam Smith, the father of economy was a behavoural economist. Economy remained such until Keynes, but a great change came after World War II, which made economy rely on mathematics much more. Economists made the theory more precise by formalizing it since the most easily solvable models work with perfectly rational people (Herbert, 1957). Traditional economy calculates its models with perfectly rational people, where we can decide what is best for us based on our system of values (Herbert, 1996). In many areas, however, we systematically make irrational decisions and this was recognized by behavioural economy. It spreads fast and its mathematical and economic tools can measure and predict these systematic errors better and better. Today's economy states that people decide now how much they will earn in the rest of their life and then how they will smooth their consumption. Like if someone said they will work until the age of 65 and die at the age of 90, therefore they will need 25 years of pension. Then they would start to calculate ow much they will save with what returns and then save exactly as much as they calculated (Richard, 2016). Self-care for retirement can be voluntary pension fund membership, insurance or other savings. It is not easy to choose the right one, which can provide the standard of living we expect in retirement. Decisions, such as "what financial investment to choose" cannot always be predicted based on rationality or preferences – this is proved by psychological research – because rationality is often overwritten by irrational thoughts (Fodor, 2013).

Table 3.
Decision-making tipology, strengths and weaknesses
(Fodor, 2013).

Hemisphere/decisiveness	Decision making tipology	Strengths	Weaknesses
Left hemisphere, rational, decisive	Pragmatic	Decisive, logical	Misses creative solutions, does not listen to others
Right hemisphere, emotional, decisive	Extroverted	Decisive, intuitive, popular	Misses facts, makes hasty conclusions
Left hemisphere, not decisive	Analytical	Collects data, logical	Thorough analysis slows down decision
Right hemisphere, emotional, not decisive	Jovial	Attentive, listens to others	Does not make hard decisions

Research has shown that the processing of rational and irrational information is related to the left and right hemispheres of the brain (see Table 3). The left hemisphere is responsible for conscious, dominant, logical, rational, analytic and positive thinking, whereas the right hemisphere is responsible for the subconscious – irrational, emotional and negative thinking. Whether a person processes information in a positive or negative way is difficult to change but can be influenced (Fodor, 2013). Most people usually use the left hemisphere – it is characterized by positive information processing (Hámori, 1998). Positivity means that this hemisphere hopes for the positive outcome of things and therefore finds it hard to tolerate crises, which endanger its positive outlook on the world and expectations. The left hemisphere is characterized by systematic and analytical problem-solving, research and making lists. The right hemisphere is more suited to processing negative information, That is it plays with possible outcomes of a given situation and is activated when a given situation happens. it is economically important that in forming one's individual system of preferences, the right hemisphere is dominant.

The right hemisphere collects experience about the individual outcomes. The decision-making process is largely influenced by what hemisphere the individual relies on when making decisions. Another important factor of decision making is the decisiveness of the decision maker. A decisive person makes decisions faster than a non-decisive person. Based on decisiveness and the use of the hemispheres, four decision-making styles can be distinguished with accompanying personality traits.

3.2. The role of financial awareness in decisions

The research focused on the present and future state of the respondents. We would like to know what customs and processes motivated them to choose the kind of self-care, pension system they chose. We examined the respondents with the methodology of behavioural economics and factor analysis. The research examines the role of self-care as a pillar supplementing state pension in public awareness and in our decisions, what pension system is considered desirable in the future, what will constitute the pension of the future generations, how many people will work and how in the future.

The starting point of the research is that people think of pension with fear and uncertainty. Based on the previous chapters it can be seen that the pay-as-you-go system is in a crisis, therefore the second pillar of the pension system, self-care receives more and more attention. Self-care helps save our financial and personal independence and expresses our responsibility towards our family. In developed western countries self-care has been playing an important role for a long time (Szabó 2017b, 2017c). To understand the motivations behind our decisions more deeply (Hámori, 1998), I used certain parts of factor analysis, which is a very widespread method for mapping peronality nowadays (Ottó 2003, Czirfusz 2010). I processed the data of the surveys and performed the statistical calculations with the SPSS software with help from the department (Sajtos 2007, Szabó 2017b, 2017c). The online survey was completed in 2017. The respondents provided theiranswers online on kerdoivem.hu (link: http://www.kerdoivem.hu/kerdoiv/927511662/). Table 4 shows that there were 500 respondents altogether (n=500). My basic questions were connected to pension systems, pension savings, self-care and retirement security because these are the elements that determine the financial background of our future existence, that is, the extent of our self-care.

Table 4.
Statistical data of the respondents
[My own editing, 2017].

Number of respondents [n]	500
Male	270
Female	230
Average age [years]	31

The replies were divided into three groups:
1. Knowledge of pension systems (mandatory, voluntary);
2. Financial planning (characteristics of various savings plans);
3. The role of self-care (the mapping of personality).

The above three groups are analyzed separately by the qualitative research. Several statistical characteristics were calculated, such as average and frequency, and cross tabulation analysis was performed. The present paper only focuses on state pension and the role of self-care. Based on the answers, the respondents are basically informed about the pension system. 92.2% of respondents do not consider the current state pension system stable. They trust pension savings more – 65.2% of the respondents anwered yes to this question. Only 15.6% of the respondents have pension insurance. The results show that savings are important to the repondents. Fig. 4 shows further internal connections.

Table 4.
Relationship between pension savings and age
[My own editing, 2017].

		Have pension saving		Total
		Yes	No	
Age [years]	between 15-19	1	63	64
	between 19-28	48	162	210
	between 29-48	100	73	173
	above 49	33	20	53
Total		182	318	500
Percentage [%]		36,4	63,6	100

Table 5. shows further relationships between pension savings and optimism. Pension savings are more important for optimist men than optimist women.

Table 5.
The role of optimism in pension savings
[My own editing, 2017].

			Pension saving		Total
			Men	Women	
Optimist	Yes	No. of respond-ents	324	12	336
		% Optimist	96,4%	3,6%	100,0%
		% Pension savings	67,4%	63,2%	67,2%
		% Total	64,8%	2,4%	67,2%
	No	No. of respond-ents	157	7	164
		% Optimist	95,7%	4,3%	100,0%
		% Pension savings	32,6%	36,8%	32,8%
		% Total	31,4%	1,4%	32,8%
Total		No. of respond-ents	481	19	500
		% Optimist	96,2%	3,8%	100,0%
		% Pension savings	100,0%	100,0%	100,0%
		% Total	96,2%	3,8%	100,0%

Conlusion

According to forecasts, the current pension system will probably cause social, economic and other problems both 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. Experts favour a mixed system but there is no universally accepted and favoured concept yet. In spite of the small amount of answers, there are many possibilities. The respondents consider many possibilities to ensure their future living. There is no choice concerning state pension because it is mandatory. In the case of other supplementary possibilities, such as voluntary pension funds and private investments our income and emotional decisions determine which form or forms we choose.

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Gendering technical professions and secondary school science education in Hungary

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Abstract: Formal schooling is a major agent in reinforcing cultural expectations for males and females. Socialization in schools occurs through various channels such as classroom interactions and subject choices. Girls may feel obliged to fit into a pre-determined stereotypical model of femininity. The paper deals with gendering technology and secondary school science education. The research was based on focus groups with female students and interviews with teachers about familiarity and feelings concerning tech fields and the factors behind.

Keywords: gender beliefs, STEM, secondary school, higher education

1. Introduction

A fundamental way to express gender is through technology. Technical skills or lack of them basically shape masculinities and femininities. In Western societies men are regarded as possessing a kind of natural affinity with machines and technology to such a great extent that technology is coded male. On the other hand women are supposed to dislike it, which is originated in their totally different engagement in the past. Men are viewed as being enthusiastically involved in making and tinkering with machines. Women also use machines, but are considered to simply be just beneficiaries of inventions, passive in relation with machines. Women are characterized by using machine without any deep understanding or affection (Bray, 2007). Meanwhile in modern societies gender is having the power to enact what is recognized as technology: washing machine is not a technology when used for washing clothes (by a woman), but becomes technology when it is repaired (by a man). As a consequence gender is also closely related to the determination whether skills can be categorized as negligible or significant.

Gendered attitudes and beliefs are featured in throughout of social institutions. From the viewpoint of striving for a deeper democracy that can be achieved through the establishment of a greater gender equality, an important goal of analyses is to understand how technology is implicated in the (re)production of gender inequality. Even though women constitute the majority of the students of higher education in the developed world, the relatively low number of women in fields related to science, IT or engineering is widespread. According to traditional expectations for boys and girls, students are treated differently by teachers. Knowledge is also gendered and certain fields are seen as masculine, whereas others as feminine.

Secondary schools play an important role in this respect because they may further foster and support societal stereotypes for gender behaviour at the same time when students face with difficulties of career choice. Teachers, however, may contribute to dismantling fears and encouraging ambitions towards fields not expected by gender. The views and expectations of technical programmes may significantly be influenced by the content and quality of science subjects at the secondary schools. Negative experiences in the class and/or bad marks obtained in subjects of science may create a mental or a real barrier deterring girls from technical/science academic programmes.

In this article we analyse the gender conditions that may exercise a significant impact on the career choice of secondary school female students concerning tech fields in Hungary. Section 2 summarizes some of the main findings of the researches on gender issues in science education. Section 3 gives the methods of research. The results of research can be found in section 4. In the following section there are some suggestions by students to make technical programmes more attractive. Finally we give concluding remarks.

2. Review of literature

Cheryan et al. (2016) draws attention on that STEM (science, technology, engineering and mathematics) is not uniformly hostile place for women. They proposed a model with three overarching factors to explain the larger representation of women in certain fields, like biology and mathematics than in others, e.g. IT and engineering. First, due to their hostile masculine culture ("chilly climate"), certain fields can work against women. Masculine culture implies stereotypes of people in the fields, negative stereotypes of women's abilities, and lack of female role models. The second factor, although having a less potent explanation, refers to the early scarce experience with computer science and physics, which may imply a limited number of course offerings and insufficient freedom to choose courses. Computer science is an example of fields where the culture has been "made masculine". Seeing other girls and women in courses helps avoid stereotype threat and weaken association between STEM and males. The third factor is the gender gap in self-efficacy, or the disparities between women's and men's

confidence in their abilities. Self-efficacy is the belief about one's capacity to be successful at a certain task. Mann and DiPrete (2013) indicates that gender gap in subfields other than life sciences is wider than it was ten years ago.
Riegle-Crumb and Humphries (2012) explored, with the help of the theories of intersectionality whether gender stereotypes about math ability shaped high school teachers' assessments of their students resulting in the presence of bias. The bias measured implied explicit as well implicit bias referring also to unintentional behaviour or an orientation that the person wants to conceal. Such implicit stereotypes might be more common than explicit ones among contemporary cohorts and in certain cultural circumstances. Riegle-Crumb and Humphries (2012) found that teachers held the belief that math was easier for white males than white females across all course levels. They warn that occurrence of bias in high schools likely function to maintain and reproduce inequality "throughout the math pipeline". They also referred to researches in various fields, one of the most important is that of Correll (2001) giving evidence of the persistence of stereotypical beliefs that, relative to males, females have inferior ability in the field of math which is a key gatekeeper to elite occupations in science or technology. Using longitudinal data of junior and senior high school students, Correll showed that girls attributed less math ability to themselves than did boys with the same math test scores and grades. Correll (2001), among others, also points to that internalization of such stereotypes by young females inhibits their performance on math test and weakens their feelings of self-worth and competency. Legewie and DiPrete (2014) argue that strong math and science curricula have a great effect on the STEM orientation of girls. Supportive school environment plays an important role in the strengthening/weakening of gender stereotypes, and is particularly beneficial for disadvantaged groups, like girls in the case of STEM interests. They are less concerned, compared to boys about violating gender stereotypes. Researchers and policy makers are encouraged to take seriously the potential impact of high school interventions on girls' STEM orientations. It also found that less gender segregation in extracurricular activities reduces the gender gap in science orientation.

Chapman (2013) noted that gender socialization in schools and a gender biased hidden curriculum work against gender equity, and girls are short-changed in the classroom. Teachers socialize them towards having feminine characteristics like neatness and quietness, while boys are encouraged to be creative and active. Gender bias is embedded in textbooks, lessons and the interactions of teachers with students: contributions of women are often omitted and their experiences are tokenized, while gender roles are stereotyped. Men are described as being brave, bright, and powerful, and women as being passive and invisible. Educational sexism imparted explicitly or implicitly to students is a huge challenge to be dealt with in order that girls could unfold their gifts. Buchmann et al. (2008) mentioned gendered norms within families as another source of constraints which may cause basically different educational pathways for girls and boys.

3. Research methods

The qualitative research[41] was carried out in a teamwork with Erzsébet Takács (Eötvös Loránd University) and Lilla Vicsek (Corvinus University). We organized focus groups with secondary school students and semi-structured interviews with their teachers in the schoolyear 2011/12. The students involved in the groups were in the last year of their school and planned to study in tertiary education. In the first group there were 11 girls who studied in a medium strength Budapest secondary school and had good grades in math. The second group was composed of 9 girls from a Budapest secondary school with a possibility to specialize in technology. There also was a group of 12 students from a countryside strong secondary school who specialized in math.

The group discussions were carried out in one of the classrooms of the schools, and took about an hour. The semi-structured conversations first included questions on where the participants intend to study and how they decide, and then focus was on technical academic programmes and gender issues. After, there were questions on what tools the participants thought would stimulate them or girls in general to choose technical academic programmes. At the same schools we have also made semi-structured interviews with teachers, who were either teaching science subjects or were homeroom teachers. The questions included similar topics as those for students and regarded the factors behind the choice of career or gender differences in performance in science classes.

4. Results of research with female students

The focus groups with female students provided a look into the life of three secondary schools. In order to get an insight from the other side, there also were semi-structured interviews with their teachers being involved in either the problem of teaching science or further education and career choice. Although the vast majority of teachers in secondary school education are women, we succeeded in getting men at each school among the interviewees.

41 The research project was a part of the gender sub-project of TÁMOP 4.2.2/B-10/1-2010-0020. The Hungarian acronym TÁMOP refers to the Social mobility programme of the European Union.

4.1. Familiarity with technical academic programmes

Each focus group discussion gave an impression that the students knew very little about higher education and much of their information stemmed from the Internet. However, according to them, universities only have limited amount of information interpreted easily by secondary school students on their web-sites. A further source of information was the talk of their friends studying at universities. Besides the little knowledge about higher academic programmes, the students knew very little about what types of professions existed and what the concrete content of professions was (excepting few well-known occupations).

The participants of the focus groups knew extremely little about technical academic programmes and about what such graduates actually did. Students had scant knowledge of the market demands and salaries such professionals had, or they were not fascinated by the good salaries of such experts.

Moderator: What does a mechanical engineer do?

Mazsi[42]: I have no idea.. Maybe, he[43] thinks out how things are put together, or tests them once they have been put together, I don't know.

Panna: He makes plans.

Someone: Plans?

Anna: I don't know.

Mazsi: He plans the heating of the buildings, the piping....

Eszti: But that's the architect's job, isn't it? …

4.2. Feelings about technical academic programmes

Notwithstanding the lack of knowledge about technical fields and simply because the students did not hear them, tasks related to technical occupations in question did seem interesting for the students. The negative attitude evolved in such circumstances might be connected to the media's role conveying rarely information about jobs in such fields.

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42 The names of the participants involved in the focus groups and interviews were changed to protect anonimity.

43 Although in Hungarian the singular third person has no gender, unlike „he" does in English, when participants talked about a singular third person, it was translated as „he".

Moderator: Are they interesting or boring professions (electronic engineer and a mechanical engineer)?

All (together): Boring.

Moderator: Why?

Évi: You cannot hear about them.

However, in the focus group of the Budapest's stronger school, students had quite a few IT experts and engineers among their parents and brothers, there were less stereotypical statements, or they were confuted on the basis of the examples of the relatives.

Janka: My brother is a programming mathematician. But he is a cube. He is very, very good at maths. And he has interesting tasks, for example … he makes a GPS system.

Ibolya: My father's job (electrical engineer) is interesting in my opinion,… he plans a lot of things, fountains, small cars, and so.

Janka: And he has an own workroom … full of with various inventions, and I said at home that he is an inventor … So it must be interesting, if somebody is an insider and familiar with that …

In many cases the students in the groups had a mistaken belief about the jobs of IT experts. They thought they only included programming (while usually one third of the tasks of an IT professional consist of programming (Collet, 2006)). Stereotypical views of professions deter some of the girls from IT studies. Even those who were quite good at informatics at secondary school were inclined to decide on different careers. Generally only those students were familiar with the tasks of an IT expert, who had relatives dealing with IT. But these students also expressed, although to a lesser extent stereotypical views.

Moderator: What image do you have of what an IT professional does?

Anna: He sits at a machine.

Someone: He does programming.

Someone else: He puts in the program and there are numbers running across the screen ... (laughter) and he snaps...

The lack of knowledge about jobs in technical and IT fields among the students interviewed seems quite severe. It is also problematic that even the curiosity seems absent in these girls, which can be rooted in the not so interesting presentation of science by the media. Instead of its function to inform people about technology, personal relationships fulfil this role.

4.3. Gendering technology: free choice or gender-tracking?

Discussion about the choice of career in technical fields was an important part of focus groups. It was dominated by thinking in gender stereotypes. As masculinity is closely related to technical professions and societal roles are highly gendered, students in the focus groups had strongly biased views concerning decisions on further studies.

Free choice argument

Firstly free choice argument explains that the decisions on the career path by the students are freely chosen by them based on their preferences. Female students were not captivated by the plan to get involved in technical academic programmes. Many girls at the stronger school in Budapest and at that in the countryside argued that they did not choose technology academic programmes mostly because they were simply not interested in it and not for any other reason.

Moderator: And how do you find electrical or mechanical engineering?

Szilvi: For example it does not interest me at all. Exactly because I hate physics, and I do not search in such direction that I do not like, because why and it does not interest me and I do not orientate …

Low self-esteem

Secondly, it seems that the students have the interest yet. Some of the girls would prefer studying in technical fields, but their low self-esteem worked as a barrier towards achieving their goals. They were considerably frightened by not performing well enough at the university and being laid off.

Erzsébet: I am interested in math, physics, but I am a little bit afraid as I am not good enough at them, but I would be interested in studying them (at the university).

Female students showed low self-confidence in technical fields which fits well with results of previous international research, indicating that girls often underestimate their own skills in various fields including even their performance at technical studies (OECD PISA, 2006.).

Societal gender tracking

It seems that lacking self-esteem is the outcome of societal gender tracking. If one has only very limited information about academic programmes and professions, a considerably influential factor towards decision can be the beliefs about persons who were fascinated by certain studies and jobs. Female students in all the groups had a dominant opinion that boys were more fascinated by technology and related careers, and such jobs mainly were done by men.

Gabi: It is rather the boys, who are interested in how things work, the machines...(laughter)

Évi: The boys' thinking is different… Girls engage themselves with other things, we are interested in people, in ourselves – because of this we mature earlier, as we know more about ourselves. And the boys are involved in maths, physics …

Csilla: … technical things interest boys and they need ideas …

Gender stereotypes seemed to weaken further the low self-esteem of students particularly at the not so strong Budapest school, where an interviewee emphasized that their acquaintances having technology related studies coped with many problems.

Tünde: I have quite a few male acquaintances, who study in such field and now they feel that they are more stupid, and the others know better, and are more prepared in class …

Family background

Places where they met with negative attitudes as to their ambition for technical fields included their own families. In the focus groups some of the students described their parents as exercising an important impact on the selections of the field of study. Sometimes parents had different decisions according to the gender of their children.

Évi: My parents influenced me in this respect. My father is very maths oriented, and because of this my brother was told that he should be an engineer, and …. he tried real hard until he realized that he didn't want to do it… In my case, I was told that I was like my mom, and my mother told me, I did not necessarily have to know it (math).

Betti: My brother, he is always occupying himself with these things (machines), and if I do not know something, then he instantly says, that I am stupid, and that this is because I am a girl...

Experience of general negative attitude by men

Fear of an experience of failure in the higher education in the field of technology and science seems deeply rooted in the difficulties girls face in the everyday life because of gender stereotypes. Concordant opinion of the girls was that their interest in technical things is very rapidly taken away due to negative behaviour by men. For the girls at the not so strong Budapest school this problem was very vivid, and became spontaneously present in the talks.

Betti: For me the major thing that sets me back is that I feel that men treat women negatively in this respect, they are of the opinion that I would not be able to learn as fast as them how machines work, as I have less experience... They discourage us.

Some girls: Yes.

Betti: Yes, you feel that you are stupid and you should not follow that road just because you are a girl.

Moderator: Who discourages you?

Alexa: The men (laughter).

Natália: Those, who know these things better, and then if you try to do something for the first time, such as writing a programme or something like that -

Zsóki: Then they do not even give you a chance...

Fear of negative attitudes by prospective employers

Students seem afraid of having troubles at their workplaces in the future. Even though the interviewees emphasized the possible unique value-added a woman can provide in technical fields owing to her different thinking, it was a dominant opinion that men had a greater experience. In the focus groups there were students afraid of gender discrimination in the labour market in the future because of men's greater experience in technology. The view that men have better skills in this field was even internalized by some of the girls, which became an important factor of preferring a different profession.

Vivi: I just happened to hear about mechanical engineers that women applicants are not employed anywhere, and similar stories …

Moderator: Why?

Vivi: Because men have greater experience or something like that …

Panni: Or they just think that they have greater … (laughter)

Rozi: Most often they think they do …

In the focus groups girls and boys were viewed by the students as having essentially different scopes of concentration, although exceptional cases were mentioned. The considerably different process of socialization by gender was not mentioned. Low self-esteem of the students in technical fields was reinforced by some of their concrete negative experience, but also their dominant opinion that boys were more fascinated by technology in which jobs mainly were done by men. This view might have a dangerous consequence, because girls who are interested in technical studies may feel that they are not like typical girls. Due to a gender identity conflict, they may feel forced to evolve other kinds of interests. As the participants of all focus groups mainly thought that men were more involved in technical career, this view can lead to a self-fulfilling prophecy: girls who might be otherwise interested in technical studies may turn towards other kinds of interests.

4.4. Gendering science education at school

Science and technical fields are not popular in the society which can be explained by many factors. Science education is not able to keep alive the interest from childhood towards the nature. Teachers lack competencies to choose innovative teaching methods and rather require memorizing from the students instead of using problem-solving approaches. Also, team work and experiments are absent in the classes. Personal initiatives to innovate education methods remain very insignificant and the process of education, lacking the cooperation with natural museums or R&D companies is limited within the frameworks of schools (Kurkó, 2008).

The views and expectations of technical programmes may significantly be influenced by the content and quality of science subjects at the secondary schools. Negative experiences in the class and/or bad marks obtained in subjects of science may create a mental or a real barrier deterring girls from technical/science academic programmes.

Way and content of teachings

Female students interviewed mostly complained about the way physics and chemistry was taught, but mathematics was rarely criticized, rather some of the girls liked the math classes. Girls very rarely preferred classes of physics in a higher number per week. Several students complained about incompetent teachers, which led many girls to dislike these subjects.

Vivi: In my opinion the whole system should be changed, because we have physics classes for two years, and the curriculum is weighed down in a concentrated form and not gradually. During the first year I understood almost everything and was good at it, but in the second year the complicated issues became dominant and I began to dislike and did not study it, just wanted to survive.

Insufficient grades

Girls may conclude from the messages coming from their societal environment that they are not so capable of performing well in technical fields as their male mates. As a consequence, girls' decision on career choice may much more significantly be based on how they perform and the grades they get in science classes.

Many of the students in the focus groups could not get five, the best mark in physics, and concluded that they would not be able to get into and perform well at technical academic programmes. This experience was an important factor explaining their decision of another programme instead of technology to study. Negative attitudes with science subjects became an obstacle for girls towards choosing academic programmes in technology or science.

Moderator: And for some of you is studying to be a mechanical or electrical engineer a real possibility?

Timi: It could be a possibility for me, but I will not apply to such places, because I know how important physics is for that, and if because of that I would be thrown out after the third day, then that would not be so good.

Behaviour of boys

Numerous female students stated that boys in classes behaved differently and received more attention from teachers. Boys were more loud and self-confident, and put more questions during classes. This kind of difference in the behaviour of girls and boys at secondary schools has also been shown in other countries (Catsambis, 1994).

Menyus: (The boys) have better logical thinking, are faster with the class work, … because they are more loud. They could be better, but do not pay attention. … In my opinion they are lazy to study.

Móni: They are more loud … and more confident, if they make a mistake, then well, it just runs off, does not bother them.

Moderator: And the girls?

Móni: They remain in silence (laughter).

Moderator: And whether why is it?

Móni: I rather prefer not to say, because it might be wrong. Finally we solve the exercise, and I think it is important to know whether it is good or not. I finally know, whether I understood.

Attitude of teachers

There were questions on the difference in attitudes towards boys and girls in the classes of real subjects.

Moderator: And there are opinions that boys are more encouraged …

Menyus: I do not think so.

Tündi: In my opinion the girls …

Natália: No, I think much more helpful, if you have any problem… If you seem attentive and want to do it, then (you will get a help).

Gender discrimination in the school was firmly rejected in two focus groups, and teachers' attitude towards students was owned to the level of diligence and cooperation. When girls asked for help, teachers usually were very ready to lend a hand and did not show a sign of negative gender stereotypes. However, in the stronger Budapest school girls found discrimination, but there was only one answer for the question of moderator.

Évi: … do not take it wrongly, but we originally were put in classes of lower level (in physics)… What I saw in physics class was that I think the teacher has the attitude that this is something the boys love and know well.

Other students seemed reluctant to make any gender-specific critical comment. The citation shows well how the conviction of a teacher operates as self-fulfilling prophecy: because of the teacher’s attitude girls may feel less confident, thus boys may think of themselves as more competent even with the same level of knowledge. Attitudes of some of the teachers can be very harmful from a gender perspective, because girls can have a feeling that they are supposed to be less good at some subjects than boys, thus becomes less self-assured.

Moderator: And do you see any difference with respect to teachers? How is their attitude towards boys ….?

Móni: They ask them all the time (laughter.)

The lower level of attention paid towards the girls might have the hidden message that the boys’ success is more important than that of girls. This may provide a basis for such attitude in the later phase of life that the professional advancement of women becomes subordinate. Our results as to the adverse experiences of the research subjects in science classes are largely similar with those of the national report discussed earlier, which had found that science education does not meet the needs of the students in secondary schools. Lack of the satisfaction of students at schools may also be entailed by the absence of gender-sensitive approach in education.

4.5. Role models for students

As seen from the above, students in the focus groups very rarely had female relatives or acquaintances in the field of technology, which could cause that they did not prefer technical studies or professions. Advertisements, books, TV programmes, and movies constantly show women in stereotypical representation. Majority of girls did not meet any woman who worked in technical fields and could have served as model in their choice of study. Some of the students knew only male engineer or IT expert.

Moderator: What do you think an IT expert do?

Tünde: My brother do similar things … he gets some objects or something like that, and has to do it in picture, in 3D …

Csilla: My father graduated as an engineer, and now he is an IT expert …

Models of female engineers and IT professionals were absent in the lives of female students, thus they might have felt that they should have choose girlish thing for living. Due to the fear that technical professions do not fit into the image of and social expectations about a woman, in fact they might not have been driven towards such fields.

4.6. Teachers' views and intervention

In secondary schools students' preferences for subjects and choice of career are greatly determined by teachers' way of teaching and attitudes. Teachers' views in the interviews reflected an extremely traditional approach to gender roles.

Science teachers stated that girls were hardworking, while boys clever, but lazy. Teachers detected significant differences in learning strategies by gender and evaluated them in a different way. Preciseness of girls was considered less positively than reflectiveness of boys.

Moderator: And the girls, why do they think that they do not choose (math in higher number)?

Teacher: In general girls are more diligent, and boys are more thoughtful… I can reach more with the average of boys than with the average of girls. Girls do everything precisely … but not every girl is thinking, but rather learns how to do. … The average of boys is very lazy in the class of math in higher number

Other opinions went further on with the explanation of differences. Gender differences were reasoned by biological characteristics and logical thinking was owned to boys. Besides, however, their habit to trimmer was also emphasized among the explaining factors.

Moderator: What do you see is there any difference in studying science subjects between girls and boys?

Teacher: Surely in my opinion. Technical subjects are boyish. More boyish subjects, more boyish professions, than the human. … (Boys)' thinking is more logical possibly, even if they might be lazier to study, but with brain, with brain they can get here …

Moderator: Do you see any difference in the study of math and physics?

Teacher: Girls study with diligence, there are very few clever girls, such very clever girl, who would have great idea … obviously they (boys and girls) have brain working differently, and boys rather have a feeling toward technology, they rather than girls trimmer in my opinion.

Even though many girls argued that the supposed "masculinity" of professions did not exercise any (negative) influence on their choice for study, their teachers were convinced that in fact it was an important issue in the case of both the girls and their parents. During the interviews teachers considered traditional gender stereotypes and gender roles as important reasons for that girls found difficult to reconcile work in technical fields and responsibilities at home.

Moderator: What do you think is there any difference in the (career) decision of boys and girls?

Teacher: Yes, they are impacted upon by their future role, the family, fortunately still every boy thinks that he will sustain the family some when, thus more important decision is to earn money…

Moderator: And the girls?

Teacher: For girls it is more simple, to become kindergarten teacher, hairdresser, or beautician, so there is a girlish profession, which they deal with anyway, and are happy to study… I think it is a little bit easier for girls. And there is no any breadwinner role. She works at most from 10 am till 5 pm.

Another teacher of math had a similar approach, but gave a more gender specific description in the answer.

Moderator: Why do not girls choose a career in technology? Why do they go elsewhere?

Teacher:… Maybe they know that this is a form of life, they know somehow unconsciously that this does not fit into their femininity, or female role.

Moderator: And what do you see when the parents give advices is a factor of decision if the profession is considered boyish or girlish?

Teacher: Surely… I think it is also a tradition, an unsaid viewpoint that girls have to care about the family, his husband, to bear all the consequences of leading a household …

Secondary school teachers underlined that female students knew about the biases against women in technical professions and consequently about a much higher level of women's performance necessary to be accepted like men.

Teacher: If we think about (we know) a woman needs to perform much better in technical field in order that her achievement get acknowledged. Is not such the society?... For a woman to live in a profession dominated by men she must have a very high level of knowledge.

Moderator: Does that have an impact on girls?

Teacher: Of course. … After a while the girl thinks that whatever she does her brain is not like that of that boy. … So she looks upon the boy in this aspect.

That same teacher had gender stereotypical attitudes toward female students, even if she was aware of the unwanted impacts of them. Her students said that they were automatically put in the weaker group of math. The teacher's confidence about the better performance of boys in math works as self-fulfilling prophecy:

girls are considered less creative, thus they get less exciting tasks in the classes, and consequently there is no chance for independent work and great ideas.

Teachers in the interviews emphasized that girls who applied for technical higher education programmes always were in an exceptional situation: their (one of) parents worked in the field of engineering or science and served as model(s) during making decision about higher education.

Moderator: And what about those three girls?

Teacher: Their parents are engineers, or math teacher, that is they have scientist background. They have at home the burden, the orientation in their genes, so they were in a special situation.

On the question of the moderator teachers had various suggestions as to how to increase the number of girls applying to technical fields. Increasing the self-confidence of girls was the own suggestion of a teacher, but the idea to invite successful engineers to talk about their own career to girls was proposed by the moderator, and positively accepted by teachers.

Moderator: And how would it be possible to make this (technical career) attractive (for girls)?

Teacher: … to live and to get on is more difficult as a woman everywhere … So the self-confidence of girls should continuously be strengthened, because boys have much higher self-confidence. By the time girls get here, inferiority has already been evolved within them. … (they may think) I cannot do that anyway, I am a girl.

Moderator: And what if successful engineers gave lectures to girls? Would it impact on them?

Teacher: Of course it would impact on them. Before we had similar event, the day of student biologist … so many scientists come and we can realize that the interest is a little bit increased (towards that field).

Summarising the discussions of interviews, one may have the feeling that the cause of that most girls are not targeting technical fields despite having talent and knowledge in maths (and physics), rather lies in the opinion and pressure from their social environment than in their own interest and diligence.

5. Girls' opinions to make technical programmes more attractive

An important part of our research concerned the question what means could be utilized to potentially get more girls to apply to technology academic programmes.

The last part of focus groups with female students dealt with the issue. The significance of the topic is indicated well by that even students in the group studying math in a higher number neglected technical field as an objective of further study to a great extent.

Students showed enthusiasm about the possibilities to acquire personal experience in engineering or meet with engineers or technical students. They would have preferred taking part in the programmes of open days at universities, listening to lectures by successful women engineers or IT experts, taking part in the programmes of Girls' day, or hearing about experiences of alumni students who studied in higher technical education. Interviewees did not appreciate impersonal ways of getting information, such as poster advertising of academic programmes in secondary schools.

Elimination of lack of knowledge

The first cluster of suggestions referred to the elimination of ignorance caused by the lack of information. Students in the interviews underlined the particular importance of greater knowledge of the opportunities in technical higher education and technical professions for female students. They mentioned various forms of giving information, particularly open day in higher education and concerning this the emphasis was placed on that it should take a day.

Mazsi: For a girl, as we think through things and we are more level-headed, there is a need for not an hour or 1,5 hour long information, but for a day long one.

As participation in an open day might be problematic for students in the countryside, they preferred a lecture in the organization of school. A successful female engineer or IT expert was thought to be ideal for such an event.

Lilla: There is really a woman or more women in a profession, and then they come and tell that it is really not that bad for girls either.

In two groups of students Girls' day spontaneously came as an idea.

Lilla: An open day is I think an important possibility,… so that girls can go to a workplace and look around. If there could be workers there designated, each of them let's say to three students and they show the girls around, they try to work together. I think it is really important for the girls to see what these people actually do, how this and that work...

Students considered important to know about material requirements and performance expected in order to reduce the extent of anxiety. In this aspect introductory class was mentioned as useful.

Panna: Examination should not be shown as failure, because the first thing to hear about technology fields that how many people fell out … success experience means a lot for a person.

Mentor program

Girls, who were unsure about their choice of technical or other fields, would have found a good solution to meet a mentor from a university to get advices on various professions. In such favourable situation they would have been more likely to decide on livings in engineering or IT. The idea of a mentor program was received by enthusiasm.

Anikó: It would be a great security if we had a thought that all the time there is somebody, a safe point, a person, who helps and gives advices …

Fellowship

Due to the different social background, students' groups had different opinion on the possibility of getting a stipendium. Those living with divorced parents considered financial incentives and state allowance as very influencing factor. Sensitivity could be detected towards students with severe financial needs.

Móni: … they in the eighth district (within difficult financial circumstances) may have other opinion (that they need a fellowship), because they might not have family background like ours, let us say, because they would need fellowship very much.

Girls' school

There was a strong opinion, without saying examples that teaching methods in technical fields should be modified in order that technical professions fit in the interests of and get attractive for girls.

Moderator: And in your opinion is there anything that would help encourage girls in real subject?

Ibolya: There could be a girls' secondary school with superb teaching methods, where girls can get a very good level of education of math, physics, and they get into university and show (what they know) to the boys.

Interdisciplinary education

This concept received uniformly positive welcome in all the three groups. Moreover, pairing of technical majors with others appeared spontaneously in the talks. The most popular pairs were economic informatics and media technology, the latter was thought to be more creative than the other technical majors.

Bettina: The media is the closest to us, because of every day is not it, and also surrounds us.

Opinions of our research subjects indicated that girls would be more interested in technical academic programmes, if they were combined with other non-technical fields. Research in other country discussed above also showed how starting interdisciplinary academic programmes can be useful to get more girls to apply.

Conclusions

The views of female students and their teachers of secondary schools in our research are strongly influenced by gendered beliefs, i.e. cultural beliefs about gender that define the distinguishing characteristics of men and women and how they are expected to behave. These gender beliefs work in our topic of research as cultural rules or instructions for coordinating the interest and career choice of students towards traditional fields. Teachers' behaviour in science classes and thinking about the performance of their students are prejudiced according to the relevant content of gender. Girls are praised for diligence and boys' thinking is acclaimed as creative. Such attitude of teachers has long-lasting consequences not only for the career choice and thus the lives of students, but, from a broader perspective also for the (unchanged) gender structure of the various segments of labour market. It may support gender segregation of jobs and contribute to that there will not be an increase in the number of men in women-dominated fields and in the number of women in men-dominated fields. Cultural beliefs about gender have self-fulfilling effects on perceptions and behaviours that give them a remarkable ability to persist. Attitudes by teachers may strengthen the gender-biased self-estimates of ability of students. Girls more easily may decline to choose technical fields, while boys may persist at them in the face of difficulties.

It would be significant to understand the consequences of gender beliefs in order to decrease gender inequality. As to our research topic, widening the potential scope of talented applicants and meeting the demands of the private sector for a higher number of female engineers and IT professionals can be attained by attracting more girls into technology. Workforce in the fields of science, technology, engineering or math is crucial to the future's innovative capacity and global competitiveness. Women are vastly underrepresented in such jobs despite their large presence in the labour market. As a way to attain changes in the gender ratio of people involved in STEM fields, female students indicated their enthusiasm towards interdisciplinary education, such a media technology. To change the gender stereotypical thinking, persistent accumulation of everyday challenges to this system of beliefs would be needed that can greatly be supported by steps such as provisions of gender-sensitization courses for secondary school teachers.

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Factors influencing the rational production in the Hungarian agriculture

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Abstract: How is it possible that the Hungarian agriculture is not competitive, despite the fact that the country has great geographic features, favourable position and there are many farmers who have decades of experience in the agriculture industry? What are the external influences in the agrarian sector, which could contribute to meet the needs of production and consumption? What are the factors that will help to contribute to competitiveness and to exploit the potential of the Common Agricultural Policy –announced in November- for the period after 2020?

Keywords: rational, agriculture, assistance, precision agriculture, environmental agriculture

1. Hungarian agriculture

There are many factors influencing the agricultural production of a country, whether it is about the forecast of population growth, sustainable development or meeting customer needs (Tresó [2017]). The latitude of the post-2020 agricultural policy will be determined by many external circumstances and unforeseen processes such as the migrant crisis, the Transatlantic Free Trade Partnership or Brexit. [44] Some views show that the reimbursement of subsidies will remain for the 2028 cycle for farmers. There is a need for a radical change in the way of thinking, so that the options of support do not define the direction of development. It is necessary to make sure that, by abolishing subsidies, the individuals of the agricul-

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44 Source: https://www.agronaplo.hu/szakfolyoirat/2016/09/szantofold/jo-uton-haladunk 2016.09.06, downloads: 02.10.2017, Dr. Máhr András, Fórián Zoltán, Tresó István, Hollósi Dávid, Dr. Kapronczai István, Dr. Weisz Miklós, Novák László, Dr. Popp József, Dr. Feldman Zsolt

tural sector operate on a competitive basis (Fórián [2017]) [45]. The termination of subsidies will revaluate the institutions that have reclaimed their results, sacrificed money on developments and acquiring expertise. The transformation of the support system is expected in the future, where the structure of the economy, market goals, investments and cost planning are more rational; the age of knowledge-based agriculture can come now (Hollósi [2017]). [46]

2. Material and Method

According to capitalism the goal of industrialized agriculture is the profit like in all industry. This means that to work with as few uncertainties as possible, and to simplify the production (Krajner [2005])[47].

However, the agriculture means much more than production. There are far more unpredictable factors in the agriculture than in any other industry which makes it difficult to make rational decisions. The risks could be reduced by adaption and consideration of position, but no rational decision can be made in the agricultural sector. In this study I try to present which factors affecting the agricultural production and consumer behaviour with relying on the KSH's public statistical timeline. Is the Hungarian agriculture sustainable? In my opinion in the present circumstances, not for long. This study is looking for answers which are those external influences that could make the activity of this sector more predictable; which are those factors that should be accounted for in order to be competitive.

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45 Source: https://www.agronaplo.hu/szakfolyoirat/2016/09/szantofold/jo-uton-haladunk 06.09.2016., Fórián Zoltán, downloads: 02.10.2017.

46 Source: https://www.agronaplo.hu/szakfolyoirat/2016/09/szantofold/jo-uton-haladunk 06.09.2016, Hollósi Dávid, downloads: 02.10.2017.

47 Source: http://www.napkut.hu/naput_2005/2005_02/098.htm, downloads: 13.09.2017.

3. Factors influencing production

Looking at any business sector, production is driven by a number of influencing factors in the background. Examining national conditions, the impact of global phenomena on agrarian issues, such as population growth and global warming, cannot be ignored; at the same time, consumer behaviour has to be considered, which are often motivated by fashion trends, the media and not the actual needs.

3.1. Impact of population growth

According to forecasts the aging of society will take on such dimensions that the number of individuals over 60 will be doubled in 35 years. The Earth's overpopulation will result in the fact the 34% more consumers will be need to provide with food. Agriculture is facing enormous challenges, with the next generation estimated to increase food production by at least seventy percent, which, moreover, needs to be achieved by using roughly the same amount of land and less water.

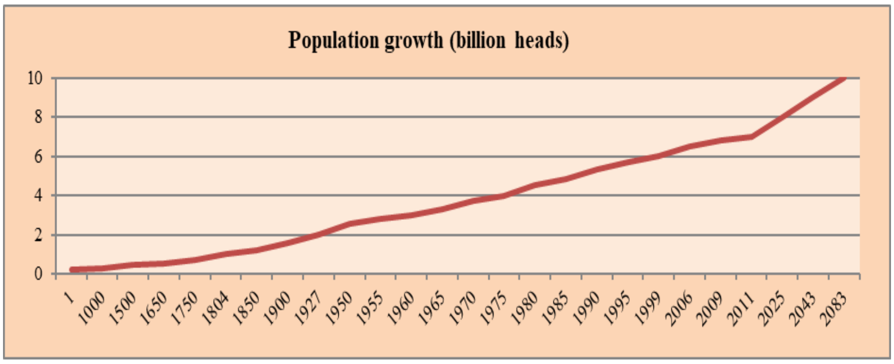

Figure 1.
Prognosis of population growth
source: https://www.thoughtco.com/current-world-population-1435270, downloads: 27.09.2017. Self-editing

3.2. Consumer behaviour

Due to fashion trends and the media, sometimes the consumer behaviour is not driven by real needs. Nowadays it is trendy or even expected to be healthy, but healthy eating can't be afforded by everyone. According to statistical data, some improvements have been made in the Hungarian population's diet, as there is a slight decrease in the consumption of high carbohydrate meal and sugar-containing foods, while growth in the consumption of high-fibre vegetables, fruits and meats can be observed. Improvement of Hungarian consumer behaviour could be the result of the changes in income.

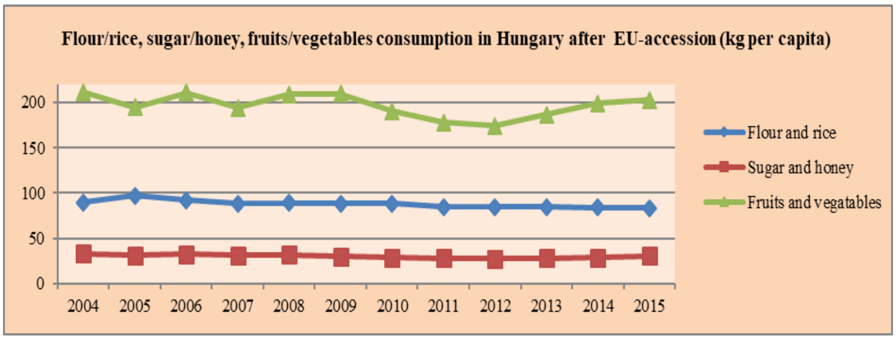

Figure 2.
Flour/rice, sugar/honey, fruits/vegetables consumption in Hungary after EU-accession (kg per capita)
source: by KSH data, compiled by the author

According to forecasts the meat consumption needs (22 kg/person in 1960, 42 kg/person in 2015 and 20 kg to 52 kg/person in 2050) will increase the forage therefore we need to aim for precision agriculture (Vöő [2017]).[48]

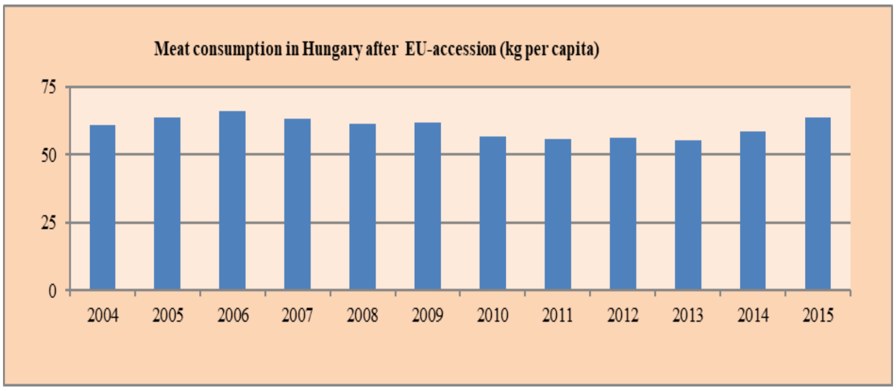

Figure 3.
Meat consumption in Hungary after EU-accession (kg per capital),
source: by KSH data, compiled by the author

At national level the demand is growing for markets; the farmers need opportunity to sell their products and costumers are looking for good quality, local products.

48 Source: http://magyarhirlap.hu/cikk/91103/Drasztikusan_megugrik__a_husfogyasztas, 2017.06.22, downloads: 19.09.2017.

The number of markets was below 100 before 2010; apparently there are 280 now and their number is increasing.

3.3. The problem of global warming, sustainable agriculture

Only a limited amount of land and water are available for the increased demands. Due to global warming and the growing of air pollution, healthy and sustainable meals must be sought, but only 1/5 of the Hungarian population are willing to do so. The importance of organic farming is growing all over the world, and the size of these areas has doubled since 2000.

Most domestic experts and politicians also agree that only a sustainable agricultural model can ensure the development of the agricultural economy, which guarantees the preservation of nature and the environment, and helps the rural population's livelihood, create jobs in the countryside and guarantee the safe food supply (Nemes [2017])[49].
Organic farming is a type of farming that uses environmental-friendly, traditional biological and mechanical methods which limits the use of substances and technologies (pesticides, fertilizers, genetic modifications) that could be a threat to the environment and health.[50]

The organic farming includes all agricultural systems, which are environmentally, socially, economically sustainable and provide healthy products and food. Protects the soil fertility which is the key to successful farming. It focuses on the natural balance of plants, animals and soil, and aims to improve the quality of agriculture and the environment. It significantly reduces the intake of external resources, refrain from the use of synthetic fertilizers and pesticides. It lets the nature do the job to ensure of the growth of yield and resistivity.[51]

Today many countries regulate the conditions of organic farming. According to EUROSTAT data, approximately half of the European countries are involved in agricultural areas above the EU average.

49 Source: https://www.agrarunio.hu/index.php/hirek/2941-versenykepes-de-fenntarthato-legyen, Nemes Gyöngyi 2017, downloads: 04.09.2017.

50 Source:KSH, 28.05.2009., The World of Organic Agriculture Statistics and Emerging Trends, 2006, 2007, 2008; IFOAM, International Federation of Organic Agriculture Movements; FIBL, Survey; www. organic-world.net; www.biokultura.org., downloads: 09.08.2017.

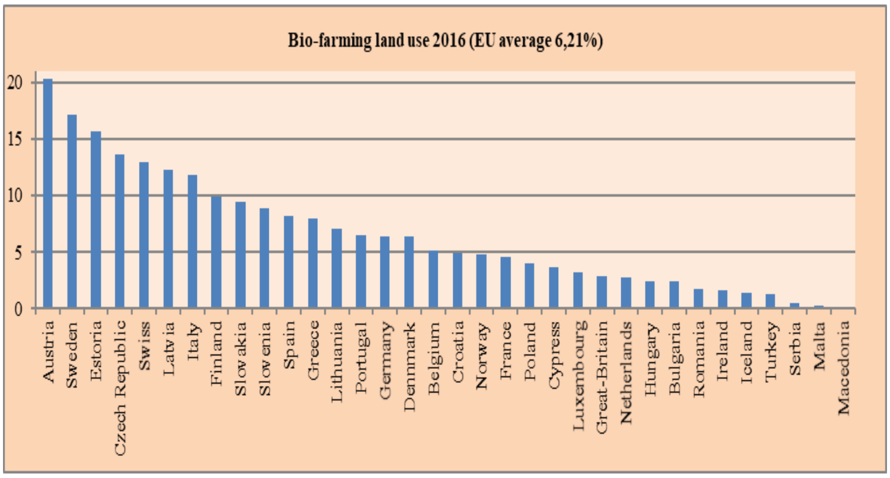

Figure 4.
Attendance in bio-farming in Europe – 2016
source: KSH data, compiled by the author

Austria, Sweden, Estonia, the Czech Republic, Switzerland, Latvia and Italy are at the leaders in organic farming, while Romania, Ireland, Iceland, Turkey, Serbia, Malta and Macedonia don't even achieve a 2%.

The EU's organic area has already reached 22% of the world's organic lands in 2007; 2.1% of the Hungarian agricultural lands was organic farming[52]. According to available statistics, in Hungary the number of farmers participating in organic production is increased by 15 times from 1995 until joining the EU, and more than doubled from the accession to 2016. The size of the agricultural land involved in organic farming increased by more than 15 times before accession, and nearly one and a half times after accession, but this value is still well under the EU average.

51 Source: http://www.ifoam.bio/en/organic-landmarks/definition-organic-agriculture, downloads: 27.09.2017.

52 Source: KSH 28.05.2009., The World of Organic Agriculture Statistics and Emerging Trends, 2006, 2007, 2008; IFOAM, International Federation of Organic Agriculture Movements; FIBL, Survey; www. organic-world.net; www.biokultura.org., downloads: 09.08.2017.

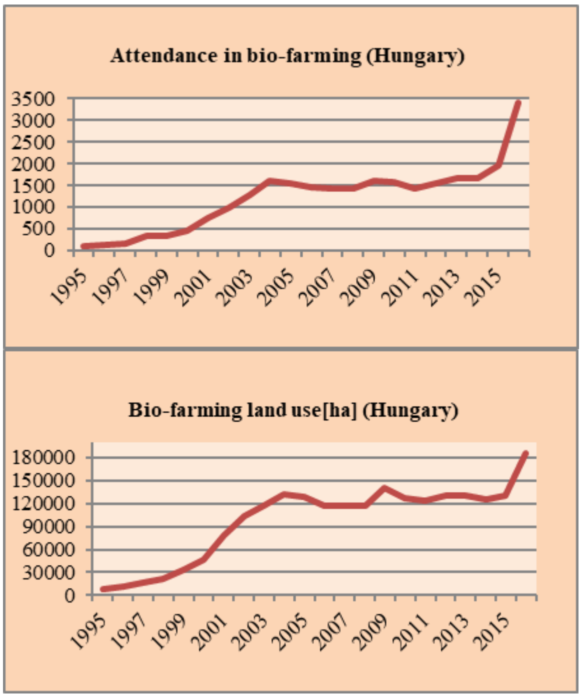

Figure 6.
source: KSH compiled by the author

Our nutrition and food choice is influenced by many other factors, such as the physical availability of the food, the price, personal preferences and taste, family traditions, and social culture, besides the environmental aspects and the impact on our health[53].

3.4. Impact of the state and of the European Union

3.4.1. Involvement of the state

As future food production needs to be increased, politics has highlighted the incentive of technological developments in Hungarian vegetable and fruit

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[53] Source: https://www.agrarszektor.hu/agrotechnologia/ot_trend_ami_a_mezogazdasag_jovojet_alakitja_ne_maradj_le_rola.7991.html, 2017.07.28, downloads: 10.08.2017.

production, the strengthening of expertise and the protection from weather extremes.

Experts consider it important to increase the competitiveness of the processing industry, to reduce labour shortages and to improve market transparency. 2016 and 2017 have brought positive changes in the consumption of meat in Hungary with a significant impact on the reduction of the VAT of pork in 2016 and the VAT of poultry meat in 2017. According to experts, the impact of the VAT reduction could be measurable in the pig sector and has beneficial effects on the economic environment as the affected areas have been whitewashed[54]. In addition to reducing the VAT, the Chinese government's foreign trade negotiations have also proved to increase the food production. Among the countries in the region, Hungary has the most product accreditation for the Chinese market and negotiations are being made that Hungary would be the logistical base for food export to China. According to the Agricultural Research Institute (AKI), total Chinese agricultural exports expanded 14 times between 2010 and 2016, but the total turnover of 22.8 billion forints last year was only nearly 1% of the total Hungarian food exports of 2400 billion forints[55].

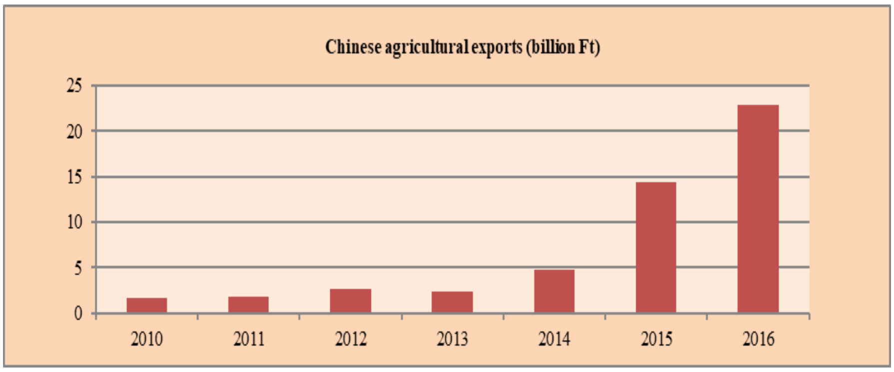

Figure 7.
Chinese agricultural exports, compiled by the author,
(source: https://www.agrarszektor.hu/elemiszerpiac/kozel_1500-szor_tobb_magyar_serteshust_vesznek_a_kinaiak.8673.html)

54 Source: http://www.onlinekassza.hu/NAV-hirek/az-elelmiszerek-afajanak-csokkentese-mintegy-50-60-ezer-forint-megtakaritast-jelent-a-csaladoknak.html, 2017.08.08., downloads: 05.10.2017.

55 Source: https://www.agrarszektor.hu/elemiszerpiac/kozel_1500-szor_tobb_magyar_serteshust_vesznek_a_kinaiak.8673.html, downloads: 05.10.2017.

3.4.2. Hungary and the Common Agricultural Policy

Considering the futures of the Common Agricultural Policy, experts of agree that after 2020 the support system is still needed, otherwise the majority of domestic farmers will not be able to sustain themselves[56]. Every business should work and develop its own well-designed and deliberate strategy, which is built on future decades rather than on economic policy cycles. Going into non-compliant directions only because subsidies are available, not favourable (Tresó [2017]). Overall, the future transformation of the support system is expected, where the structure of the economy, market goals, investments and cost planning are more rational, the age of knowledge-based agriculture can come now (Hollósi [2017]). Some views show that the reimbursement of subsidies will remain for the 2028 cycle for farmers. There is a need for a radical change in the way of thinking, so that the options of support do not define the direction of development. It is necessary to make sure that, by abolishing subsidies, the individuals of the agricultural sector operate on a competitive basis (Fórián [2017]).

In order to change the way of thinking, there has been a recent announcement on several fronts that "anyone who wishes to use subsidies only to develop and manage, should think over his or her financial future. Hungarian agriculture had to stay on the ground even when no EU aid was available and should remain on the ground even if this type of EU aid is no longer available[57]."

3.4.3. The Common Agricultural Policy and the development of agriculture

Regarding to the latest tender cycle, we are only talking about plans for the time being. It is expected that a new CAP will be presented in November. On the forum of professionals, the EU agricultural commissioner stated that two important elements of the new concept could be the precision farming and water resource management. The Common Agricultural Policy is expected to allow farmers to produce more by using less resources after 2020, thereby reducing environmental impacts. However, critics are uncertain about the availability of technology as one third of EU farmers are 65 or older and have no digital skills. The other issue of precision farming is affordability.

Not all farmers can afford to adapt to this technology. The machines are expensive and require great economies of scale to use them. On the other hand, European

56 Source: https://www.agronaplo.hu/szakfolyoirat/2016/09/szantofold/jo-uton-haladunk, 06.09.2016., downloads: 02.10.2017.

57 Source: https://www.agrarszektor.hu/agrarvidek/lazar-gondolkozzon-el-aki-csak-palyazati-penzre-var.8941.html, downloads: 04.10.2017.

agriculture consists of small or very small farms, which are often unable to provide viable income to farmers. For more efficient use of resources in agriculture, robots for the use of water meters, plant growth monitoring sensors, and drones plant pathogens may be spread58. The development of irrigation management can be a breakthrough for farmers. Hungary's position is that the spread of water-efficient and efficient technologies in Europe can ensure that sustainable development goals are met. Our country also urges the development of drought monitoring and drought warning systems to increase the safety of agricultural production[59].

3.5. Competitiveness and innovation

Competitive and sustainable agrarian business can be achieved if the innovation is greater, if we have the expertise needed, and the sector could develop by these investments. According to some experts, agricultural output could increase considerably if the industry would produce quality vegetable, reduce costs, increase economic efficiency, in addition to land and environmental protection, so to precision farming (Nemes [2017]) [60]. It was reported on a conference that thanks to agricultural subsidies, the profitability of Hungarian agriculture has improved in recent years, the situation of farmers was stabilised with the resources[61]. Most of the farmers 52% would seek for technical improvements, 36% would increase farm size, and 23% plan to improve the technological level of production in the next year.

Overall, 68 percent of the respondents would develop, 28 percent would stay on the same level, and 4 percent would forfeit. The aim of the investments is to show that in the majority of respondents would take out human resources and reduce its dependence on it to the future. Based on the results of the survey, the number of those increasing who will implement their planned investment irrespective of the application results. 51% of the respondents would apply for agricultural aid in the

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58 Source: https://www.agrarszektor.hu/europai-unio/phil-hogan-ket-uj-irany-johet-az-unios-penzosztasban.8989.html, 2017.10.03., downloads: 04.10.2017.

59 Source: https://www.agrarszektor.hu/agrotechnologia/a-zoldites-8222-eroltetese-8221-nem-mehet-a-gazdak-profitjanak-rovasara.7603.html, 2017.06.16, downloads: 03.10.2017.

60 Source: https://www.agrarunio.hu/index.php/hirek/2941-versenykepes-de-fenntarthato-legyen, Gyöngyi Nemes 2017, downloads: 04.09.2017.

61 Source:https://www.agroinform.hu/gazdasag/az-agrariumban-is-kozeppontba-kerul-a-munkahelyteremtes-33684-001, 2017.08.06, downloads: 10.08.2017.

next year and more than one third, 36%, will count on reimbursed subsidies (Fórián [2017]) [62]. It can be a major problem that over the next ten years a large number of older farmers are expected to leave the industry, while young and skilled workers are not attracted by the agricultural sector due to low incomes and prestige.

In order to increase the competitiveness and production efficiency of the Hungarian agriculture, technological upgrading is also essential, which urges the qualified labour; hence the use of new tools and technologies requires the necessary expertise[63].

The economic performance of the countries is significantly determined by the level of technology used, as the output is largely determined by the efficiency of the use of available resources, alongside with the capital and labour growth. This is the so-called total factor productivity (TFP), indicating the combined effect of technological development, human capital education level, increasing efficiency and economies of scale. The performance of agriculture is largely determined by the efficient use of available resources. The condition is the training of human resources, the optimization of economies of scale, technological progress and increasing of efficiency. Over the last 10 years, Hungary has been far behind the EU average. In the EU agricultural sector TFP increased with an average of 0.8% per annum between 2005 and 2015, while in Hungary roughly half of it, by about 0.4%. Compared to this, the Baltic States and Romania's agriculture produced an annual growth of 2-4% (Tresó [2017]).

The spread of new technologies is a relatively slow process, as both companies and employees need time to adapt to and learn the technology, and this happens in a very different pace in different industries. The renewal process is relatively slow in agriculture. This is caused by several things. On one hand, the development of technology is a research-demanding task, requiring increased R & D expenditures. On the other hand, traditional-based management is not enough to apply new

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[62] Source: https://www.agrarszektor.hu/agrarpenzugyek/sokan_beruhaznanak_ha_megnyerik_a_vart_tamogatasokat.8413.html, 03.08.2017., Zoltán Fórián, downloads: 10.08.2017.

63 Source: https://www.agrarszektor.hu/agrotechnologia/ot_trend_ami_a_mezogazdasag_jovojet_alakitja_ne_maradj_le_rola.7991.html, 28.07.2017., downloads: 10.08.2017.

technologies, it also needs adequate expertise, but only 20-40% of the EU farmers are willing to spend on training (Popp [2017]) [64].

According to analysts, Hungary does not to exploit its potentials, which would allow a quantitative and qualitative increase in production and exports, although this would be needed to strengthen agricultural trade. The export of higher processed products should be placed in the forefront, as products of lower added value and lower processing remain predominant in the Hungarian agricultural export. The export volume of high processed products needs to be increased to be able to strengthen the Hungarian agricultural trade and new target markets have to be identified.

According to analyses in the sector, the Hungarian food economy has the largest potential market expansion opportunities in the Western Balkans region. This is explained by the relatively small transport distance, the similar consumer taste, and that the countries here almost without exemption are net importers of food and will join the European Union in medium term. It is a general experience that there is a significant increase in the import between the EU members, which Hungary should be able to use. According to statistical data 31% of agricultural products and food exports were unprocessed products and 30% were primary processed products in 2016 whereas the ratio of secondary processed products was 39%. This export product structure could seriously hamper the successful, extensive sales on target markets. Inexpensive, unprocessed products can only be transported at a relatively small distance, a high ratio of them increase their vulnerability as the supplier of such homogeneous products can easily be replaced at any time. At the same time the secondarily processed products are dominant in the case of Hungary. Apparently 87% of the agricultural trade turnover is contracted between the EU countries and Hungary. The five largest export markets - Germany, Romania, Italy, Austria and Slovakia - together shares 51% of the total agricultural export[65].

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[64] Source: https://www.kh.hu/csoport/sajto/-/sajtohir/hatekonysagnoveles-az-agrariumban-felzarkozunk-vagy-lemaradunk-, K&H news 08.08.2017., downloads: 0.08.2017., https://www.agroinform.hu/gazdasag/van-hova-fejlodnie-a-magyar-mezogazdasagnak-33699-001 2017.08.08, downloads: 10.08.2017.

65 Source: https://www.agrarszektor.hu/agrarpenzugyek/csanyiek-mar-latjak-mit-kell-tenni-az-agrariumban.8115.html, 07.07.2017., downloads: 04.10.2017.

4. Summary

Hungarian agriculture has been developing in recent years thanks to modern technology and developments. Technological development, however, was not paired with economic rationality and did not follow the guidelines of the required growing size of industry of the so-called fashionable precision agricultural approaches. (Lazányi [1999, 2005]). Agriculture is a special industry with a lot of external influences that sometimes occur unexpectedly, so full rationalization is almost impossible. Weather is unpredictable, but can be adapted to.

The volume of high processed products needs to be increased, while the lower value-added products and low processed products dominate in the Hungarian agrarian export. The problem with precision farming is that not all farmers can afford to use technology. The machines are expensive and require great economies of scale to use them. On the other hand, European agriculture consists of small or very small farms, which are often unable to provide viable income to farmers.

The Common Agricultural Policy is expected to allow farmers to produce more products by using less resource, thereby reducing environmental impacts after 2020. The Hungarian agriculture is still not competitive, but if it wants to be, the change of way of thinking is needed in order to be able to handle the support as best as possible after 2020. Proper use of subsidies can help to make Hungarian agriculture a competitive sector on its own.

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[6] https://www.agrarszektor.hu/agrarpenzugyek/csanyiek-mar-latjak-mit-kell-tenni-az-agrariumban.8115.html, downloads: 2017.10.04.

[7] https://www.agrarszektor.hu/agrotechnologia/ot_trend_ami_a_mezogazdasag_jovojet_alakitja_ ne_maradj_le_rola.7991.html, 2017.07.28, downloads: 10.08.2017.

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[9] https://www.agrarszektor.hu/europai-unio/phil-hogan-ket-uj-irany-johet-az-unios-penzosztasban.8989.html, 2017.10.03., downloads: 04.10.2017.

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How do we choose our apps?

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Abstract:Mobile phones and applications are affecting almost every aspect of our lives including the way we think about our health and fitness. There are countless applications helping us keeping or tracing a healthier diet, helping us during workouts and tracking our sleeps. But how do we choose the apps we download? Do we consider design, functions or anything else? Do we consider safety as well? This article seeks the answers to these questions and the motives behind the usage of health and fitness apps based on focus group interviews.

1. Introduction, the era of mobile apps

Nowadays we can't imagine life without our smart phones and internet connection. Just looking at the statistics around us we can get an idea of how deeply the world is affected by this phenomenon. According to KSH, 89% of the Hungarian population used internet daily and there were 120 mobile subscriptions per 100 Hungarians in 2016. (KSH.hu, 2017) These numbers aren't different from the European Union's average, although if we consider the total population of the world, there are only 101 subscriptions per 100 people. (Worldometers, 2017) (Worldbank, 2017) These show that mobile technologies are important parts of our lives and can make a difference to them. Mobile phones can affect almost every aspect of our lives through apps. Apple's famous ad, „There's an app for that" describes this situation well. There are apps for almost every topic, problem of life. In 2017, March Android users were able to browse between 2.8 million apps, while Apple users could choose between 2.2 million apps. (Statista.com, 2017)

In 2016 there were more than 25 billion apps downloaded by iOS users and 90 billion by Android users, the total number of downloads is 149 billion, if we consider the rest of the app stores too. Forecasts show that we can expect a further jump in these numbers. Although we must note that studies show that users tend to delete those apps which they don't use daily (and there are a limited number of maximum 10 of these), so they probably delete a lot of these downloaded apps. (Dogtiev, 2017)

Considering popularity, in the App Store, lifestyle apps were the 4. most popular category with more than 8% share, health and fitness category reached only 3% in the 9. place on a 20-place list in 2017 October. (Statista.com, 2017) According to another study, Health and fitness apps reached 23% of the global Android mobile users this summer. The most popular categories, which reached most of the users were for example communication (99.4%), video players (96.7%) and social (95.2%). Lifestyle got 39.8%, sports 30.9%. (Statista.com, 2017) Before that by the end of 2015 according to a study, 15% of the global internet users accessed health and fitness apps monthly. (Statista.com, 2017) Health and fitness apps and sport related apps are among the fastest growing app categories, by 2016 the first increased by 18%, the latter by 43% compared to 2015. (Statista.com, 2017)

2. Health and fitness apps

What are these health and fitness apps that are so popular and still show growth? These are apps which aim to help users get fitter, loose, gain or maintain weight, stay motivated, keep track of their progress, diet, sport activity and get reminders too, so in short, they try to make users' lives easier and sometimes change their behavior too. (Although according to surveys most of these apps lose their users before they can have a long term impact on their lives. (Research2guidance, 2017)) There are apps also for more serious healthcare related topics, for example diabetes, which could help to make classic healthcare easier, more convenient and less expensive. The reason behind the popularity of these kind of apps nowadays is that there is a new segment of users which are concerned about healthy lifestyle and sustainability. There is also a trend of changing platforms, a few years ago this segment could be reached by written media and now they can be targeted through mobile devices too. (Reicher & Racz, 2012)

Let's have a closer look at the mHealth apps. In 2014, for example, among mHealth apps, fitness is the biggest category with a 30.9% share, medical reference is the second with 16.6%, wellness is the third with 15.5%, nutrition is the fourth with 7.4%. 28% of the users are people interested in health and fitness. (Research2guidance, 2017)

These apps are for different groups of customers. In 2016, the main users were chronically ill people (56%), and the health and fitness interested people (33%). The health app is getting crowded as well, there are more than 259000 apps which are available on the major app stores. The total downloads were 3.2 billion in 2016. 13% of the developers are small startups with 1-2 people which can also lead to a decline in quality. (research2guidance, 2016)

As the downloading growth is slowing from year to year (research2guidance, 2016) and as the quantity of the available apps grow, as we could already see, attracting customer's attention is key to success. How can we reach this? How customers choose from the vast amount of health and fitness apps, or in general, any apps? In the following sections we try to answer these questions.

3. How do we choose our apps? Focus group interviews

How do people choose an app to download? My assumption was that we choose considering four main factors, design, ratings, functions and permission requests. Naturally, users have some goal with the app they want to find, they have priorities and expectations but there are several things that can influence their decision too. There are top lists online or even in the app stores, there are reviews or recommendations from professionals, bloggers, users or from friends, colleagues of the users but we can get information also from currently used apps, websites or blogs too. Entering the app stores, we can also see ratings, reviews, screenshots and descriptions of the functions of certain apps we find.

To find answers to these questions and find out more about people from Y generation's attitude towards apps and health and fitness apps, we conducted a focus group survey concentrating on the assumptions (the above mentioned four main features). This is a qualitative method which gives the participants opportunity to reveal their deepest motives and thoughts about a certain topic. We selected three main categories and examined how they influence user's choice.

The total number of participants was 28, they were questioned in smaller groups. There were 6 women and 22 men which is an interesting split considering the kind of apps we were showing to them. In my opinion men are not the main target group for these apps, but this was it was easier to get unbiased opinions about their decision making this way, so this has its advantage too. The majority of the participants were in their 20s, which meant they are familiar with today's technology. From a previous study, we found out that these people are more likely to use apps and share data about themselves without concerns. (Szucs & Reicher, 2017)

As I mentioned, during the survey, we examined the effect of three main categories, the first one was design, looks and ratings, the second was functions and the third was permission requests the app is requesting. We chose 8 apps for the experiment, all of them are health and fitness related, 6 of them are good for diets and 2 of them are better for sport activities. These apps were chosen randomly, but the most populars in the stores and on blogs were amongst them. We only considered free apps and free functions as we assumed that the majority of users don't want to pay for their apps. (Later during the discussion, it turned out that there was only 1 participant who said that he would pay for an app if it offered better functions than a free app. The rest of the participants were all for free apps and said they wouldn't have considered buying applications.) At first, we had a conversation about the general app usage habits and the opinion about the health and fitness apps. As a second step, we showed the groups the 8 chosen apps, 3 screenshots per each and 2 ratings (for Android and iOS) and asked the participants to share which they would have chosen and why. After this, we showed them the functions of the apps and asked them again to choose one and give us an explanation. As a third step, we showed the requested permissions by the apps and asked them for a third time to choose one. The aim of asking the participants to choose 3 times was to identify the main influencer of their decision and to see if this decision is changed during the experiment. Some of the participants chose more than 1 app at a time, as they were not able to decide and we allowed this if they had reasons. (So sometimes the sum of the numbers won't match the number of participants.)

The presented apps were the following:

1. MyFitnessPal
2. Lose it! (See Picture 3.)
3. FatSecret
4. Yazio
5. MyNetDiary
6. Lifesum (See Picture 2.)
7. Endomondo (See Picture 1.)
8. Record (by Under Armour).

To keep the article easily readable and easy to take in, I will only include the screenshots of the apps which were chosen during the survey and will just describe the rest of the choices.

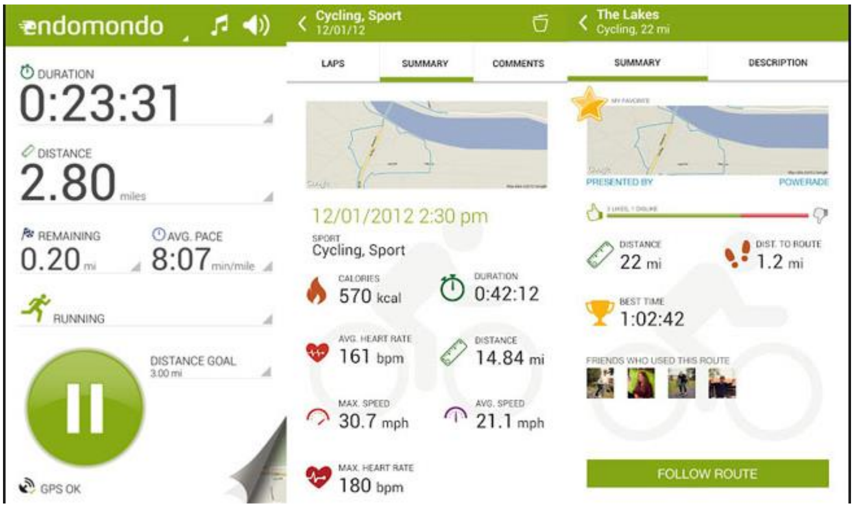
During the general discussion we found out that, of course, everybody is using mobile applications on a daily basis. The most popular reason was that the participants are using these for communication (for example WhatsApp, Viber or Messenger) and getting information, either by using Google, maps applications or by reading the news. As we asked them about the health and fitness apps, we found that not everybody is familiar with the term. Just asking them about the topic revealed that some of the respondents don't know these kind of apps, but after we gave a short explanation to them about the topic, it turned out that they actually use some of these without knowing that they belong to this category.

Let's have a look at the most popular app choices of the 8 for the first question when participants were asked to decide based on design and ratings. The table below shows the name (and number) of the app and the number of participants who chose them. (3 of the participants chose 2 apps for the first question.) We can see that the most popular ones were Endomondo, Lifesum and Lose it!. The pictures of these apps what were shown to the participants are also below. The ratings won't be shared because participants didn't consider these as influencers. They confirmed that they use recommendations and reviews but the ratings only matter when they are visibly not good and these apps were rated in both major app stores above 4 stars (out of 5).

Table 1.
Answers based on design and rating

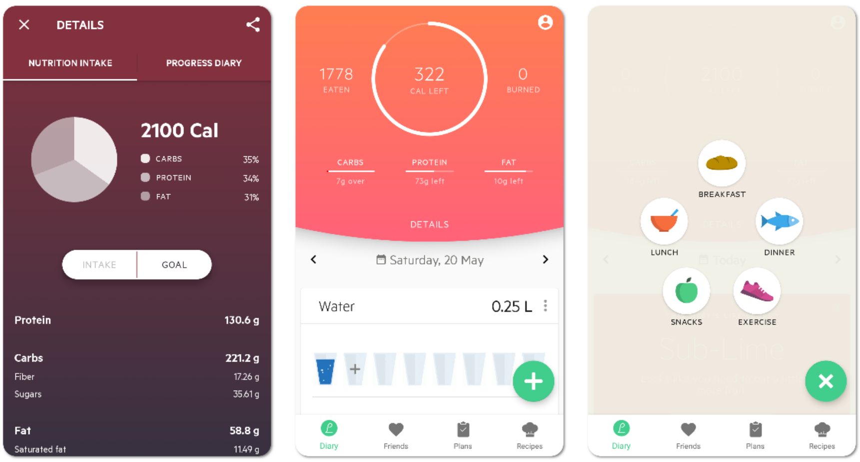
7. Endomondo	12
6. Lifesum	9
2. Lose it!	6
1. MyFitnessPal	1
4. Yazio	1
5. MyNetDiary	1
8. Record (by Under Armour)	1
3. FatSecret	0

The main arguments for Endomondo, the most popular app in this experiment, was that most of the participants know this app and are satisfied with it. (This shows that many people like to choose something they are already familiar with against new things.) They also highlighted that they can easily see the most important information on the screenshots and that it is easy to use based on them. The convincing green color and the design was also mentioned. According to many sources, green color reminds people of health, trust and nature, and because of this, it's a good choice of color for a sport activity tracker too in my opinion.

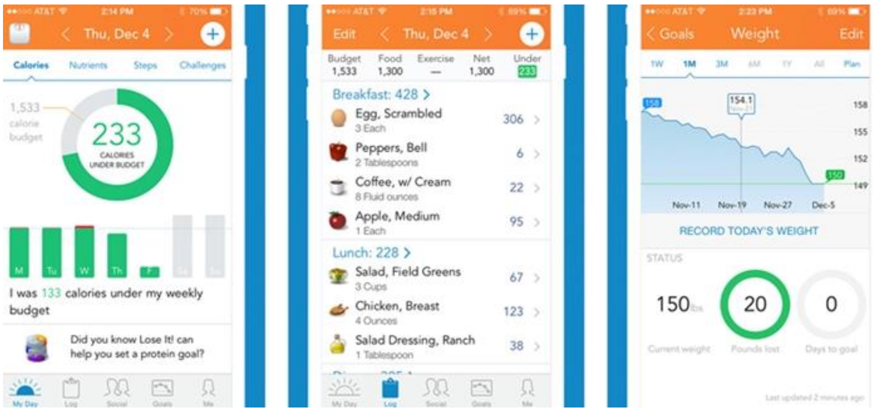


Picture 1 Screenshots from Endomondo app

In the case of the second most popular app, Lifesum, the elegant, minimalist and clean design was mentioned. The visibility of the most important information and that the app looks easy to use were also likeable. The purple color suggests elegance and quality, white suggests purity, balance and peace. These are also good choices for a lifestyle app. Loose it! app won participants with the graphs and diagrams, so in short data visualization. The colors weren’t mentioned this time, the clearly visible information was the key factor. The rest of the apps were chosen with the same reasons, (just by less participants), clearly visible data, easy to navigate and a known logo.



Picture 2 Screenshots from Lifesum apps



Picture 3 Screenshots from Lose it! app

In summary, we can see that design is important when we are trying to win a user. Customers like clean designs, pleasant colors, easily visible information and visualized data (graphs). As I already mentioned, participants reported that they didn't consider ratings during the focus group interviews.

At the second phase, participants were shown a table describing the free functions of the apps (for example see Table 2).

Table 2.
Table of functions

	Lose it!	Lifesum	Endomondo
Calorie need, goal setting	x	x	with MyFitnessPal
Calorie intake tracking	x	x	with MyFitnessPal
Macronutrients tracking		x	with MyFitnessPal
Tracking exercise, sport	x	x	x
Barcode scanner	x	?	with MyFitnessPal
Tracking progress	x	x	x
Sharing status	x	x	x
Blog with useful articles		x	with MyFitnessPal
Tracking water intake		x	with MyFitnessPal
Recipes		x	with MyFitnessPal
Reminders	x	x	x
Friends	x	x	x
Connection with other apps	x	x	x
General wellbeing tracker		x	
Challenges			x
Exercise materials			x
Sleep tracking			
Premium	x	x	x

Based on this, there were 2 winners, Lifesum and Endomondo, which were already popular based on design, Lose it! is also was the top 3, but with less votes. If we have a look at the entire table of functions, we can easily compare the apps and see that these have generally more functions than the rest. Now because the table is too big, I only include the top 3's here. I would highlight two factors, when considering Lifesum. One is that participants thought that this app covers more segments of life (sleep, exercise, water), so they liked when the app offered a holistic picture of their wellbeing, the other factor is that they like when one app can provide the functions and they don't have to download additional apps. Regarding Endomondo, participants mentioned again that they know the app and they like it, but apart from this, good functions were also brought up. They specially liked the GPS function and the many type of sport they could choose in the app. Participants who use this app said that they wouldn't mind downloading another apps for the missing functions (nutrition or sleep for example). Regarding Lose it! App, it was chosen by participants mainly because they thought it doesn't have unnecessary functions (which shows that quality is more important for them than quantity). Challenge function was also mentioned as a popular feature as a kind of motivational tool.

Table 3.
Answers based on functions

6. Lifesum	10
7. Endomondo	10
2. Lose it!	4
8. Record (by Under Armour)	3
1. MyFitnessPal	1
4. Yazio	1
3. FatSecret	0
5. MyNetDiary	0

I would like to mention that it's possible that the table itself influenced participants' decision as it shows a comparison. Most people like when they can get more for their "money", so they might have chosen apps which have more functions compared to others, even if they wouldn't need those if they had to search for apps to download for themselves in the first place. Another observation is that only 5 of the 28 participants changed their decision in the second phase, which means that once they saw the design, they were convinced and when the functions matched their expectations, they were confirmed in their decisions. The reasons behind the decision changes were either the realization that other apps have more functions which the respondent found useful or that they have less functions than expected.

Table 4.
Answers based on permission requests

7. Endomondo	10
6. Lifesum	6
3. FatSecret	5
2. Lose it!	3
8. Record (by Under Armour)	2
1. MyFitnessPal	1
4. Yazio	1
5. MyNetDiary	1

In the third phase, we showed participants the permissions the app is requesting when they are downloading or using them. (See Table 5.) The most popular apps in this round were Endomondo, Lifesum and FatSecret. The first two are not really surprising, some of the participants remained with their choice and weren't influenced by the permissions, they shared that they think these are understandable needs from the apps (so they can function better), so most of them don't mind these. Some of them didn't understand every request, they thought that for example sharing their media files or call logs seemed a bit risky. Others said that they weren't influenced by the requests because they can always say no to them, using only those functions of the app which they want to. The surprise of this round was FatSecret which had 0 votes in the first 2 rounds, which shows us that respondents were definitely biased by the table of comparison this time. The reasons behind these decisions were that this app requires the fewest permissions compared to other apps and this made respondents realize that they don't want to trade their personal data for functions. Some of the participants confirmed that if they download an app in real life, they also can be stopped by the permissions, but the majority of them shared that they didn't mind either accepting these permissions so they can use the apps' full potential or saying no to permissions they didn't agree with.

Table 5.
Permission requests of the apps

	FatSecret	**Lifesum**	**Endomondo**
In-App purchases			X
Contacts		X	X
Location (GPS)			X
Photos, media, files (read and write)	X	X	X
Camera		X	
Internet, Wifi	X	X	X
Bluetooth		X	

In summary, 10 of the 28 participants changed their mind during the interviews, which shows that each category plays an important role while providers try to win customers for their apps.

- Five participants chose the same app for question 1 and 2, then changed their decisions because of the permissions, which shows that they are more protective about their personal data and they would refuse to grant permissions for each function.

- Three participants chose 1 app based on design, then for them, functions were more important than looks so they chose another app and stayed with their decisions when they saw the permission request phase too.

- Two participants changed their mind in every round. In my opinion they were influenced by the experiment, choosing always the best app for them from the options.

The rest of the respondents stayed with their first decisions till the end of the experiment and they considered their decisions confirmed with every feature revealed.

Participants mentioned that they usually use their built-in health and fitness functions on their mobiles and seemed to think that those don't access their personal data (for example contacts and media files which were the major concerns amongst them). Opinions in general about these apps were mixed, some of the participants said that they think these apps are useful and can help them reaching their goals (if they already have the motivation) or track their progress easily, others thought they are a waste of time and reported that they would never use them.

4. Summary, findings

The main findings of the experiment were the following:

- Participants don't rely on ratings, they usually read the reviews and ask for opinions, they also like to experiment with the apps they download, they confirmed that they easily delete and download another apps they don't meet their expectations.

- Previous knowledge and existing good reputation can obviously also influence decisions and can convince people to download an app.

- Design and well-chosen screenshots are important when we are trying to convince a user. If data visualization (graphs, easily distinguishable information) and pleasant colors (suggesting the theme or the quality of the app) are visible, they are likely to win users.

- Functions play a great part in influencing customers when it comes to apps too, but they are tricky. Too many functions can be just as unattractive for users as not sufficient number of functions.

- Permission requests for the majority of the participants are not influencing factors, in many cases they were influenced because they were asked to consider this aspect too, but they reported that in real life, they don’t mind these (they sometimes say no to them though). Few of the participants however confirmed that they consider this aspect too when choosing an app.

- Users like to try apps and they delete them easily if their expectations aren’t met.

In summary, with this experiment, we now understand better how users choose between apps and what are their main concerns during the decision making. We would like to continue searching these motives in the future, perhaps in smaller groups so we can monitor the decision making more closely. It would be also interesting to research this topic from a behavioural perspective, many applications in this field as well, are trying to win customers with months of free trials which is also a way to convince them to download these apps.

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Innovative marketing strategy of a domestic small enterprise on the changing laboratory market

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Abstract: The topic of my thesis work is the analysis of the micro and macro environment of a small enterprise operating on the market of chemical laboratory technology related products and services as a distributor of international manufacturers, also analyzing its market opportunities and overviewing the possible and necessary actions to be taken to grow its market share. Starting my presentation with an overview on the company's history, followed by the STEEP analysis of the macro environment. I'll highlight the importance of the efficient delivery and service of the target market by the distributed laboratory products'. At the start of the company's operation the company had not diversed its product portfolio but solely focused its whole operation on trading as an exclusively authorized distributor of a well-known, significant Australian – American enterprise, a manufacturer of high-end laboratory-technological instruments. In the beginning of the new millennium, the represented manufacturer lagged far behind from its competitors as it negligated innovative technical development which lead to a serious loss of market share. A decade later the company merged with one of the largest international manufacturers.As the result of the fusion, the new holding had restructured its operation in order to increase efficiency. Overviewing the performance of the European distributors the newly merged international manufacturer had decided to reallocate the network of distributors. In conclusion the company lost its flagship partner at the end of 2010. Following this unfortunate situation the company started an unreasonable row of marketing actions without any conception or strategic planning. Soon it resulted in descending efficiency and loss of market share. Defining the alignment of changes below I'll identify the threats and opportunities of the external market environment as well as the internal strengths and weaknesses of the company using the frame of SWOT analysis, focusing on the new trend of laboratory centralization and the new demand of target groups. Concluding I'll determine the business goals in sake of the successful future market operation, such as *improving our market position, growing the market share, increasing our annual turnover. Providing a solution to the factors and problems discovered during the analysis process I will specify 3 strategic directions of growth, market and product development and diversification, for which I'll apply the Ansoff matrix used for portfolio analysis. In my proposal solution I'll point out a marketing action program with the help of the 4P model for the company's new strategic imperatives. Below I'll appoint the critical initiatives of the new market strategy in reflection of value added service key roles as scientific counselling, installation, training and continuous maintenance of laboratory instruments. The main goal is to provide excellent value added services to build up long term relationships with the partners based on mutual benefits and trust through highly educated cross-functionally skilled sales team. During the implementation of the new marketing strategy, activity effectiveness will be measured as well as continuous feedback on the terminated changes and results given, monitoring parallel the competition's activities performed on the market.*

Keyword: STEEP-analysis, macro- and micro environmental analysis, Porter 5 forces, SWOT-analysis, Ansoff-matrix, customer focus, releationship marketing

1. Background introduction

My study is the analysis of a domestic small enterprise operating on the market of laboratory supplying trading companies as the representative of international manufacturers. I will analyse the past and present macro and micro economic environment and will review the possible and necessary acts on focus of increasing its market share.

The reason I have chosen to research the laboratory market field that it is strongly effected by globalisation, innovative technology and turbulently variable environment. There had been a lot of changes since the so-called 'golden ages' by the scientists back in 1989-1990, right after the regime change where Small-Medium Hungarian Enterprises with expert knowledge of the laboratory equipments and devices, represented and distributed the well-known lab manufcturers producing excellent brand products solely. New tendencies are observable on the segment in the last 10 years, namely the significantly enhancing precense of multinational manufacturing companies setting up their affiliates in Central-East European countries as well to have their own office there. Also the increasing numbers of aquisitions among international manufacturers or merges by huge financial holdings with strong capital background. All of these newly formed merges led to the complete restructuring of our local lab market in a short term and could mean furtehr, real threath to the SME local companies. In my thesis work I reflect the above matter through a currantly operating small local company presenting in the market for more than 28 years. I introduce its market activities, position, present market share, weaknesses and strengths. My aim is to evolve a successful, long-term marketing strategies for stabilising local distributors' status for the future to be used as a solution method by all SME (Small-Medium Enterprise) in Hungary.

Evolving and sustaining the competitiveness of a small company crutially requires a strategic marketing plan containing a solid system of assets and approach which focusing on creating value to the customer.

Business marketing means the task of choosing, developing and keeping customer relations which serves the interest of both the vendor and the buyer by considering their properties resources technologies strategies and targets. [66] [3]

During their operation small companies present on the laboratory market have to encounter with countless specialities differing from the market of the consumer goods, such as:

- limited number of participants (both on vending and buying sides)
- long and complex purchasing processes
- decisions being made by groups, purchasing centres „buying centres"
- formalised contracted relationships
- absence in the continuity of demands, timely rigidity
- customers are mainly looking for a needed solution instead of a certain instrument (Why do you have to buy a drill? Cause you cannot buy a whole on the wall.)
- prices are being formed by quotations [1]

In the following I would like to present the operation and development of a small enterprise LAB-EX Ltd. by measuring its position on the laboratory market requiring very specific professional knowledge.

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1.1. Brief presentation of the company's history and activity

The firm was established right after the Hungarian regime change in 1990 by its owner relying on his decade experience on the domestic and international field and on his network of professional relationships. It was the very first company in the chemical analytical profession and became a market leader for a long time in Hungary. As the firm trading its products on a very specific area, the chemical laboratory market, where special knowledge required for the proper usage of the instruments, that is why deeply understanding the exact customer demands is essential in every department of the company.

The company was among the first few newly registered private enterprises in Hungary with its orientation and trading activity related to the chemical laboratory supplying sector.

In the first several years after the establishment the company was growing slowly, mainly relying on the formerly built supplier connection network consolidated by contracts laying down exclusive trading rights for the local territory.

When started its operation the company was the exclusive distributor of the American based company called VARIAN which fulfilled a worlwide acknowledged role in space research and after acquiring the Australian company CARY operating on the field of analytical spectroscopy it specialised to serve laboratories applying analytical spectroscopy instruments. In the profession CARY was one of the most well-known brands. Another brand, BECKMAN COULTER was and is eversince also a defining brand in laboratory innovation.

In the beginning period, just like in the masses of the newly opened small companies the whole personnel consisted of the owner executing the sales and its assistant dealing with the administrational duties.

After a few years of its foundation, starting from 1993-1994 due to the tenders released by the World Bank it became more and more strong on capital so the number of the employees started to increase steeply as well.

The booming growth made necessary to employ specialised professionals to serve the fastly extending part activities. Parallelly, the circle of the represented manufacturers also broadened. Currently the company is contracted to more than 40 foreign companies. As the products are traded on a professionally specified market to a rather narrow group of users, and laboratory devices requiring intensive customer support that is why user orientation is empathic in the whole organisation to ensure sustaining and stabilizing the company's market position.

The customer's demands are being completely satisfied by highly educated chemical and biological engineers working as representative category managers. The company is serving its clients by category management based sales system. Beyond the sales activities providing wide range of aftersales such as service, maintenance and with manufacturing cooperation organising professional fairs, exhibitions and seminars providing additional values to its clientele.

Since the foundation the firm is exclusively trading products of worldwide well-known, prestigious, long history manufacturers ensuring the quality without compromise. Its vision to potentially cover around 60 – 70 % of the profile of an average chemical laboratory with the supplied instruments.

During the 1990's the company kept its market leader position until the beginning of the 2000's when the forthcoming accession to the European Union growing number of affiliates of manufacturing companies with multinational background started their activities in Hungary. As a result of the market restructuring the company's market share began to decrease. When the company was founded in 1990 it built its operation on the exclusive representation of the American producing company VARIAN on the analytical spectroscopy market. The firm lacked the necessary scenarios leading to the future, a possible script for the further acts and the preparation of a comprehensive contingency plan. The initial stable advance on the market which ensured a strong position to the company throughout a decade, from the early 2000's was slowly consumed by the strengthening competition. Due to the competitors' continuous technoligical develoment so to the general growth of the economy, the company's product trading generated marginal utility decreased. In 2008 VARIAN itself was merged by AGILENT TECHNOLOGIES the independent analytical instrument division of Hewlett Packard Inc. and throughout Europe it reviewed the existing distributor network's activities to optimize effectiveness. After a two year research it restructured the reseller network in focus of enchancing productivity and effectiveness. The process resulted negatively to LAB-EX Ltd, in the end of 2010 it has lost the exclusive trading right of its original internationally known flagship manufacturing brand.

2. Analysing the company's external environment

The target of the strategic analysation is the exploration of the current position and state of the company which cannot exclude the examination of the external environment, the clientele and the internal environment.

The external environment surrounding the company is a complex and constantly changing system of connections. In the last two decades the revolutionary booming innovation of the informational technology has changed the key success factors of the industrial sectors many times.

The external environment can be broken down into four relevant level as follows:

- Global environment (world market trends);
- Macro environment;
- Environment of the industrial sector;
- Micro environment (direct market environment)[67] [4]

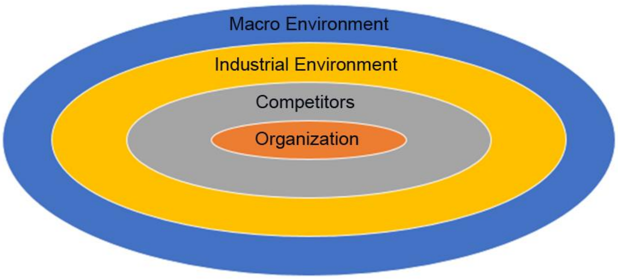

Figure 1.
Levels and analytical models of the external environment
Source: Balaton, Tari, 2014, 39

The purpose of the analysis is to sketch up the external effects influencing the products and the markets. We are examining the given factors how their presence affecting the marketing activity and when they are changing how the direction of marketing should be corrected.[68] [4]

67 Józsa L. (2014) Marketingstratégia, Akadémiai Kiadó, Budapest; page 43

68 Józsa L. (2014) Marketingstratégia, Akadémiai Kiadó, Budapest; page 47

2.1. International (Global) environment

As a result of the globalisation the production and development of the technologies of laboratory instruments started to boom on a level which has never been seen before in the last couple of decades. In regard of the compliance to the high requirements of the innovation technologies manufacturing companies was forced to fuse or to cooperate in focus of optimizing the allocation of their resources and to utilise those with the utmost effectivity.

Until the beginning of the 2000's the international laboratory market was represented by the products of the American and European manufacturers. After the millenium the emerging countries' (primarly China and Taiwan, Korea, India) presence became more and more intensive and their laboratory products are holding exceptional price value ratio.

2.2. Analysing the effects of the macro environment

In the following I'd like to present the environment surrounding the company with a STEEP analytical method. This will allow to map and recognise the external threats and possibilities and find out how to avoid or utilise those to evolve the adequate strategy to answer the environmental challenges. [8]

The STEEP model collects the elements of the macro environment into the following five groups:

- Social-,
- Technological-,
- Economic-,
- Ecologic and
- Political environment.

2.2.1. Social environment

The company is operating on the industrial market, within that in a rather narrow segment, the industrial chemical market where the customers' headcount can be estimated to some several thousand intstitutes and organisations. The consequences of the general trend on centralisation and consolidation of laboratories in the last decade resulted in the decreasing number of laboratories operating on govermental budget and it made suppliers to face completely new challenges. The limited number of market participants (mostly coming from the state institutes on public budgets) resulting strong market concentration in the segment.

2.2.2. Technological environment

The chemical laboratory industrial sector – due to the prior importancy of research and development – is defined by a very dynamic technological innovation combined with extremely high level of development. The more important technological novelties effecting incentively to the pace of economic growth. Long term consequences of innovation are cannot be always foreseen. The environment is characterised by high turbulence, the fast and unpredictable sequence of changes and therefore the shortened life cycle of products. The lowering obsolescence of machines and instruments generates more frequent replacement of the instrument park by more effective and more successful operational solutions which holds potential marketing possibilities. In this industrial sector the obsoleting velocity of technology is outstanding.

2.2.3. Economic environment

The profile of the organisation is highly exposed to the business cycle of the economy. Consequently to the prevailing state of business cycle the purchase of the instruments is being adjusted to investment and production cycles which resulting in the abscence of continuity of demand and timely rigidity. The clientele – mostly speaking about institute research laboratories operating on public budgets – disposing over strictly regulated previously determined budget so their demand is rather inflexible with low annual income. The purchasing of the instruments are defined by long and complex bureaucratic processes with a strictly formal quoting system, council decesion making, multi-level hardly transparent subtle purchasing centres. „Buying Centres” are passing through the finally selected suppliers which makes the selling process extremely difficult.

The global financial and economic crisis in 2008-2009 significantly set back the growth in the industrial sector furthermore the operation of the locally based international and domestic enterprises and their presence on the profession related events, fairs, workshops, etc. As the effect of the crisis restrictions are perceptible until present days. In our country, despite the innovational contributing taxation the govenrment sensibly does not support the development of chemical related researches on a satisfactory level.

2.2.4. Ecological environment

The industrial sector exponentially sensitive to the particularities of the ecological factors and problems. It plays a leading role on the field of biological technologies and waste management furthermore in measuring air contamination, water management, etc. After the accession to the European Union strict EU directives bound to all enterprises are to regulate the activities of various industrial sectors.

2.2.5. Political (and legal) environment

Considering market activities requirements prescribed by *Public Procurement Laws* are to limit the moving space of enterprises.

Different and strict industrial regulations – food industry, environment-protection, water and waste management, pharmaceutical and healthcare – EU directives are defining the acceptable concentration of various elements, allowing room for the pruchase of scientific instruments necessary to execute the measurements. These regulations are promising new opportunities for the traders of laboratory instruments.

3. Industry competitors analysis

From the company's point of activity we are considering *laboratories of industrial chemistry* as the relevant sector.

As the specific requirement of professional education and knowledge, the laboratory market is rather a narrow one. Supplying its demands the count of companies on the domestic market can be estimated to a couple of hundreds of entities. Regarding their size companies are covering a wide range from the larger multinational enterprises to micro-companies working with one or two associates. Looking at their product portfolio the market is also very diversified from the low value consumables to the multi-million price complex automated instruments.

From the product side of the industrial competition the laboratory market can be divided to three well separated main areas:

- High valued complex laboratory instruments (chromatography, spectroscopy)
- General biological laboratory measuring devices and instruments (chemical and micro-biological)

- Laboratory consumables (vials, pipette tips, plasticware, etc.)

The intensity of the sector competition is being formed by numerous factors. In the following we'll analyse the competition intensity of the domestic market by applying ***PORTER's 5 forces model*** consisting the elements seen below. The basic model later became completed by a sixth force, the complementary industrial effect. [2]

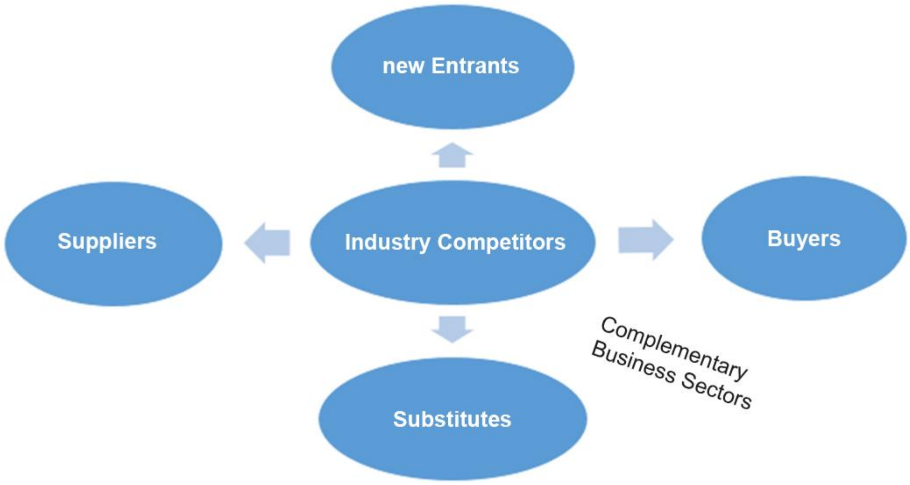

Figure 2.
Porter's structure of competition
Source: Józsa, 2014, 94

Regarding its structure the industrial laboratory market is a differintiated oligipoly specified by the low number of market traders complying to the professional properties and the high level of technological requirements. The growth of the sector is stagnating and saturated. Since there's no significant possibility to increase, aspiration for efficiency became to focus. Those companies which cannot operate efficiently have to leave the industry. Massively lowering number of competitors is also generated by the acqusition and merging trend of large enterprises. Less quantity of participants leads to the concentration of the market. The number of potential competitors is differentiated by product categories related to the various industrial demands and requirements and professional specifications. The profitability of the sector is decreasing due to the strengthening effect of pricing competition on the market.

Speaking in total, the growing pace of laboratory sectors is low, with high level of technologial requirements, product-differentiation and capacity utilisation where strategic priority is strongly prevailing.

3.1. Threat of New entrants

Owing to the strong entry limits and the narrow and saturated market the domestic laboratory market is not realistically threathened by new entrants. Starting from the beginning of the 1990's in the period lasted to the millenium the current structure of the market has been evolved. As an entry limit, the hardly achievable professional knowledge, the limited access to the dealt distribution networks and the high capital investment demand can be mentioned.

3.2. Threat of Substitute Products

Considering the high professional specification and the specialty of the activities it clearly can be stated that in chemical laboratory industry, according to the current knowledge of technologies there is no substituting alternative to the laboratory products.

3.3. Bargaining Power of Suppliers

The chemical laboratory sector is present on the B2B market. The profession is mainly represented by foreign suppliers from the U.S.A., Europe and the Far East. Compliance to the high and complex technological requirements needs manufacturers strong on capital. Among the end users, serious commitment and brand loyalty can be experienced encouraging traders to deepen and consolidate their cooperation with the foreign producers.

3.4. Bargaining Power of Buyers

From the customers' point of view the sector is also based on the B2B market. The clientele is consisting of *non-profit institutes* – universities, hospitals, academical research centres, National Health Office Services, National Institute of Food Safety, and *for-profit institutes* – pharmaceutical companies, private contract laboratories. On the laboratory market customers are in a strong market position. Building up the user loyalty companies are competing intensively. Regarding the professional complexity of the market the purchasing decision processes are long-extended time consuming multistage procedures.

3.5. Complementary business sectors

Complex, high valued laboratory instruments are operated by customized control softwares, mainly designed by contracted third party IT services in close cooperation with the manufacturing company.

3.6. Operational competition environment

Reviewing the close competing environment of the company various range of competitors can be observed depending on the homogeneity of the traded laboratory insturments and other products, with differing sizes and levels of profitability.

In focus of sustaining and long term growing stable clientele, forming a comprehensive strategy which can create competing advantages it is essential to monitor and research the competitors' operation, products and activities. Serving the demand of the clientele these days, facilitating their decisions about investments, innovation, the expanded network of reliable added value services, confidentially based professional consultancy became extremely essential instead of the sole intention of purchasing the product with the requested properties. To achieve success the most important asset is the outstanding professional knowledge which can provide an effective solution answering the customers' problems. Clients aren't looking for a products but a method helping them to reach the expected result. Complying to these demands can be realised by building up long term partnerships.

Considering the particularities of the competition, in the recent years the trend of merging, acquisitions and fusions between companies creating global giant enterprises has significantly restructured the market.

The market of the larger analytical instruments can be defined as an oligopolistic structure with a few dominant foreign participants representing large market share.

On the market of general and lower value laboratory instruments and consumables countless of competitors contesting intensively to win the goodwill of end users. Unlike the trends of the large instruments produced solely by foreign producers, on the consumables market Hungarian manufacturers also can be found, many times with more favourable price level due to the difference of supplying costs. On this field competitors gaining advantage by pushing down prices to increase sales volume thanks to the high quantity of the products with general and universal purpose of usage.

Here shall be mentioned that in the past years, the developing, emerging BRIC countries with their massive presence and activities on the markets, expecially China and India broke through with their products presenting high quality and favourable price / value ratio. These instruments are more and more often superseding the highly priced products of manufacturers from America or Western Europe. Small and medium domestic enterprises acting as representatives of foreign producers who'd prefer to keep and preferably grow their positions on the market in the intensifying competition are become open to contract with manufacturers from the Far East for trading. However, this practice often holds considerable risk and hazard if the company is not careful enough by choosing its partner. The aleatory low quality of products, the insufficient contracting documentation can lead to ruin the company's market reputation.

4. Strength and weaknesses of the organisation

With its experience looking back for two and a half decades LAB-EX Group supplies a wide range of products and well built professional network covering the complete demand of the domestic laboratory market. The company also represents the exclusive trading rights of many worldwide known and acknowledged international manufacturing brand in Hungary.

The organisation kept its position during the years of the crisis, we could even increase the number of our employees against many other small competitors where serious layoffs took place at the time.

This was owing to that the company recognised the market potential of Chinese brands in time an since 2010 it started to find quality suppliers with OEM (Original Equipment Production) production. Started with consumables, and after the successful launch of these we have initiated the trading of smaller instruments and continued with higher value equipment as well. The company gained a significant competition advantage in pricing categories following this business model. [4]

Thanks to its well educated professional associates and the long term confidence built relationships the company bears fine reputation and strong connection capital throughout the whole Hungarian laboratory market.

Beyond good sales results the successful operation is ensured by the high level added value pre-, and after-sales services, such as professional consulting, installation and training of the users, regular repair and maintenance. Besides, our reliability and accuracy on deliveries is also well known and acknowledged.

4.1. Weaknesses

Eversince its foundation the company has not recognise the importancy and has not invested seriously into an effective sales supporting marketing concept. LAB-EX lacked the well built and targeted marketing strategy which – after fifteen years of prosperous operation – led to loss of market share and a weakening market position.

It can be considered also as a mistake that the firm focused its market presence and resources to the representation of a single large brand manufacturer and never diversified its activities so losing the trading rights of its flagship brand forced the company to face stern strategic decisions.

The industrial sector itself was kept sensitively by the financial and debt crisis started in 2008, which affecting economicly the whole market until these days, especially the public sector where many customers of the company are coming from.

4.2. SWOT analysis

Gathering data about general, operating and international environment provide the raw material from which to develop a picture of the organisational environmental.

SWOT analysis refines this body of information by applying a general framework for understanding and managing the environmental in which the organisation operates. SWOT seeks to isolate the major issues facing an organisation through careful analysis of each of these four elements. The company then can formulate strategies to address key issues. [7]

Potential internal strengths	Potential internal weaknesses
-wide product range -excellent product and service quality -acknowledgement -additional services -opening towards China -OEM branded trading -opening new markets (CEE region) -stable company existing for decades -library of knowledge and experience -proficiency -clearly contracted international producers	-losing the main manufacturer's rights -weakening market position -lack of marketing strategy -lack of scenarios and contingent planning -issues with liquiditiy unstable financial state -high stock level (covering over guarantee periods) -decreasing rate of profit -too high number of represented companies -fragmented sales activity -lack of proficiency with new sales associates -hard to build new relationships
Potential external opportunities	***Potential external threats***
-compliance with sector regulationa -booming of development regions (BRIC) -opening new markets in the CEE region -pharmaceutical validity on certain methods -laboratory centralisation -shortening product lifecycle -strong production technology development -equipping complete laboratories -opened EU resources for 7 years	-slow market growth, stagnation -merges and fusions of large enterprises -budget restrictions -low supported and donated R&D -deteriorating payment moral -complex, multi level pruchase process -quick technological changes -increasing legal regulation -high cost of transportation

4.2.1. S – O strategies: Evolving new skills by recognizing strengths and opportunities

Mining the opportunities coming form developing China's intensifying influence on the world market. Endavouring to find reliable manufacturers with competitive quality products and contracting with them exclusively for long term including the trading rights for the Central and Eastern European countries as well. Applying OEM production for the sales towards surrounding countries increases the visibility and recognition of the company.

Regular participation on public tenders relying on the multiannual professional experience, aiming to equip complete laboratories.

Using the company's wide and excellent quality product portfolio (via relationships with acknowledged foreign manufacturing partners) targeting institutes affected by the EU regulations and directives in regard of expanding the clientele.

Winning professionally well known opinion leaders by supplying them test instruments which will support and ensure excellent reputation for future business opportunities.

4.2.2. W – O strategies: Sorting out weaknesses by taking advantage of opportunities

By losing the flagship manufacturer in 2010 the market share of the firm has dropped seriously. Making efforts to gain that back we are trading good quality and competitively prices Chinese products domestically and exporting to new market sas well.

Focusing on partners with strategic importance will help to stop chipping among oversized suppliers. Mapping, discovering and mining the purchase tenders coming from the centralised laboratory sector by winning EU tender subsidies. Shortening product lifecycles will increase the frequency of such purchases. Building up and maintaining relationships with potential clients in regard of future results. Introducing comprehensive motivational system to optimise sales associates' performance.

Using clear and transparent communication asking the users' opinion about the measuring accuracy of the instruments, forwarding those towards the manufacturer, giving effective feedback for both sides about the results to encourage product development (QFD: Quality Function Deployment). Making deep interviews with users to research and understand precisely their work and demand. [11]

4.2.3. S – T strategies: Avoiding threats relying on strengths

Balancing slow domestic market growth by entering and investing into the export activity towards CEE countries.

Collecting relevant and actually important market information from the constantly changing environment applying continuous presence and multiannual professional knowledge and experience.

Identifying and contacting the decision making influential individuals working in the „Buying Centres" and convincing them with our professional skills.

Tendering inclusive „package" quotations containing the price and value of installation and training and additional consultancy.

Launching good quality, high price / values ratio Chinese scientific instruments onto the domestic and foreign markets being amongst the first companies and taking over competition.

4.2.4. W – T strategies: Minimizing weaknesses by avoiding threats

Constructing defense strategies and scenarios to protect the company against aleatory contract terminations might come from large enterprise acquisitions, merges and fusions. Also to evolve convenient and effective contingency plans.

Placing „demo" instruments from stock to potential clients for testing purposes to win confidence and generate sales.

Developing communication and connection building skills of dedicated sales associates to be successful in starting and maintaining good personal relationships with the decision makers of the buying centres in focus of convincing them during the complex and multi-level decision processes.

In the SWOT matrix I have unfolded the sort of threats can impact the companies weaknesses and strengths beside the given opportunities and how to handle those to reach successful business operation.

5. Defining Objectives

In the intention of massive market share growing, stabilising the position and increasing the turnover of the company we are indicating strategic targets detailed below.

As a conclusion of SWOT matrix analysis, to solve problems unfolded we are assigning three strategic directions of growth which we will present within the frames of the Ansoff matrix method. [10]

Three assigned strategic directions of growth

- **Market development** (geographical expandation by conquering new segments fitting into our general activity)
- **Product development** (giving continuous feedback towards manufacturers encouraging them to develop their production technologies to serve better the claimed and latent demands of users)
- **Diversification** (launching new Chinese products on the newly opened markets)

5.1. Strategy of market development

- Conquering new geographical areas, territorial expandation (market re-segmentation)
- Conquering new market segments

5.1.1. Territorial expandation

In aiming to consolidate the market position and increase the share and the yearly turnover we are mainly focusing on territorial expandation in the neighbour countries of Central and Eastern European region. Terminating the re-segmentation of the market we are contacting potential partners with similar portfolio of activities, and setting up personal appointments with them to discuss possibilities on cooperation and starting to base partnership.

5.2. Strategy on product development

In case of product development the company selling its products to new customers or selling the newly improved versions of the existing products.

Determining requirement of the laboratory market the continuous technological improvement which often targeting to satisfy customers' latent demands. Could be useful to consider implementing well assembled Quality Function Deployment (QFD) functional system based on customers' needs and share its measures and results with the manufacturers continuously during the product development process. In the centre of development quality assurance shall be essential. [11]

QFD system complies with both the declared and latent demands of the customers and its main target to produce a quality product focusing on the satisfactory of the clientele. [69] [4]

As an additional path of product development I remark the spreading of prime quality Chinese laboratory devices we have started last year. The company acknowledged in time that the potential China contains accounted as a developing or emerging country. Launching good quality products is in progress currently so is building long term confidential relationship with Chinese manufacturers which both have their own difficulties due to the cultural diversity. Creating tight and

69 Józsa L. (2014) Marketingstratégia, Akadémiai Kiadó, Budapest; page 249

successful connections to eliminate cultural differences businesswise will take the effort on long term temporal financial and personal investments from the company. Trading with the Chinese range of items have opened new possibilities to target customers looking for a more affordable solution in their laboratories. Evolving the complete product portfolio is currently in a starting or initial state at the firm. Reaching success will require well established business strategy and marketing concept in accordance to that.

5.3. Diversification strategy

Export activity: In the interest of the energetic growth of the enterprise it is essential to expand the trading of good quality Chinese products into the neighbouring countries first. The company analysed the Central and Eastern European laboratory market in the frame of a Feasibility Study relying mainly on secondary information. During measurements of deep market researches we were localizing the number of companies trading with laboratory products present on the market and the strength of the competition. As the result of the research can be stated that regarding the very similar economic and development situation clear demand is shown to the products with advantageous price level. The company can realise expandation via creating a so called **horizontal diversification strategy**. Size, clientele and economic potential are extremely similar to the Hungarian status. Still, many unforeseen risky event can affect the company in the operation on the new markets for which it is wise to prepare in time.

Extending activities with new services: The implementation of a new service complying with the current business as a second diversification strategic asset to conquer new target markets. The current market mainly consisting of institutes with their own laboratory. Realising a „contract laboratory" our company is aiming to reach a new market segment for those who do not possess a laboratory, but still needs to do measurements so assigning a third party contract laboratory to execute those for them. Being a severely expensive investment equipping such a laboratory it is crutial to be preceded by deep market research and assessment of demands and a business vision covering every detail containing a financial plan and analysis with calculations on incomes and outlays and net present value rates.

Effectuation of growing and developing strategic targets are being terminated by the asset of marketing-mix: the 4P method of product policy (Product), the market influencing policy (Promotion), price policy (Price), and the sales location policy (Place). These techniques shall be weighted differently depending on the selected strategies. In addition, originated from the service nature of the activity I'd like to highlight the empathic role of the Human factors out of the three additional service element.

6. Measuring of efficiency, feedback

Following the realisation of the projects it is required to compile a feedback screening through thoroughly the elements of the complete marketing strategy plan covering the whole organisation in regard of temporal and financial factors. The finalizing step of the process is the marketing direction and overall control furthermore the comprehensive allocation of the material and human resources to reach the set target. Evolving an effective allocating system in the focus of the optimal dispersion of the organisation's inputs so the terminated efforts would bring the maximum outcome. Financial analysis and planning is essential to execute the effective marketing strategy in regard of the capital standing at the company's disposal.

Could be wise to use benchmarking to measure the activity's effectiveness from the most wide range of feedbacks, which gives a realistic picture about the company's status compared to its competitors. The benchmarking operation would be relying on competitive and industrial benchmarking partners' best pratice mainly on process level and comparing these with the comapny's usual practice.

7. Conclusion

Following my detailed study of the laboratory market in the aspect of SME (Small-Medium Enterprises) distributor trading companies and their business future possibilities in the rapidly changing, technology focused segment, I highlighted adaquate solutions in frame of a long term marketing strategy along with completely useful general methods for a sustainable development of changemanagement. [9]

I had presented thouroughly the background history and activities of an almost 30 years existing trading company and specify the arising problems during its operation influenced by exogenous as well as endogenous factors. Due to the globalization and the turbulently variable environment the stabile market position of the company threatend by different factors. As a result of my research work I had highlighted relevant solutions by stabilizing the current position in the laboratory market as well as increasing its market share in te frame of the Ansoff-matrix on growth directions. To achieve the set goals and growth objectives for a stabilized market position it is essential to put great focus on satisfying customers' needs by buliding up clients' relationship marketing to attract awarness towards the enterprise image as well as offering high value added services in favor of differentiate the company's market precense from its competitors. Benchmarking is also preferential. [6] To accomplish the new strategies the utmost, well prepared financial plan is highly necessary with continous controll during the process.

As a conclusion I would like to present some graphs supporting my studies with some of the already gained results of the increasing market share such as yearly turnover and comparision chart for the last 3 years as well as the value added services.

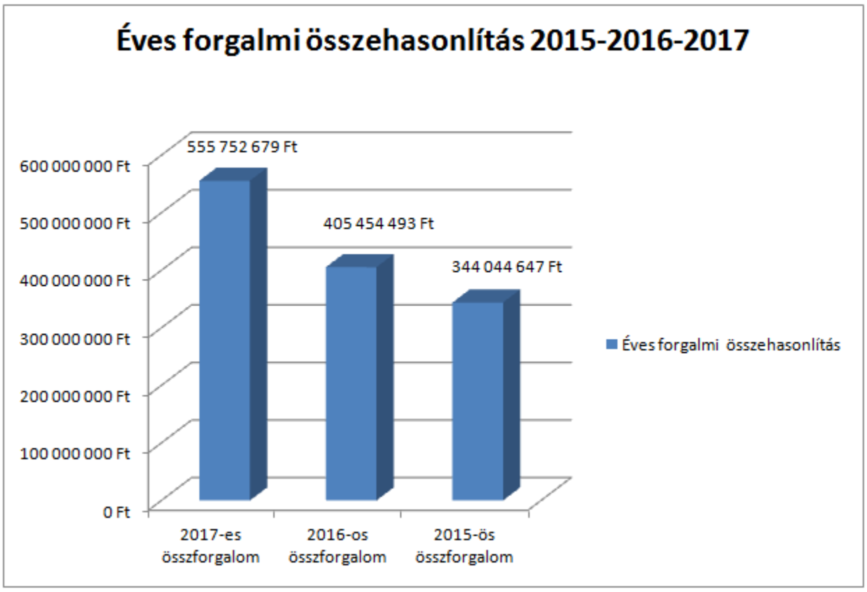

Figure 3.
Yearly company's turnover
Own statistical research

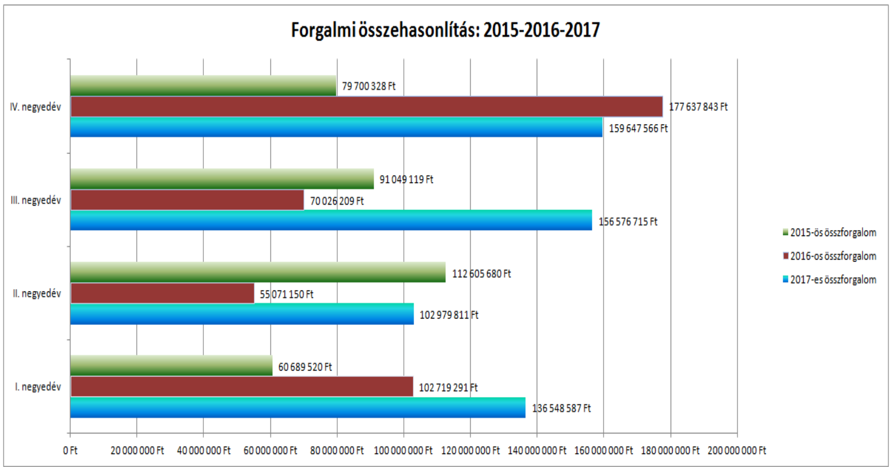

Figure 4.
Turnover comparision
Own statistical research

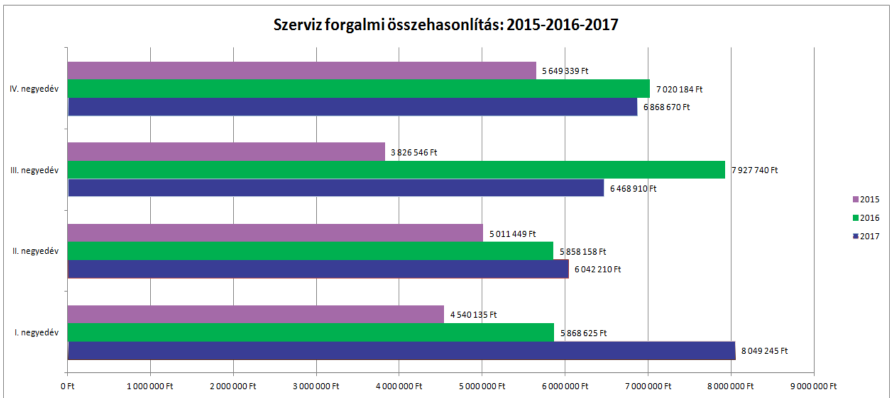

Figure 5.
Yearly turnover of the value added services
Own statistical research

The above early statistical data/results in Figure 3, 4 and 5, clearly show the positive change by the successfully implemented marketing strategies. The excellent value added services (including repair in 24-hours, maintanence, professional advice and implementation).

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HUNLYWOOD - the Most Important Challenges of the Hungarian Film Industry

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Abstract: Cultural arts are the source and resource of any free time activities. Cinema-going is a highly preferred cultural activity. Indeed, movies as an essential part of cultural activity is fairly popular, moreover they are becoming an ever more engaging, experience, all thanks to constant investment and creativity from cinema industry. Although the European Union supports national cultural activities and investments, unfortunately the dominance of American success movies (blockbusters) hardly can be outweighed. The Hungarian cinema industry is getting to be more active thanking to among other things the strategies of European Union. According to the statistical data, the Hungarian market share of national films' admission is relatively low. It seems that the Hungarians do not really like national movies not even some pretty successful awards. The aim of this study is observing the Hungarian consumption (cinema-going) habits and audience demographics of Hungarian national movie viewers. Answering the questions finding and exploring of secondary data were summarized and I used quantitative methods to find out the biggest challenges of Hungarian film industry.

Keywords: cinema industry, European Union cinematography, consumption habits, support system, strategies, economic challenges

1. Introduction

The film industry in America is essentially an integral part of the entertainment industry, while in Europe it has remained an expression of art and represents significant national values. In this sense, therefore, it is not just a simple entertainment, it is also an expression method that uses a specific actor game and artistic language what mostly - after exhaustive design and work of talented directors – working up a current issue of a nation. The situation is unvaried in Hungary as well, since Hungarian cinematography is not necessarily a business trick but it is an integral part of the national cultural circulation. The support of European film productions is fundamentally state or central, so the study is mentioning an important aspect that can affect its success, namely the attitudes of the audience. The study compares the film consumption data of Hungary with a selected EU country based on predefined criteria. Using the statistical data of the International Union of Cinemas (UNIC), the study develops research questions and then makes a primer research to find out the challenges and influencing factors of the film market and also to get more general ideas about the problems with help of experts. In the end, the paper uses the results to make a valid SWOT analysis and to draw conclusions and suggestions about the film market challenges.

2. The Hungarian Film Industry and Domestic Audience

After the II. World War Hungarian cinematography could be characterized by political censorship and state control. Till 2004 there were not any law or order what controlled the distribution of funds. In 2004 the Film Act created a frame what formulated the state funds and support. The Film Act was created "in order to enhance and preserve the values of Hungarian motion picture culture, to develop the Hungarian film industry and to make this industry internationally competitive, to create a support system that promotes the efficient use of resources with a view to the development of the culture of films and to establish a legal background that serves this purpose and is in line with the regulations of the European Union." (Nemzeti Jogszabálytár, 2004) The national film fund through the years wasted all their resources and as a result it increased the film fund's debt. The latest national organisation was founded in 2011 named MAFILM. In 2011, the national government drafted the 1167/2011. (26 V) enactment, what framed the tasks, operation and financing frameworks of MAFILM. An operational strategy had to be developed that would make the film industry effective and competitive. Their primary task was to support filmmaking as an investor and distributor of state and private resources. At the same time, MAFILM started to deal with the international sale of Hungarian films, and also to recommend various national film productions for famous international festivals. (Nemzeti Jogszabálytár, 2011) The Hungarian audiences' behaviour because of the chaotic situation of the Hungarian film industry through the years became very negative and rough. The low quality of national movies in the 80's and 90's also takes a pressure on their pessimistic attitude. The statistical data about cinema-going, following the 2011 "regime change" was hardly traceable, because the local newscast authority in the same year uncommunicated all the information. (Csákvári, 2012) However, after a huge jump from 60's in 2014 Hungarian movies became very popular internationally and started to gain many awards. One of the biggest honour what the national movie industry got was when in 2016 the *Son of Saul* received the Oscar statue for the Best Foreign Film. The film is considered as the most prized Hungarian film of all time, since by the end of the year it won nearly 50 international prices. Afterwards in 2017, Hungary took pride in another Academy Award, as the *Sing* by Kristóf Deák, won the Oscar Award for Best Short Fiction Film. (Háhner, 2017) The study would like to highlight those factors that discusses the attitudes of the domestic audience, the possibilities of more effective communication and the challenges of the national filmmaking. Though, in order to understand a narrow part, it is worth first to launch a broad perspective, as the recognition of the EU's cultural industry and its audio-visual market.

3. The EU Film Sector - Challenges and Sectoral Comparison Using UNIC data

UNIC is the International Union of what represented itself in 36 countries. The purpose of the association is to perform the economic, social and cultural values of cinemas in the member countries and around the world. Its next mission is to promote the importance of cinemas in Europe, as well as to keep up-to-date information for his members since the alliance has been measuring motion picture trends since 2010. Detailed, freely accessible reports are available on UNIC's website since 2012. According to the latest report, the market share of European-produced films was 26.7% according to cinema ticket sales in 2017. The American film market, however, plays a significant role with 67,4%. In 2016, 1.28 billion inhabitants in the UNIC countries visited the local cinemas, what issued a 2.8% increase over the previous year, and as a result, the ticket revenue was around 8.4 billion EUR. France reached a high audience with attracting more than 213 million viewers, due to its powerful national Filmworks. It was followed in EU by England (168 million spectators), Germany (121 million spectators) and Italy (105 million spectators). Among the Central European countries, Poland showed outstanding values with more than 50 million film-fans, what was due to a 16.5% increase in admission and 17.6% box-office growth from last year. After all, most of the global cinema market (49% of the total ticket revenue) is limited to the eastern continent, especially on China and India, not only by the ticket revenues but also by the audience (vide infra). (International Union of Cinemas, from 2012 to 2017)

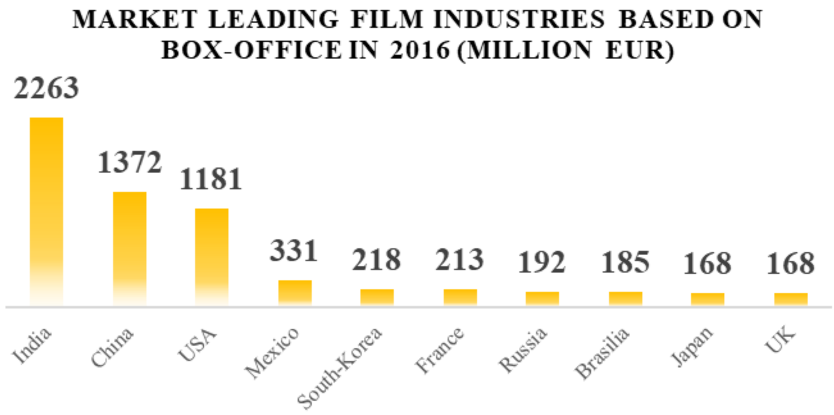

Figure 1.
Market leading film industries based on box-office in 2016

However, the number of European films produced by the UNIC members has doubled on average compared to 2011, what ensures an increasing interest in national and non-national European movies. In each UNIC country European residents spent their times in average once or twice a year at cinemas and each country has an average of 52 cinema screens for a million inhabitant. Among the member countries of the UNIC, in terms of their box-office and admission France, Great Britain, Germany, Italy and Spain are the leaders on the basis of their film industry. Spain has been strengthened since 2011 thanks to their efficient film festivals. Taking into account their economic difficulties (such as raising VAT in cinema ticket prices), series of programs and events have been organized what successfully and long-lastingly attracted the attention of consumers. France is trying to cultivate the future generation with an effective tuition, while England organizes workshops, screenings and performances for young people, what brings the film industry closer to them by motivating for cinema going. However, this is just a few examples of how to move the film market into a positive direction. Since the purpose was also to chart the film challenges and consumption (thus infer to the audience's attitude) the study compares the Hungarian cinematography with one of the European film industry selected on the basis of definite criterion to find out the biggest challenges and most important influencing factors of the market. (International Union of Cinemas, from 2012 to 2017)

3.1. Sectoral comparison based on the UNIC reports

In February 2017 OrienTax and Candole Partners conducted a survey where measured eleven EU countries with similar economic conditions as Hungary. In selecting and comparing the film industries in each country they were taken into account factors like the film industry infrastructure, wage and living standards, the film's financing structure, political stability and currency. In ranking, each factor was evaluated with scores corresponding to their weight. For the sectoral comparisons, although these data served as a starting point, however, without the more detailed knowledge of scoring, it cannot lean on this information. In addition, it would be more useful to utilize the data provided by UNIC. Although the profitability analysis would be more appropriate in this case, however, some data what are required for the calculation are unknown. With mixing of box-office, admission and market share of domestic films data of eleven selected countries the ranking showed up obvious results. (Gazdasági Versenyhivatal, 2016) These values were selected because, one of the main aims of the paper is to map viewers interest. The values are shown in a grouped bar graph to make these data more comparable and accurate (displaying box-office, admission and market share values in percentage):

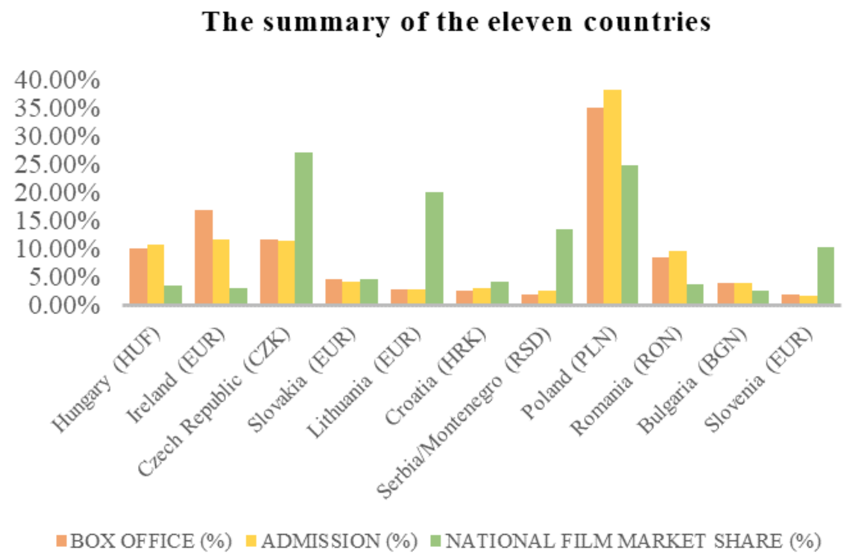

Figure 2.
A summary of the eleven countries based on the box office, admission, and national film market share

It is marking out from the Figure 2 that the highest value was taken by Poland. The most important indicator what was single-minded was the market share of domestic films, because the paper wants to look at the challenges of audience interest. (International Union of Cinemas, 2017) Nonetheless, it is also worth taking into account such factors as the territory or the population, in what the Czech film industry came out with most relevant values, but since Poland has been one of the leader of the central European countries over the past few years in terms of its film industry it should be examined first. Poland's film industry is much more complex and more sectoral than Hungary's. National directors have more opportunities to apply for funding from several institutions, what give them also more convenience to manage with higher budget. (European Audiovisual Observatory, 2017) The statistical information about the film and cinema market in Poland are easily available for all the market attendance and they have also access to a day-to-day viewing statistic while in Hungary these data are not accessible. As a result of this, filmmakers and distributors can efficiently follow the audiences' needs and behaviour in Poland, and thanks to the consumer's' feedback, they can develop more effective strategies. The transparency and well organizing of the Polish film market is also reflected into the audience's interest. The enormous curiosity from the audience at their national film works have been got their movies into the top of the most viewed features each year. (Film Comission Poland, 2017) Thanks to their strong film festivals, Poland has widely popular national movies not only among the audience, but also among the profession. However, both Poland and Hungary can take pride in international honours because both of them are having a wide range of awarded national film works. After measuring up the EU film market and summarizing up the secondary data to find out the challenges and influencing factors of the market the paper tried to get more general ideas about the problems with help of experts. To explore the point more substantially empirical primary research was needed. (National Centre for Culture, 2016)

4. Empirical Research

4.1. Metholodogy

The aim of the primary research was to explore the influence of some factors in Hungary and to approach them practically. Another purpose was to facilitate the compilation of a quantitative research and to frame up the questions. Research focused mainly on six factors what are influencing the film market according to the secondary research. Elaboration of the UNIC reports highlighted the factors what led the countries' film market on a positive direction. With the use of an open content analysis three factors have emerged: the cinema ticket prices geared to domestic movies, the intense presence of film festivals and to build in the Hungarian movies into the educational system. Additional three factors were added as the results of the research of Hungarian cinematography. These were the audiences' behaviour, communication tools, and market challenges what are the influential components of the domestic film industry. Method of data collection was by in-depth interviews what aim was to ask for experts' opinion, to collect their experience and to get wider insight about the problem. Interviewees came from different fields of the profession. Three experts (Ferenc Pusztai producer, István Szabó production manager, András Reszeli-Soós yound director, director assistant) are working in the film industry more than 5 years and cooperated with several Hungarian and international film productions so they have a wide range experiences. The in-depth interviews took place in a personal meeting three times and once in a video chat what lasted 30-45 minute. The interview guideline contained semi-structured, opened questions.

4.2. Results

At first hand three factors have been examined, what were the audience behaviours, communication tools, and market challenges. These are the influential components of the domestic film industry, what should be looked at more closely. The coding categories were also created based on these. To analyse the transcript of the interviews the use the method of the annotations was preferred. The ideas of the three interviewees could be handled easily and clearly, so it was not necessary to use any content analysis or text mining software. The data shows out that the opinions and ideas of experts have been the same in many cases, or they specified the same opportunities and challenges. Categorization of responses and keywords are detailed in the tabling below:

Table 1.
Encoding and categorizing content analysis

	Attitude of audience	***Communication tools***	***Market challenges***
1.	horrible, disappointed, bad attitude, behaviour what love foreign products	ATL and outdoor items (city light, billboards, campaigns), word of mouth, PR, press	lack of financial resources for communication, lack of cooperation and distribution among film market players, think in BIG, inadequate proportion of art- and entertaining movies, the possibility of independent support
2.	mistrustful, resistant	entertaining movies, demanding trailers, advertising space, appear on a foreign platform	reach larger audience, retrieve audience's' confidence, complicated Hungarian film language, waste of resources, elitism
3.	sceptical, rejected, disappointed	demanding trailers, social media, word of mouth, appear on a foreign platform, entertaining movies	lack of support for entrants, a hard-to-reach audience, focusing on copyright movies, high festival entry fees, lack of social capital

According to experts' opinion the attitude of domestic audience is negative and repulsive, but the use of word-of-mouth, directing entertaining movies, high standard previews, or appearing on foreign platforms as communication tools may improve this passive relationship. Biggest challenges of domestic film market are from the lack of independent institutions, wrong distribution of resources, unvarying film works, transformation of audiences' behaviour, lack of cooperation or the bias of market participants. Three additional factors what affecting the movie industry were provided by the UNIC and other EU reports: the cinema ticket prices geared to domestic movies, the intense presence of film festivals and to build in the Hungarian movies into the educational system. During the analyse of the interview sketches based on these categories there were taken into account whether the professionals have shown supportive or negative behaviour. Results and opinions are detailed in the following table:

Table 2.
Encoding and categorizing content analysis

	Cinema tickets	***Film festival***	***Education***
1.	difficult to implement because VAT has to be released or "cheaper is bad" consumer mechanism	should be implemented because initiatives are ongoing and opportunities are provided by the location	it is necessary because it is underdeveloped due to lack of quality content or to build up awareness
	REJECTED	SUPPORTIVE	SUPPORTIVE
2.		has to be developed because now it is only for the expert and does not reach the audience	useful because of conscious consumer education
	MISSING	SUPPORTIVE	SUPPORTIVE
3.	does not useful because of the „cheaper is bad" consumer mechanism	feasible because Hungary is a good target	cannot be built in because education faces lot challenges already
	REJECTED	SUPPORTIVE	REJECTED

Results show that all three experts have been positive to develop domestic film festivals and also two professionals were positive to evolve the educational system, but one does not consider that it is feasible. Two professionals would find it unworkable and inappropriate to adjust cinema ticket prices for domestic movie market. According to the secondary and primer research a SWOT analysis (vide Table 3) was created for setting out the most important parameters of domestic film market. One of the biggest strengths of the markets are the internationally awarded movies, and the highly trained Hungarian professionals. However, the lack of entertaining movies, poor communication with the audience or the lack of cooperation inside the domestic film market cause a low market share of national films. There are anyhow many opportunities like EU support packages, international cooperation or some political and legal rights or factors. Though there are many successful competitors on the market such as Americans, and because of the low number of Hungarian statistical data about the cinema going it is really difficult to meet the audiences need.

Table 3.
SWOT analysis

STRENGTHS	WEAKNESSES
- Highly trained professionals - Acclaimed movies - Scenario development - Well-equipped studios	- Viewers' mistrust and rejection - Lack of distribution - High production costs - Small number of communication channels - Unilateral support - Unrelieved movies - Lack of film events - Low market share
OPPORTUNITIES	**THREATS**
- Creating cultural value - Foreign appearance - Tax relief - Co-production co-operations - Digitalized cinemas - Copyrights - EU support packages	- Centralized cinema market - Difficult to find out and meet audience's needs - Successful competitors - Outdated educational system - High number of substitute products - Investment risk - Adverse impact of trade policy

Conclusions

Since its inception, European Union has been eager to support the thriving of the cultural and creative (also film) sector. It is a decisive, dynamically growing sector what is an important part of the nation and not only a cultural but also an economic and social value what create national heritage. Substantial mapping and screening of some EU film market has given rise to factors what influenced the industry for sustainable growth. Result revealed that Hungary faces several challenges, but there are many opportunities what can put the situation in a positive direction.

This paper made an exploratory research what purpose was to get wider insight about the problem. It can be used by the filmmakers and distributors to keep in these risk factors in mind and pay attention. Further aim of the research was to help create a survey what assess customers' needs or help to construct a program what will improve their behaviour. The question was examined on a professional and consumer side to give a full picture about the difficulties, but also to reveal the vital scope of the market. Additional steps of the subsequent study have already occurred. The audiences' attitude has been revealed by focus group research on both Hungarian and international samples. However, the analysis of this research is still in process forming an excellent basis for publishing the most recent results at the following study.

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