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The Effectiveness of Financial Planning and Forecasting in Selected Units of the MoD as a Premise for the Use of Performance Budgeting

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Abstract: The paper is based on the basic principles of public sector planning, specifically financial planning and forecasting. The level of efficiency of planning and budgeting for the selected Ministry of Defence unit is evaluated on decentral planned expenditures. Evaluation of the application of individual methods of planning (including forecasting) and budgeting, led to propose of process improvement. Based on the performed analysis and comparison, it was found out that with the budgets actually spent in the evaluated period, the planning process takes place mainly on the basis of the intuitive method. Therefore, there are large deviations between the planned and real state of the MoD Unit budget. Based on qualitative analysis, it was found insufficient application of financial planning tools (as budgeting). Another identified problem is the lack of cost management tool (hereinafter only controlling) usage. Based on the results of the paper, it can be suggested that statistical methods and management tools should be used in planning, especially controlling and performance budgeting.

Keywords: budgeting, controlling, forecasting, planning

JEL classification: H00

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1. Introduction

Financial planning, in its entire system, therefore at the Ministry of Defence (hereinafter MoD) – budgeting, is evaluated from the perspective of view of the practice of the selected organizational unit of MoD.

Planning is one of the main success factors at all levels of management. Through this process, we can get opinion on what we are able to achieve with planned strategies and resources. An integral part of the financial plan is the so-called financial forecasts. These financial plans are based on financial forecasts. Both financial planning and financial forecasting are among the indispensable activities that reach a specific position in the planning process. (Peková et al., 2008)

A system is set up for the needs of planning and budgeting (ie financial planning) in the MoD. Budgeting (short-term financial planning) in the MoD has been developed in recent years and undergone many changes. The aim of the budget process is to allocate the funds for the current year and the following years for their economical, efficient and effective (3E) usage.

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The budget process uses the outputs from the planning process provided to the administrator of each budget by the organizational unit of the MoD, which is responsible for the planning process here. (Dubec, 2010)

The main processes of financial management of public sector organizations include: budgeting; personal expenses management; financing; accounting; financial control; controlling. As mentioned in the above list, the concept of financial planning is replaced by the concept of budgeting in the public sector. However, we cannot forget the interconnectedness of individual mentioned processes. It means that part of financial planning is hidden within each of these concepts. (Poister, 2010)

The aim of the paper is to map the level of efficiency of planning and budgeting for a selected unit of the Ministry of Defence. Based on the performed analysis and comparison, it was find out how large are the differences between the planned and the actual state of the budget of the MoD unit and propose methods that would lead to the improvement of the current state.

2. Planning system in the Ministry of Defence

Most of the elements of today's planning system are adapted and modified versions of elements from the previously used "planning, programming and budgeting system" (SPPB), or its supplement and elaboration, so the SPPB system definitely forms the original basis for the planning system as we know it nowadays.

The SPPB was formed and gradually implemented after 1993. In the following years, it was switched to modern, flexible, and adaptable management with MoD command usage and available tool of modern management. MoD command and its information support have been settled. Meanwhile, both MoD and the armed forces, the application of the principles of civilian management should continue. The expected result of this management system was an improved response to ensure a very dynamically changing operational needs. (Ministry of Defence, 2012a) Each of main phases of MoD planning process is described in Table 1 below.

Table 1: Output documents of individual phases of the planning process (Ministry of Defence, 2012b)

Planning phase	Output document	Responsibility for the content of output document
Long-term planning phase	Long-term outlook for the development of the Ministry of Defence	The document is under the responsibility of the Defence Policy and strategies Section of MoD and is issued following a long-term planning process.
Medium-term planning phase	Medium-term plan of activities and development of the Ministry of Defence	The document is under the responsibility of the Defence Policy and strategies Section of MoD and is issued in the medium-term planning process.
Short-term planning phase	Budget of the Ministry of Defence;	Documents are issued after the process of short-term planning, resp. budgeting. The

	budgets of individual organizational units	plan of activities of the MoD for the year X + 1 is within the competence of the Capability Planning Section. The budget and budget outlook is under the responsibility of the Economic Section of MoD.
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3. Methodology and Data

During processing the problems, different methods of scientific work were used. The level of efficiency of planning and budgeting for the selected Ministry of Defence unit is evaluated on decentral planned expenditures.

Various methods of scientific work were used in processing the problems. With regard to the focus of the work, the basic methods of scientific research were used: analysis and synthesis, comparison and induction. Support provided also index method of deviations. Process and workflows of process participants were mapped in order to be able to deduct the specific provisions.

The data for the selected centre demonstrates the relationship between decentral planned expenditures and the efficiency of their spending. At this point, it must be mentioned that this is not a comprehensive evaluation, but a demonstration of the problem on selected unit of MoD, and based on data provided by this unit. This process of research is creating prerequisite for introducing management techniques into this area and supporting the full usage of the pre-established management tools in MoD.

Table 2: Planned and real expenditure on diet at the MoD selected unit in the years 2012–2019

The budget area – Diet (year)	Schedule / Plan [CZK]	Drawing [CZK]	Differential [CZK]	Differential [%]
2012	14 049 000	10 370 114	3 678 886	26 %
2013	13 644 000	10 777 853	2 866 147	21 %
2014	17 873 000	14 410 603	3 462 397	19 %
2015	15 722 000	13 559 218	2 162 782	14 %
2016	16 283 682	19 183 775	-2 900 093	-18 %
2017	19 296 988	18 951 336	345 651	2 %
2018	20 855 544	24 686 065	-3 830 521	-18 %
2019	17 335 400	23 721 150	-6 385 750	-37 %

As the financial resources for diet at MoD unit can be very well estimated due to the direct ratio between the number of participants in the meals and its cost, the planned budget should be with a minimum deviation from the actual expenditure. However, as can be seen from Table 2, for example in 2019, the planned budget was diametrically lower than the budget actually spent, specifically a 37% deviation from the plan. It is highly probable that it is possible to estimate that such small amount was

planned because it is a quasi-mandatory expenditure. As seen from the data that differ between planned current expenditure and actual disbursement, this points out that the internal personnel are not taking advantage of the tools that contribute data to the preparation of the background for budget preparation and outlook.

Table 3: Planned and real expenditure on fare at the MoD selected unit in the years 2012–2019

The budget area – Fare (year)	Schedule / Plan [CZK]	Drawing [CZK]	Differential [CZK]	Differential [%]
2012	4 659 000	7 287 488	-2 628 488	-56 %
2013	6 399 000	6 619 214	-220 214	-3 %
2014	6 126 750	8 072 920	-1 946 170	-32 %
2015	8 121 000	8 924 845	-803 845	-10 %
2016	7 198 000	8 076 523	-878 523	-12 %
2017	8 888 000	7 755 554	1 132 446	13 %
2018	9 716 000	8 810 775	905 225	9 %
2019	9 200 000	8 949 046	250 954	3 %

The drawing for 2012 was 56% higher than the planned budget as shown in Table 3. Depending on this fact, there should be an analysis and subsequent evaluation during the planning for the following calendar year, which would naturally result in an increase of the planned budget for travel allowances. However this happened only partially and represents approx. 30%. When analysing the data, with similar deviations from the real plan in other MoD units, there were also evaluated units for which there was no reaction on deviations and the planned budget of year $n + 1$ which was completely identical to the planned budget of year n , even it was not its actual amount of previous year or action plan of current (evaluated) one.

4. Results and Discussion

With the growing amount of funds allocated to the MoD, there is a growing problem of inefficient allocation of funds and planning inconsistent with the 3E concept. This area has undergone many reforms in the past, but the current state of these processes is still under discussion by all levels of management as well as researchers.

The evaluation of the application of individual methods of planning (including forecasting) and budgeting led to propose a process improvement. Of course, due to the scope of the topic, this paper abstracts to some extent from many factors or levels related to financial planning. However, based on the obtained data and their analysis and comparison, problems were found in the interconnection of the controlling system with the planning system. Furthermore, a problem was identified with the timing of the annual plan and draft budget. Specifically, these are the following results and proposals in the area of planning:

- In the area of medium-term planning and the process of compiling a medium-term plan, the biggest shortcomings in the interconnection of the controlling system with the planning

system were identified. The identification was based on the process analysis of the workflow of employees. Responsible employees did not use cost-calculation data from controlling system as support.

In order to improve the medium-term planning system, it is appropriate to introduce a change in the controlling system so that it is possible to determine what costs are associated with a particular activity (Eschenbach et Siller, 2012), as well presenting the usage of this data to employees. These resulting data would significantly facilitate and streamline the medium-term planning process. With regard to the structure of the tasks carried out in MoD Unit, it seems suitable process management system of controlling (activity based costing) more than the central units one.

- In the short-term (annual) planning, the biggest shortcoming is the link between the annual plan and the draft budget for the following calendar year, which was found on the basis of a year-on-year comparison of the data provided for selected areas. Taking into account the basic principles of financial planning, it is therefore a lack of coherence between short-term planning and budgeting processes.

To improve the current situation, it seems appropriate to apply moving budgets respectively change the time sequence of creating the annual plan and draft budget of the MoD respectively its individual components. In order, for the draft budget, to be able to financially reflect the objectives set out in the annual plan, the plan must logically precede it, and subsequently, taking into account the basic principles – the budget is the financial coverage of the plan. From this point of view, it is therefore necessary to draw up an annual plan by the end of June at the latest.

Although some deficiencies were found in the analyzed and compared data collected, these data are provided for the compilation of the medium-term budgetary outlook and the draft budget. Another problem is – the compilation of the draft budget (in the evaluated areas / on the evaluated components) is based fully on previous years' data rather than the plan of future needs and its financial coverage. Specifically, these are the following results and proposals in the various time phases of budgeting:

- In the area of compiling the medium-term budget outlook, sufficient data are not available for more accurate compilation of the medium-term budget outlook based on the reporting from the controlling system.

To improve the creation of medium-term budget outlooks, reference can be made to the above-mentioned proposal to change the controlling system. Changes in the structure of individual calculation units, which are currently managed only according to the organizational structure of the departments, could lead to a distribution of costs associated with a specific activity.

- Based on the findings and timeline of the activities related to the establishment of the draft budget, which is not compiled according to the annual plan taken into account the performed tasks / activities. It is compiled on the basis of data from previous years. These data also do not include operational calculations, which would allow the specification of forecasting, which – based on the data presented here, is therefore not applied. At the same time, this approach does not provide an adequate basis for effective budgeting.

In this results, the possible solution is again in the consistent use of the fully advanced controlling system, which is implemented within the MoD. Monitoring the costs of calculation units, which would show specific tasks (or to the level of activities). This provision would lead to more efficient use of funds, reduce the number of budgetary procurement (changes in its structure) during the financial year, therefore a smaller workload economic services and better allocation of funds in terms of the priorities of the Ministry of Defence.

Table 4: Proposed provisions

		Problem	Action
Planning	Long-term planning	Without quantitative evaluation	–
	Medium-term planning	Coherence of the controlling system with the planning system.	Change of MoD controlling system – calculation units.
	Short-term planning	Timing of the draft budget to the annual plan.	Timeline change – annual plan before budget draft.
Budgeting	Medium - term budgetary outlook	The resulting data of the controlling system and its possible usage.	Change of controlling system – calculation units.
	Draft budget	The resulting data of the controlling system and the connection of the draft budget with the annual plan.	Change of controlling system – calculation units.

Table 4 is a brief summary of the problems identified and the proposed contribution measures. The result of the analysis of chosen MoD data evaluation shows that by focusing on the collection and processing of data from controlling system within the MoD, we would obtain an adequate system for correcting problems associated with planning and budgeting at the MoD unit level.

5. Conclusion

Based on the performed analysis and comparison, it was found out that with the budgets actually spent in the evaluated period, the planning process takes place mainly on the basis of the intuitive method. Therefore, there are large deviations between the planned and real state of the MoD Unit budget. Based on qualitative analysis, it was found insufficient application of financial planning tools (such as budgeting). Another identified problem is lack of usage of the MoD controlling system (as cost management tool). Based on the results of the paper, it can be suggested that simple mathematical and statistical methods and management tools should be used in planning. From management tools, it should be pointed out cost calculation and performance budgeting.

Based on the results of the paper, it can be suggested that not only intuitive but also basic financial math or statistical methods should be used in planning, as the economic and planning department already has enough information from previous years and is able to evaluate these data (if necessary for presenting probability of the costs trend). And on their basis further use expert estimation of the budget for the coming years.

It can also be recommended that the MoD controlling system, using its clearly defined calculation units, should not be based on the organizational structure of MoD Unit. But should be able to divide the expenditures already incurred into specific activities or tasks which would lead to a greater transparency of funds spent, and in the case of an economic recession would help with process of reduction of the budget of MoD. The selected MoD unit would be able to effectively reduce the part of funds allocated to individual objectives according to army priorities. As results show, data from controlling system are not taken into consideration as management support, but could provide assistance to decrease most of mentioned deviation.

Last but not least, it is necessary to change the system of the planning process, in terms of compiling a timeline for the processing of individual documents, where the annual plan must be prepared before the draft budget for the following year. This step would simplify planning when drawing up a draft budget, which must be based directly on the annual plan and not just ex-post. The above mentioned recommendations can be linked by the system of the Performance Budgeting (PB) approach (Smetanková, et Krček, 2019). In which MoD of Czech Republic has advantage by an implemented controlling as cost management tool, because information for PBs successful implementation (not only subjective self-evaluation nowadays provided) will be supported by suitably settled and functional controlling system and cost accounting. The main purpose of PB is the connection of plans and priorities for the financial framework in this order and at all levels.

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The Finnish Rate of Return Regulation of the Electricity Transfer Business: Data-based Analysis of Historical Returns on Equity

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Abstract: The Finnish rate of return regulation for the electricity transfer business is an interesting system, where the euro amount rate of maximum regulated return for each network system operator is determined by multiplying a “reasonable return” percentage with a basis value based on a by the Finnish energy regulator determined capital that is tied to electricity transfer. The common understanding is that the regulated rate of return is around seven percent annually. The model and application of the model have been recently criticized, due to observed issues with regards to the model constellation and the parameter values used. In this paper, we shortly present the Finnish rate of return regulation model for electricity transfer, analyze the realized returns of Finnish electricity transfer companies based on historical data, and study how changes in the model would affect the returns from the model. The results are new and highly relevant to the Finnish consumers as well as to policy-makers involved in creating the rate of return regulation models.

Keywords: rate of return regulation, electricity transfer, regulation model, WACC, Finland

JEL classification: D04, D42, D47

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1. Introduction

Electricity is a necessary commodity for the modern way of life and as such the availability and price of electricity play an important role in how the society and the individuals within a society can function. Due to this necessary role, there are often *regulations* put on the reliability of the electricity supply and the pricing of electricity production and the transfer, or transmission, of electricity. Furthermore, electricity transfer is typically a (local) monopoly business, which further emphasizes the role of regulation.

In this paper, we concentrate on the regulation of the transfer of electricity and especially on the rate-of-return regulation (RORR) connected to the transfer of electricity. We are specifically interested in the model that is used in the rate-of-return regulation of electricity transfer in Finland. The impetus for this interest has come from the critique voiced about the rising electricity transfer prices and the observation that one reason behind the rises may be the rate of return regulation model used. In this vein, we investigate the architecture of the model and study how selected changes in the model would affect the returns calculated and at the end of the day paid by the customers of the electricity transfer companies. There is a common understanding that due to the RORR model used the return of the electricity transfer business in Finland is “around seven percent” – here we investigate, whether this is true.

The Finnish electricity transfer business has attracted academic attention also previously and it has been studied from the point of view of investment incentives in the regulation system (Kinnunen, 2006) and of the different methods used in evaluating the effects of regulatory systems (Kuosmanen, 2012; Kuosmanen, Saastamoinen, & Sipiläinen, 2013). The costs of making the Finnish electricity transfer system weatherproof have been studied in (Muukkonen, 2019) and also presented previously

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in this series of conferences (Muukkonen, Collan, & Savolainen, 2019) and the issue has also been studied from the point of view of cabling rates being affected by the set requirements for the security of supply (Haakana, Lassila, Kaipia, & Partanen, 2014). Also, the rate of return regulation, most relevant to this research, has received attention previously (Tahvanainen, Honkapuro, Partanen, & Viljainen, 2012). The RORR model created by the Finnish Energy Authority (EA) and used in Finland has been in force in its present form for the first time for the fiscal year 2016 (Energiavirasto, 2015) and therefore most of the academic research on the Finnish system is in this respect outdated. In this paper, we specifically focus on the model in force at the time of writing.

The first issue we look at is the historical rate of return of the Finnish electricity transfer companies. This is to get a feel about how high the rates of return actually are, and whether there is a real basis for the critical discussions being voiced about the cost of electricity transfer vis-à-vis these returns. For this to take place it is important to define what is a rate of return and more specifically to define what components are used, when the rate of return is calculated. The rate of return can be calculated for equity that is, for the equity capital invested in the activity by the owners of the activity – in this case, the owners of the electricity transfer companies. This makes sense, as the returns are kept by and become the property of the equity holders.

The rate of return can also be calculated for the total capital invested, which includes the equity, the debt, and any capital other than equity or debt that has equity-like rights in the event of company liquidation (seniority lower than debt). In these cases the return is calculated as a return that is collected by the equity holders, or as the return that the company gives to total assets (return collected by the equity holders + the interests paid to the debt capital). The calculation is typically made so that the return (in absolute terms, €) is divided by the basis for which the return is calculated (equity or total capital). In this case, we define the return on equity as the return of interest as we are looking at the profits of the electricity transfer companies accruing to the equity-holders (shareholders, owners) of the said companies. Secondly, we are interested in looking at how changes in the model (application of the model) would affect the rate of return.

All data used as a basis for the analyses presented in this paper are publicly available from the Finnish Energy Authority website ((Energiavirasto), 2020) and are public documents. The data includes company-specific information on the regulated return calculated with the model, also called “reasonable return” in the context parlance that the electricity transfer companies are allowed to charge from their customers. The data also includes full balance-sheet information for all electricity transfer companies in Finland including data about the financing mix of the company. The year for which the data is examined here is 2018 – the year scrutinized is not special in terms of being very different from the preceding years 2016 and 2017 and thus the results are most likely illustrative of how the regulation model used works also beyond the reality of 2018.

The results presented are new and to the best of our knowledge, never presented in academic literature. They show how important data-based study of the effects of the RORR models is in terms of understanding the actual rates of return (on equity) that are a direct product of the models. Furthermore, the results illustrate the effects changing the model would have on the regulated return and the burden carried by the electricity transfer customers. The results have practical relevance for both consumer advocates and policy designers.

In the next section of this paper, we shortly present the Finnish rate-of-return regulation model for electricity transfer, then we show with real-world data from 2018 the actual rates of return in the electricity transfer industry in Finland under the preset model, and then analyze how selected changes in the use of the model would affect the returns to the electricity transfer industry (companies). Finally, conclusions are drawn.

2. The model for calculating the Finnish reasonable rate of return for electricity transfer

In this section, we shortly outline the structure of the rate of return regulation model used in Finland. A detailed presentation of the model is given (in Finnish) in (Energiavirasto, 2015) and we refer the interested reader to consult that original text for any clarifications and information about the details. The general idea behind the Finnish rate of return regulation model is to calculate a “pre-tax weighted average cost of capital” (WACC) for the electricity transfer businesses. All the companies are assumed to have the same financing mix 60% equity and 40% debt and thus a fixed 60/40 weighting scheme is used (same for all companies). Pre-tax, in this context, means that the return generated by the equity is corrected by dividing it with $(1 - \text{the corporate tax rate})$. The required return on equity (C_E) and the required return for debt (C_D) are calculated separately by using a set of rules specified in (Energiavirasto, 2015), but that is left outside this discussion. The Finnish model for calculating the “reasonable return” is visible below in Definition 1.

$$\text{Pre-tax WACC} = \frac{C_E * 0.60}{1 - \text{tax_rate}} + C_D * 0.40 \quad (1)$$

The “reasonable return” is used as a multiplier to calculate the absolute return. This is done by using a Finnish Energy Authority adjusted “stock of capital tied to the transfer business” as a basis (that the “reasonable return” is multiplied with). This “adjusted capital stock” is the result of various corrections and adjustments to the balance sheets of the companies the details of which can be found from (Energiavirasto, 2015). The EA publishes official “tied capital stock” numbers for each company on a yearly basis. The calculation of the “tied capital stock” and the relation it has to the actual balance sheet numbers and thus the actual capital tied to the electricity transfer business is an issue worth further study, but falls outside the scope of this research – we take the basis as given for the purposes of this investigation. The EA determines also yearly the required returns for equity (C_E) and debt (C_D) used in the model. The corporate tax rate in force in Finland at the time of analysis is 20.00%. As the multiplier used with the “reasonable return” is the tied capital stock, it means that the absolute money amount is rather closely based on a sum that is relative to the whole capital employed in the electricity transfer business – this means that as the ratio for equity and debt used is fixed the return on equity will be higher than the return with the fixed ratio for companies with a lower than the assumed (and used fixed) equity ratio.

3. Data-based analysis of the rate of return of Finnish electricity transfer companies 2018

In this analysis, we use data from the year 2018 that is originally for all the 88 companies engaged in electricity transfer in Finland, and that fall under the regulation model. In 2018 the parameter values used for the returns for equity (C_E) and debt (C_D) were 6.92% and 3.58% respectively, making the pre-tax WACC used by the EA 6.62%. The company by company numbers were extracted (and the aggregations made for the industry) by using the data published by the Finnish Energy Authority (Authority, 2020) for 2018.

In aggregate, according to the company balance sheets from 2018, the capital tied to electricity transfer business (equity and interest-bearing debt) was altogether 8.016 B€ and of this capital the equity made 2.644 B€, which is 32.98% of the whole capital tied. Now, when this number is contrasted with the assumed and fixed 60% used in the RORR model it can be noted that the difference is remarkable and more importantly that the assumption of 60% equity is quite far from reality. For the year 2018, the “reasonable return” in terms of absolute € as an aggregate, for the 88 companies was 858.20 million. This corresponds to a 10.7% return on the tied assets (equity and interest-bearing debt) and a 32.46% return on equity. The above numbers are aggregate (average) for the whole industry.

The aggregate adjusted capital stock tied to electricity transfer, calculated by the Finnish Energy Authority was 15.260 B€ in 2018, and the adjusted equity 10.155 B€, making it 66.55% of the adjusted tied capital stock. These numbers are “virtual” in the sense that they remarkably differ from the real balance sheet numbers, but they are the numbers that are used as a basis for calculating the real absolute reasonable € return according to the RORR model used. In other words, the virtual numbers overstate the amount of equity tied to the business by a factor of 3.84 and total employed capital (equity and interest-bearing debt) by a factor of 1.90. One can only observe that the differences between the assumptions used and the reality are breathtaking.

The highest “reasonable return” for the balance sheet based tied capital for a single company in 2018 was 52.84% and for 30 out of the 88 companies it was over 15%. The highest “reasonable return” on equity for a single company in 2018 was 9028.67% and for 39 out of the 88 companies it was over 50%. We point out the fact that this is a one-year return that we are referring to here. If we take a different point of view on these numbers and calculate the pay-back period for the balance sheet based tied capital for the industry as an aggregate (based on the 2018 numbers) we get 9 years 4 months as the payback time. It is noteworthy that the economic life of the “steel on the ground” assets that are invested in is typically in the 40 years range. The pay-back period for the equity for the whole industry is on average three years one month and put in layman terms means that with the 2018 return-level the industry can pay back their whole equity investment in little over three years while keeping the business running as usual. This is an incredible picture to see, while we are looking at a monopoly investment in a low-risk business.

Studying the effect of selected changes in the use of the RORR model

In this section, we study the effect that selected changes to the assumptions made by the Finnish EA, when using the model, would have on the returns calculated by the model. We focus on the following changes, and study:

- i) the effect of not using a fixed 60/40 assumption on the financing mix of the companies in the industry, but instead using the equity/debt mix reported in the 2018 balance sheet for each company. Calculations are made by using the EA adjusted tied capital.;
- ii) the effect of using a model that does not consider the corporate tax, with the 60/40 financing mix assumption, and when the 2018 reported equity/debt mix is used for each company. Calculations are made by using the EA adjusted tied capital.

In the first case, the real-world situation is as already discussed above – the industry average equity ratio is 32.46% and remarkably lower than the assumed 60%. This means that if the real 2018 equity ratio is used the “reasonable return” will be a lot lower. In fact, calculated with the real average 2018 equity ratio for the industry the “reasonable return” would be 5.23%. The average does not tell the truth in this case as the companies do not have the same weight on the markets, therefore to calculate the “reasonable return” for the industry in absolute €, we must first calculate the company-specific pre-tax WACC and with company-specific “reasonable return” the absolute € return for each company separately and sum these up to understand the industry situation. By performing these calculations, we get 635M as the absolute € return for the industry, when the 60/40 assumption is replaced with using real balance sheet numbers from 2018, ceteris paribus. This kind of a change to the calculation procedure would hence mean a roughly 223M€ lower “reasonable return” and as a consequence lower electricity transfer cost to the consumers.

In the second case, the focus is on the part of the model that includes taking into consideration (in effect compensating) the corporate taxes. What we want to see is how much such a component affects the “reasonable return”. Firstly, if the corporate tax compensation is, ceteris paribus, removed

from the model altogether (that is deleting the term $(1 - \text{tax_rate})$ from Definition 1, the “reasonable return” becomes 5.584% and we can call this the after-tax WACC. As the name suggests, we are looking at a situation where the “reasonable return” is calculated as the before- or after-tax return made by the electricity transfer companies. It can be debated which one is the correct way to do it and arguments can be found for both cases – we leave this discussion outside the scope of this paper. If the absolute € return is calculated with the after-tax WACC we get ca. 724M, which leaves 134M€ as the value of the “tax compensation” for 2018.

Table 1: Summary of the results for the three studied cases

Case	Original ROR	Changed ROR	Difference in €	Difference in %
i) use 2018 debt mix instead of fixed 60/40	858M	635M	223M	26,0%
ii a) fixed 60/40, but remove tax consideration	858M	724M	134M	15,6%
ii b) 2018 debt mix, and remove tax consideration	858M	577M	282M	32,9%

Now, if the model without the corporate tax consideration is used, and instead of the 60/40 financing mix assumption the 2018 balance sheet based numbers are used for each company and added up to get the industry absolute return in €, we get ca. 577M, which is 282M€ lower than the original absolute return calculated with the presently used model. Table 1 shows a summary of the results presented above.

4. Conclusions

The thing that hits one, when one sees the results is that the return on equity and the return on the capital tied (equity and interest-bearing debt) of the Finnish electricity transfer companies, natural monopolies operating without competition, is very high. At the average of over 30% per year the return on equity is higher than that of the growth expectations of many start-up companies and over ten-fold to the average yearly return on the money market index in Finland (2.6%), also a low risk “asset”. This means that there are a place and a need for this kind of analysis and that the results are very interesting for policymakers, regulators, consumer advocates, and perhaps also for the electricity transfer industry as well.

The results presented show that changing the construct of the model and/or the way the model is used there is potential for relatively large changes in the returns of the electricity transfer industry that would directly benefit the consumers. The effect of using the real 2018 balance sheet financing mix of each company in calculating the reasonable return instead of using the 60/40 assumption, which is not in line with reality, the potential to lower the returns is over 220M€. The effect of the corporate tax component in the model was 134M€, while the combined effect of removing the tax component and using the actual balance sheet based financing mix from 2018 was over 280M€. This represents massive potential, for the electricity transfer customers and a massive downside for the transfer companies.

It is possible to argue that “money does not matter” and that the return on equity is indifferent from the return on assets in terms of functioning as a proper measure for the rate of return regulation, this, however, is a theoretical argument as the real-world opportunities to change the capital mix of a company, let alone a whole industry, is not a simple issue or an operation that could be completed at a fast pace – some special cases may apply, such as cases, where the transfer business is a wholly-owned subsidiary of another company, but generally this is not the case. Furthermore and importantly, from the point of view taxation, the difference between equity and debt financing of a

company may be relevant, for example, the return on equity “patriated” to the pockets of equity holders is typically taxed in the country where the company resides (Finland), while return on debt capital (interests) are taxed in the country from which the debt is from.

Future research avenues include studying the effects of using real balance sheet numbers as a basis for the calculation of the rate of return (instead of the Finnish EA adjusted tied capital), studying the effects that using different methods to determine the used return levels for debt and equity financing may have, and in the bigger picture studying altogether different model constellations for the Finnish rate of return regulation. Also, the legality of compensating for taxes in the model could be scrutinized further, especially in terms of the legal framework of the European Union.

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The relationship between the values of an organization and its learning culture

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Abstract: Creating an environment in which people are willing to learn and share their knowledge to achieve organizational goals, which is vital for organizational efficiency and competitiveness, is closely related to the values that are shared in the organization and that govern its behaviour. The paper aims to find out which organizational values are significantly correlated with the culture of learning. Our study is based on a quantitative approach using the adapted Schwartz's PVQ to evaluate the organizational values and the short version of the DLOQ to determine the learning culture. Relationships based on data from one large organization were investigated using multiple regression analysis. The results show, with specific differences at particular levels of learning culture, that learning in the organization is primarily connected with those values that are associated with self-development and growth taking into account both personal and social aspects.

Keywords: Schwartz value system, learning organization, organizational learning culture, DLOQ

JEL classification: M14, M54, L20

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1. Introduction

Today's dynamic and turbulent times place greater demands on organizations than ever before. Creating an environment in which employees will be willing to develop and maintain their qualifications in accordance with current trends in the industry and the requirements of the organization is essential to its further existence and place in the market. Developing and sharing knowledge, i.e. creating a culture of knowledge sharing in the organization, is the key to its further performance (Serrat, 2017). Organizational learning has been proven to affect organizational efficiency and competitiveness (e.g., Brockman & Morgan, 2003). Egan et al. (2004) showed that the culture of organizational learning significantly affects both job satisfaction and motivation to learn and, also, that learning culture in connection with job satisfaction has an indirect impact on employee turnover.

And not only that. Organizational learning culture (OLC) is one of the key elements that strengthen commitment to the organization (Joo, 2010). Positive social exchange stimulates individuals' trust in the organization and strengthens their willingness to better identify with the organization (Ashforth, 2016). The relationship between OLC and the degree of identification with the organization was demonstrated by Hiršová et al. (2020). The degree of identification is often associated with the success,

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prestige of the team and with the exclusive qualities that the members of the group share within the organization (Ashforth, 2016). These unique characteristics of an organization define, among other things, the values that the organization and its members profess (Johnson & Jackson, 2009). Values are then considered to be a part of organizational culture (Schein, 2010). The aim of this article is to examine the relationship directly between the values of the organization and OLC.

2. Theoretical Background

2.1. Values of Organization

The values of the organization and its members mediate information about expected and formal and informal rules that connect individuals with a broader organizational context. Values signal to their members, but also to the external environment, what is important for the organization, they also serve as a standard for evaluating organizational success and how the organization and its activities are viewed (Johnson & Jackson, 2009). Being based on deep-rooted beliefs, values can influence an individual's perception of how the world around each individual should function, and affect both his/her professional and private lives.

Schwartz's (2012) theory of values works with ten universal personal values which serve as standards and criteria for evaluating any situation in which individuals find themselves in their personal or professional life. Among these ten core values, to which each individual attaches a different weight on the imaginary personal ladder from the most important to the least important, there are dynamic relationships which affect the motivation behind all their actions. Schwartz (2012) illustrates the values in a circular structure, in which two bipolar dimensions oppose each other. The first captures the contrast between conservative values and values characterized by openness to change. In the second dimension, a distinction is made between those values helping individuals to transcend themselves and those that, on the contrary, help them in self-enhancement and in focusing on themselves. The second principle of the Schwartz's theory is the distribution of the values depending on whether the individuals rather pursue their own interests on the basis of the values or, on the contrary, their motivation is to serve the interests of the people around them. The last principle is to differentiate values according to how they relate to the feelings of insecurity and anxiety.

2.2. Learning Culture

The current state of knowledge in the area of learning organization and organizational learning is summarized by Watkins and Kim (2018), who acknowledge the generally accepted view that this phenomenon is difficult to grasp and measure. There are new opinions that the learning process within organizations should be understood as a complex matter including emotions, relationship and political issues, which may even be in contrast to the learning process in the organization (Vince, 2018), yet this idea is perceived as persistent, still relevant, multilevel and multidimensional (Antonacopoulou et al., 2019). There is a number of definitions describing the learning organization, organizational learning and the related OLC. For example, OLC is perceived as a set of norms and values related to the functioning of an organization (Škerlavaj et al., 2010). OLC can also be seen as an important means of achieving creativity and innovation, as it promotes research, risk-taking and experimentation in organizations (Bates & Khasawneh, 2005).

The DLOQ by Marsick and Watkins (2003) belongs among the most commonly used methods of determining the level of OLC, as evidenced by, for example, Song et al. (2013). It maps significant changes in the culture, systems and structures of the organization that affect learning of individuals.

The theory is based on the assumption that learning in organizations takes place at three intertwining levels - individual, collective and organizational. At the individual level, we talk about solving problems and situations from the point of view of the individual, while the related outcomes are interconnected with the collective level through communication. This team or group experience is then also influenced by organizational culture, i.e. by issues at the level of the organization as a whole, in the interest of which should be to share this experience within the organizational vision and strategy. Each of these three levels works under specific conditions (imperatives/dimensions). At the individual level, these imperatives are "continuous learning" and "inquiry and dialogue", which can be understood as the constant creation of learning opportunities and space for questions and the opportunity to express one's opinion in an environment that indulges mutually open communication. At the team/group level, these imperatives are "collaboration and team learning" and "systems to capture learning", i.e. the support of cooperation and learning within teams and, at the same time, enabling sharing and archiving of the gained knowledge through modern systems within the technological equipment of the organization. At the highest, organizational level, these imperatives are "empower people" and "connection to environment", i.e. the active involvement of individuals in the creation and implementation of the organizational vision in a broader context, i.e. in a manner enabling individuals to see the impact of their actions in the context of the whole organization, but also as an external impression of the organization. According to Marsick and Watkins (2003), the last imperative is "strategic leadership for learning", which incorporates the learning process and its outputs into the strategic planning of the organization.

Various types of relationships and variables that enter into these relationships can be found in the OLC literature (Song et al., 2013; Xie, 2019), but we have not been able to find any studies that directly address the relationship of OLC to values. Therefore, we asked ourselves the following research question: Which organizational values are significantly correlated with the culture of learning?

3. Data and Methods

The study was based on a questionnaire survey of employees of one large organization operating in the CZ-NACE sector Q - Health and social work. To measure the values of the organization, we modified the Schwartz's Portrait Value Questionnaire (Schwartz, 2003) designated to measure how employees perceive the values of the organization. Each value was expressed using two items with a six-point scale (1 - completely unlike, 6 - totally similar). Prior to data collection in the organization, the instrument for measuring organizational values was piloted. For research purposes, we primarily focused on the categories of higher order: Self-Enhancement (Power, Achievement), Openness to Change (Hedonism, Stimulation, Self-Direction), Self-Transcendence (Universalism, Benevolence), and Conservation (Tradition, Conformity, Security), which were calculated as an average over the relevant values. OLC was determined using Yang's (2003) seven-item version of DLOQ proposed by Marsick and Watkins (2003), where each item represents one of the seven dimensions presented in Chapter 2.2. Items were again assessed by respondents on a six-point ordinal scale.

The questionnaire was distributed to all employees of the selected organization in an electronic form at the turn of 2018/2019. A total of 1,451 of them completed the questionnaire, which amounted to a return of less than 50%. The data from the questionnaire were evaluated using standard statistical methods. The basis for fulfilling the research goal was mainly regression analysis, where the explanatory variable was OLC and the explanatory variables were four Schwartz's categories of values.

4. Results and Discussion

Table 1 shows the calculated means (M) and standard deviations (SD) for the values of the organization perceived by the employees and the corresponding higher order categories. The average values show that anxiety-based values predominate in the organization (Self-Enhancement: $M = 4.49$, Conservation: $M = 4.17$). Thus, it can be concluded that the organization's strategy builds on the need for personal performance and power, but with low willingness to change, which is mainly influenced by high conformity ($M = 4.47$). Here, however, it is still necessary to take into account the need for analysis at individual organizational levels which, for capacity reasons, could not be included and can be considered one of the limitations of this study.

Table 1: Basic Summary Statistics (Sample Means and Standard Deviations) for the Values

Value	M	SD	Category	M	SD
Power	4.45	1.01	Self-Enhancement	4.49	0.94
Achievement	4.53	0.99			
Hedonism	4.09	0.93	Openness to Change	3.65	0.73
Stimulation	3.43	0.87			
Self-Direction	3.43	0.96			
Universalism	3.56	1.07	Self-Transcendence	3.54	1.03
Benevolence	3.52	1.15			
Tradition	4.15	0.93	Conservation	4.17	0.79
Conformity	4.47	0.94			
Security	3.90	1.17			

Overall OLC ($M = 3.48$, $SD = 0.99$) is just below the middle of the 3.5 scale used. Table 2 then gives the basic descriptive characteristics for the individual dimensions of OLC. In terms of OLC, the highest average was achieved at the group level ($M = 3.66$), where it can be assumed that a team approach is a necessary condition for success in the healthcare sector. The organizational level is also above the overall OLC ($M = 3.58$). However, the Empower People dimension ($M = 3.09$) lags somewhat behind the other dimensions of the organizational level and corresponds to the lower values of both dimensions from the individual level. It is therefore clear that the already traditionally and publicly recognized level of expertise and qualification is of great importance in this organization at the organizational level, but employees do not feel that they are given space to participate actively in the development of this organizational strategy. This attitude stems from the individual level, specifically in the form of the feeling that the organization's management does not share knowledge related to their work, including the belief that neither an open dialogue on this and other topics, nor steps towards the change in the organization are encouraged. To strengthen the organizational and individual level of OLC, it would be appropriate for the gaps in these areas to receive more attention in the organization.

Table 3 presents the results of the regression analysis, where the explained variable was both the overall OLC (highlighted by grey background) and its individual dimensions. The explanatory variables were always four Schwartz's categories of higher order values. The results show statistically significant dependence of OLC on three categories (Openness to Change, Self-Transcendence, Conservation) out of four. The correlation was positive in all three cases, with the highest growth rate (slope estimate being 0.59) identified for Self-Transcendence. Together with Openness to Change, it correlates

statistically significantly with all seven dimensions of OLC. Our results are in line with the study by Ismail (2005), which showed a relationship between OLC and innovative or creative culture where a parallel with the value of Openness to Change can be perceived. Furthermore, the often-mentioned relationship between OLC and transformational, participatory, altruistic or servant leadership (Xie, 2019) may refer to the sharing of Self-Transcendence values. Compared to the two previous categories, Conservation, associated with the values of tradition, security and safety, then has a statistically significant effect in as few as four dimensions (D2 - Inquiry & Dialogue, D3 - Collaboration & Team Learning, D4 - Systems to Capture Learning, D7 - Strategic Leadership), while the significant correlation with the dimensions D3 and D4 from the group level confirms our assumption about the team approach in healthcare mentioned in the previous paragraph. Thus, the relationship between OLC and the value of Conservation can be greatly influenced by the nature of the work and the industry in which the organization operates.

Table 2: Basic Summary Statistics (Sample Means and Standard Deviations) for the OLC Dimensions

ID	Dimension	M	SD	Level	M	SD
D1	Continuous Learning	3.09	1.34	Individual	3.17	1.18
D2	Inquiry & Dialogue	3.25	1.29			
D3	Collaboration & Team Learning	3.60	1.23	Group	3.66	1.08
D4	Systems to Capture Learning	3.72	1.28			
D5	Empower People	3.09	1.37	Organizational	3.58	1.02
D6	Connection to Environment	3.65	1.17			
D7	Strategic Leadership	3.99	1.20			

Table 3: Regression Analysis Results (Effect Estimates, Standard Errors, p-values of Related Significant Effect Tests) with Overall OLC and the OLC Dimensions as Dependent Variables

	Self-Enhancement			Openness to Change			Self-Transcendence			Conservation		
Y	Estim	SE	p	Estim	SE	p	Estim	SE	p	Estim	SE	p
LC	-0.01	0.29	0.503	0.29	0.02	<0.001	0.59	0.02	<0.001	0.19	0.02	<0.001
D1	-0.05	0.04	0.179	0.31	0.05	<0.001	0.74	0.04	<0.001	0.03	0.05	0.529
D2	0.08	0.03	0.024	0.30	0.05	<0.001	0.73	0.03	<0.001	0.17	0.04	<0.001
D3	-0.04	0.04	0.287	0.20	0.05	<0.001	0.41	0.04	<0.001	0.47	0.05	<0.001
D4	-0.01	0.04	0.700	0.23	0.05	<0.001	0.51	0.04	<0.001	0.33	0.05	<0.001
D5	-0.09	0.04	0.011	0.37	0.05	<0.001	0.85	0.04	<0.001	-0.02	0.05	0.717
D6	0.09	0.03	0.003	0.33	0.04	<0.001	0.58	0.03	<0.001	0.06	0.04	0.096
D7	0.10	0.04	0.008	0.27	0.05	<0.001	0.33	0.04	<0.001	0.29	0.05	<0.001

5. Conclusion

The results of the survey showed that especially those values that are typical for the principle of Self-Enhancement and Conservation, specifically the values of Achievement and Conformity, have a negative impact on OLC, or they do not make any positive contribution to it. Therefore, it can be concluded that the examined organization has a rather negative attitude towards any changes and there is a relatively protective tendency towards everything that could potentially endanger its operation. Given that the organization is active in healthcare, which is dependent on following the

latest trends in the field and adopting new practices, we would recommend that the organization's management be more open in this area.

On the contrary, the values of Benevolence and Universalism, which in Schwartz's theory represent the principle of self-transcendence and focus on the welfare of others, had a positive effect on OLC. They are characterized by understanding, appreciation, tolerance, social justice and usefulness. Employees, however, see these values low on the organization's imaginary value ladder, ranking 7th and 8th out of ten. Thus, the organization would benefit not only in terms of OLC, but also for the sake of strengthening the organizational identification, which is connected with OLC (Hiršová et al., 2020), if these values and principles were supported more there.

Although the analysis of the obtained data led to interesting and concrete results that could help the management of the organization in understanding some situations and further building a functioning learning organization, it should be noted that the study addresses only a limited part of the space that exists in the relationship between values and OLC. Future research could include and explain other factors that affect the value setting of an organization and, thus, find deeper connections not only with OLC.

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The Influence of the COVID-19 Pandemics on Consumerist Behaviours in Poland

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Abstract: The impact of the COVID-19 pandemics on the economic, social, and civilisational situation is enormous. The global society is up against a new reality and challenges which had not been seen before. We are witnessing changes in every sphere of human life. The attitude towards life, work, and consumption is transforming. This article describes the influence of the pandemics on consumerist behaviours of the Polish people. The COVID-19 pandemics has altered the shopping habits fundamentally. Consumers approach the frequency of doing shopping, the matter of paying for the purchases, and the use of alternative channels of distribution in a different way. Internet shopping has become more popular. In the first weeks of the pandemics, spending on products of everyday use, health products, and dietary supplements rose. At the same time, consumers' interest in household goods, industrial goods, and cosmetics waned. This article is an attempt at defining the new phenomena of consumerist behaviours that have been observed during the pandemics in Poland.

Keywords: consumerist behaviours, pandemics, commerce

JEL classification: : O24, N74

1. Introduction

Consumer behaviours – sometimes interchangeably referred to as consumerist behaviours – constitute one of the elements of the broadly understood human behaviour. In the source literature, one can find a variety of approaches to the question of defining consumer behaviours. This results from the interdisciplinary character of the phenomenon (Gosik, 2017, p.55). Most generally, consumer behaviours constitute a compound of activities and efforts that aim at satisfying a person's needs by means of obtaining goods and services according to the subjective system of preferences (Gajewski, 1994, p. 7). A more elaborate definition was suggested by Ewa Kieźel, who has assumed that consumer behaviours are defined as a coherent whole of activities, efforts, and proceedings associated with making choices in the process of fulfilling consumerist needs within particular social, cultural, and economic circumstances (Kieźel, 2003, pp. 17-18). Another definition conceptualises consumer behaviours as a way in which a consumer hierarchises their own needs, selects goods and services with the aim of satisfying them, and utilises owned goods (Pohorille, 1980, p. 490). According to yet another definition, consumer behaviours concern thoughts, sensations, and activities that people undertake in the process of consumption, as well as factors from the surroundings, which influence those thoughts, sensations, and activities (Peter, Olson, 2002, pp. 6-7). Nonetheless, a definition which captures the question of consumer behaviours in the most comprehensive manner is one devised by Gerrit Antonides and W. Fred van Raaij (2003, p. 24). According to them, consumer behaviours comprise any mental and physical activities (behaviour) – including their motives and causes with regard to both individuals and groups – concerning the orientation, purchasing, utilising, maintaining, and disposing of a product (cycle of consumption), as well as concerning the household production, all of which allows the consumer to function, fulfil their objectives, and actualise their values. This, in turn, will lead to them gaining satisfaction and well-

being, at the same time taking into consideration short-term and long-term outcomes as well as individual and social consequences.

The outbreak of the COVID-19 pandemic at the turn of 2019/2020 imposed changes in consumer behaviours all over the world. The “Consumers and the new reality” report (KPMG International) presents behaviours, needs, and preferences of consumers as shaped under the influence of the pandemic. The research was conducted among consumers from Germany, Italy, Great Britain, Spain, France, Canada, the United States, Brazil, Australia, Japan, China, and Hong Kong. The report clearly indicates that the most significant factors influencing consumers’ behaviours after the outbreak of the pandemic include those which are determined by the global economic situation. The freezing of economies, the lowering of incomes, job loss, care about home budget in the uncertain times, and fear of one’s own safety all constitute the main causes of current changes in consumer behaviours. The consequence comes in the form of shaping a new type of a consumer, whose distinguishing features include: limiting expenses, reasoned shopping, and advancement in using digital technologies. This was confirmed by the results of the survey research presented in the said report. In the period of the pandemic, the main decisive factor behind doing shopping is the value for money of a given product (63% of indications). The subsequent key factor, one indicated by 42% of the respondents, turned out to be the easiness of making purchases. The next positions in the ranking were taken by brand trust (41%) and personal safety (40%).

The coronavirus pandemic has changed before our very eyes the world which had up till now been open to a variety of possibilities; the world of travelling, interpersonal relations, and shopping. The social, cultural, and commercial life has been transferred to the Web. The implemented restrictions forced the transfer of consumers’ needs into Internet shops, both grocers’ and non-grocers’ (Figure 1). The main factor determining online sale turned out to be comfort – 54% of indications in the case of grocers’ and 65% of indications in the case of non-grocers’. The subsequent reason behind online shopping is safety (52% – grocers’; 41% – non-grocers’). Other important factors include price (50% – grocers’; 67% – non-grocers’) and a wide choice of products (35% – grocers’; 52% – non-grocers’).



Figure 1: Factors influencing online-shopping decisions in the age of COVID-19
Source: The “Consumers and the new reality” report (KPMG International)

2. Polish Consumers' Attitudes in the Age of the COVID-19 Pandemics

Poland was one of the first European countries to take very radical actions aimed at protection from the COVID-19 virus. The restrictions concerned practically all aspects of socio-cultural and economic life. Educational, cultural, gastronomic, and service establishments were closed. The freedom of movement was limited and the international air traffic and railways transport operations were suspended. A range of restrictions regulating the functioning of commerce was imposed. Shopping malls were closed, while other retail facilities were obliged to introduce the sanitary regime (obligatory covering of nose and mouth as well as gloves and disinfection). All these actions forced the consumers to compulsorily adjust to the new reality. Consumer awareness, which had been developing at a quick pace before the outbreak of the pandemics, has significantly evolved after the crisis. Online shopping provides a good example. Before the COVID-19 pandemics, many people had only tested or tried doing grocery shopping online. At the moment of the crisis situation – at the moment of care about safety and health – this channel of sale proved successful and turned out to be satisfactory. A similar thing happened with touchless (cashless) payments, which remained the most preferred form of payment even after the lifting or loosening of the restrictions.

Against the background of other countries, the Polish people adjusted to the conditions of life during the pandemics fairly well. Around 26% of households in Poland reduced their spendings. It is a surprising result, because globally this proportion is 47%. The declarations with regard to cutting the spending on a long-term basis reveal a similar tendency. In Poland, 14% of households indicated the will to continue the reduction of their spendings, while globally this rate is 28% (the report from the "EY Future Consumer Index" research). According to consumer research carried out by the EY Poland, four main attitudes of the Polish society towards spending money during the pandemics can be defined. The same research has differentiated five trends influencing home budgets in a long-term perspective.

Among the four attitudes and behaviours of the Polish people towards the COVID-19 pandemics, one can differentiate: 'Stay calm, carry on', 'Hibernate and spend', 'Deep cuts', and 'Save and stockpile' (Figure 2). Within the Polish society, the biggest group comprises persons marked by the 'Stay calm, carry on' approach; 43% of the respondents are currently functioning according to this rule. These are persons who have not been stricken by the pandemics in a direct way and who are not changing their habits with regard to spending. For them, the only concern is the fact that other people are saving money. The subsequent group – 'Hibernate and spend' (30% of indications) – consists of persons who are afraid of the consequences of the pandemics, but who at the same time are not restricting their spendings, are better prepared, and are looking into the future in an optimistic way. On the other hand, the researched persons assuming the 'Save and stockpile' approach (10% of indications) are those who have not been stricken by the pandemics in a direct way, but who are apprehensive about the future and their families, and assess the long-term consequences of the coronavirus in a pessimistic way. The last group includes persons marked by the 'Deep cuts' approach (16% of indications); they are feeling the effects of COVID-19 in the most acute way and had to make considerable savings in their home budgets. These persons are looking into the future in a pessimistic way and at the same time are aware of the fact that their situation will not be improving significantly in the short-time perspective.

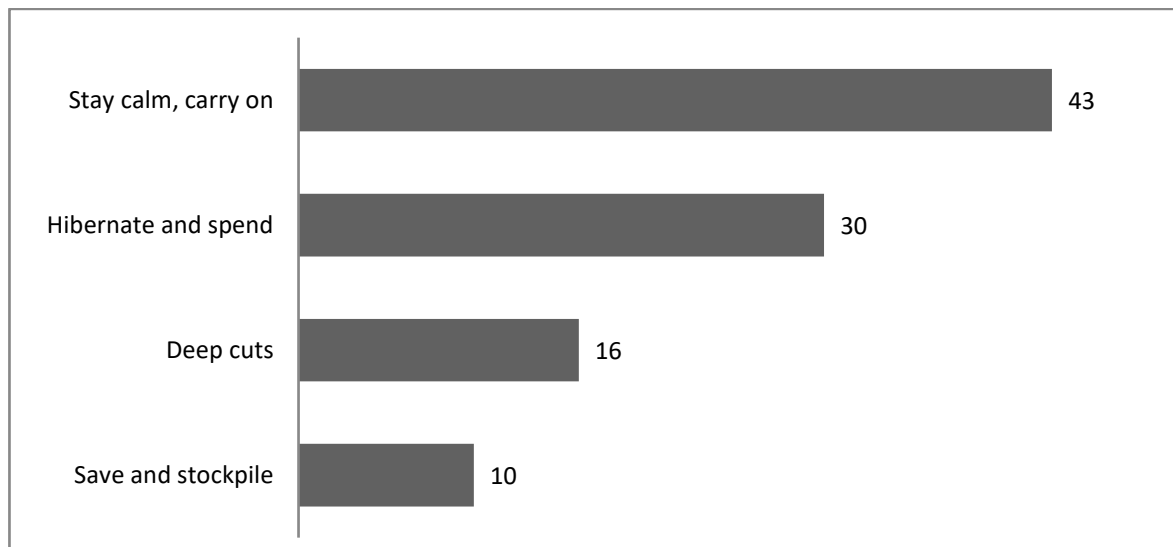


Figure 2: Polish people's current attitudes towards the COVID-19 pandemics.

Source: Based on the "EY Future Consumer Index" report (EY Polska)

When analysing trends shaping home budgets in the nearest future, five main attitudes of the Polish consumers can be distinguished: 'Return to normal', 'Cautiously extravagant', 'Back with a bang', 'Keep cutting', and 'Stay frugal' (Figure 3). Among the researched persons, the biggest group comprises respondents who are hoping to return to normality after the pandemics ends (41% of indications). It is a group of people, whose situation during the pandemics did not change significantly and who did not have to worry about their economic situation. The subsequent group (24% of indications) is called 'Cautiously extravagant'. This attitude of the researched persons is marked by a rather deep optimism, but also by great concentration on the matters of health and safety. They are aware of the crisis resulting from the pandemics and at the same time they are ready for bigger spendings in the spheres that are of considerable significance to them. The most optimistic attitude is one called 'Back with a bang' (20% of indications), which is represented mainly by young people who are not coping with the restrictions very well. These persons are planning to return to the way of spending money and to the lifestyle which they had had before the outbreak of the pandemics. Then, the group called 'Keep cutting' (10% of indications) turned out to be in the worst situation. The researched persons marked by this attitude are planning to maintain the cuts in their home budgets and the limitations with regard to their spendings. This is a group which was affected by the economic effects of the pandemics most radically and is looking into the future in the least optimistic way. Finally, the 'Stay frugal' group is the smallest one (4%). These are researched persons who are trying to return to normality despite the restrictions to their home budgets, although they are perceiving the future in a pessimistic way.

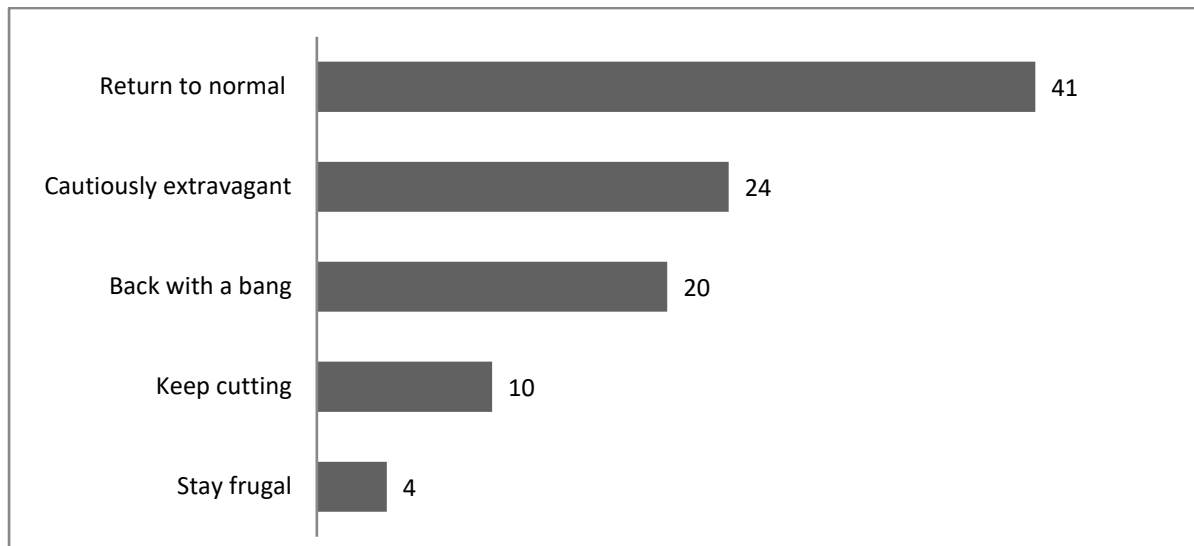


Figure 3: Polish people's expected attitudes towards the COVID-19 pandemics.

Source: Based on the "EY Future Consumer Index" report (EY Polska)

3. Conclusion

The situation that the world faced after the outbreak of the COVID-19 pandemics is an unprecedented one. Economy and the social and cultural life – both on the global plane and in particular countries – came to a halt for long months. In Poland, the government decided to close retail facilities with a floor area of above 2,000m², gastronomic establishments, and places of entertainment. The society shut themselves away at homes as part of the national isolation aimed at minimising the risk of catching the disease. The basic question which the existing civilisation came to face is: how will life after the pandemics look like? These are the conditions under which new behaviours and consumer attitudes began to shape. In this new reality, a consumer is driven by values and motivations other than that from before the pandemics. Health and safety of oneself and one's relatives were brought to the forefront. It turned out that we are capable of pushing our own boundaries of comfort significantly under the influence of external limitations. We are ready for changes imposed by the adaptation to new conditions, but at the same time we really yearn to return to stabilisation and normality, i.e. to life in the period before the pandemics. Many of us redefined the way of thinking about life and introduced proper work-life balance. In terms of expenditure, we are trying to manage home budgets in accordance with our financial capacities. When choosing a shopping store, we now place importance on safety and the attention to hygiene rules. We are choosing Internet shops more and more often and not only with regard to non-grocers'. We are taking up innovative offers from shop chains which enable us to make a purchase online and collect it from a special pick-up point (the so-called 'click & collect' option). We now prefer cashless forms of payment. To sum it up, the COVID-19 pandemics accelerated the adjustment of consumers to technological changes on the one hand, while on the other it made them more aware with regard to both choosing the products and going through the process of doing the shopping.

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The relation between Employer Branding and Personnel Marketing

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Abstract:

The aim of the paper is to determine the relation between employer branding and personnel marketing. Both employer branding and personnel marketing are relatively new concepts, and the corresponding theory has not been unified. Some authors regard personnel marketing as a tool of employer branding, whereas other authors consider this relationship to be the polar opposite. Based on preliminary/previous literature review, this paper offers a third point of view – employer branding and personnel marketing are to be considered equal in terms of having a mutual effect.

Keywords: employer brand, employer branding, personnel marketing, marketing mix

JEL classification: M31, M51, M54

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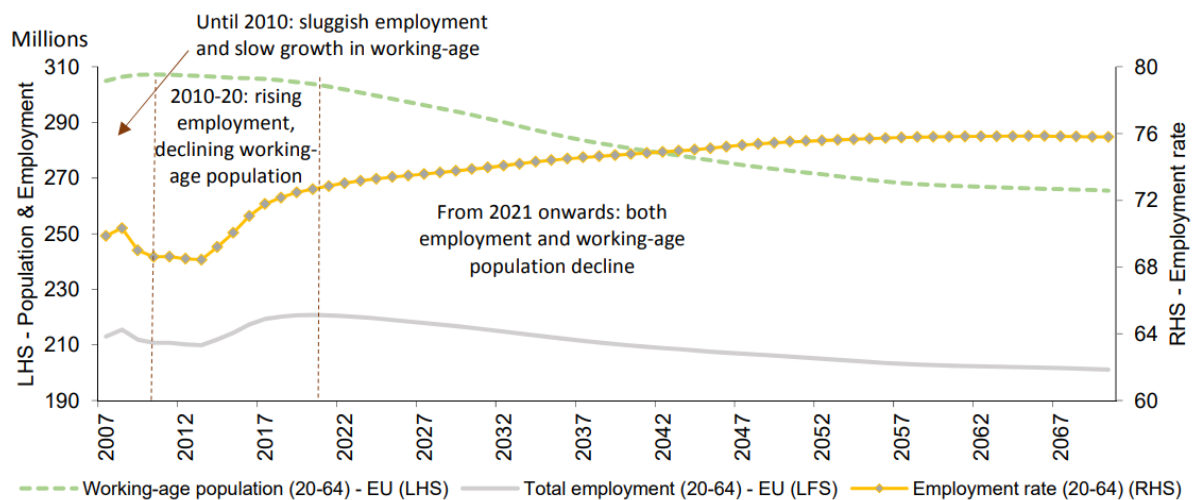
1. Introduction

The term *War for Talent*, despite being coined in 1998, is still applicable today. The lack of human resources in the future was predicted in connection with this term. It was pointed out that maintaining the employer brand should be prioritized. In accordance with this notion, all activities of the company should aim to establish a brand symbolizing attractive organizational culture and inspiring values (Chambers et al., 1998).

Czech employers have been experiencing a significant lack of human resources recently. The unemployment rate in June 2020 only reached 2,6 % ("Nejnovější ekonomické údaje", 2020). As far as the lack of human resources is concerned, despite the expected economic recession, we cannot expect the situation to improve in the long term, as the Czech, and the European population, in general, is aging rapidly. Figure 1 describes the rise of employment rate and the decline of the working-age population, as well as total employment. All values apply to the population between 20 – 64 years (European Commission, 2018).

There is a consensus that the higher quality human resources a company has at its disposal, the bigger their competitive strength. For the company to be successful, it needs to develop a strategy of attracting quality human resources, i.e. how to become the employer of choice. Employer branding and personnel marketing appear to be suitable tools to achieve such a goal.

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Source: Commission services, Eurostat, EPC.

Figure 1 Population and employment developments (million), EU (European Commission, 2018)

Nevertheless, the nature of the relationship between employer branding and personnel marketing does not appear to be clearly defined. The purpose of this paper is to determine this relationship based on revisiting previously published peer-reviewed articles.

2. Employer branding

Ambler and Barrow defined the term employer brand in 1998. They described it as a package of functional, economic and psychological benefits provided by employment, related to the employer (Ambler & Barrow, 1996). Other authors succeeded them in developing this theory further.

Brand as the result of brand management is one of the most essential values for companies and next to product area, it is used in the context of human resources management. Employer brand may be defined as a process of creating an identifiable and unique identity of the employer. In contrast, employer brand is a concept which emphasizes distinguishing a company from its competitors. It encompasses both internal and external promotion and highlights the reasons for the employer's desirability and their distinctiveness from other employers. (Backhaus & Tikoo, 2004).

Employer branding is a process of creating such employer image, resulting in the company being perceived as a desirable employer providing satisfactory work conditions. Better quality recruiting processes are the result of employer branding through which the company achieves competitive advantage (Gogolova et al., 2015).

There appear to be several similarities between employer and product brand, along with some differences. Employer brand seeks to define the company and its employer identity, focusing on the internal and external audience. On the other hand, the product brand is focused particularly on an external audience (Backhaus & Tikoo, 2004). Nevertheless, the employer brand is influenced by product brand to a large extent. It is difficult to employ highly qualified human resources for companies with low product awareness or negative product brand, as they do not seem to be sufficiently attractive for their prospective job candidates (Wilden et al., 2010). The relation between product and employer brand is shown in Figure 2. It visualizes the interconnectedness of employer and product brand. If quality staff is employed, the company can provide good product and services, resulting in

best word of mouth marketing, and being able to attract the best job applicants in the process (Ambler & Barrow, 1996).

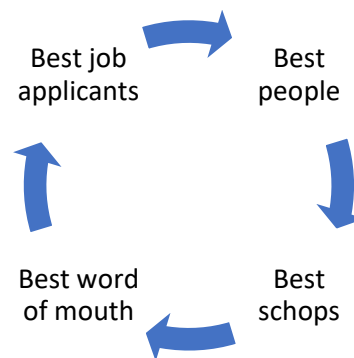


Figure 2 Cycle of employer and product brand (Ambler & Barrow, 1996)

Backhaus and Tikoo conceptualized employer branding, as described in Figure 3. Organizational culture affects the attractiveness of the employer brand, while in turn, employer brand impacts organizational culture. Employer brand generates two basic values: brand associations and brand loyalty. Associations affect the company's image and increase its attractiveness for potential job applicants; loyalty increases the productivity of employees (Backhaus & Tikoo, 2004).

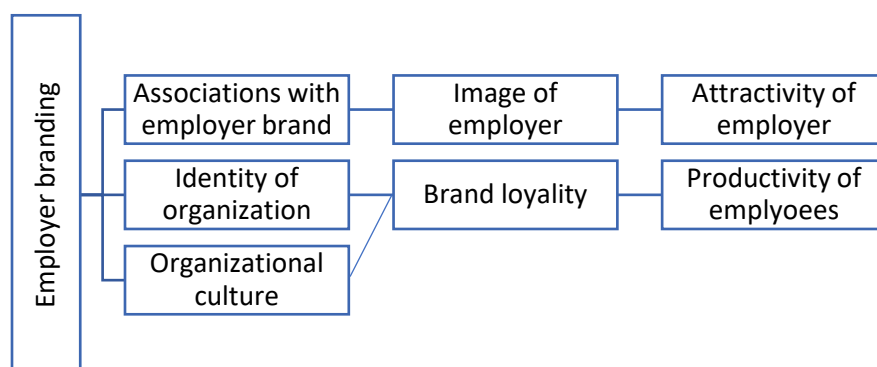


Figure 3 Conception of employer branding (Backhaus & Tikoo, 2004)

Employer brand fulfils the following functions in employee's point of view: it provides a reference point during the employer selection process, in which a strong employer brand enables the company to reach the employer of choice status, serving as an indicator of quality on the labour market. Such an employer is, therefore regarded as trustworthy. After accepting the job offer, the employer brand is useful as a mechanism which enables employees to identify themselves with the employer. If employees consider their organization prestigious, this fact alone generates a positive impact on their general attitude. In employer's perspective, employer brand functions are as follows: employer brand may increase company's value as an employer, it supports recruitment strategies, decreases fluctuation, differentiates the company from other employers and influences the extent of its competitors' desirability by job applicants. To fulfil all these functions, the employer should be encouraged to invest in the transparency and consistency of its brand (Wilden et al., 2010).

3. Personnel marketing

Knowledge of accommodating brand to customers may help discover the means of communicating the employer brand (Wilden et al., 2010). In this concept, personnel marketing combines marketing knowledge and human resources management knowledge, where personnel politics considers employees' needs to motivate the current employees and gain future ones. The goal is to acquire human resources for the organization (Andrejčák, 2013). The primary idea of personnel marketing is developing the company's attractiveness as an employer (Gladka & Fedorova, 2019).

Instead of using the term "market of goods and services" we are inclined to use the term labour market. Demand for jobs meets job vacancy offers by employers. In this way, job applicants are regarded as customers (Gogolova et al., 2015). This approach is based on the knowledge that publishing a job offer in the traditional way is insufficient for recruiting quality labour force. It is necessary to develop an attractive approach for searching, attracting, motivating and convincing employees for choosing to accept the job offer (Jánošová, 2016).

There are four approaches to personnel marketing: **functional approach** perceives personnel marketing as a package of personnel management functions focused on planning, selecting employees and their personal development, along with the maintenance of the employer brand; **structural approach** entails the process of decision making on the strategic and tactical level, which, in turn, is related to acquiring human resources, their development and maintenance of the employer brand; **process approach** includes collecting information about the labour market, planning, selecting employees and their personal development, along with the maintenance of the employer brand; **aiming approach** emphasizes reaching goals focusing on quantity and quality when acquiring human resources and in developing the employer brand (Mishyna et al., 2019).

3.1. Marketing mix in personnel marketing

Personnel marketing approaches job vacancy as a product sold on the labour market. Here, the labour force is regarded as customers, both internal and external (Rodica & Rodica, 2017). Marketing mix of product and services was developed in the past from McCarthy's 4 P (McCarthy, 1960), to Booms and Bitner's 7 P ("Marketing Theories", n.d.) and finally to Borden's 12 P (Borden, 1984). Similarly, there are different approaches to the personnel marketing mix as well.

Lvovna and Viktorovich categorize 4 P in personnel marketing into two perspectives – employer's and employee's (Lvovna & Viktorovich, 2017) – see Table 1. Wickham and O'Donohue applied extended marketing mix to personnel marketing (Wickham & O'Donohue, 2009), as described in Table 2. Mishyna, Mishyn, a Parkhomenko, established the most detailed classification of the personnel marketing mix, which includes 12 P (Mishyna et al., 2019) – see Table 3.

Table 1 4 P of personnel marketing (Lvovna & Viktorovich, 2017)

4 P	Employer's point of view	Employee's point of view
Product	Job vacancy	Human work
Price	Time/education/qualification	Salary
Place	Workplace	Workplace
Promotion	Announcement of recruiting	Job application

Table 2 7 P of personnel marketing (Wickham & O'Donohue, 2009)

7 P	Human resources management function
Product	Incentives offered to employees by and employer
Price	Expected value delivered by employees to organization.
Place	Geographical location
Promotion	Formal and informal messages communicated to current or potential employees directly or indirectly
Process	Systems and procedures on workplace which allow employees to procure a product, enabling them to reach their organizational and private goals.
People	Leaders who possess knowledge and skills to mediate product to employees and gain maximum value from them.
Physical Evidence	Workplace environment, organizational culture

Table 3 12 P of personnel marketing (Mishyna et al., 2019)

12 P	Personnel marketing interpretation
Product	Workforce
Price	Salary
Place	Vertical and horizontal move of human resources, workplace rotation
Promotion	Employer brand concept
People	Staff dealing with personnel marketing
Package	Corporate dress code, symbols
Purchase	Methods and tools for attracting staff
Public Relations	Public information about personnel politics and personnel programs
Physical Premises	Social responsibility of organization
Profit	Growth of human resources for organizational profit

4. Employer branding and personnel marketing relation

We can define two primary approaches to establishing the relation between employer branding and personnel marketing. The first one perceives personnel marketing as a tool for maintaining employer branding. For example, Backhaus and Tikoo maintain that employer branding comprises of three steps. Firstly, a value proposition is established. It includes organizational culture, management style, quality of current employees, employer's image, perception of product or services etc. Secondly, the value proposition is aimed at the target group of potential employees by external personnel marketing.

Finally, internal personnel marketing is utilized to fulfil commitments made to job applicants (Backhaus & Tikoo, 2004).

Another approach understands employer branding as a part of the marketing mix, mostly promotion. An example of such an approach is by Gladka and Fedorova. They believe employer branding may be considered as one of the components of the personnel marketing mix. It is focused on promoting the organization as an employer, which results in higher attractiveness required to fulfil personnel strategy (Gladka & Fedorova, 2019).

Both concepts are legitimate. Taking into consideration the arguments of proponents of both strategies, we can formulate yet another, alternative approach. Admittedly, employer branding cannot exist without personnel marketing and vice versa. Employer branding is a result of personnel marketing activities where personnel marketing uses employer branding for promotion and other components of the marketing mix, depending on the selected approach – see Figure 4.

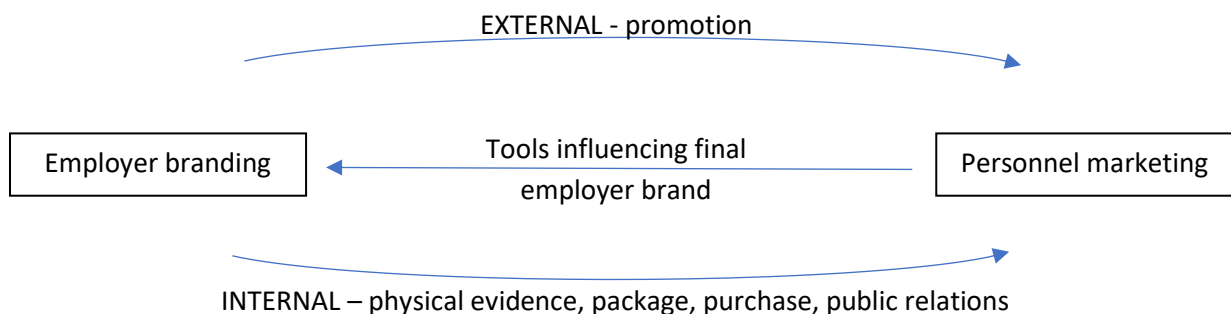


Figure 4 Employer branding and personnel marketing relation (source: author of the text)

5. Conclusion

Employer branding and personnel marketing are relatively new concepts in human resources management. Contemporary sources in this field are not unified, employing disparate approaches to the subject. The most considerable differences are to be found in the relation between employer branding and personnel marketing. It is not clear which of these concepts is superordinate to the other. This paper attempts to formulate a new point of view - employer branding and personnel marketing are equal in their effect on each other.

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Motives and methods of using SWOT analysis for planning and budgeting in the municipality of the Czech Republic - CASE STUDY

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Abstract: The subject of the article is to examine the motives and methods of using the SWOT analysis for planning and budgeting at the level of the Czech municipality. A case study of two selected municipalities in the Czech Republic with less than 1,000 inhabitants they used by a method of qualitative analysis. The method of unstructured interview they used to obtain primary data. The authors used for data collection available secondary public sources as well as bachelor thesis of two students of STING ACADEMY, Brno and websites of municipalities and ministries.

Keywords: SWOT analysis, planning process, methods, budgeting, municipality

JEL classification: H 83 R 11

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1. Introduction

The subject of the article is to find out the motives and ways of using SWOT analysis by, the case study in two selected municipalities in the Czech Republic. SWOT analysis is ranked among the basic tools of synthesizing findings from the analysis of external and internal environment, followed by an effective alternative strategy formulation (GRASSEOVÁ, Dubec, Rehak, 2010). In the public sector of the Czech Republic, SWOT analysis is a relatively frequently used tool in solving problems and in processing strategic documents. This is mainly due to the explicit definition of the SWOT analysis in the methodology of preparation of public strategies (Ministry of Finance of the Czech Republic, 2012). It is also based on the methodology of development development (Ministry for Regional Development of the Czech Republic, 2012) such as and the Manual for Municipal Development Management prepared on the Portal for the Support of Municipalities of the Czech Republic, 2011).

1. Methodology and objectives of the paper

As a method of qualitative analysis, a case study is, used in two selected municipalities in the Czech Republic with a population of up to 1000 inhabitants, which have a development plan using SWOT analysis. We used for data collection the of available secondary sources, primarily developed planning and budget documents communities, guidelines, technical publications, databases, theses students of STING ACADEMY, Brno. Information gathered from mayors and processors of the development plans of the two municipalities was used as the primary source of information. In the first case, the mayor

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of the municipality was also the processor of the Municipal Development Plan. The background for the Municipal Development Plan was his bachelor's thesis, which was part of our research grant (2017). In the latter case, the processor of the Municipal Development Plan was a student at our school. She, too, was based on her bachelor's work, with which she was involved in the research grant solution (2020). She has drafted a development plan for the community in which she lives with her family. The mayor studied the contents of the bachelor's thesis. He did her review. As a result, he asked the student to process the Municipal Development Plan. That is why we have proceeded to unstructured interviews with respondents. The content of the interviews was to find out whether respondents and in which cases used the SWOT method. Why they chose this method. We were also interested in using other complementary methods. The aim of the article is to answer the following research questions: (1) What are the main motivations for carrying out the SWOT analysis in a given municipality? (2) How, and using what additional methods, do municipal workers go about implementing the SWOT analysis?

2. Background using SWOT analysis

The essence of the SWOT analysis is summarized by Hill and Westbrook (1997) as a type of evaluation of internal (strengths and weaknesses) and external (opportunities and threats) environment with a subsequent combination of these factors, which leads to the creation of so-called alternative strategies.

Strengths and weaknesses are internal factors environment that can affect an organization and have a positive or negative impact on its functioning and results. Strengths and weaknesses can change over time according to the changing conditions of the organization and its surroundings (Houben, Lenie, Vanhoof, 1999). In practice, there may be a certain reluctance to reveal and present weaknesses and, conversely, a tendency to emphasize and exaggerate strengths (Valkov, 2010).

Opportunities are those factors from the external environment of the organization that organizations can use to increase efficiency and effectiveness. Threats are then understood to factors from outside the organization, that may undermine the effectiveness and efficiency of the organization. With regard to external factors, the organization's management is not always able to initially estimate whether the revealed trend will mean a threat or an opportunity. It may happen that the initial opportunity seized by the competition becomes a threat (Helms, Nixon, 2010). Therefore, the impact of individual factors changes over time, which must be taken into account when creating a SWOT matrix.

When creating a SWOT matrix, where we combine the factors of the internal environment with the factors of the external environment, we create the so-called alternative strategies. It is not appropriate for one area or only a few types of aspects or information to dominate (Vakov, 2010).

The main advantages of the SWOT analysis include its universality, comprehensibility and relative simplicity. On the other hand, just the perception of this method is simple, sometimes leads to the fact that the method used and understood correctly, are made only brief, vague and unordered lists factors affecting the operation of the organization (Helms, Nixon, 2010). This method is criticized mainly because of the risk of high subjectivity. Therefore, the effort of organizations should be to increase objectivity (multi-member teams, employees from different levels of the organization, from different functional areas, etc.). Furthermore, we can recommend the use of a uniform methodological procedure for the implementation of SWOT analysis with the appropriate use of appropriate methods.

In the public sector of the Czech Republic, the SWOT analysis is used on the basis of the methodology of preparation of public strategies (Ministry of Finance, 2012). In this document, the methodological procedure for the use of SWOT analysis is not further defined. In contrast, municipalities can use the Methodology of creating a community development program (Ministry of Regional Development, 2012), which recommends the possibility for the design part to use analysis of internal and external factors of development (SWOT analysis) in accordance with the Manual for Municipal Management (Portal to support the development of Czech municipalities, 2011). Both of these materials present SWOT analyses as a compilation of an overview of factors without their subsequent evaluation.

Approaches to the implementation of SWOT analysis in practice (Hill, Westbrook, 1997) were identified as follows: (1) The organization orders the processing of a SWOT analysis from a consulting firm. One selected manager usually communicates with the selected company from the middle management level or several top managers. (2) Several members of the company's top management will perform a SWOT analysis for their areas. These partial SWOT analyzes are then sorted. As a rule, there is no joint meeting to decide on the final form of a comprehensive SWOT analysis. (3) The SWOT analysis is the output of a meeting of managers, where everyone forms a SWOT matrix.

From the above it can be concluded that the methodological procedure for the implementation of SWOT analysis is not standardized. The individual phases of the SWOT analysis implementation, if the analysis is performed by the employees of the analyzed organization, could be the following (Grasseová, Dubec, Řehák, 2010): (1) Preparation for the SWOT analysis. (2) Identification and evaluation of the strengths and weaknesses of the organization and opportunities and threats from the external environment. The sources for identifying strengths and weaknesses should be, in particular, documents describing and evaluating the development, activities and results of the organization, eg. annual reports, analytical and / or forecasting studies, financial statements. Employees performing SWOT analysis can draw on similar sources as in identifying the strengths and weaknesses of the organization. Relevant documentation or creative methods such as Brainstorming can be used. (3) Generating alternative strategies using the SWOT matrix. Optimally, all data entered into the matrix should be supported by relevant data, quantitative indicators, etc..

To reduce the degree of subjectivity of the use of SWOT analysis, many authors propose its quantification, such as the application of Saaty's AHP method (Analytic hierarchy process) (Saaty, Vargas, 1990), which is, used for mathematical expression of relationships between goals, criteria and solution alternatives.

The use of the mentioned and other methods of multicriteria decision support (MCDS) in SWOT analysis was processed, for example, by Kajanus et al. (Kajanus et al., 2012). The application of SWOT analysis using MCDS is then basically performed in the following steps: (1) Creation of a SWOT matrix from relevant environmental factors. (2) Determination of the relative importance of factors in groups using MCDS. (3) Determining the relative importance of individual areas, again with the possibility of using MCDS. (4) Identification of possible alternative solutions based on previous quantification. (5) Calculation of the overall evaluation of solution variants.

Described in detail the process of creating the SWOT analysis (Chang and Huang, 2006), which is based on the principle of comparing multiple objects when several decision-maker may be as follows: (1) Determine what is to be evaluated. (2) Creating a hierarchical structure of the main factors to evaluate.

(3) Data collection (objective and quantitative performance) and questionnaire survey (subjective and qualitative performance). (4) Determination of factor weights using the AHP method (Analytic Hierarchy Process). (5) Standardization of evaluation. (6) Calculation of internal and external evaluation (normalized evaluation multiplied by weights) and determination of values. (7) Calculation and comparison of internal and external evaluation.

3. Case study

We selected two municipalities with less than 1,000 inhabitants. Almost 80% of all municipalities are located in size groups of up to 1,000 inhabitants. At the same time, only 17.2% of the population of the Czech Republic lives in these municipalities. ((CZSO, 2020) The study (Ježek, 2015) states that in small municipalities with less than one thousand inhabitants 2/3 of small municipalities do not have a developed development strategy, especially the smallest municipalities with less than 1000 inhabitants. As a reason, representatives were told that they did not consider the strategy important, they knew what they wanted to do, and they did not need an "extra piece of paper". Another most frequently mentioned reason was that it could not process the strategy. If they should have it processed externally, it is too financially expensive (Ježek, 2015).

The authors of the article were interested in what motives lead mayors and deputies to plan the development of the municipality and to use SWOT analysis. Why did they choose the method of SWOT analysis? To find out this information, we defined research question No. 1: What are the main motives for the implementation of SWOT analysis in the municipality? We have announced the topics of final topics of final bachelor's theses focused on development planning and compiling the municipality's budget. From the final bachelor works of students dealing we selected two, which were later used as a basis for compiling a development plan of following willages. The first village is Branišovice belongs to the South Moravian Region and the second is Lipová from of the Olomouc Region. In terms of population, cadastral area and budget, both municipalities are similar. All analyzed documents of both municipalities are publicly available. Both mayors are university-educated with basic knowledge of SWOT analysis. To solve research question no. 2: How and when using what additional methods do the employees of the municipality proceed in the implementation of the SWOT analysis? We performed the following steps. We performed a content analysis of development plans and their connection to budgets and budget outlooks and the use of management regulators. In an unstructured interview, we discussed with them. In addition to the above research questions, we had a discussion about the barriers that municipal representatives see in the wider use of this method, such as in the process of drawing up a draft budget and budget outlook.

4. Discussion

Both municipalities based their elaboration of the plans on the instructions of the Ministry as the relevant legal regulations and methodologies developed by the Ministry of Regional Development of the Czech Republic (2012). They prepared the socio-economic characteristics of the municipality, according to the methodology of the Ministry of Regional Development of the Czech Republic (2012). These are complex and detailed characteristics of life in both municipalities. This analysis was sufficient for the SWOT analysis.

Findings on research question no. 1: What are the main motives for implementing a SWOT analysis in a given municipality? In case study, the respondents confirmed that the main motivation for using the SWOT analysis was that the respondents knew the method. They liked its versatility, intelligibility and relative simplicity. Both mayors understand planning the development of the municipality as a strategic document of the municipality as an effective method.

The author of the plan of the first willage prepared a SWOT analysis as an overview of strengths and weaknesses, opportunities and threats. Although no matrix evaluation of individual factors was performed. But a questionnaire survey was conducted, on the result of which the vision and strategy of the municipality were determined. was agreed with the representatives of the municipality. Based on the compiled list, strategic goals and individual measures were set, including estimated expenditures for individual measures. The measures were planned for the first two years. From the final accounts of the municipality, we found that the measures were included and actually implemented in the budgets in the planned years.

The author of the plan from the other village prepared a detailed SWOT analysis with a final evaluation of strengths and weaknesses, opportunities and threats and the choice of WO strategy (minimization of weaknesses and maximization of opportunities). In accordance with the conclusion of the SWOT analysis, it compiled a vision, proposed strategic goals and individual measures, which were planned by the municipality for the entire period 2020 - 2027, including estimated expenditures.

In case study, the SWOT analysis was prepared in-house. Students' bachelor's theses were used as a source of information. One of them was later elected mayor of the village. It was not necessary to spend funds on its processing. The mayor of the second municipality positively assessed the precisely evaluated factors and processed conclusions from the SWOT analysis.

Findings on research question no. 2: In what way and when using what additional methods do the employees of the municipality proceed in the implementation of the SWOT analysis?

In both examples, respondents replied that they had used a questionnaire survey. The aim was to find out the opinions of citizens on life in the village and to help the village leadership in choosing strategic goals and measures. Mayors and processors confirmed that the formulation of questions and the widest possible participation of the inhabitants of the municipality is important for a successful questionnaire survey. Careful evaluation and interpretation of the results is important. A questionnaire survey in both municipalities stimulated the interest of residents in the future of their municipality. Visitors to the municipality also took part in the questionnaire survey of the first municipality. The drafter of the draft development plan of the second municipality prepared and conducted a questionnaire survey in person. This has met with great interest from citizens. The questionnaire survey in the second case contributed to the management of the municipality to know the views of its citizens.

Other findings

The mayors of both municipalities appreciated the cooperation with the students who live and helped in the elaboration of the development plan of the municipality. But they also help in other events. As part of their studies and study practice, they contribute to increasing the quality of planning. They are active and independent actors. Both mayors see the involvement of the young generation in particular in planning the future of the municipality as positive. They can also be involved, for example, in the

processing of SWOT analysis, in the processing of questionnaire surveys. They can act as an objective, independent element of planning, unlike representatives who are already involved in political competition. According to both mayors, the SWOT analysis is a suitable tool for creating a development plan. The advantage of SWOT analysis is that it allows a comprehensive view of the needs of the municipality. Obstacles to the use of this method include the difficulty of specifying whether a given factor is a weakness or a strength, an opportunity or a threat. It is sometimes unclear how to deal with vague or two-way factors.

For the purposes of budgeting, this method was not used in either municipality. According to the respondents (mayors), drawing up the budget for a given year is a matter of political negotiation. The implementation of expenditures, especially for multi-year investment projects, also requires expertise, including the need to plan individual stages. Furthermore, the management of the municipality often has to make decisions on the basis of the situation (eg in the event of natural disasters), which leads to changes in priorities and the emergence of budgetary measures, for which it should create reserves. This may limit the village's investment activity.

4. Conclusion

The authors of the article do not agree with the statement of mayors and representatives of municipalities, who claim that strategic planning is unnecessary, expensive and complicated. The authors of the article share the opinion of mayors from both examples that SWOT analysis is an effective method of preparing a community development strategy. According to Ježek (2015) for quality strategic planning of small municipalities, it is: "... the most appropriate use of the voluntary basis, looking for ways and mechanisms..." This fully applies to SWOT analysis. The authors do not recommend introducing the obligation to perform strategic planning or the use of SWOT analysis through control regulators.

Based on the findings from our case study and findings published in the study (Ježek, 2015), it is possible to verify the hypothesis that higher education of mayors, deputies and processors will be positively reflected in effective implementation SWOT analysis in strategic planning of municipalities including villages up to 1000 inhabitants..

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Value added tax in the context of tax evasion preventing

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Abstract: In this paper we focus on the analysis of value added tax in the context of tax evasion and cooperation of Slovakia with neighbouring countries in eliminating of these tax evasion. We are based on the currently available statistical data published both in Slovakia and on the report of the Center for Social and Economic Research Study and Reports on the VAT Gap in the EU - 28 MemberStates: 2019 Final Report. In the presented paper we focused on the comparison of value added tax and evasion on this tax in Slovakia and the Czech Republic. We used the comparison as one of the methods in processing the issue. We used analysis and synthesis as other methods. We consider regression and correlation analysis to be the most important method used, through which we found the tightness of the relationship between value added tax evasion in the Slovak Republic and the Czech Republic. The conclusions of this analysis showed that the correlation we actually expected between the mentioned tax evasions in both countries is close, as the correlation coefficient is at the level of 0.91. It follows that if the tax evasions in the Slovak Republic increase, so do the tax evasions in the Czech Republic. It is the result of joint trade between these countries.

Keywords: value added tax, tax evasion, tax cooperation.

JEL classification: H2, K4

1. Introduction

The tax system of each state is the result of its long-term cultural, political and economic development. Public finances are largely generated from tax revenues, as the state's tax system is a well-thought-out mechanism for the state to fill sources of public finances. The interest of the state is to collect the largest possible amount of taxes through the tax authorities, while the interest of tax subjects is to pay the lowest possible amount in the form of taxes.

Value added tax, not only in Slovakia but also in many countries of the European Union, forms a significant part of the state treasury's income and is a part of international taxation. In addition to international double taxation, the issue of international tax evasion is equally important. However, tax evasion is not only a matter of international dimension, but also an internal problem of any state.

2. Methodology Used

The essential of the paper is to compare the development of tax evasion in the years 2012 to 2017 in Slovakia and the Czech Republic, as there is a strong and close connection between these two countries not only in the tax area, and to point out the correlation between rising tax revenues and tax evasion.

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We divided the main goal into the following sub-goals, which we tried to achieve and fulfill their content in individual parts of the article:

1. to specify and to define the main concepts related to the issue of value added tax and tax evasion,
2. to compare VAT evasion in Slovakia and the Czech Republic. To meet this sub-goal, we set one hypothesis, which we will verify using correlation and regression analysis: **H: The relationship between tax evasion in value added tax in Slovakia and the Czech Republic is very close.**

In order to achieve the set goals, we divided the paper into two basic parts - theoretical and empirical. In the theoretical part, which is focused on the definition of basic concepts related to tax evasion in value added tax in Slovakia and the Czech Republic, we used mainly the method of comparison, which compared the views of different authors on this analysed issue. We also used the currently valid Slovak and Czech legislative framework.

In the second, empirical part of the paper, we used regression and correlation analysis to verify the tightness of the relationship between tax evasion in Slovakia and the Czech Republic.

3. Literature Review

3.1. A short historical excursion

The first works on the preparation of the law on value added tax began in the common state of the Czech Republic and Slovakia, when the decision was made on the transition to a market economy. Work on its change began in 1990 with the elaboration and preparation of a concept for the reform of the tax system. It has been decided that the tax system will be based on the application of value added tax and that the taxation of the population will be reformed. Already during this work, cooperation with experts from abroad, especially the European Union (EU), was started, as the path of convergence of tax mechanisms as a necessary precondition for involvement in European integration processes was set out, as cited in Schultzová (1996).

At the beginning of the 1990s, a sales tax was used in Czechoslovakia, which was an indirect tax and was levied mainly on the sale or internal use of goods. The sales tax has undergone several changes. Grůň (2001) states, that *“the disadvantage of the sales tax consisted mainly in its gradation, which caused the tax to be transferred from one entrepreneur or technological stage to another with increasing force. The number of intermediates on the product path from the semi-finished product to the final consumer was directly proportional to the rising price”*.

The date of 1st January 1993 is referred to as the day of the establishment of the independent Slovak Republic and at the same time the functioning of the single market between the Member States of the European Union (EU). The main objective of Directive no. 77/388 / EEC of 17th May 1977, referred to as the Sixth Directive on the harmonization of the laws of the Member States relating to turnover taxes, was *“the creation of a common system for value added tax”*, states Ondreášová (2005).

In the period 1993-1995, the basic interest rates for value added tax were set at 23% and 25%. Reduced interest rates applied to selected goods were at the level of 5% and 6% (Bánociová, 2009).

In 1996, there was a legislative change and Act 222/1992 Coll. on value added tax was replaced by the Act of the National Council of the Slovak Republic No. 289/1995 Coll. This law changed the basic tax rate, it fell from 25% to 23% and the reduced tax rate remained unchanged (Grúň, 2001).

At present, value added tax is regulated by Act no. 222/2004 Coll. on value added tax, as amended. The law entered into force on 1st May 2004.

As we stated in our publication (2013), value added tax is an indirect tax, as it is reflected in the prices of goods and services of daily consumption, and therefore it is paid indirectly by everyone. Value added tax in the Slovak Republic is established by Act No. 222/2004 Coll. on value added tax, as amended, which has been amended 34 times since its entry into force and the last change was amendment 334/2017 Coll. with effect from 1st January 2018.

At present, the basic tax rate on goods and services is a 20% rate on the tax base. For the goods listed in Annex no. 7 of the Value Added Tax Act, a reduced tax rate of 10% of the tax base is applied. In addition to the basic and reduced rate of value added tax, Slovakia exempts the exemption of certain goods and services from the payment of this tax.

3.2 Tax evasion

The term **tax evasion** can be understood as *"non-payment of taxes in violation of the law"*, as stated by Rylová (2007, p. 13). The tax evasion in the narrow sense is in the most cases perceived as a violation of the law. The tax evasion can be divided into **two groups** according to Babčák (2010):

1. **Legal tax evasion** - this is a reduction of tax liability or complete non-payment of tax in cases that result from individual provisions of the tax laws or their incomprehensibility, ambiguity or contradiction. Legal tax evasion is on the verge of legality because it uses means such as the law to "discreetly circumvent." Legal tax evasion is essentially synonymous with the term **tax avoidance**.
2. **Illegal tax evasion** - arises as a result of the concealing facts important for determining the tax base, for imposing the tax or on the basis of pretending facts that make it possible to avoid the tax liability. It is also illegal to report fictitious expenses in tax accounting. **Illegal tax evasion means direct and overt or covert violation of tax laws.**

Forms of tax frauds in this area usually do not have the so-called **pure form** but they are often a combination of several ways, with other types of taxes and fees being reduced.

Tax crime is often very carefully prepared and thought through. The affected area is primarily indirect taxes and then all other tax sectors.

3.3 Cooperation between Slovakia and selected countries in the field of taxation

In order to increase the effectiveness of the fight against fraud involving European Union (EU) funds, the European Commission has set up through the decision 1999/352 / EC of 28th April 1999 the **European Anti-Fraud Office (OLAF)**, located in Brussels.

"OLAF" is an abbreviation derived from the French name for the European Anti-Fraud Office "Office européen de lutte anti-fraude". It is an independent office responsible for investigating fraud,

corruption and other illegal activities, including abuse of power within the European institutions. Its mission is to protect the financial interests of the European Union and to fight fraud and corruption.

Member States are responsible for most of the European Union's (EU) expenditure and also for the managing the EU's revenue collection. Their action is the first line of defence against any attempt to fraud against the EU budget.

On 19th September 2013, the Commission published a Study to quantify and to analyse the VAT differences, which it subsequently updated in 2015 and 2017. This comparison showed a lack of significant improvement in VAT revenue collection, as the overall VAT gap was € 168 billion, it corresponds to 15.2% of VAT loss.

According to the records of the Tax Directorate, the Slovak Republic cooperates to the greatest extent with Hungary (approx. 1,112 cases per year), the Czech Republic (approx. 953 cases per year), Germany (approx. 312 cases per year) and Poland (approx. 269,156 cases per year). These are countries neighbouring Slovakia, so we can expect more intensive business activity and cooperation.

In 2018, the Czech Republic and Slovakia agreed to conclude an agreement on the automatic exchange of information in the field of the value added tax, which would improve the mutual cooperation in the detecting tax fraud. Given that police in the Czech Republic and Slovakia have reported several tax frauds in the past concerning fictitious trade in goods between companies from both republics of the former Czechoslovakia, Slovakia and the Czech Republic have pushed through several measures in recent years to reduce tax evasion. Both countries want to cooperate in the field of direct taxes in the future as well.

Already in 2016, Poland was interested in the measures taken by the Slovak government in the area of combating tax evasion. In Slovakia, an Action Plan to Combat Tax Evasion was approved in May 2012, containing 50 measures, which were gradually put into practice in 2012-2015. Representatives of Slovakia presented all measures to the Polish partners. These ensured a higher success rate in the collection of value added tax as well as corporate income tax and thus brought more than 2 billion euros to the state treasury

The Slovak-Hungarian Chamber of Commerce and Industry and PricewaterhouseCoopers organized the CEE VAT ANTIFRAUD conference. Its aim was to find the best ways to deal with tax evasion in the whole region of Central and Eastern Europe and to bring together financial experts. The conference was led by the tax experts from the Czech Republic, Hungary, Poland, Romania and Slovakia together with the tax experts from the European Commission.

4. Comparison of tax evasion for VAT in the Slovak Republic and the Czech Republic

To compare and to analyse the tax evasion in Slovakia and the Czech Republic, we used the data presented in the **Study and Reports on the VAT Gap in the EU-28 Member States: 2019 Final Report**. For the processing of regression and correlation analysis, we used these data: VAT revenue and VAT evasion for the Czech Republic and Slovakia in the years 2012 - 2017. The results of these analyses are shown in the following tables (Table 1, Table 2, Table 3 and Table 4).

The first part of the Regression Statistics output presents the results of the correlation analysis. The value of Multiple R (correlation coefficient) is equal to 0.91. In our case, it is a high degree of tightness

of the relationship between VAT evasion in the Slovak Republic and the Czech Republic. The value of R-square is the value of the coefficient of determination, it is a value of 0.84. This value after multiplying 100 informs that the chosen regression line explains the variability of VAT evasion in the Czech Republic to approximately 84%, the other part represents unexplained variability, the influence of random factors and other unspecified influences. Adjusted R-square also takes into account the number of estimated parameters and the number of measurements.

Table 1: Correlations

		SR	CZ
SR	Pearson Correlation	1,00	,91
	Sig. (2-tailed)		,004
	N	7	7
CZ	Pearson Correlation	,91	1,00
	Sig. (2-tailed)	,004	
	N	7	7

Source: own

Table 2: Model Summary CZ

R	R Square	Adjusted R Square	Std. Error of the Estimate
,91	,84	,80	123,93

Source: own

Table 3: ANOVA (CZ)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	394243,19	1	394243,19	25,67	,004
Residual	76794,52	5	15358,90		
Total	471037,71	6			

Source: own

Table 4: Coefficients CZ

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(constant)	665,65	352,25	,00	1,89	,108
SR	,83	,16	,91	5,07	,004

Source: own

The null hypotheses concern the significance of the locating constant and the regression coefficient, while the null hypothesis states the insignificance of the respective coefficient and the alternative hypothesis its significance. In the ANOVA section, we test the null hypothesis, which states that the model we have chosen to explain the dependence is not suitable and the alternative hypothesis says the opposite. The F test is used to evaluate this statement. Significance F = 0.004 < 0.05 (α - significance level), i. e. we reject H₀, which means that the model was chosen correctly.

The regression function has the form $y = 665.65 + 0.83x$. The value of 665.65 says that if the VAT evasion in the Slovak Republic were zero, the VAT evasion in the Czech Republic would be EUR 665.65. The value of 0.83 shows that if VAT evasion in the Slovak Republic increased by one euro, then VAT evasion in the Czech Republic would increase by 0.83 EUR.

5. Conclusion

In presented paper, we focused on the analysis and correlation of the tax evasion between value added tax between Slovakia and the Czech Republic, as these countries in the past formed one state and even after their division, cooperation in trade and services between them remained at a very high level. In the article, we analysed and described the amount of revenues and tax evasion in both countries from 2012 to 2017 (which is the latest information available in this area) and using regression and correlation analysis, we examined the relationship between evasion in Slovakia and the Czech Republic. The result of this examination is the finding that the relationship between tax evasion and value added tax is close, as the correlation coefficient is at the level of 0.91, which indicates a strong tightness and dependence of the examined variables. We think this is due to the long-term and strong ties within business relations. Both countries have taken many measures to prevent tax evasion in value added tax. For example in September 2018, the *aktuality.sk* website stated that since 2012, many measures have been taken in Slovakia to fight tax fraud. Among the most important are the introduction of a VAT control report, the establishment of a tax cobra, the information system of control stamps, the restriction of cash payments, the launch of a virtual cash register. Thanks to these measures, EUR 3.7 billion more was collected in the state budget. The VAT tax gap has been reduced from 41% to 26%.

In the Czech Republic, they started an intensive fight against tax evasion in 2014. They set up a tax cobra and adopted more effective procedures for transfer pricing controls, contributing to the increase of corporate tax between 2013 and 2017 by 50 billion Czech crowns, which represents 1.96 billion euros. In 2016, a control report was introduced, as well as an electronic record of sales. Thanks to the measures taken, it was possible to significantly reduce the so-called tax gap of more than 20% of GDP by about half. Between 2013 and 2017, VAT revenues increased by 73 billion Czech crowns. At the meeting of the finance ministers of these two countries, more intensive cooperation was agreed in the area of the tax fraud fight, for example in the area of exchanging information on platforms operating on the territory of these states.

The Supreme Audit Office in the Czech Republic (SAO) issued a report on the topic of taxes for the years 2014 to 2017. It does not only summarize the results of audits, but also points to the international comparisons and strengths and weaknesses of the Czech tax system. The SAO points out that, despite the fact that the collection of taxes has improved, the obligations of tax subjects are increasing, the administrative complexity is also increasing on the part of the tax administration and with it the costs of this administration are increasing as well. The tax structure of the Czech Republic is still complex and the problem is also the strong dependence of the state revenues on economic growth and a large tax burden on labour, which will be a problem for the sustainability of the state budget in the future.

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Directions for Urban and Regional Development – Globalisation or Social, Cultural and Economic Distinctness?

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Abstract: In the near future, cities, as centers with high population density, will have to face numerous problems. The main ones include: aging of the society, environmental pollution, depletion of natural resources and the threat of economic decline, which may result in social polarization in the income area and its consequences. Currently, the above mentioned problems have been joined by the socio-economic effects of the COVID-19 pandemic. Due to its extent, the pandemic is a global humanitarian crisis that will undoubtedly affect the global economy. In the face of such challenges, urban agglomerations will have to implement new management models enabling the balancing of different interests and goals and to redefine the idea and direction of development. Each city individually plans its "development path", which should take into account both social, cultural and economic potential, but also be based on a balanced approach common to the exploitation of natural resources and environmental protection, common for a given region, country, continent and even the world. Are both approaches possible to apply simultaneously? Certainly, the best solutions should be sought through the use of a process approach, detailed analysis of our resources and choosing what we consider to be a common value - i.e. the answer to the question "Why do we think something is good?".

Keywords: agglomeration, development, management, globalisation

JEL classification: A13, F66, F68

1. Introduction

The problems and challenges that cities and regions face today are: environmental pollution, climate change, depletion of natural resources, social polarization in material, spatial, ethnic and cultural dimensions, problems related to social integration, especially in large agglomerations, the importance of the value system for everyone man, loneliness or a feeling of exclusion, which is so acute for an aging society. When setting individual development paths, cities and regions in the 21st century should take into account the long-term development perspective of a given country, continent, and even a global perspective (climate, water and energy). The sustainable development of "green and healthy" cities and regions requires the implementation of a strategy in this area that combines demographic and social, economic, cultural and aesthetic issues. Globalisation has accelerated the flow of people who, especially in large, urbanized cities, feel lonely or even excluded, which in turn fosters the emergence of cultural, material, ethnic or religious conflicts. Currently, the socio-economic effects of the COVID-19 pandemic have joined the above-mentioned "group" of problems. The effects of this crisis, both in the social and economic dimension, will be felt to a different extent at the level of a given country, which, through economic solutions, financial instruments or social programs, can support individual regions in the fight against the negative effects of the pandemic.

When counteracting social exclusion, it should be remembered that valuable social integration is not achieved through uniformization, but through the realization of unity while maintaining creative diversity. As cities and regions are places where various interest groups live and interact, the main

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challenge of management systems is to enable the building of shared visions reconciling rival goals and resolving conflicts through cooperation with the community.

2. City and region – the space for human life

Places with exceptional spatial and landscape features, with a distinctive identity and symbolism enjoy a growing interest. Spaces created for society, we must provide people with a sense of security, harmony, order and unity. Particular attention should be paid to its use and development in terms of the right to life for other generations.

2.1 City

Most often, a city is defined as “a gathering of people distinguished mainly by non-agricultural functions, living within a significant area and a building intensity, subject to distinctive administration” (Sobol, 1994). The first “gatherings of people” had the forms of settlements and appeared about 10-12 thousand years ago in the Middle East - in Mesopotamia and in the Indus Valley. In Latin, there are two terms defining the city: **urbs** - for space organised with streets, houses and other structures (aqueducts, gates and defensive walls) and **civitas** - in the meaning of people connected to one another in a social and cultural space (Głuc, 2017). Such interpretations of the meaning of the word “city” point to the main areas for focusing while elaborating directions for the development of the “cities of the future”. Relatively early, small communities turned into large settlements. It should be remembered that, to this day, urban agglomerations remained the places with the largest and most qualitatively diverse number of human activities. Modern urbanisation processes are based on changes in the buildings, concentration of industry and trade, increase in industrial or automotive development. As a result of the above changes, the social and economic space is more bonded, which is characteristic of industrial civilisation. It should be remembered, however, that the city is a space for human life, first of all: “The spatial organisation of a city, settlements or households can favour or hinder the development of individuals and social groups, it can generate or inhibit the occurrence of social bonds, it can increase the state of mental satisfaction or trigger the occurrence of the states of frustration” (Wójcik, 2016). In this statement, there is an inseparable relationship between the “urbs” and the “civitas” - it is about creating such conditions for a man that entirely meet their living needs in the living area, starting from satisfying material needs to psychophysical ones. Therefore, such a relationship defines a specific “function” that should be fulfilled by the city, measured by the possibility and extent of meeting the biological and spiritual needs of a man. Thus, it can be said that future cities should develop towards an ever more complete and better meeting of the needs of their inhabitants. During such a development, which is undoubtedly a process, there will probably occur many interdisciplinary challenges, e.g. pertaining to the sociology of the city, architecture, or social ecology. Effective solution of the emerging problems will require, first of all, the understanding of the relations that take place between the various elements that create the urban centre(s), and, in particular, the man-man relationship (Gorzelać, Szczepański & Ślęzak-Tazbir, 2009). The strength of human relationships can be seen in the words of Paulo Coelho (“Alchemist”) “Shepherds, sailors or merchants always know a city where there is someone who makes them forget the charms of carefree wandering all over the world one day.”

2.2 Region

The definition of the word “region” (Regio) already in Latin was burdened with ambiguity. It meant both the direction and location, the border and the geographical denomination, the area and the urban

district. According to “Polish Language Dictionary of the Polish Academy of Sciences”, the region is “an area with characteristic features, e.g. geographical, ethnographic, etc. which distinguish it from other areas” (Sobol, 1994). Regions are distinguished from adjacent areas by certain natural or other characteristics acquired throughout history. The distinctness, or rather uniqueness of specific regions, has been determined on the basis of various criteria, e.g.: natural, demographic, cultural, economic, or political. The world has consisted of such regions. Huge centralised states, i.e. the Roman empire, the monarchy and the French Republic, and the Russian empire, often with the use of violence, shaped their borders to include the regions that were highly differentiated. However, despite the attempts undertaken to unify them, they have retained their distinctness, which is an evidence of the great vitality of the regionalism, while not dismissing the need to satisfy the sense of unity at the national level. The concepts of the region cannot always (if ever) be brought to the limits of an administrative unit, although attempts at such reduction have always been observed. In France, alongside the departments created during the Great Revolution, in practice, there is still a historical division into provinces. The division into regions proposed by Charles de Gaulle was rejected by the people (Bukusiński, 1990).

Is there an “ideal” solution in determining the area of a region according to consistent geographical, historical, economic, cultural, and administrative criteria? It is safe to remember that “the first creator of the regions was nature, and it made demarcations which were later read by geographers. Then a man entered who, by interfering, not always accurately, in the environment, transformed them into a cultural environment for centuries.” (Bukusiński, 1990). It is worth pointing out here that the associations of writers with certain regions have always been widely known and vastly documented. A Goethe’s couplet is often quoted as “Wer den Dichter will verstehen, Muss in Dichters Lande gehen”. It should be remembered, though, that regionalism is “a mental movement looking for the revitalisation of cultural and scientific life in the province, opposing the concentration of all the scientific and cultural centres and institutions in the capital, seeking to preserve the distinctiveness of individual districts” (Sobol, 1994). Bronisław Chlebowski already in 1884 emphasised that “each of the territorial areas, having its own separate physiological, ethnographic, social and historical conditions, has its separate route of mental development, and separate characteristics of literary production.” (Bukusiński, 1990). In cyber-punk literature, a variant of science fiction, the theme of the city is also addressed - mainly as the “cities of the future”. The “Neuromancer” by William Gibson presents a fantastic vision of the world based solely on technical development and driven by money. “Chiba City” depicts mainly gigantic skyscrapers rising over destroyed, abandoned, old buildings. Residential areas instead of homes, hackers wandering in the streets, drugs, and alcohol. “The Three Stigmata of Palmer Eldritch” by Philip Dick depict New York as a deserted city due to the weather conditions on Earth that prevent life on the surface. The city as a wasteland where everyone, though surrounded by millions of other people, feels lonely. A huge impact of the city on the psyche of a man was depicted in Janet Fitch’s “White Oleander”. The vision of the “city of the future” presented in the above works may not be optimistic, but we can find there the real problems and challenges that are today faced by the cities and regions - pollution, climate change, depletion of natural resources, social polarisation in a material, spatial, ethnic and cultural dimension, problems related to social integration, in particular, in large agglomerations, the importance of the system of values for everybody, loneliness or the feeling of exclusion, affecting the ageing society so much.

3. City and region - a set of problems or a place for human freedom and creativity?

In the 21st century, the main problems and challenges faced by cities and regions are: aging of the population, environmental pollution and depletion of natural resources, and social polarization. In order to find the best solutions, it will be necessary to engage the endogenous potential of society, and in particular to create conditions for the development of creative attitudes.

3.1 Ageing of the population – a threat or a demographic and social challenge?

A sharp increase in the number of very old people is a significant aspect of the phenomenon of the ageing population. It is estimated that the number of people over the age of 80 will grow rapidly and then double every 25 years. Research shows that in the next 30 years the “80+” age group will account for over 10% of the population of many EU cities (Gluc, 2017). In order to meet the challenges arising from the need to ensure that this group has access to social services, mainly in the area of advanced health care, home care or specialised centres, and to address the problems of architectural barriers for people with reduced mobility, significant financial resources will be needed. Due to the growing population of old people with limited economic resources, it will be required to involve more and more public resources from local self-government budgets and, in the case of health or social programmes, most often from the national budget.

If, as demographic research shows, the phenomenon of the ageing population has become a permanent characteristics of the next decades, it may be worth considering whether the effects of this change for the development of cities and regions are only negative. To answer this question, we cannot focus solely on the economic issues. First of all, it is necessary to realise that aging is a natural and inevitable process that is inscribed in the life cycle. Universal preparation for old age poses a new challenge for modern societies. For the good experience of old age, it is of key significance to motivate people to remain physically and intellectually active. The involvement of older people in the process of intergenerational integration and exchange is extremely important from the prospective of shaping value systems that should be embedded in the individual development paths of cities and regions in the 21st century. Certainly, some values will be of an inter-area (universal) character, and some regional ones, i.e. the memory of local heroes (historical memory), cultural and geographical identity, and tradition. The role of the old people in a society is also linked to the living witness of the past marked by the struggle for freedom and independence in many countries – remembering the atrocities of war, armed conflict, or the fight against regimes. Many years of their experience and life wisdom are an invaluable contribution to the upbringing and development of the young generation and an effective tool for building communities in their cities and regions. As Józef Piłsudski said: “Whoever does not respect or value the past is not worthy of respect in the present or the right to the future.”

3.2 Environmental pollution and depletion of natural resources – threats and challenges in the environmental and ecological aspect

The main problems faced by large agglomerations today are, first of all, the increase in smog pollution and the increasing amount of garbage, wastewater, and exhaust gases. The state of urban ecosystems is also not insignificant - concreting and asphaltting of the earth's surface threatens biodiversity, causes disturbances in natural cycles, and increases the risk of flooding and drinking water deficiencies. The development of “green and healthy” areas is incorporated in the development strategies of many cities. However, it requires a holistic approach to environmental and energy issues as many components of a natural ecosystem are linked to elements of the urban social, economic, cultural and

political system. Urban agglomerations should pay more attention to energy-efficient forms of housing, communication and services, increasing the scope of recycling, or the use of renewable energy technologies, such as solar panels or wind energy (Hermant-de Callatay & Svanfeldt, 2011). The directions of the development of cities and regions will be inextricably linked to the identification and shaping of appropriate proportions between the universally understood economic- industrial, human environment and natural environment. The search for the best possible balance in this area should be treated as a challenge in terms of sustainable development (Marszał, 2016). The implementation of global climate goals aims at reducing the risk of severe floods and droughts, uncontrolled migration of climate refugees and other negative effects of extreme weather conditions". The necessity to ensure food and water security should also be added to the above objectives, as the weakness of the global nutrition systems has become apparent in recent years (Głuc, 2017). Climate changes and the forecasts elaborated by experts for the forthcoming decades should be an especially important factor motivating cities to take advantage of natural resources and consumer goods more efficiently. Like all the economic entities, cities will also have to take responsibility for the reduction of CO₂ emissions and reduction and recycling of waste, or revitalisation of local green areas (Hermant-de Callatay & Svanfeldt, 2011).

3.3. Social polarisation in material, cultural and ethnic dimensions – a threat or a challenge?

A natural aspiration of a human being is to take such a place in the urban space that would give them optimal conditions for the existence and development in the place of residence. As Jeremy Bentham used to say, "The first law of nature is a desire of your own happiness". Very often in an urban society, especially in highly urbanised zones, many groups live side by side, sometimes without interacting with one another. Globalisation has accelerated the flow of people, goods, capital, identities and images, and increased the mobility of ideologies and lifestyles. Due to the progressive social gap (many material, religious and cultural structures), there is a risk that enclaves will begin to appear in cities, inhabited by people who do not participate in the mainstream of social life, and their attitude will become fundamentally hostile, which in turn will intensify xenophobic attitudes. The economic and financial effects of the Covid-19 pandemic may also contribute to the intensification of xenophobic and protectionist tendencies in the form of limiting the flow of goods and people between countries. However, the enormous costs borne by modern countries in the fight against the coronavirus show that in order to protect the highest value, which is human life, societies are willing to mobilise huge funds to finance remedial measures, such as the introduction of quarantine of entire regions. The results, or rather, the threats posed by the pandemic, should particularly make people and companies aware of the need to diversify both the source of income and the source of supply (Sieroń, 2020). It is also worth mentioning that contemporary urban social structures are shaped also by the dynamically developing technological revolution which divides generations into those who remember life before the computer and cellular era and those who have always lived in the "digital world" and, to an increasing extent, power the existing communities (Głuc, 2017). The widespread use of virtual social networking sites has also given new meaning to the concepts of space and place.

A challenge for the cities of the future on the path of their development will be the use of the potential of social and economic, ethnic and cultural diversity to cope with the effects of increasing immigration flows and increasing material and social segregation. National policy and regulations as well as the fact that economically rich cities are the most attractive for economic immigrants can be a great support on this path, and this may be an opportunity for the development of the local economy due to the

aging of the population. Cities should focus their actions on preventing spatial exclusion by ensuring the best possible household conditions and supporting cooperation across ethnic, socio-professional and socio-cultural boundaries. Since people are the core of the city, social initiatives are essential to improve social relations and strive for social cohesion based on universal values such as sharing public space and public services while respecting the diversity of culture, identity, history and heritage.

3.4. Management – new challenges = new model

In the face of the presented challenges, cities will have to approach the management model in a completely different way - the existing management based on a top-down decision-making process (hierarchical system) in urban structures should be replaced by a process model. Process management focuses on the analysis of resources, identifying a problem situation, and then developing and implementing mechanisms to solve a specific problem. As Professor Bohdan Jałowiecki states: “The key in this process is constantly answering the question: why? Why do we think something is good? Is it good? Do we consider it a common value? In this context, “City-Idea” is precisely a process of creating value. As such, it combines a physical space and a social, interactive, cultural and subjective structure.” (Głuc, 2017).

In the new management model, in order to achieve the goals incorporated in development strategies, cities of the future should combine a place-oriented approach and a people-oriented approach, and deal with challenges in an integrated and comprehensive way. As cities are a place of life and interaction of various interest groups, the main challenge of management systems is to enable the building of common visions reconciling rival goals and resolving conflicts through cooperation with the community. The urban community has to be able to actually shape its metropolis. Delegating some authority to citizens, involving all the stakeholders, co-governance and co-management enables innovative use of social capital. The flexibility of the city process management model should also facilitate cooperation and strengthen contacts with other agglomerations in order to implement joint investments and provide common services necessary from the point of view of their range, i.e. with a larger territorial scale (Hermant-de Callatay & Svanfeldt, 2011).

4. Conclusions

When setting the direction of development, cities and regions of the 21st century should apply the structure of long-term thinking about the future. The decision-making process in this respect should be related to the long-term perspective of the region in the area of a given country, continent, or a global perspective (climate, water and energy). On the global scale, a great geographic area that brings together demographic, political, economic, scientific, cultural and military potential is called “Megaspaces”. “Megaspaces”, on the other hand, is a regionally diversified area, but there are no barriers hindering the free flow of people, goods, information and capital (Artymowska, Kukliński & Żuber 2011). Such a pro-globalisation approach has recently been redefined by the results of the pandemic and lockdown introduced in many regions of the world. Therefore, one should expect the region’s role to be strengthened also as a subject of the global scene. As B. Suchodolski writes: “I would see the greatest strength of regionalism in the opportunities it creates for the deeply understood goal of human self-realisation, life at the level of satisfaction, reduced not only to the ground of thrift, but elevated to higher spiritual activities. On these levels, choices are made constantly between the charm of the moment and the severity of discipline, between hedonism and heroism, between loneliness and the world.” (Bukusiński, 1990).

Nowadays, more and more people miss a sense of belonging to the community they live in. In particular, large cities will have to deal with the growing number of people remaining outside the society in order to prevent cultural, material, ethnic or religious conflicts. It should be remembered that worthwhile social integration is not achieved through uniformity but through the implementation of unity while maintaining creative diversity. It is particularly important to maintain the right balance between satisfying the need to belong and feel independent in a given community. The difficulty of achieving balance in this area is best reflected in the words of Albert Camus, "The only cure for the weary of living in a community: living in a big city. It is the only desert available today.". In order to counteract social exclusion, the potential of social and economic, cultural, generational and ethnic diversity should be exploited in the first place. The sustainable development of "ecological and healthy" cities and regions requires the implementation of a strategy in this area that combines demographic and social, economic, cultural and aesthetic issues. Ecological and clean communication requires considering the needs of the elderly, families with young children, but it cannot ignore the conditions necessary for the functioning of shops, services or enterprises. The application of technologies based on solar energy (panels) or wind energy (windmills) has to respect the architectural and cultural heritage as well as the tourist potential of the city and the region (Hermant-de Callataÿ & Svanfeldt, 2011).

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The institutional model of local food market organization with the participation of local government

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Abstract: The European Green Deal is an opportunity to reconcile our food system with the needs of the planet and to respond positively to Europeans' aspirations for healthy, fair, and environmentally-friendly food. One element of this transformation is the development of local food markets based on direct sales from farms. All actors in the food chain must play a role in achieving the sustainability of the food chain. Public authorities at all levels can also play an important role in incubating this process. The local nature of the markets creates a specific field for local government.

The paper aims to present the concept of an institutional model of the local food market with the participation of local government. This model is adapted to Polish conditions, but after taking into account the characteristics of a given country, it can be a universal model.

Keywords: European Green Deal, local food market, local government, short food supply chain

JEL classification: Q13, L11, O43

Introduction

Short Food Supply Chains (SFSCs) are as an alternative to the globalized agri-food model. They can represent alternative ways of producing, distributing, retailing, and buying food and they have served as niches for those food system actors, most producers, and consumers, who look for alternatives to the dominating agro-industrial model.

The conceptual framework of SFSCs has been created relatively recently. The economic, social, and environmental role of local farming systems, began to be recognized in research only at the beginning of the 21st century. The development of this research trend (often referred to as "territorially integrated food geography") has led to a reconsideration of the role of public institutions in food policy (Lang, Barling, and Caraher, 2009). It appeared in the context of a broader debate "Alternative food chains" (Ilbery & Maye, 2005), "Alternative food networks" (Goodman & Goodman, 2009) or "Sustainable food chains" (Roep & Wiskerke, 2006).

The diversities and particularities of the experiences existing all over the world (box schemes, farmers' markets, on-farm selling, consumer cooperatives, Internet sales, farmers' cooperatives, etc) have attracted growing interest from academia and policy-makers due to the nature of these initiatives, as well as for the socioeconomic, territorial and environmental scope (Galli & Brunori, 2013).

The European Commission also sees the potential of local food markets which is confirmed by the acceptance of two documents in May 2020: the EU Biodiversity Strategy 2030. Bringing Nature Back

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to Our Lives (COM 380, 2020) and the Farm to Fork Strategy on for a fair, healthy, and environmentally friendly food system (COM 381, 2020).

In Poland, despite the implementation of legislative changes enabling the direct sale of food (directly from the farmer), it remains marginal on the market. Despite the favorable state policy in this area and the promotion of SFSCs by the Ministry of Agriculture and Rural Development, there is a lack of good examples of institutional and logistical solutions, linking the dispersed systems of producers and consumers. The inertia of the food market dominated by large retail chains is so significant that not only organizational and legal changes but also changes in attitudes, mentality, and exchange rules are necessary for its transformation. Therefore attempts to create effective solutions should be incubated by the public sector. Due to the local character of the SFSCs, local governments can play an important role in overcoming organizational, financial, mental and technical barriers.

The paper aims to present the concept of an institutional model of the local food market with the participation of local government. This model is adapted to Polish conditions, but after taking into account the characteristics of a given country, it can be a universal model.

In the first part, there will be a short review of the scientific literature on the role of local government in SFSCs development. This will justify the presentation in the second part, the proposal of organizational model of such an initiative with the institutional support of local authorities. The shape of the model is the result of theoretical analyses, verified by experience from the implementation of such initiatives in practice.

1. The role of local government in SFSCs development

In contrast to the neoclassical theory of economics, new trends have emerged in the literature (e.g. new institutional economics, business, and management economics or economic geography), describing more broadly the conditions that limit the scope and efficiency of the supply chain and provide justification for the diversity of organizational forms observed in the real world.

Short supply chains belong to a broad category of hybrid institutions, defining complex organizational forms that aim to perform tasks that neither the market nor the company can perform on its own under certain conditions (Carbone, 2017). Because SFSCs are by their nature local or regional, it seems important to involve these levels of government as well. All the more so because, according to S. Martinez (2010), who studied local food systems in the US, local government programs are more likely to support local food systems. Local governments often either directly serve local markets or provide funds for their activities (e.g. using public space for markets). There are many financial programs in the U.S. aimed directly at local governments to support local food production. Some states and localities offer incentives to low-income people to shop at agricultural markets. For example, the Health Bucks incentive program in New York City provides free coupons to low-income consumers to buy fresh produce at marketplaces. Individual states and municipalities can also support agricultural markets by supporting land-use policies that favor small farms and zone policies that create space for markets.

Similar research conclusions were reached by S. Dani (2015), who estimated that alongside central authorities, who shape the general conditions of the systems, the functioning of the food supply chain is significantly influenced by local authorities and NGOs, which develop rules and programs for storing and securing food, monitor and regulate the functioning of the chains from producer to consumer.

Even further in these views, K. Parson and C. Hawkes are moving forward (2018), exploring food systems both in the EU and worldwide. They point to their specific territorialization - the growing importance of local conditions. They also note that the greatest activity in supporting local food systems could be observed at the local government level. An example of such activity is the Milan Urban Food Policy Pact (2018), which sets out the steps that cities can take to make their food systems more sustainable. As of August 2020, already 210 cities (including Warsaw) have ratified this document. The food initiatives taken at the local government level started to be visible only three years after the announcement of the Pact. Most often it can be seen that cities have started to integrate food security with climate change, economic development, spatial planning, and civic engagement. In food systems linking urban areas with surrounding rural areas, food producers, food companies, and many other actors representing civil society, the private sector, research institutions are increasingly recognized by local governments as key players in food policy and practice through partnerships and alliances (FAO, 2018).

In addition to this global movement, in countries such as France, the Netherlands, and the United Kingdom, there are also national networks of cities involved in improving food policy (iPES-Food, 2017).

In Poland, after initial failures in the dissemination of SFSCs, attention was drawn to the need to include a greater role of local governments in projects animated by the Ministry of Agriculture and Rural Development (Ministry..., 2015). This direction is in line with the demands of researchers, who show that the influence of local governments on local food markets is one of the manifestations of concern for the high standard of living of residents (Babczuk, et al. 2017). More detailed conclusions on the local government's influence on shaping the model of short supply chains were presented by M. Raftowicz et al. (2019).

Despite the studies mentioned here, it is pointed out that there is a large research gap in this area - there are few studies on the detailed analysis of the impact of local government on short food supply chains in the literature. Most often, some studies indicate the need for cooperation between food producers, intermediaries, NGOs, or governmental organizations to promote short supply chains (Smith, 2008), but there is no in-depth analysis of the role of local government. The authors of this article intend that the institutional model of SFSCs development with the participation of local government, presented here, will contribute to gradually fill this research gap.

2. The concept of an institutional model of the local food market with the participation of local government

The unsatisfactory pace of SFSCs development in Poland requires overcoming organizational barriers. The new way of introducing agricultural products to the market (direct sales on a large scale - modern agricultural retail trade) also requires overcoming technological barriers. The proposed model tries to take both these conditions into account.

To overcome the organizational barrier, the municipality has to take over the function of an incubator of activities aimed at organizing, on the one hand, an operational group of producers and, on the other hand, consumers using the proposed solutions (Figure 1). In this arrangement, the municipality takes over the role of the Local Market Organizer, which, however, concentrates mainly on soft activities, without directly undertaking a business activity. The local government may be a direct beneficiary of

these activities - the system built in this way may supply products to mass catering establishments (e.g. canteens in nurseries, kindergartens, schools).

The business activity (and related financial and tax settlements) is reserved for the seller, i.e. the farmer or food producer. It is worth adding here that the fundamental principle of SFSCs is to maintain the closest possible producer/seller-consumer relationship, which means eliminating the intermediary function. However, to coordinate activities, achieve synergy effects, or create a comprehensive purchase offer for consumers, farmers can form Operational Groups in the form of associations, cooperatives, foundations, or commercial companies. In such an arrangement it is possible to separate the function of the seller from the farmer/food producer and transfer it to the Operational Group.

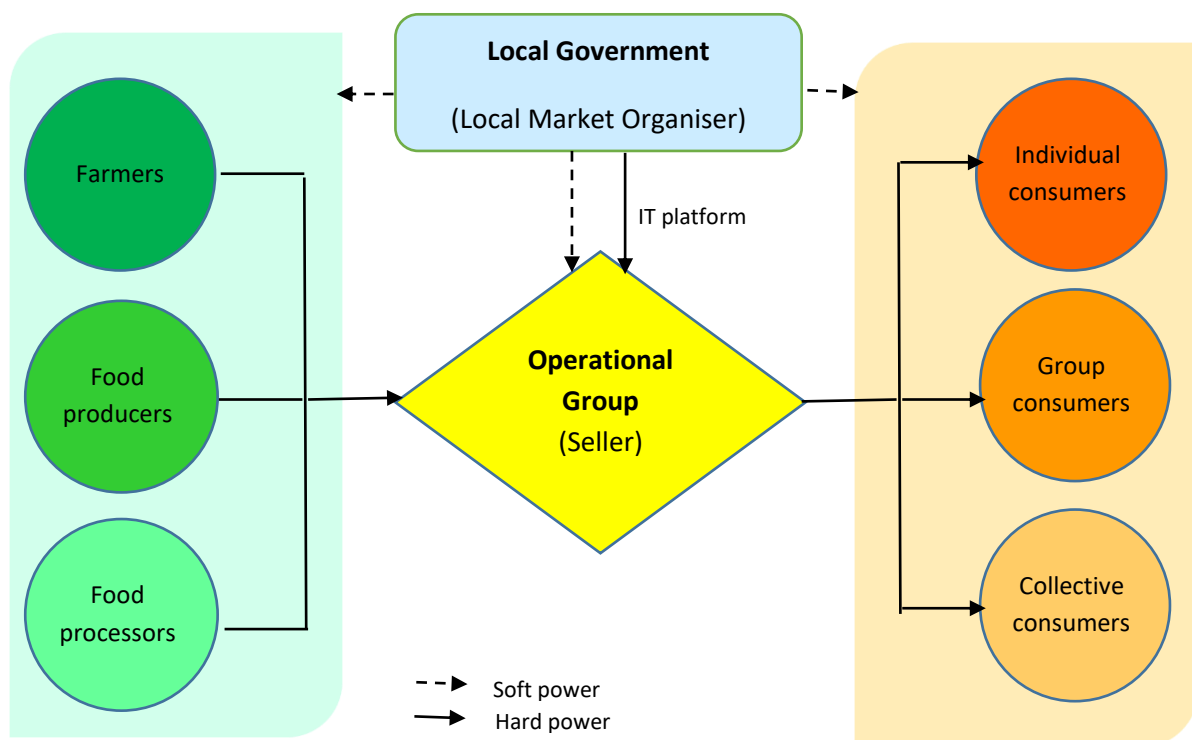


Figure 1. The institutional model of the local food market with the participation of local government (own compilation)

The key role in such a model is to use intelligent solutions that optimize and generate cooperation networks. The use of digital systems should not only be limited to the system of orders and transaction settlements (a classic online store). These activities must be carried out based on information technology, which allows us to try to solve the problem of logistics of connecting geographically dispersed producers and consumers. This applies to the blockchain technology, which allows to carry out transactions without intermediaries, where it is possible to track the origin of food from "field to plate", in a spontaneous, self-organized system, without the need for central management.

From the farmers/producers/processors' point of view, such a system allows for the regular preparation of offers, flexible pricing, and the use of a growing distribution network and offering deliveries adapted to the conditions of buyers, allowing for simple and quick settlements (without

intermediaries). From the consumer's point of view, the system provides the functionality of classic intermediaries by automating the management of market participants, verification of the authenticity of products offered for sale, logistics of deliveries, and accuracy and flexibility of financial settlements.

Therefore, in this model, the local government has the function of organizing such an IT system (purchasing a software license, running its initial operation). The user of this system is from the beginning of the Operating Group (seller), therefore after the incubation period of the operation, it may be transferred to its ownership. As experience has shown so far, in the initial phase of farmers' self-organization, the purchase of such an IT tool is unrealistic. Hence the key role of local government, which can obtain funding from European programs to organize such activities (including IT equipment).

The proposed model implements the postulates of increasing the role of local government in the organization of the local food market, as demonstrated in the literature review. It also has a chance to boost the development of such initiatives in practice. It eliminates barriers to entry into the system as diagnosed in previous projects. At the same time, it should be noted that the effectiveness of the model will depend on the involvement of local government representatives, who must understand their important role in its creation. Their involvement will depend on the use of the potential inherent in the presented solutions. It is necessary to realize that despite the potential impact of the SFSCs on the local economic, social and environmental system, its support is one of the optional tasks of the local government, to which it is not legally obliged.

3. Conclusion

For countries such as Poland, where agriculture is based on a fragmented structure of farms and small-scale processing, the presented model of operation opens new possibilities for increasing the profitability of agricultural and food production. At the same time, it responds to the needs of consumers who, faced with the domination of the global food economy, are looking for opportunities to buy local food. It creates an opportunity to revive local markets and create a new impulse for sustainable rural development. Centralized food distribution and sales systems used by supermarkets exclude such small producers. Consequently, small and geographically dispersed producers are not able to compete with large scale farms.

The proposed actions fit into the diagnosed barriers to the development of SFSCs in Poland. Even though the agriculture department has directed aid funds, the development of these forms of sales is unsatisfactory. However, the Ministry's policy to date has not taken into account the significant role of local governments, which could not be e.g. a beneficiary of support programs. A significant change in this perception has taken place in recent years, which is due to the effects of research. The authors hope that the proposed institutional model of the local food market will contribute to strengthening these trends not only in Poland. It may inspire to apply similar solutions, especially in countries with similar institutional conditions.

By presenting the institutional model of SFSCs development, we tried to expand the scope of scientific literature on the role of local government in creating local food markets. We hope that we have contributed to gradually fill this research gap. At the same time, we are aware of the need to deepen this direction and complement it with ex-post analyses from the functioning of the proposed solutions in practice.

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Attitudes to health information and pharmaceutical products and related consumer behaviour of generations

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Abstract: The presented article is a continuation of series of articles focused at health-conscious consumer behaviour of Slovaks. The presented partial results relate to health care issues, with an emphasis on identifying attitudes to sources of information about health and pharmaceutical products, perception of types of advertising for pharmaceutical products, and the related consumer behaviour when purchasing pharmaceutical products. The results of the survey are presented from the perspective of three generations of consumers. Based on these results, we conclude with recommendations about the possibilities of marketing communication in the media, taking the studied generations into account.

Keywords: Consumer behaviour, Generations, Health prevention, Pharmaceutical products

JEL Classification: P46, I19, M39

Grant affiliation: Scientific project VEGA 1/0339/18 Health conscious consumer behaviour: determinants, perspectives and intervention possibilities.

1. Introduction

In today's world, in order to successfully implement marketing strategies, it is necessary to take into account consumer preferences and behaviour. During the purchasing process, consumers are exposed to many factors that influence them when choosing products. This is also true when purchasing health-related products. Trustworthy information and past product experience are key to deciding on the purchase and consumption of pharmaceutical products. It is assumed, that one of the current trends is the aging population. It is expected that in the future there will be many more digitally skilled seniors. The future of the consumer profile is visible in digital skills, a greater influence on consumer decision-making, which is part of a multicultural society oriented towards urban areas. The demand for healthcare will increase and the number of smaller households with more frequent but smaller purchases will increase. With lifestyle changes, new tools are provided by digital media. In the past, customers were not users of multiple media. Today is the opposite, most consumers are multimedia consumers. Technological developments of change in social trends have a huge impact on consumer perception. The consumer is more sophisticated, demanding, but also more influenced. Marketers must adapt to new trends with their creativity and perspective. Today's young people are characterized by digital skills. We have a generation of young people who grow up surrounded by digital technologies, who know how to use technology intuitively. In the literature we can find various denominations given to the generation: generation Z - called "centennials", generation "digital natives", generation I - internet generation, generation Y - millennials, generation Alpha and others. For example, the Internet is the key medium for the Z generation. They use it in

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their entire consumer behaviour process. A key factor is to induce consumer curiosity. Generation Y members are individuals who are controversial, flexible, seeking self-autonomy and rapid career growth (Cordeiro and de Albuquerque, 2017), media and technology, recognizes diversity and expects it from others, cares about the state of the environment.

This generation has a high digital literacy, what is the way of exploiting of technic tools, the quickness of its using in various forms from various sources by presenting them by way of modern informatics and communication technologies (Orgonáš, 2015).

The current consumer has a lot of possibilities to look for information that helps him to decide about the purchase of certain goods. The position of advertising in today's world is of enormous importance. Advertising, however, must be seeing as a trigger for the first product information. Based on an engaging, interesting, creative ad, the process continues. The great advantage of advertising on the Internet is the possibility of measuring and evaluating campaigns, a high degree of personalization and, last, but not least, the possibility to appear in several forms - video, audio, text, photos, pictures or hyperlinks. We point to the significant relationship between TV advertising and consumers' tendency to search for keywords. (Joo, 2014). Searching for more information is sometimes directly triggered by ads. Consumers can search online in parallel, after they show their ads, or they can do a search later. Searching naturally begins on a device that the consumer uses in parallel while watching TV. At this point, it is important to realize the importance of placing keywords in high positions, so that consumers do not lose their attention. The product or company website must be in a high position in the online search for keywords that the consumer enters to the search engine. Ensuring good visibility in search is essential to ensuring that potential consumers have the opportunities searching for information about the company. For example, we may find online communications from companies, user-generated content, including reviews, discussions, and ratings. (Kates, 2013)

2. Methodology, results and discussion

Different generations are distinguished by different approaches to health care and the ability to obtain health information and the possibility of purchasing food and pharmaceutical products. We are living in dynamic era. If we intend to mark it by appropriate title, then quite sure by such terms as globalization, internationalization, internalization, digitizing.

The paper presents partial results of a research study on health care, with an emphasis on identifying attitudes to sources of information about health and pharmaceutical products, perception of types of advertising for pharmaceutical products and related consumer behaviour of selected generations in purchasing pharmaceutical products. Data, which formed the basis for the analysis, were gathered in 2019. The hybrid research, whose partial results are reported, used method of semi-structured interviews that were conducted with 765 respondents of seniors (61+), Generation X (41 – 60) and Generation Y (20 – 40) from all regions of Slovakia. The sample was formed by 237 respondents from the generation of seniors, 242 respondents from Generation X and 286 respondents from Generation Y. 62% of respondents from the urban areas and 38% from the rural areas participated in the research study. More than half of them had secondary education, 42% of respondents were with university education and 4% of respondents with primary education.

The interviews are based on a prepared scenario where participants had the opportunity to respond to health and consumer behaviour issues when purchasing pharmaceutical products. We asked

respondents if they used to search health information, what sources were most often used to obtain this information, and what areas of health - related information were searched. We explored the sources of information about pharmaceutical products, what factors they consider when buying pharmaceutical products, where they purchase them mainly, and how much they spend to purchase them every month, but also what are the attitudes of the generation in the research towards the types of pharmaceutical product ads. Interviews were conducted face to face - one researcher one participant - usually in their home environment. The data gathered were first processed individually (a set of selected "representative" interviews were analyzed using qualitative analysis - code generation using the GTM method), then all interviews (n = 765) were again analyzed and structured to provide comparable results.

Partial aim of the research study was to determine the attitudes of the investigated generations to sources of information on the health and pharmaceutical products. Moreover, we investigated the differences in consumer behaviour among generations when purchasing pharmaceutical products and the attitudes towards type of advertisements for pharmaceutical products.

2.1. Attitudes to search for health information

In the past 12 months about 82% of young people have been searching for health information as opposed to Generation X, where 67% of respondents and 56% of seniors sought such information. Women are looking for health information more frequently than men. The most common source of health information search is for 67% of respondents in Generation Y internet as shown in Figure 1, similar to 41% of Generation X respondents. 26% of seniors seek health information from a doctor.

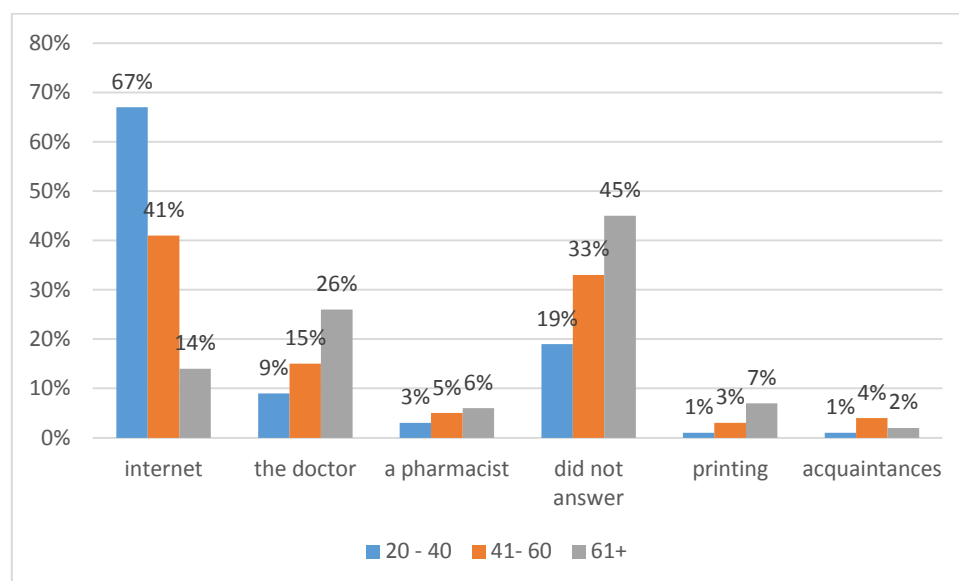


Figure 1: Health information sources

We also investigated the type of health information respondents were looking for from each generation. 48% of respondents aged 20-40 years and 31% of respondents aged 41-60 searched general health information. 28% of generation X and 25% of seniors searched information about a specific disease. 16% of seniors and 14% of Generation Y respondents searched treatment information (how to take rugs, their effects) (Figure 2).

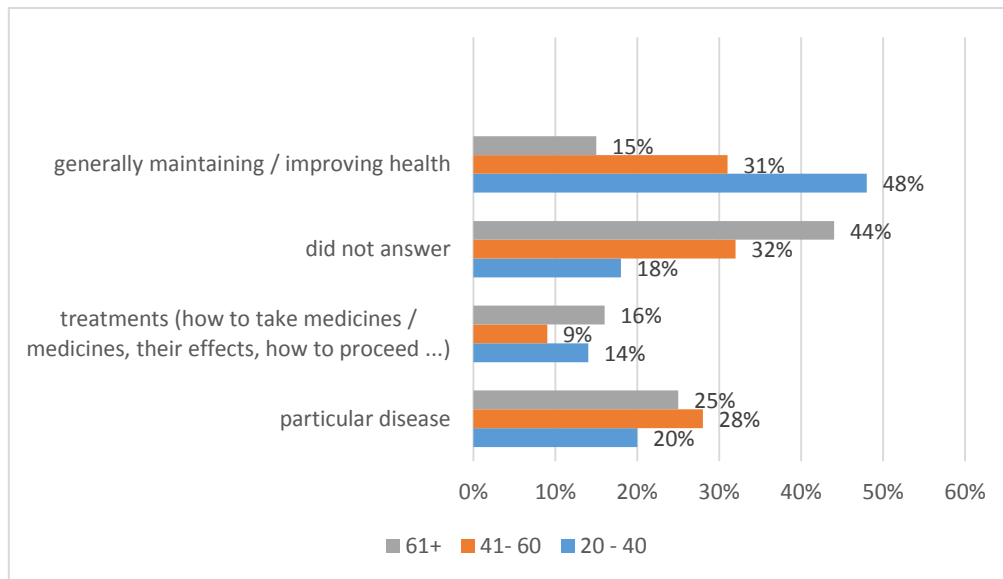


Figure 2: Types of health information

2.2. Attitudes to information about pharmaceutical products and types of advertising for pharmaceutical products

The most common source of information about pharmaceutical products is for 32% of respondents in the Y generation internet and for 28% of young respondents is a doctor. For Generation X, the most common source of information is the physician for 35% of respondents and the pharmacist for 27% of the respondents. 17% of Generation X respondents are looking for this information on the Internet. Of the seniors, 61% most often seek information from a doctor and 17% from a pharmacist and only 8% from the Internet. Other media such as the press, radio and television are the source for finding information about pharmaceutical products for only about 4% of respondents from all generations surveyed (Figure 3).

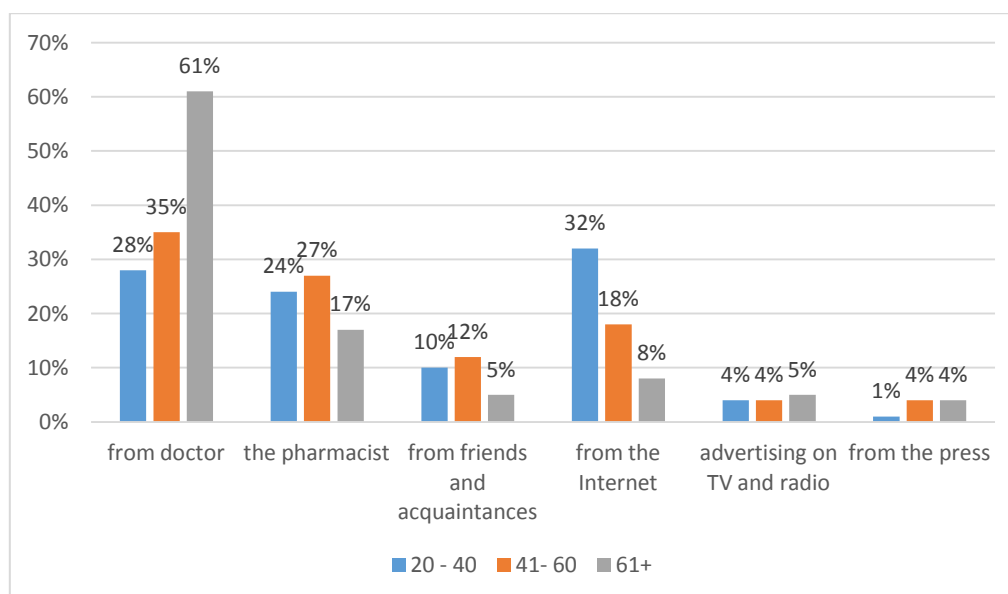


Figure 3: Sources of information about pharmaceutical products

We investigated the attitudes of the generations under investigation to the types of ads for pharmaceutical products. As shown in Figure 4 nearly half of the respondents from each generation will not engage in any type of advertising for pharmaceutical products. 28% of Generation Y respondents are particularly interested in internet advertising. 22% of Generation X respondents and 36% of seniors are interested in TV advertising. Leaflets for pharmaceutical products will attract 17% of seniors and 14% of Generation X.

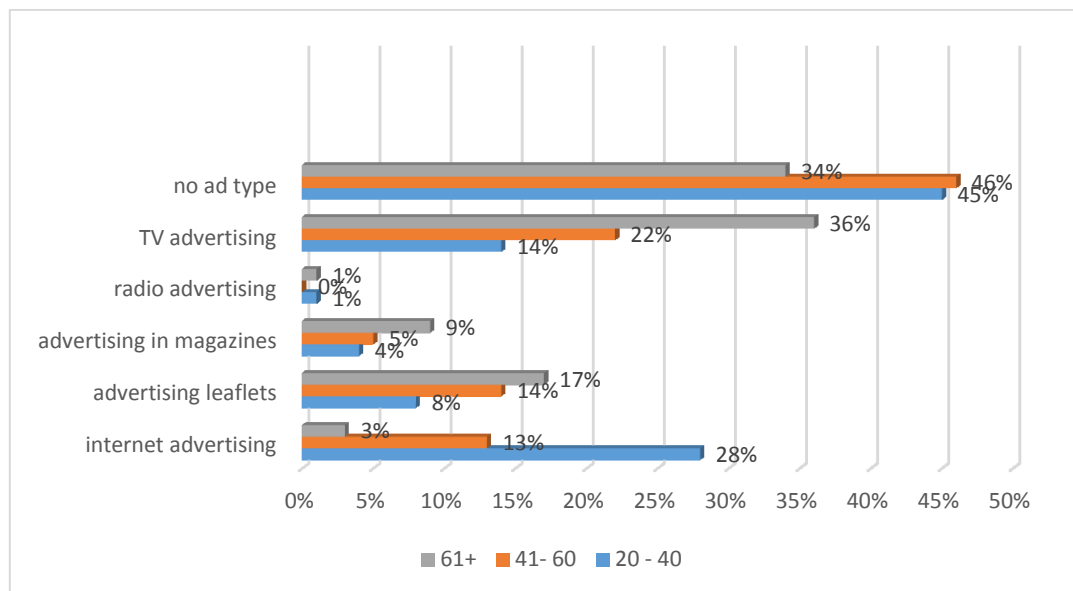


Figure 4: Types of advertising for pharmaceutical products

2.3. Consumer behaviour by purchasing pharmaceutical products

In the examination of consumer behaviour when purchasing pharmaceutical products, we found that respondents make decisions primarily on the recommendation of a physician / pharmacist, as shown in Figure 5. Up to 70% of seniors take advice from doctors, as do 56% of Generation X respondents and 47% of Generation Y respondents. Based on previous experience, 44% of Generation Y respondents and 33% of Generation X respondents choose pharmaceutical products. Price and brand were not decisive criteria when purchasing pharmaceutical products.

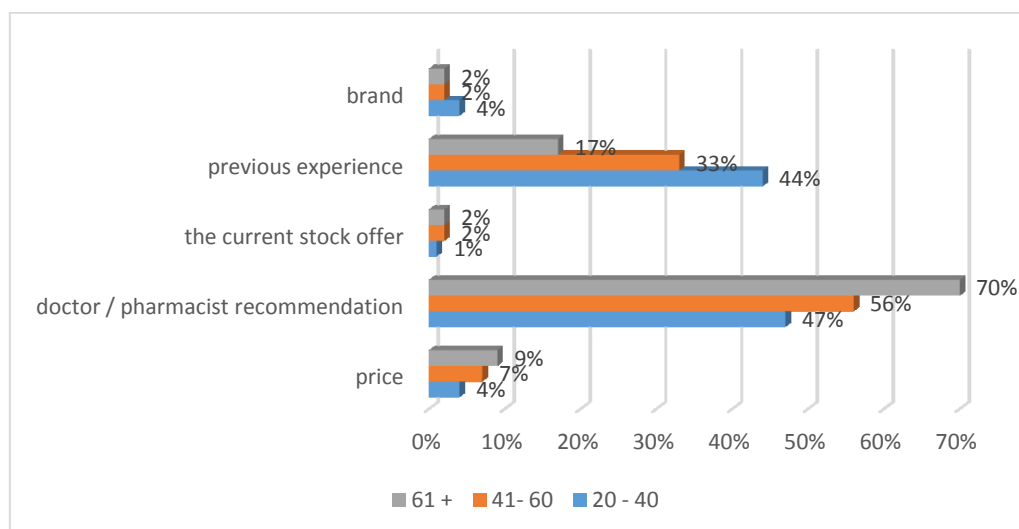


Figure 5: Decisive factors in purchasing pharmaceutical products

The most common place to purchase pharmaceutical products for all the generations studied is a pharmacy, as shown in Figure 6. 83% of Generation Y respondents, 88% of Generation X and 97% of seniors shop in pharmacies. Our research study showed that only 8% of young respondents buy pharmaceutical products online.

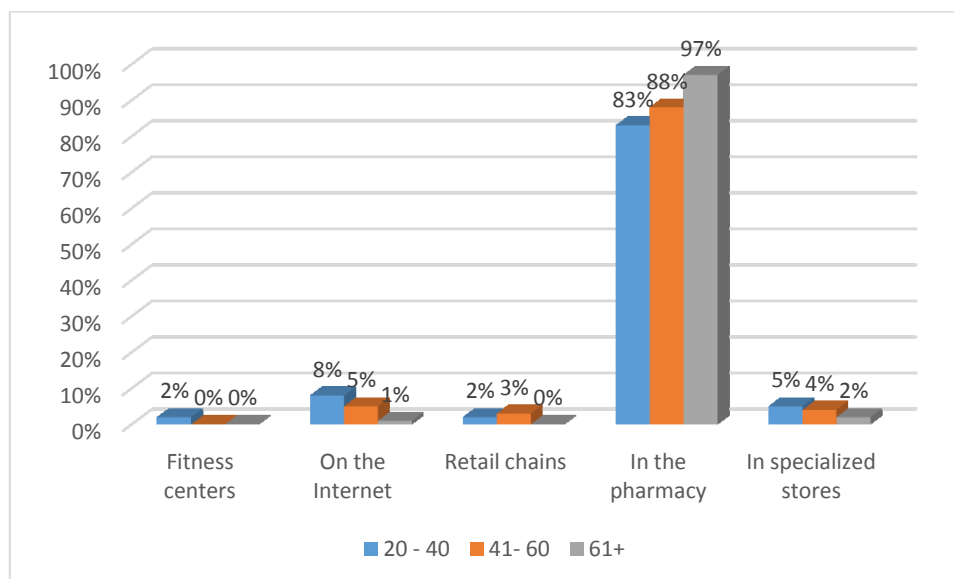


Figure 6: Place of purchase of pharmaceutical products

57% of Generation Y and 54% Generation X respondents spend less than 10 euro per month to purchase pharmaceutical products, compared to the senior generation, where up to 71% of seniors spend more than 10 euro.

3. Conclusion

In conclusion, consumer behaviour in the area of health care and the purchase of pharmaceutical products is influenced by age. Significant differences between generations have been confirmed in all areas examined. Marketing communication and product promotion should aim not only to increase sales but also to enhance loyalty to them. In connection with pharmaceutical products, we consider it appropriate to use sales support, event marketing, sponsorship and communication in the online environment from a wide range of marketing communication tools, in addition to traditional advertising.

Among the communication tools we recommend several tools and methods when targeting young people: Event marketing – a tool for increasing the brand's popularity and strengthening the emotional component of the target group's attitude to the product. Sales promotion - activities aimed at presenting the products at the point of sale, at a moment of the customer's visit can trigger an immediate purchase. Sponsoring - part of PR; it may be one-off or long-term; Due to the nature of the products it is suitable to involve sports type of sponsorship, it means support of athletes - individuals, teams or a specific sporting event for the public. All generations use the Internet as a channel for information. An appropriate way to provide them is e-shop. A company that has a quality e-shop, can participate in affiliate marketing. It is a cooperation with intermediaries - affiliate partners (bloggers, publishers), who promote their products in some form on their website for an agreed remuneration. Effective channels for marketing communications are the internet search

engine of Google and paid advertising in all its forms - advertisement, video, banners. On social networks there is room for organizing various consumer competitions. This can bring more traffic to your website, increase brand awareness, and encourage customers to purchase.

Among the communication tools when targeting senior customer we recommend: Among the traditional tools of marketing communication, promotion through TV spots and advertising in print media is still effective for this segment. Such placement can serve as a good communication channel to inform consumers. Through a variety of information and recommendations from doctors, a change in consumer behaviour can be achieved in a positive direction. Other forms of communication between companies and consumers that can be used by a doctor are leaflets and brochures. It contributes to their reading if they are well prepared in terms of content and graphics. Sales support can be realized at the point of purchase, which is in the case of pharmaceutical products, especially pharmacies and in the premises of medical facilities, where clients often spend a long time when visiting a doctor. The means include catalogues, price lists of medical facilities or stickers. In the online space, we consider using classic forms such as banners, but also search tools. It is important to realize that visibility in search is extremely important, especially when launching new communication campaigns that include other media. Advertisers should be prepared for the fact that if consumers are interested in a TV or radio spot or billboard message, they are highly likely to want to know more about the company or product. Therefore, visibility in search for keywords related to a TV campaign is critical to achieving an efficient flow of communicated messages to consumers and ensuring that they reach across the entire network of traditional and online media. Companies should therefore focus not only on the visibility of the general set of keywords related to their brand, products and needs, but also on the news and products that are part of their communication campaigns.

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Young People on the Labour Market: Current Trends

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Abstract: Young people are one of the most vulnerable groups on the labour market. The youth unemployment rate is generally much higher, in some countries more than double the overall unemployment rate. The crisis that began in 2008-2009 significantly increased youth unemployment. Ten years after its onset, youth unemployment rates are still very high in some European Union countries. The COVID-19 pandemic that currently affects the European Union and the world as a whole will only exacerbate the problems of young people on the labour market. The aim of the paper is to analyse latest trends on the labour market with an emphasis on young people and to identify the main problems related to youth unemployment.

Keywords: Labour Market, Vulnerable Group, Youth Unemployment

JEL classification: J01, J64

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1. Introduction

Youth unemployment (15-24 years) has been high in some European Union countries for many years. About a decade ago, the financial crisis significantly worsened young people's prospects of integrating into the labour market. Well, there are some exceptions, notably Germany. Young people are among the disadvantaged groups on the labour market and, if the situation in the economy deteriorates, they are most likely to lose work. The situation on the labour markets in the European Union has improved in previous years, but in general it is not the case of youth. Youth unemployment rates remain high in many Member States. Young people are nearly three times more likely than adults to be unemployed. Moreover, among young people we can find also some disadvantaged, they face even more serious and complex barriers when trying to find a good job (Buzzeo et al., 2016). Social and economic uncertainty is connected with many young people. They often do not have access to decent jobs that would match their skills and interests. The transition from the education system to the labour market is difficult for many of them and might have long-lasting adverse consequences on both their families and communities (O'Higgins, 2017). In the first half of 2020 the situation with the COVID-19 pandemic has forced governments to impose severe restrictions and take unprecedented measures to protect their citizens. Among others, labour markets have been hit hard because of job losses and/or reduction in earnings. The question is, obviously, who has been hit the hardest? A recent study in the UK shows that in early May 2020 one-third of employees aged 18-24 (excluding full-time students) have lost jobs or been furloughed during COVID-19 pandemic. The study also concludes that it is more common among youth working in atypical jobs (Gustafsson, 2020). In fact, there are clear signs that the impacts of the COVID-19

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pandemic on youth labour market outcomes will be severe not only in the European Union, but also globally.

2. Youth labour market developments in the European Union

It is very interesting to compare developments in youth unemployment within the European Union. The following specific groups across the European Union can also be observed (last year for analysis 2019):

- (a) Countries that experienced high youth unemployment rates in 2008 and the unemployment outcomes have deteriorated significantly since 2008, such as Greece, Spain, Italy;
- (b) Countries that experienced high youth unemployment rate in 2008. Later the unemployment outcomes worsened significantly, but now are much better off than in 2008 - for example Bulgaria, Croatia, Hungary, Poland, Slovakia;
- (c) Countries that experienced high youth unemployment rate in 2008. Later the unemployment outcomes worsened significantly, but are currently at about the same level as in 2008 - for example Ireland, Latvia, Portugal;
- (d) Countries that have not been significantly affected in terms of youth unemployment, such as Finland, the Netherlands, Austria, Sweden;
- (e) A country that, despite the crisis, has been continuously reducing its youth unemployment rate - Germany.

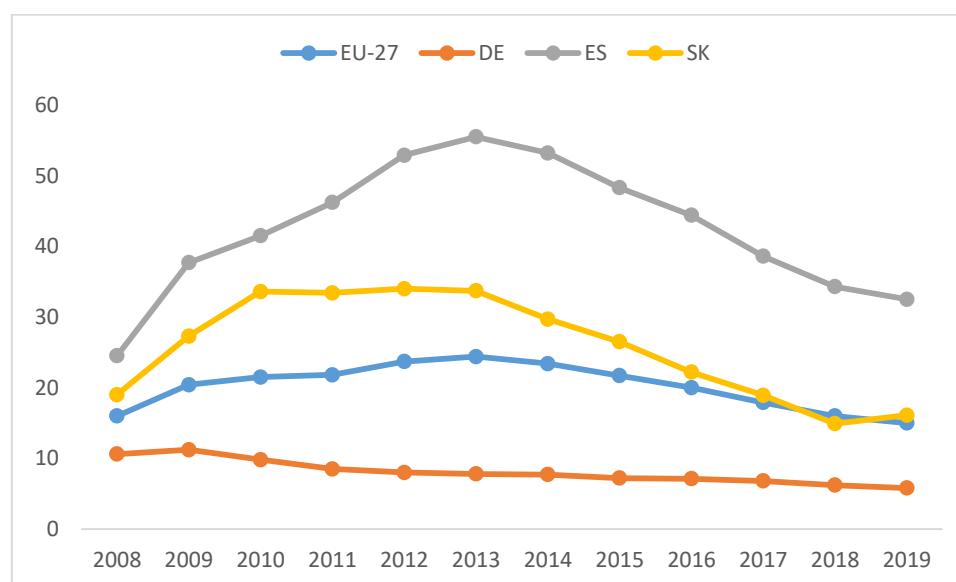


Figure 1: Youth unemployment rate (15-24, percentage of active population). Source: EUROSTAT.

It is clear from the above that youth labour market developments vary widely across the European Union. Figure 1 shows the development of the youth unemployment rate in selected countries and the EU-27 average. Germany, Slovakia and Spain differ significantly and were chosen for the graphical comparison to highlight above-mentioned specific groups. If we take a closer look at Figure 1, it is obvious that in the case of Germany we record a positive development continuously, which

has a significant positive effect on the EU-27 average with regard to the size of the German population aged 15-24. Slovakia and Spain are jointly characterized by a sharp deterioration of the situation in 2008-2010. However, since then, the development in these two countries has been different. In Slovakia, the youth unemployment rate stagnated at around 34% between 2010 and 2013, and subsequently, since 2013 the situation has gradually begun to improve. In Spain, the youth unemployment rate continued to deteriorate dramatically after 2010, with the youth unemployment rate peaking at 55.5% in 2013, then stagnating and starting to decline sharply in 2015.

Youth unemployment has significant economic, social and political consequences and is characterized by certain specific characteristics (Marelli & Signorelli, 2017):

- a) Youth unemployment rate is generally higher than the overall unemployment rate;
- b) Youth unemployment rate is more sensitive to changes in the economic cycle;
- c) There are significant differences in youth unemployment rates among EU countries, both in levels and dynamics, as shown in Figure 1.

High youth unemployment rates in general suggest that there are some difficulties in integrating young people into the labour market within European Union countries, which poses serious risks to the sustainability of welfare states in the Member States. Especially in the countries of southern Europe, we can talk about clear features of segmented labour markets. They are characterized by high unemployment and low employment of vulnerable groups on the labour market, such as young people, women and the low skilled. In addition, people working through non-standard contracts have a reduced bargaining power in the context of potential wage increases or career advancement (European Commission, 2019). This is particularly the case in Greece, Spain and Italy, where youth unemployment rates are significantly higher than the European Union average. It is obvious that in some countries active labour market policies focused on youth proved to be ineffective. In fact, the prevention of youth unemployment is crucial. Therefore, active labour market policy is very important. It should focus primarily on preventing a situation where short-term unemployment becomes structural or long-term (Marelli & Signorelli, 2017). In its report (ECA, 2017), the European Court of Auditors assessed the Youth Guarantee and the Youth Employment Initiative, which should prevent that from happening. It highlights that for the next employment initiatives, Member States and the European Commission should manage their expectations by setting realistic and achievable targets. It is also necessary to carry out market analyses and assessments of market needs before various schemes are implemented. It may happen that schemes are accepted, but they may be largely non-functional. The reason is an absence of a real ex ante evaluation of their effects. Another problem may be the implementation of the various schemes and measures adopted at European level that should take account of the circumstances of individual Member States. Youth Guarantee does not always bring unemployment rate plunges, quality jobs and it is crucial considering sustainable labour market integration. One solution to improve the results of the Youth Guarantee is to identify and disseminate good practice among Member States. Naturally, what works in one country may not necessarily work in another. However, it is clearly easier to look for positive examples abroad than to try to come up with something completely new and learn from your own mistakes. As part of the evaluation of the implementation of the Youth Guarantee and the Youth Employment Initiative, the European Court of Auditors visited seven European Union Member States, Croatia, France, Ireland, Portugal, Slovakia, Spain and Italy. The European Court of Auditors report (ECA, 2017) states that although some results have been achieved it is disappointing those results have not matched expectations of the implementation of the Youth Guarantee. On the other side

there is the Study for the Evaluation of ESF Support to Youth Employment (European Commission, 2020b) and it is very positively written. It concludes that Youth Employment Initiative has had a positive impact in integrating youth into the labour markets. In fact, the European Union experienced very positive labour market developments in the past years before the COVID-19 pandemic. Then it is difficult to say how effective the Youth Employment Initiative and the Youth Guarantee have been. But, what can be said is that Member States will definitely need youth schemes that really work in the years to come. Table 1 shows the latest developments and huge differences inside the EU-27. First of all, there are approximately 254 thousand more unemployed youths in June 2020 than in June 2019 in the European Union. Secondly, if there is about 2,962 thousand unemployed youths in the European Union, roughly 50% of them are in Spain (17%), France (21%) and Italy (12%). The largest European Union country in terms of population, Germany, has recently experienced very interesting labour developments. As can be seen in Table 1, there has been a significant increase in number of unemployed (year-on-year change), but not in case of youth. Despite of Covid-19 pandemic, there are less unemployed youths in June 2020 than in June 2019. The reasons of positive youth labour market outcomes in Germany we could find in educational system and active labour market policy.

Table 1: Number of unemployed and number of unemployed 15-24 in the European Union. Source: EUROSTAT.

	Unemployed in thousands			Unemployed 15-24 in thousands		
	6/2019	6/2020	Change	2019M06	2020M06	Change
EU-27	14 199	15 023	824	2 708	2 962	254
BE	278	282	4	56	52	-4
BG	136	147	11	13	15	2
CZ	98	139	41	17	21	4
DK	139	175	36	38	51	13
DE	1 320	1 865	545	249	242	-7
EE	32	n/a	n/a	10	n/a	n/a
IE	124	131	7	39	39	0
EL	811	n/a	n/a	81	n/a	n/a
ES	3 267	3 387	120	506	514	8
FR	2 514	2 300	-214	546	627	81
HR	118	161	43	25	37	12
IT	2 489	2 204	-285	412	360	-52
CY	32	45	13	6	7	1
LV	62	98	36	8	11	3
LT	91	139	48	11	20	9
LU	18	24	6	4	7	3
HU	162	n/a	n/a	37	n/a	n/a
MT	8	11	3	2	4	2
NL	313	404	91	97	156	59
AT	200	255	55	46	54	8
PL	553	520	-33	134	118	-16
PT	341	351	10	71	81	10
RO	343	467	124	100	n/a	n/a
SI	46	49	3	5	8	3

SK	157	181	24	27	30	3
FI	186	201	15	57	61	4
SE	358	508	150	116	174	58

The huge differences in labour market outcomes are not only among Member States, but of course, we can find them in individual Member States. Table 2 shows registered unemployment rate and its comparison selected districts in Slovakia. We have chosen three districts with the highest registered unemployment rate in June 2019, the average registered unemployment rate (Slovakia), and three districts with the lowest registered unemployment rate in June 2020. As seen in table 2, there is a significant increase in registered unemployment rate in every single district between June 2019 and June 2020. What is really worrying, however, is that districts with the highest registered unemployment rate in June 2019 have experienced significant increases in number of unemployed under 25. This could be painful for future of Rimavská Sobota District, Kežmarok District and Revúca District, where job prospect are very poor for adults in general. The COVID-19 pandemic could have a detrimental effect on widening regional disparities in Slovakia and has to be address urgently.

Table 2: Registered unemployment rate in selected districts in Slovakia. Source: Central Office of Labour, Social Affairs and Family.

A	B	C	D	E	F
District/Country	Registered unemployment rate in %		Number of unemployed under 25		E/D Change in %
	June 2019	June 2020	June 2019	June 2020	
Rimavská Sobota	15.66	20.40	841	1177	140
Kežmarok	15.03	18.29	1032	1220	118
Revúca	13.34	17.47	353	425	120
<i>Slovakia (country)</i>	<i>4.97</i>	<i>7.40</i>	<i>22490</i>	<i>32114</i>	<i>143</i>
Nitra	2.04	4.65	250	576	230
Bratislava V	2.01	3.38	97	190	196
Trenčín	1.93	4.02	181	297	164

Nowadays there are no discussions whether there will be a second wave of coronavirus, or not. The questions are how can we cope with it and if we are prepared. Another unknown is how long it will take for the economy to recover from COVID-19 pandemic. As can be seen in Table 2, if we compare June 2019 and June 2020 there are significant increases in overall unemployment rate as well as in number of unemployed under 25 in Slovakia. The European Commission in its forecast expects a deep and uneven recession, and an uncertain recovery. It also points out that the COVID-19 pandemic has changed the prospects of the labour markets in the European Union and the economic recovery is expected to be asymmetric across Member States (European Commission, 2020a). Although there is some financial (and another) support from the Slovak government to mitigate current negative developments on the Slovak labour market, a lot more should have been done, and faster. Well, one could say that the situation on the labour market in Slovakia is not bad at all nowadays. It might be true, but only in western part of Slovakia. However, there are significant regional differences in Slovakia and the COVID-19 pandemic has hit hard especially the least-developed districts. The unemployment rate and the number of unemployed under 25 have

increased substantially because of COVID-19 pandemic. These developments might have very detrimental effects on future prospects of the least-developed districts in Slovakia. Some studies suggest that the evidence indicates that it is not the best time for youth to enter the labour market during a recession. Unemployment rates are elevated, the labour market is weak and new entrants may accept lower salaries than in better economic times. Young people may experience a temporary decline in earnings and it could affect their future earnings (Dettling, 2016). Cockx (2016) also points out that graduation during a recession has negative impacts on the youth entering labour market. These negative impacts depend on the labour market flexibility and the education level.

3. Conclusion

First of all it is necessary to conclude that there are significant differences in youth unemployment rates among European Union countries. Youth labour market developments vary widely across the European Union. Member States have different educational systems as well as different active labour market programmes. There are countries such as Greece, Spain, and Italy that experienced high youth unemployment rates in 2008 and the unemployment outcomes have deteriorated significantly since 2008, such as Greece, Spain, Italy. Those countries are currently still not at the 2008 levels. The Covid-19 pandemic significantly worsened young people's prospects of integrating into the labour market and will definitely worsen labour market outcomes in Member States. New graduates and school leavers searching for their first job will need great determination to succeed. We all should be concerned about the rise of youth unemployment. Nowadays it is more important than ever to focus mainly on the most disadvantaged groups on the labour market, especially youth.

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Intercultural aspects in the context of virtual teams' lifecycle

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Abstract: Although it is still not clear how the Covid-19 pandemics will reshape the global economic landscape, one of the possible scenarios is the tendency to intensify the virtual nature of global work. The consequences of the measures taken by national governments to mitigate the impact of the pandemics confirmed that virtual work is an adequate alternative to collaborate globally. In this light, this conceptual article explores the current body of knowledge in relation to practices of establishing global virtual teams. Specifically, this article focuses on the lifecycle of virtual teams and how the intercultural aspects of the virtual teams' management are taken into consideration in this lifecycle. The contribution introduces three models of team lifecycle. Then, the article deals with the selection of team members and training as these two areas were identified as the most relevant to the phases of the introduced models. The identified concepts contribute to a better understanding of global virtual teams as a very topical phenomenon and can serve, for example, as a starting point for future research projects.

Keywords: Virtual teams, Recruitment, training, Intercultural competences, team lifecycle, team development

JEL classification: Z1

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1. Introduction

Year 2020 has been an unexpected turning point in modern history. The outbreak of global pandemic of COVID-19 in March 2020 was an unprecedented situation sending millions of people home in order to stop spreading of the novel coronavirus. Although involuntary, the stay-at-home has catalysed the processes of knowledge work virtualisation.

The shift to virtual work is an ongoing process which has started in the second half of the 20th century. During the first two decades, we have witnessed an increasing tendency towards virtualisation of work ("2018 Trends in High-Performing Global Virtual Teams", 2019; "Trends in Global Virtual Teams", 2016). The necessity to search for alternative solutions in relation to the pandemic measures increased the speed and intensity of the virtualisation process. Besides that, the pandemics also showed the full scale of global interconnectedness. As at the time of writing of this contribution the global pandemic crisis continues we still only anticipate the specific nature of the related consequences. Nevertheless, already now, we can expect the direction towards a more virtual global world.

After the initial shock resulting from the unexpectedness and scale the world has been hit by the COVID-19 crisis, the society is discovering the positives of the transition to the high-intensity virtual work. Although the technologies allowing smooth virtual work and cooperation existed before the crisis, the necessity to continue the work activities facilitates the familiarisation with both technological and managerial aspects of virtual work.

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The transition to virtual work as the primary form of knowledge work is challenging for many organisations. Consultancy companies react to this situation with new training products on the management and leadership of virtual teams. Another frequently discussed topic is the psycho-social aspects of working from home in the virtual environment. Sharing this article, we want to contribute to this topical debate and body of knowledge about the practices of virtual teams.

This article focuses on the intercultural aspects and intercultural competences from the perspective of the virtual teams' lifecycle. In the article, three possible approaches to team lifecycle are introduced and two of these models focus specifically on virtual teams.

As culture is one of the internal factors influencing the performance of virtual teams (Nemiro, 2008) we identify the presence of intercultural aspects in the lifecycle of virtual teams. Further, special focus is paid to the selection of team members and training as these two areas were identified as the most relevant in relation to team lifecycle. Conclusion section closes the article and summarizes the implications of the explored topic and identifies possible further questions and follow-up research topics.

From the methodological point of view, the contribution is based on the review of secondary resources. Besides the monographs dealing with management and leadership of virtual teams, the article is based on journal articles published in licenced databases Ebsco and Proquest. The topic of virtual teams has always been a very dynamic domain. This applies even more in light of the global pandemic. Given that, the article also builds on the information published by the major consulting companies as the advisory industry reacts flexibly on the current situation and therefore can provide a valuable practical insight.

2. The intercultural potential of virtual teams

The majority of literature dealing with the management of virtual teams emphasise the role of proper intercultural communication within the global virtual teams as one of the determinants of effective performance. Culture is an internal aspect of virtual teams functioning. According to Nemiro et al. (Nemiro, 2008), culture, together with trust and leadership are created within the specific virtual team. These three aspects do not stand on their own. There are mutual relations and dependencies, creating a unique internal environment of each virtual team. For example, Duarte and Tennant Snyder point out the relation between culture and trust-building pattern in virtual teams. (2001) There is also evidence of the relations between culture and leadership styles. (Zakaria, 2017)

The cultural diversity of global virtual teams is a double-edged sword, having both positives and negatives (Shachaf, 2008). The positives lie, for example, in the potential to better reach and understand certain geographical and culture-specific location. Other positive of cultural diversity is better decision making which is attributed to multiple points of view in a diverse team (Shachaf, 2008). Teams' cultural diversity contributes to the creation of stronger structures, able to creatively interpret team goals. (Haas, & Mortensen, 2016)

The negative aspects lie in the potential miscommunication, caused either by a culture-based difference in interpretation of communication (Shachaf, 2008) or other cultural-dependent behaviours (perception of hierarchy, time perception, directness etc.). The cultural-related miscommunication is also directly related to language challenges.

The benefits of the cultural potential of global virtual teams are based on the optimal balance between diversity and communication ability. (Hertel et al., 2005) The setting of the global virtual team should ideally correspond with the purpose and tasks and at the same time, this team setting and composition must be properly managed within the team lifecycle.

3. The lifecycle of virtual teams

When describing the development of groups, many authors mention already classical development model introduced by Tuckman (1965). This model consists of five phases. In the first phase – forming, the team members test the mutual relations. Regarding culture, Brewer (2015) mentions that the time necessary for forming is dependant to the cultural distance of the team members. In the second phase – storming, the interpersonal relations polarise and there is an emotional acceptance of the tasks. During the next phase – norming is characterised by overcoming of resistance, acceptance and cohesion of the team. In the following phase – performing, the functional roles are established and there is emerging the group energy in the team. The fifth phase – adjourning, which was added later (Tuckman, & Jensen, 1977), represents the end phase of the lifecycle.

The above-mentioned group development model is generally used as the basis for understanding the process within the teams, that means the social groups create to achieve specific objectives (Gilbert, 2005).

The model introduced by Gluesing et al. specifically focuses on the process of development of global virtual teams. (2003) This process consists of three phases. The first phase – Team formation, reflects initial conditions, such as individual characteristics of the team members and available technology, and team formation including team structure and hierarchy and team's tasks. The second phase – development processes, focuses on early and ongoing development through actions and interaction which influence the team's ability to accomplish its tasks. The last phase – maturation, is the state of sustainability and stability when the members and context are integrated and the team shares the common purpose and focus.

Another model reflecting specifics of virtual teams is the virtual teams' lifecycle model introduced by Hertel et al. (2005) This model is complex and consists of five stages. Preparation includes the activities necessary for the establishment and functioning of the team. This phase includes a definition of the mission statement, selection of the team members, tasks design and planning and technological and organisational integration. The second phase – Launch, consists of initial activities carried out when the team members are already present. This means, for example, kick-off meetings and clarification of goals and internal rules and norms. During the next phase – performance management, there is a focus on intra-team communication, leadership and maintaining motivation. Fourth phase – team development, is dedicated to the assessment of needs of the team, training activities and evaluation of these training activities. The last phase – disbanding, reflects frequent use of virtual teams as project teams. The main characteristics of this phase is the preserving of the team value after the end of the activity of the team. That mainly means collecting and assessment of the feedback and maintenance of the expert network.

In the following parts of this contribution, the article focuses on the virtual teams' lifecycle phases in which the intercultural aspects are the most relevant in terms of global virtual teams' management.

4. Selection

Selection of the team members, including leaders is one of the initial activity in the life of a virtual team. As the management activity, the selection is explicitly mentioned in the above-mentioned Hertel's (2005) lifecycle model. In the team selection process, we have a chance to influence the starting position of the team in terms of its knowledge, skills and abilities input.

In their research, Hertel, Konradt and Voss (2006) focused on the relation of the team members' competences and effectivity of virtual teams. There were identified so-called tele-cooperative skills which reflect the specifics of the teamwork in the global virtual teams. These tele-cooperative skills consist of self-management, interpersonal trust and intercultural cooperation.

The need for identification appropriate of appropriate knowledge, skills and abilities necessary for work in a virtual team setting is also explored by Blackburn et al. (2003) Cultural sensitivity and awareness are in this research viewed as the skillset helping to avoid conflicts, improving mutual understanding and most importantly the effectiveness of virtual teams. Blackburn et al. further point out the traditional emphasis on technical skills and omitting of the intercultural competences. They state that in collocated teams, there is a focus on the technical expertise during the selection of the team members. However, when establishing virtual teams, it is desirable to add also the criteria assessing the ability to work in the global virtual setting and this includes the communication and intercultural competences. This will increase the chance that the selected team members are fit to complete the team's mission.

The argument, that there should be also placed a special focus on intercultural skills during the selection process of virtual teams' members is also supported by the research of Gluesing et al. (2003) The authors analysed several case studies and based on this analysis, they formulated the recommendation that the persons entering the virtual teams should already possess a certain level of intercultural competencies. The assessment of cultural fit of the members of virtual teams is also recommended by the advisory company Wipfli, which mentions the use of personality and behavioural assessment tools during the selection process of the new team members. („How to recruit, manage and retain virtual team member”, 2020)

The above-mentioned shows that intercultural competencies are an important determinant of the effectiveness of virtual teams. There is also an assumption that the interpersonal skills play a more critical role in the virtual teams than in the collocated teams. This, however, raises the question whether it is desirable to insist that the quality team members should possess the intercultural competencies at the time they are entering the virtual teams or there should be also paid attention to intercultural training of the team members. There may also appear an opinion that there is a process of natural selection in the global virtual teams and that the team members which are culturally fit will stay in the team and those who are not will leave the team. However, as a large share of the virtual teams has the form of project teams which are assembled for a determined time, we may ask if the organisations should rely on such a natural selection.

5. Training

Intercultural competences can be acquired informally or formally through intercultural training. Such training focuses on improving communication in teams, preventing misunderstanding and conflicts and overcoming cultural differences. (Blackburn & Furst, & Rosen, 2003)

In terms of virtual team lifecycle, Hertel et al. (2005) place the training activities into the fourth phase of his model called development. Including training activities in the penultimate phase of the developmental model may suggest the relationship between the purpose and duration of virtual teams. Although advocating the necessity of intercultural readiness of team members of virtual teams, Blackburn et al (2003) point out the approach of some companies which apply the training activities, including the intercultural training on a just-in-time basis. Based on the duration of the team and its purpose, the organisation may solve the dilemma of whether to provide the team with training only when needed or not to provide any formal training at all.

Gluesing et al (2003) besides the initial phase of their model, where they recommend selecting the individuals who are already culturally competent (see above), mention the positive effect of facilitation in the relation to the intercultural aspects. They place facilitation in the second phase of their model development. The purpose of the facilitation activities is faster integration of differences in the team. The facilitator's role is the ongoing maintenance of intercultural awareness and sensibility (Howell, 2015). Although facilitation shares some similarities, it is not training. Nevertheless, it is a formalized intervention into a team's development and can be combined with focused team activities.

In the case of a more robust virtual team, the aspects of the intercultural training can be included in the team's kick-off meeting. The purpose of the kick-off meeting is to clarify the roles and tasks of the team. During the kick-off meeting, the team develops intra-personal relations and collaborative potential (Goodbody, 2005). Hertel et al (2005) place kick-off meeting in the launch phase. However, they admit that the launch and development phases may stretch and overlap with other phases of their model.

In the first half of 2020, the global pandemics of COVID-19 catalysed the shift to virtual work and virtual teaming. Also, the training activities moved to virtual space. Besides that, the forced work from home created a sudden increase in demand for training activities focused on virtual collaboration and management of virtual teams. We can expect that the teams which once transformed to virtual teams will keep in a certain extend their virtual character also after resolving the current global situation. Because of the weakening of the prejudices of virtual work, we can also expect the growth of the work in virtual teams. This also means greater acknowledgement of intercultural aspects as the determinant of virtual teams' effectiveness. We can also expect the development of training activities and a deeper understanding of intercultural training as a management and leadership tool.

6. Conclusion

The purpose of the contribution was to analyse intercultural aspects of virtual teams in the context of team lifecycle. There have been introduced two models which specifically focus on the lifecycle of virtual teams.

We can conclude that in the lifecycle of virtual teams, the intercultural aspects are present directly in the initial phases during the selection process. The analysed sources recommend paying attention to

the existence of intercultural competencies when assessing the team candidates as the prerequisites to work in the culturally diverse environment have in the virtual environment greater importance than in the case of collocated teams. Another important area is training and preparation of virtual teams. Some approaches suggest that it is more effective to prepare the virtual teams informally during their work. On the other hand, the majority of sources specialising on the management of virtual teams point out that proper attention to intercultural issues increases the potential of virtual teams and prevents team conflicts and misunderstandings. As the setting of virtual teams can significantly vary in many factors including the expected duration of the teams, we can conclude that the decision whether to provide a formalised intercultural training or not reflects the specific purpose of the given team. However, such a decision should be deliberate and supported by proper arguments.

Although the topic of virtual teams has been researched for several decades, there is still lacking a solid body of knowledge about practical solutions of issues and challenges of virtual teams. The focus of research lies in the first decade of the 21st century and the majority of newly published works frequently cites these resources. When assessing the current trends, we can see the shift to virtualization. Further research emphasis on cases and best practices would bridge the theory with the current practice.

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Threats, Vulnerabilities and Risks of Social Enterprises – What Do We Know and What Should Be Developed?

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Abstract: Social enterprises are entities that develop economic activity and at the same time create a positive social impact. For these enterprises, having a positive social impact is more important than maximizing their profits. Like traditional businesses, social enterprises are affected by a number of threats, vulnerabilities and risks that they should take into account and implement them into their crisis management activities. However, due to the specific ecosystem of social enterprises, these risks, vulnerabilities and threats may differ from those that surround conventional enterprises. The aim of this paper is to reveal how the scientific and specialized literature deals with threats, vulnerabilities and risks of social enterprises and to suggest how the topic of crisis management in the environment of social enterprises can be further developed. Especially in times of crisis caused by the COVID-19 pandemic, this issue deserves special attention.

Keywords: social enterprise, threat, vulnerability, risk, crisis management

JEL classification: M21, M14

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1. Introduction

Social enterprises are entities that develop economic activity and at the same time create a positive social impact. For these enterprises, having a positive social impact is more important than maximizing their profits. This is one of the characteristics that distinguishes them from conventional enterprises. However, like traditional businesses, social enterprises are affected by a number of threats, vulnerabilities and risks that they should take into account and implement them into their crisis management activities. Due to the specific ecosystem of social enterprises, these risks, vulnerabilities and threats may differ from those that surround their conventional counterparts. And especially at a time of crisis caused by the COVID-19 pandemic, it become apparent that attention should be paid to the development of crisis management of social enterprises.

This necessity can be illustrated by the example of Czech social enterprises. According to the TESSEA database (Thematic Networks for the Social Economy in the Czech Republic), there are currently 300 social enterprises operating in the Czech Republic. 90% of these entities are work-integration social enterprises (WISE) and 80% of them focus on the integration of people with disabilities, employing almost 4,000 such disadvantaged people in 2018. Social enterprises in the Czech Republic operates mainly in the food industry, gastronomy and in the area of maintenance work. In terms of their size, these are mostly micro and small businesses. Based on TESSEA's experience from the ongoing crisis caused by the COVID-19 pandemic, we know that, from a financial point of view, earnings of Czech social enterprises have fallen by an average of 75%. However, only a minimum of Czech social

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enterprises work systematically with crisis management, although from many perspectives they are much more vulnerable than conventional companies. These vulnerabilities are mainly related to the employment of disadvantaged people who are less adaptable and could be less able to handle stressful situations.

The aim of this paper is to reveal how the scientific and specialized literature deals with threats, vulnerabilities and risks of social enterprises and to suggest how the topic of crisis management in the environment of social enterprises can be further developed. Especially in times of crisis caused by the COVID-19 pandemic, this issue deserves special attention.

2. What Do We Know?

According to Hoogendoorn, Zwan and Thurik (2011), who refer to Knight (1921) and Parker (2009), the role of the entrepreneur is to bring demand and supply for goods and services together while bearing all of the risk involved in this process. Hence, the ability to bear uncertainty and risk is required for entrepreneurship, and it is acknowledged that it plays a significant role in the occupational choice to become an entrepreneur. This requirement is no different for social entrepreneurs, for which risk-bearing is widely acknowledged to be a key characteristic. As stated by Defourny and Nyssens (2012), members of EMES (International research network for social entrepreneurship), those who establish a social enterprise assume totally or partly the risk inherent in the initiative.

Is social entrepreneurship more, just as or less risky than traditional entrepreneurship? As claimed by Halberstadt, Niemand, Kraus, Rexhepi, Jones and Kailer (2020), risks connected to social entrepreneurship seem at least equal to or higher than in business entrepreneurs, since they additionally have to deal with risky decisions also influencing the economic returns, such as investing in the correct employees, strategic partners or choosing an innovative product/service approach or marketing mix that ultimately influences social as well as economic performance. According to Gupta, Chauhan, Paul and Jaiswal (2020), who refer to Dwivedi and Weerawardena (2018), risk management, along with innovativeness, proactiveness, effectual orientation, and social mission orientation, is key dimension in social entrepreneurship. As stated by Fakoussa, O'Leary and Salem (2020), social entrepreneurship includes more risk than traditional entrepreneurship. Murphy, Pollack, Nagy, Rutherford and Coombes (2019) offer a similar statement: the risk and uncertainty of entrepreneurial action within social entrepreneurship tend to be higher than in other, more regulated, entrepreneurial sectors. Because the value generated by a social enterprise is harder to ascertain reliably compared to other types of enterprises, investing in social enterprises becomes more of a risky bet.

Do social entrepreneurs have a higher risk aversion than their conventional counterparts? This issue has been addressed by Choi, Kim and Kim (2018): social entrepreneurs tend to more have about 15% risk-seeking propensity than commercial entrepreneurs. This can be explained by the fact that social entrepreneurs have different types of financial investments such as philanthropic fundraising or charities for public interests. This can cause higher risk propensity of social entrepreneurs.

For the development of crisis management of social enterprises, research made by Wronka-Pospiech, Frączkiewicz-Wronka and Laska (2017) is particularly useful. Based on a survey of 160 social cooperatives, the authors identified 10 main risks in activities of social enterprises. These risks are introduced in the Table 1.

Table 1: Main risks of social enterprises (according to Wronka-Pospiech, Frączkiewicz-Wronka and Laska, 2017)

Type of risk	Type of risk
Lack of employee involvement	Deterioration of market conditions
Damage to the brand and reputation	Intentional or unintentional actions to the detriment of the customers
Decrease in the income (revenue)	Failure to comply with or a breach of the contract by the operators and organizations we work with (partners)
Failure to comply with, or violation of terms and conditions of the contract	Theft of cash earned by the organization
The responsibility we bear for the quality of goods/services	Loss of funding

While the risks in social entrepreneurship are addressed in the literature, the other two crisis management phenomena - threats and vulnerabilities – are not much discussed. However, two exceptions are introduced in this article. Tykkyläinen (2019) dealt with the threats affecting social enterprises in Finland. These threats are of a financial (drop in sales, bankruptcy) and market (exclusion from public procurements, buyout, public contracts ending) nature. In relation to vulnerabilities of social enterprises, comparative synthesis report written by Borzaga, Galera, Franchini Chiomento, Nogales and Carini (2020) should be mentioned. By the authors, without further legitimisation, adequate support to scale up and consolidate (also through tax breaks), proper capacity building and access to financial resources tailored to their peculiar needs, social enterprises will remain vulnerable. The vulnerability of social enterprises is to a certain extent connected to the fragmented debate and conceptual confusion that revolves around their role in contemporary societies. Moreover, vulnerability results from the strong dependency of social enterprises upon national and local policies, given their strong integration into EU Member States' welfare systems, continuous policy changes and cuts in public spending.

3. What Should Be Further Developed?

For the development of social enterprises' crisis management, the concepts of risks, threats and vulnerabilities should be properly distinguished. Literary review has revealed that the publications do not focus comprehensively on all three concepts. In addition, some of threats mentioned in the review should be classified rather as risks (for example, drop in sales or bankruptcy). We give an example of how this triad can be distinguished and what is the relationship between the concepts.

Table 2: Triad threat – vulnerability – risk

Concept	Situation
Threat	Due to the crisis caused by the covid pandemic, aggregate demand will decrease.
Vulnerability	Typically, social enterprises focus on selling more expensive local products.

Risk	In all probability, there will be a significant decline in sales of the enterprise. This decrease will have a significant impact on the enterprise's financial situation.
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It is evident that there is the relationship between these concepts. A threat is a phenomenon that is not dependent on a subject (on a social enterprise, in our case). A threat affects a vulnerability of an enterprise, exploits it. A risk arises from a combination of threat and vulnerability – this is a situation that occurs with a certain probability and has a certain impact on the subject.

In addition to this distinction that should be taken into consideration when developing crisis management systems of social enterprises, catalogues of threats, vulnerabilities and risks associated with social enterprises could be made. Although the literature provides several representatives of these concepts (see Wronka-Pospiech, Frączkiewicz-Wronka and Laska, 2017, Borzaga, Galera, Franchini Chiomento, Nogales and Carini, 2020, Tykkyläinen, 2019), their list is certainly not complete. Our two pilot studies revealed, for example, the vulnerability of a social enterprise may lie in 100% dependence of its running on the founder of the enterprise (interview with founder of Loop-Store). Or the threat can be represented by raising the minimum wage without increasing contributions for disadvantaged employees (interview with manager of MYJÓMI). Thus, further interviews may contribute to extension of portfolio of social enterprises' risks, threats and vulnerabilities. Using catalogues of these concepts, social enterprises will be able to develop their own crisis management systems.

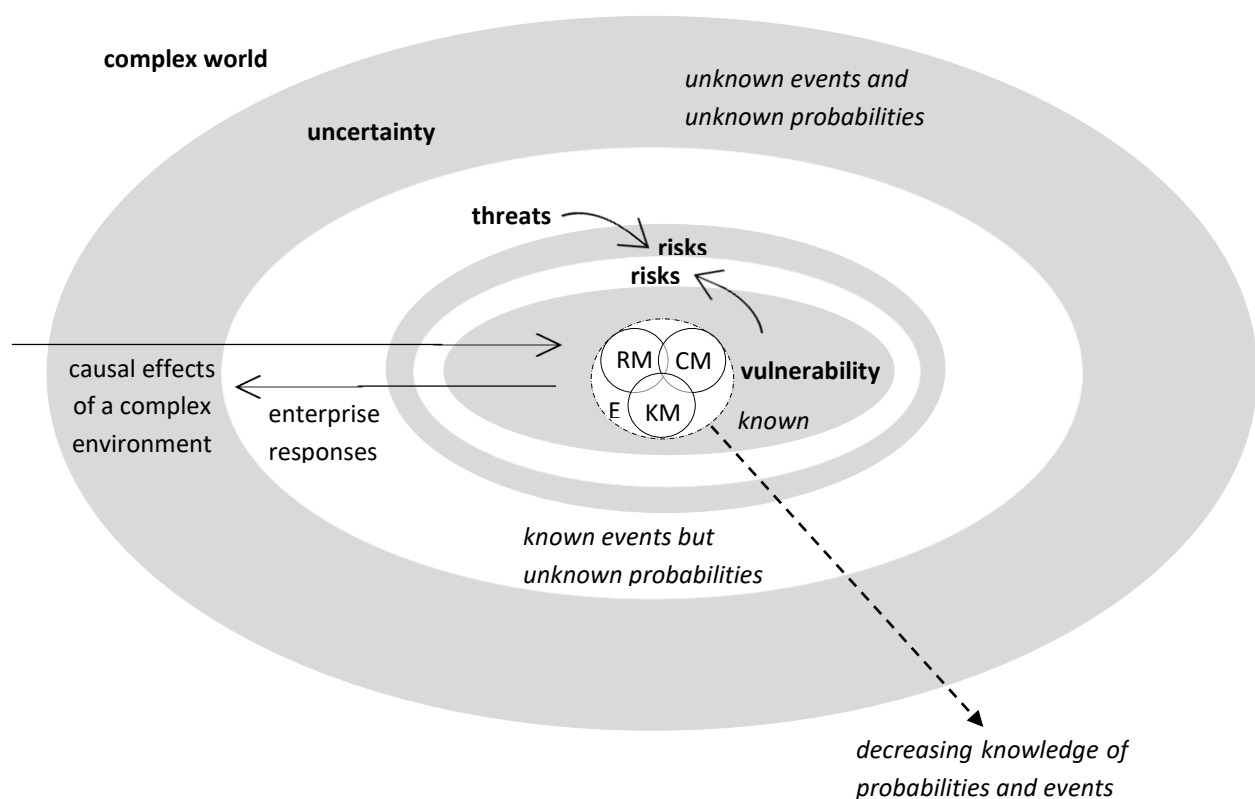


Figure 1: Threats, risks, and vulnerability in the context of enterprise epistemology

Catalogues of threats, risks and vulnerabilities will allow to understand the individual relationships between these phenomena and include them in the enterprise epistemology, as shown in Figure 1. In this context, the enterprise (E) can be understood as a link between key areas related to epistemology: knowledge management (KM), risk management (RM) and crisis management (CM). Knowledge management systems are one of the key components of corporate epistemology, together with the company's self-knowledge, self-examination and measurement of team and individual knowledge (Petříková, Nenadál, Zelený & Girstlová, 2005, p. 75). Knowledge about risk is also closely related to epistemology, as risk represents a specific type of knowledge that relates to knowledge about our lack of knowledge (Hansson, 2012, p. 34). In addition, the issue of risk perception, which is related to epistemic credibility, must be considered (Hansson, 1999). Consistent with this epistemological link, it is clear that crisis management, risk management and knowledge management are interconnected disciplines (see Haltiwanger et al., 2010, Rodriguez, Edwards, 2014).

As Figure 1 shows, our knowledge about threats, risks, vulnerabilities and other phenomena varies. While for risks that can be understood as the interaction of threats and vulnerabilities, we can determine some numerical representation, this is not the case for uncertainty (Knight, 1921). For threats, it is difficult to determine the probability of occurrence, but it is possible to consider individual events. It is the threat catalogue that is important for identifying possible risks that are likely to occur if a specific threat occurs. The goal of the company as an epistemological organism is appropriate work with knowledge about threats, risks and vulnerabilities. Sufficient knowledge can be used to reduce this vulnerability and expand the ability to identify and quantify concrete risks.

4. Conclusion

As contemporary literature claims, the phenomenon of risk is an integral part of the concept of social entrepreneurship and some of the main risks relating to social enterprises are mentioned in scientific texts. However, the other two crisis management phenomena, namely threats and vulnerabilities, are only marginally discussed. In this paper we suggest how the triad threat-vulnerability-risk could be implemented into social enterprises' crisis management systems and we explain what is their position in enterprise epistemology. In our opinion, it is necessary to consistently distinguish between these concepts and record them in catalogues of threats, vulnerabilities and risks. For threats, it is difficult to determine the probability of occurrence, but it is possible to consider individual events. It is the threat catalogue that is important for identifying possible risks that are likely to occur if a specific threat occurs. The goal of the company as an epistemological organism is appropriate work with knowledge about threats, risks and vulnerabilities. Sufficient knowledge can be used to reduce this vulnerability and expand the ability to identify and quantify concrete risks.

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The use of yoga in work-related stress management

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Abstract: The aim of the paper is to find out the present state of scientific knowledge in the use of yoga in work-related stress management. The main research question is: Are there known specific yoga practices that reduce perceived work-related stress? To answer the question, systematic literature review of publications recorded in the Web of Science Core Collection or Scopus is applied. The purpose of this newly acquired knowledge is to help broaden the spectrum of work-related stress management methods.

Keywords: stress management, work-related stress, yoga

JEL classification: M100, I000

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1. Introduction

Research into work-related stress began to appear in the 1950s, with interest in the topic strengthening through the 1960s (Ganster & Schaubroeck, 1991), and since then research in this area has continued to grow rapidly (Ganster & Rosen, 2013). It has been shown that work-related stress is associated with sizeable financial costs for both organizations and national economies (Hassard et al., 2018). In general, the costs are associated with absenteeism and presenteeism, loss of productivity, health care costs, and disability benefit payments (Aleksynska et al., 2019). Thus employee well-being is critically important not only for companies but also for society as a whole as it is connected with both economic performance and social legitimacy (Harvey, 2019) and both companies and the public sector need to find ways to deal with work-related stress.

Popularly, work-related stress is described as occurring when there are discrepancies between the physiological demands within a workplace and the inability of employees to either manage or cope with such work demands (Babatunde, 2013). Selye (1976, p. 15) recommends the following definition of stress: "Stress is the nonspecific response of the body to any demand." All endogenous or exogenous agents that make such demands are called stressors. Selye points out that it is necessary to distinguish between two types of stress effects, eustress (from the Greek eu – good) and distress (from the Latin dis – bad). Depending upon conditions, stress is associated with either desirable or undesirable effects. Selye also argues that there is no specific type of stress. However, it is acceptable to typify stress if it is clear that it refers to the stress produced by specific factors. In this paper, work-related stress means distress caused by work-related factors, further called stressors.

Stress management involves neutralizing or reducing the magnitude of the responses to stressors (Chen, 2017). Stress responses occur on multiple levels, and within many systems, in the body and mind. The results of stress responses can range from behavioral to physiological consequences.

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Stress management strategies and methods are in fact countless. Chen (2017) divides them into seven categories: Challenging Stressful Thinking, Problem Solving and Time Management, Psychological and Spiritual Relaxation Methods, Physical Methods, Preparing for the Future Stress, Care of Self, Conflict in Relationships. Within this categorization yoga is considered a physical method of stress management as physical postures are an important part of it even though yoga involves also relaxation, breathing, and meditation techniques together with psychological, moral, and ethical principles.

2. Method

The aim of this paper is to find out whether specific yoga practices that reduce perceived work-related stress are known. To answer this research question, systematic literature review was conducted. Fink (2005, p. 3) defines systematic literature review as “a systematic, explicit, comprehensive, and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners.” Web of Science (WoS) and Scopus were chosen as the sources of scientific literature to be reviewed. The WoS Core Collection contains over 159 million publication records (Web of Science, 2020), Scopus contains over 77 million publication records (Scopus, 2020). A serious problem that needs to be addressed is that many publications are recorded in both WoS and Scopus. In this research all unique subject-related records, i.e. the union of the records from either the WoS Core Collection or Scopus are analyzed. The key search term was “yoga” and “work-related stress”. The terms were searched in the title, abstract or key words of the recorded publications; the AND operator means that both terms occur there. The searches were conducted on May 29, 2020. No other search conditions or limits were set.

3. Results

The search results were quite modest. Eleven results were found in WoS and fourteen in Scopus. Eight publications were recorded in both WoS and Scopus, so seventeen unique publications dealing with yoga and work-related stress will be reviewed further to answer the research question: Are there known specific yoga practices that reduce perceived work-related stress? An overview of these publications including their main messages and target groups is presented in table 1. The entry in the second column shows whether a specific yoga practice is presented in the publication.

Table 1: Overview of thematic publications (source: own elaboration)

Author(s), Year	Specific yoga practice	The main message of the publication	Target group
Cheema et al., 2011	No	Information about a planned study of a yoga program (see Cheema et al., 2013).	Sedentary office workers
Bellad & Goudar, 2012	Yes	Practice of yoga appears to reduce symptoms of repetitive stress injuries and improve motor performance.	Laboratory workers
Cheema et al., 2013	Yes	A 10-week hatha yoga intervention did not improve heart rate variability. Improvements in flexibility, state anxiety and musculoskeletal fitness were noted with high adherence.	Sedentary office workers
Mastel & Innes, 2013	No	A theoretical text suggesting the cultivation of mindfulness in daily life through a practice of yoga, Tai Chi and meditation.	Librarians

Tonello et al., 2014	No	A review of literature relating to workplace stress, physical activity and heart rate variability. Workplace physical activity interventions may provide a means to improve worker stress levels but further studies are necessary.	No particular group
Botha et al., 2015	No	A review aimed to identify the effectiveness of mindfulness based programs in reducing stress, with no clear conclusions.	Nurses in adult hospitalized patient care settings
Klatt et al., 2015	No	The participants of an eight-week-long Onsite Mindfulness Based Intervention showed significantly greater improvements in their perceived stress, the quality of their sleep, and heart rate variability.	Workers in chronically high stress environments
Lin et al., 2015	No	The participants of a 12-week yoga program experienced a significant reduction in work-related stress and a significant enhancement of stress adaptation.	Mental health professionals
Kubát, 2016	Yes	A single arm pilot study suggesting significant reduction in neurotic tendencies and reduction in disability for low back pain.	Health care professionals
Kubátová, 2017	No	Pointing out the suitability of extending Western managerial education by parts relating to traditional East Asian thinking, values, and selected mind control techniques incl. yoga.	Professors and Students of management
De Bruin et al., 2017a, 2017b	No	General presentation of Mindful2Work training with a large positive effect on the workability (2017a in English, 2017b in Dutch).	No specified group
Grensman et al., 2018	Yes	Yoga (as well as other practices) can be used as both treatment and prevention of burnout.	Patients on sick leave because of burnout
Wright, 2018	No	Pilot project to evaluate the effectiveness of a web-based program using holistic modalities for stress reduction and improved coping.	Nurse-midwives
Bischoff et al., 2019	No	A systematic review to identify the current evidence on the effect of physical activity interventions on stress outcomes.	Health personnel
Rajan & David, 2019	No	Spiritual meditation is a way to help reducing work related stress through improving communication and technical skills.	IT sector women employees
De Bruin et al., 2020	No	Mindful2Work training (De Bruin, 2017a, b) showed substantial and long-lasting improvements in work-related stress complaints.	No specified group

None of the publications denied positive effects of yoga practice on coping with work-related stress. Nevertheless, also none of them definitely confirmed effects of yoga on decreasing work-related stress. All studies were limited in some way, and also yoga exercises were combined with other

practices such as relaxation or meditation. Specific yoga practices for work-related stress reduction are presented in four publications (see table 1 above and the text below).

The study by Bellad & Goudar (2012) focuses mainly on physical stress injuries. The participants of the study practiced 10 yoga asanas for 45 - 60 minutes twice weekly for 12 weeks. The asanas were chosen on the basis of a yoga-based intervention for carpal tunnel syndrome study (Garfinkel et al., 1998).

The study by Cheema et al. (2013) focuses mainly on heart rate variability. The participants practiced yoga for 10 weeks, three times a week, 50 min per session. Asanas and vinyasas were combined in the sessions representing in total about 20 yoga elements. The choice of the yoga exercise is based on Borg-Oliver & Machliss (2005).

The study by Kubát (2016) focuses mainly on alleviating stress and back pain. The participants took part in a 12-week yoga course and they practiced for 90 minutes once a week. Twelve yoga asanas were practiced during the yoga sessions. The choice of the asanas is not explained in the paper.

The study by Grensman et al. (2018) focuses mainly on improvement in the conditions of patients with burnout syndrome caused by work-related stress. The participants took part in a 20-week program and they practiced for 60 to 90 minutes, 3 - 4 times a week, for a total of at least 7 h per week over five days. Fourteen yoga elements were practiced during a yoga session. The choice of the yoga elements is not explained, nevertheless the authors based on Cramer et al. (2016) argue that most yoga styles have the same proportion of positive conclusions, and that different yoga styles might have similar effects.

4. Conclusion

The main focus of this paper was to find out whether there are known specific yoga practices that reduce perceived work-related stress with the aim to broaden the spectrum of work-related stress management methods. Systematic literature review was chosen as the research method. Publications recorded in WoS or Scopus that contain both terms “yoga” and “work-related stress” in their title, key words, or abstract were reviewed. The choice of the key search terms is the main limitation of the findings. The main reason is that the term “work-related stress” has several synonyms such as occupational stress or job-related stress. Regarding the term “yoga” this problem does not arise.

The general answer to the research question is that so far there are not known specific yoga practices that reduce perceived work-related stress and that can be easily adopted and included as a stress management method. Nevertheless, there is apparently a common knowledge that yoga can help in stress reduction and research on this topic has been conducted and published. The research studies reviewed in this paper except for De Bruin et al. (2017a, b; 2020) have a narrow target group of workers. De Bruin et al. (2017a, b; 2020) do not specify a target group but do not specify the yoga practice used for stress reduction either.

A common feature of the studies that present a specific yoga practice is only a brief or completely missing explanation of the choice of the practiced yoga elements, i.e. mainly asanas but also vinyasas or berthing and relaxation techniques. The same applies for the length and frequency of the yoga practices.

With estimated 300 million practitioners (Rishikesh Yog Mandir, 2020) yoga is very popular around the world. Thus if yoga is offered within the company stress management as an employee benefit it can increase the happiness of the employees (on the other hand, no one can be forced to practice yoga) and decrease their perceived stress at the same time.

Even though there is an opinion that all yoga styles have the same effects (Cramer et al., 2016) in terms of stress management it would be more efficient to know which particular yoga elements support the perceived stress reduction the most. To gain this knowledge more research needs to be conducted. Systematic literature review needs to be extended and studies focused on yoga and stress (not only work-related stress) should be reviewed. The effects of yoga elements and yoga practices also need to become subjects of further multidisciplinary research.

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Alternative Approaches in Economic Theory and the Possibility of Applying them in Practice

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Abstract: Leaders of heterodox economics criticize the traditional main-stream economics (orthodox economics). The criticism focuses mainly on the fundamental premise on which orthodox economics is based and which is a rational acting individual (*homo economicus*), on the methodology of orthodox economics and the inadequate mathematisation of economic science. From the many different approaches of heterodox tradition we will focus on behavioural economics and post-Keynesian economics. Behavioural approaches in economics examine the deviations of individual behaviour away from rationality. They use psychological approaches to understand the economic behaviour of individuals and institutions. Behavioural economics representatives differ in their view as to how the “*homo economicus*” model should be rejected. Some argue that it is necessary to replace the entire paradigm of rational choice of the individual. Others take the view that this is not a total rejection of the methodology of orthodox economics, but only a correction of the simplistic assumptions of its economic models in order to better match the realities of people's lives. Post-Keynesian economist Hyman Minsky criticized the fact that since the days of Keynes, the analysis of economic crises has come under spotlight of economists and focused his research on this area. He rejected the hypothesis of effective markets, according to which he called his financial instability hypothesis.

Keywords: heterodox economics, behavioural economics, post-Keynesianism

JEL classification: B5, A12

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1. Introduction

In the aftermath of the financial crisis, criticism of the traditional orthodox economics has increased, in particular by the representatives of the so-called heterodox economics. They criticize the core of orthodox economics, i.e. the rationality of the so-called economic man (*homo economicus*) and the ever-increasing formalisation and mathematisation of economic science. They argue that the relationship between formal calculations and the human conduct of individual economic subjects is being lost. Most representatives of heterodox economics therefore consider it necessary to return to the economics the “human world”.

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The aim of this article is to draw attention to selected heterodox approaches in economic theory, namely behavioural economics and post-Keynesianism, and their contribution to improving the functioning of the economies.

2. The main contribution of the post-Keynesianism

The post-Keynesianism differs from neoclassical approach and orthodoxy as such, particularly in the field of methodology. The starting point of their methodology is methodological realism (or critical realism) associated with methodological collectivism. Methodological realism places great emphasis on the realism of assumptions and is based on empirical-inductive research. A person is understood to be a social being whose behaviour is determined by the cultural and social environment. People's ability to gather and process information is limited and therefore individuals rely on group behaviour and conventions. The post-Keynesians are thinking in a historical time that they understand as an irreversible sequence of events from an unchangeable past to an uncertain future.

With the emergence of the financial crisis in the USA in 2007 and the subsequent global economic recession, Hyman Minsky's contribution to economic theory was rediscovered, in particular his analysis of the financial instability of contemporary capitalism. Minsky criticised the fact that since Keynes, the analysis of crisis has come under the spotlight of economists and that is why in his research he focused on this area (Minsky, 1986). He rejected conventional economic view such as the market efficiency hypothesis, according to which he called his hypothesis of financial instability. He argued that over a long period of prosperity, investors are undergoing greater and greater risk until the amount of loans exceeds the level that borrowers can repay from their income. When over-indebted investors are forced to sell also their less speculative assets so that they can repay their debt resulting from the borrowing, the price spiral starts to fall, creating a high demand for liquidity. This is a case that has become known as the so-called "the Minsky moment".

Minsky was based on the assumption of fundamental uncertainty in economic life. He asked the question what are the effects of real and expected changes in the profits from capital goods. The assumption of uncertainty in economic life means that the risk of development of capital gains cannot be mathematically quantised. If the behaviour of actors on the capital markets cannot be explained by the quantification of the risk, so that its rationality cannot be verified, this allows speculative behaviour.

Investments are mostly financed through corporate liabilities. Profits earned by the producer in the future flow to that entity that provided the capital goods for the production. Such a link between a production company and a capital provider is made in modern economies through the specific national and international financial structures. Hyman Minsky points to the instability that the financial system has built-in. In the financial instability hypothesis shows how the change between three forms of financing through indebtedness takes place. In the hedge financing system, the production enterprise is able to pay back its liabilities arising as a result of its indebtedness through its cash-flow. Previous period liabilities are repaid at current profits. There are also enterprises in the position of debtor which as a result of their speculative financing, are unable to pay back all the liabilities through cash-flow. However, they can cover their repayable liabilities by accepting new credits. If the company's debt goes on and it fails to pay out either the liabilities or the interest on its cash-flow, so-called Ponzi financing may take place. Where, as a result of such a conduct, the equity of enterprises is reduced, while the liabilities of enterprises continue to increase, the economy is indebted. If a large number of

enterprises are in Ponzi-financing mode, the economy is characterised by large instability, which leads to an economic crisis. The structure of the capitalist system is thus responsible for the crisis, not the exogenous shocks. The financial structure of the economy, its actors, as well as the institutional framework, give scope for an unstable form of financing for firms (Becker et al., 2009).

In the expansion phase, the willingness to take risks is growing and speculative behaviour by economic actors is increasing. This trend is supported by the existence and expansion of financial innovations. The last global financial crisis was the result of a tendency to increase risk and increase the use of speculative financing instruments. The post-Keynesian economic theory followers already before this crisis had called on the responsible to restructure international financial markets. Minsky attaches a key role in this process to central banks.

Since the emergence of the last global financial and economic crisis, the post-Keynesian theories have gained importance compared to standard orthodox economic approaches. Orthodox theories did not provide an explanation for the development leading to such a crisis. Their models lack recommendations for economic policy to ensure the stability of financial markets (Becker et al., 2009).

The post-Keynesian economists seek to create a more realistic model for the functioning of the current market economy. They are seeking to create an alternative theoretical-methodological system that would be a counterweight to the neoclassical paradigm. They aim to formulate the principles of an effective economic policy that can eliminate structural disturbances and prevent cyclical fluctuations in the economy. The topicality and rationality of their approach and their economic-political recommendations (in particular Hyman Minsky) were demonstrated at a time of global financial crisis.

3. The contribution of behavioural economics to the real thinking of economic theory

Behavioural approaches in economics examine the deviations of individual's behaviour from rationality. Behavioural economics takes applies psychological approaches to understand the economic behaviour of individuals and institutions and formulates implications that result for making decisions and allocate resources in the economy. Because people are emotional and can be easily influenced, they can make decisions that are not in their own interest. Behavioural economics admits that people can act irrationally and attempts to identify the causes of their irrational behaviour. This approach can be applied to individuals or in a wider social context, or also to developments in financial markets (Lisý et al., 2018).

In 1978, Daniel Kahneman and Amos Tversky drew attention to many mental abbreviations or “heuristics” that people use when are exposed to difficult decisions. One is the “heuristics of representativeness”, i.e. the tendency to generalise on the basis on insufficient evidence. When people have a given evidence or sample in front of them, they usually take it as a representative, as something typical of reality. Based on the laws of probability, extreme results are much more likely to occur in small samples than in large ones, but even people familiar with statistics usually overlook this fact. Kahneman and Tversky gave evidence that many psychologists occasionally put too much confidence in the results of small samples in research, and repeatability of such results overestimate (Cassidy, 2012). Heuristics of representativeness is sometimes also called “the small numbers law” and occurs in many areas.

In finance, the heuristics of representativeness lead people to the assumption that short-term market trends will continue and to underestimate the possibility of a major reversal. This can lead to very bad

results, especially in combination with another mental abbreviation (which identified already A. Smith), which is the excessive self-assurance. Once people are convinced that a small sample represents the reality, they put too much confidence in their ability to predict the future (Kahneman, 2012). People very often overlook the fact that those who excel in some way in one period are likely to fall back to the average over the next period. This is a phenomenon known as “regression to average value”.

People attach too much importance to their own experience. In their memory remain dramatic and something significant events, while on the contrary, they tend to downplay everyday events. For example, people are more concerned about deaths in plane crashes than in car accidents, although these are actually much more common. Kahneman and Tversky refer to this as a “heuristics of the availability”. They argue that people are generally inclined to judge things in proportion to random benchmarks. If their benchmark is the status quo, people tend to assume that the situation will not change too much, which is the propensity to conservatism. Behavioural economist's experiments show that once someone is anchored to a particular number or claims, he try to hold it. He will misinterpret any presented evidence as supporting his claim, even if it is in fact contradictory. This attitude is known as a “tendency to confirmation” (Kahneman, 2012).

Since the 1980', the research in the field of behavioural economics has expanded. A significant representative to this economic school became Richard Thaler. The other are also Colin Camerer, George Loewenstein, Esther Duflo, David Laibson, Matt Rabin. In the area of finance, they helped explain the follow-up of trends, speculative bubbles, bad corporate decisions and other phenomena that undermine the hypothesis of efficient markets. In 2002, Kahneman became the first non-professional economist to be awarded the Nobel Prize in Economics (Cassidy, 2012).

When the economy prosper, it's harder for businesses and individuals to imagine that something bad could happen. This phenomenon is known as “catastrophic short-sighting”. The heuristics of representativeness and the heuristics of availability also play a role in this. Low-probability events such as the collapse of the securities market and the credit crises are rare, which means that people have no personal experience with this that they could use in such a situation. As memories of dramatic falls in share prices gradually fade, it is hard for investors to imagine another fall in stock prices. Thus, they attach less and less probability to such an option. Finally, it has zero probability for them, which is the so-called “threshold heuristics”. Similarly, banks tend to underestimate the possibility of a systematic shock that could cause that many of their borrowers would not be able to pay back the loans at the same time (Thaler & Sunstein, 2010). When the economy is in a phase of high growth, it is difficult to imagine such an option (heuristics of availability) and the bankers underestimate it. Eventually, this danger begins to be perceived as so remote that it is overlooked (threshold heuristics) and banks are gaining too much credit in proportion to their capital.

In the opinion of economist Laibson, many people become a victim to short-sighting and inability to plan for the future. In many cases, people are undecided and lazy when deciding on their savings. In companies where employees have to decide whether to enter corporate pension programs, only about half of them will do so during the first year. In companies where employees are automatically included in a pension scheme, with the fact that they may leave it, nine of ten employees decide to stay and contribute monthly to retirement savings. It is clear from this that people tend to stay in the status quo. This is also reflected in the choice of investing that people make in their pension programmes.

Where the initial choice of the programme foresees an investment in the share capital of the parent company, many people accept it. This investment model was not affected by the collapse of major firms after the bursting of the technological bubble.

Many behavioural economists have embraced Plato's idea that people have two distinct systems for decision-making, one intuitive and the other thinking. According to Kahneman, there are ideas that attack people themselves. Most thinking is done like this. This is system number one. We respond to the world in ways that we don't realize and don't control. And then there is system number two, which is a system under thinking. It is a system conscious, judicious, slower, diligent, targeted and can follow the rules. It is the difference in effort that is an indicator of whether a certain mental process takes place in system of one or two (Cassidy, 2012). Economists and scientists involved in neurology have come up with evidence in the form of tomographic brain scans that support this model of two systems. As blood flows through the brain, it causes slight changes in the magnetic field, which devices operating on the principle of magnetic resonance can capture. This way, scientists can determine which structures in the brain exhibit extraordinary activity when people try to solve various problems. This science area is called neuroeconomics. Various studies show that there is a certain scheme in brain functions. When people engage in complex thought processes such as solving a mathematical problem, most of the brain activity takes place in the area in front of the brain. When people are afraid, upset or moved, the much more active is the part of the brain that is located deep inside the brain and which has evolved earlier.

These, as well as other arguments, call into question the premise of orthodoxy on the general rationality of an individual's conduct (*homo economicus*). However, behavioural economics representatives differ in opinion how much the model “*homo economicus*” should be rejected. Some argue (Camerer, Loewenstein) that the whole paradigm of rational choice of the individual needs to be replaced. Others (e.g. Laibson) take the view that this is not a total rejection of the traditional methodology, but just a knowledge that decision-making is not always perfect. People try to do the best, but sometimes they make a mistake. People may not know what they really want or what their best interests are. The approach in terms of an efficient market (rational expectations) foresees transparent self-recognition. In order to maximise our own interests, we need to know who we are. The brain tells people in system number two to plan ahead, save for retirement and act cautiously, but the number one system urges them to enjoy this moment. Knowledge of the outside world, and in particular knowledge of the future, is often very limited. Even if people will try to recount all the facts about buying or investing, the calculations will not give them a clear answer. Rational irrationality is a common problem. People usually do not consider all options, but tend to respond to immediate and obvious financial incentives.

Behavioural economics has until now played the role of constructive opponent of standard economics (orthodoxy). Its contribution lies in the positive criticism of simplistic assumptions, sometimes few practically usable economic models. The aim of behavioural economics is to find and correct them to best correspond with the reality of people's lives. Current behavioural economics systematically studies the logic of human irrationalism. It is trying to understand people's behaviour, even using an experiment and its evidence-based interpretation. The importance and popularity of behavioural economics is growing. It complements and amends mainstream economics (orthodoxy) with more realistic assumptions. However, according to several economists, the alternative to the standard mainstream economics paradigm is not yet. This is also due to the fact that it does not provide as orthodoxy

a comprehensive solution (Chytil & Klesla, 2018). The importance of behavioural economics focuses only on certain areas, complements the standard models of economic behaviour.

4. Conclusion

Orthodox economics representatives failed to predict the emergence of the last global financial and economic crisis. On the contrary, some of its representatives have argued that the problem of economic crises and long-term depressions is already completely away. Finally, when the financial crisis broke out, they underestimated its implications for economic and social development. However, the application of traditional macroeconomic models has failed to prevent the crisis and later convincingly start the economy.

This implies the need to seek inspiration and more realistic ways of solving economic and social problems in other, alternative directions of contemporary economic thinking. In our view, heterodox economics (especially behavioural economics and post-Keynesianism) represent such an alternative to until now dominant mainstream economics (orthodoxy). Orthodoxy and heterodoxy can be distinguished primarily on the basis of their methodological approaches in examining the economic reality. Heterodox traditions respect the social context of economic life that is absent in mainstream economics. Representatives of heterodox approaches are thinking in historical time, exploiting the knowledge of other social sciences and applying methodological pluralism. They reject the broad and often self-purpose using of formal mathematical models. The ambition of heterodoxy, especially post-Keynesianism, is to create a new paradigm of economic theory. At present, the heterodox economics is already an established approach in economic science and can make a significant contribution to the successful direction of economic theory as well as economic policy.

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Positive and Negative Story

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Abstract: Stories are a natural means of human communication. Stories represent complex systems of symbols, give sense to things and events, and represent norms, experience, and reality explanations. The paper discusses the differences and roles of two distinct types of stories, positive and negative. Negative stories are the medium for knowledge sharing. The negative story enables us to embody knowledge. It helps the listener to make the mental leap and to get to a new level of understanding. This type of story has high potential in learning and pedagogical processes, when we need to change ideas of other people or quickly share knowledge to which the listener may oppose. Positive stories help to motivate, share values, principles, and visions. They unify people's activities towards shared goals, motivate people to be committed to group targets, help coordinate activities, and coordinate personal visions with group visions.

Keywords: story, storytelling, positive story, negative story

JEL classification: M0

1. Introduction

Stories are a natural means of human communication. They are complex systems of symbols that give sense to things and events and represent norms, experience, and reality explanations. They give message context, bring people together on a common perspective, and overpass defensive mechanisms against information from outside. As such, they are catalysts of understanding and trust. In a fast globalized environment overwhelmed by information, they represent the tool that allows them to get other people's attention and motivate them.

The paper discusses the differences and roles of two distinct types of stories, positive and negative. Negative stories are the medium for knowledge sharing. The negative story enables embodying the knowledge and helps the listener make the mental leap and get to a new understanding level. This type of story has high potential in learning and pedagogical processes, when we need to change ideas of other people or quickly share knowledge to which the listener may oppose. Positive stories help to share values, principles, and visions. They unify people's activities towards shared goals, motivate people to be committed to group targets, help coordinate activities, and coordinate personal visions with group visions.

2. Stories

As the terminology is not unified, it is necessary to state at the beginning that we understand the terms story and narrative as synonyms. A story in its broadest sense is anything told or recounted in the form of a causally-linked set of events, account, tale, the telling of a happening or connected series of

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happenings, whether true or fictitious (Denning, 2001). It is a complex system of symbols (Mládková, 2012) that provides a sequence of interlinked events (Snowden, 1999). Stories give events meanings and significance (Polkinghorne, 1988, p. 18) and work as tools for learning and memory (Hayes & Maslen, 2015). Narratives of the world are numberless and ever-present (Heath, 1977) and are “a basic human strategy for coming to terms with time, process and change” (Herman, 2007, p. 3). We create stories about our past actions to give sense to what happened and construct stories about the future (a specific type of scenarios) that help us decide. Stories give our information context, help to overpass defensive mechanisms, bring people on a common perspective, help build group identities, share experience, and are catalysts of understanding. They provide a virtual environment for communication and knowledge sharing. Our personal stories give sense to our lives, determine what we accept, how we see the world, and influence our response to incentives.

Organizations are full of stories (Gibbons & Prusak, 2020), and as “the human brain has always been highly tuned toward narratives” (Shiller, 2017, p. 967), stories play a significant role also in organizational life. As Akerlof et al. (2020) write, stories are a crucial force shaping employee behavior: they affect knowledge and beliefs (Bénabou et al., 2018; Gibbons & Prusak 2020), serve as “mental models” (Crémer et al., 2007; Mullainathan et al., 2008; Gibbons et al., 2018), and directly influence preferences (Akerlof & Kranton 2005). Denning (2001) writes that a good story can enable “a leap in understanding” and argues that a good story leverages “the full richness of tacit understanding” (Denning, 2001, p. 70).

The role of stories and storytelling is underestimated in organizations. Given that business management involves people and is about people, management basics still hinge on our deep appreciation of human nature. Telling stories seems neither professional nor technical; instead, it is personal, subjective, and ephemeral. This lack of appreciation for storytelling in the workplace can be partly attributed to the dominant view on the nature of useful knowledge in business management (Yang, 2013). According to Weick (2007), traditionally, management education has emphasized the tools of rationality, while underestimating the role that intuition, improvisation, and stories play. As Mintzberg (2004) writes, managing is mostly about nuances, while the popular works mostly provide formulas—painting by numbers. Management scholars and practitioners apparently cherish the belief that useful knowledge in business has to be objective, solid, and logical. From this stance, stories are too nebulous, subjective, and unscientific (Yang, 2013), which conflicts with the fact that human beings are “homo narrans”, mainly because all forms of human communication are fundamentally stories (Fisher, 1984).

Telling tales is one of our species' hardwired instincts; it is a natural way of communication (Yang, 2013). Evolutionarily speaking, the hardwired instinct for storytelling seems to start very early, even before the beginning of language (Klein, 1998). The actual process of narrative production has been the key cognitive coping mechanism in both ancient and modern worlds (Hevern, 2008). In fact, most of us tend to prefer narrative information (or anecdotes) to scientific evidence (Hummel, 1991). It is not surprising that “storytelling is a far more effective method of persuasion than statistical evidence for an audience who is unsympathetic to the message” (Rappaport, 2008, p. 290).

Denning (2004) discovered two different types of stories intentionally used in organizations; negative and positive. These two types of stories have a different impact on listeners and significant but

different roles in organizations. Negative stories transfer knowledge and help to share it; positive stories motivate people and support action.

3. Negative story

Negative stories transfer knowledge and enable us to learn. Because their objective is to generate understanding and not action, they tend to highlight the pitfalls of ignorance; they are meant not to inspire people but to make them cautious. They describe mistakes, moments of ignorance, and difficulties people had to overcome (Mládková, 2012). E.g., effective knowledge-sharing stories would have negative rather than positive overtones (Denning, 2004). Negative stories are “war” stories and are commonly used to make sense out of ambiguous situations or represent sensemaking in earlier events. Through shared stories about the past, present, and future, this narrative reasoning allows us to make sense of and manage our environment (Yang, 2013).

Negative stories are stories with the protagonist and the plot built on three components; connectedness, strangeness, and comprehensibility. Connectedness is provided through something familiar to the listener. It makes the listener trust the story, get his attention, and engage his imagination and emotions. It is a crucial factor that develops the interaction of a story with the listener. Strangeness is an unexpected factor that violates the listener's expectations, attracts his attention to the story, and raises his curiosity in the story. Comprehensibility is represented by the idea (knowledge) embodied in the story. When any of those three prerequisites are missing, the story fails to transform the knowledge, and knowledge is not shared (Denning, 2001).

Fairy tails are a typical example of a negative story. When telling Hansel and Gretel to children, connectedness is simple, they are kids themselves, and they can get into other kids' shoes. The situation represents strangeness; it is not common for children to be left alone and lost in the woods. The embedded idea depends on what the teller wants to achieve, which knowledge he wants to share. Fairly-tails enable us to share knowledge from generation to generation in a pleasant natural way. They may be created intentionally to share moral advice and values like Aesop fables or Idries Shah Nasrudin tales.

Denning (2001) writes that negative stories transfer knowledge better when they are minimalistic. Jokes are an example of extremely minimalistic negative stories. If you get the point, the story worked.

In organizations negative stories serve as an essential tool of knowledge sharing and learning. They describe how and why a team failed to accomplish an objective, with the aim of helping others avoid the same mistakes (Denning, 2004). As such, they help to develop shared experiences and values and form foundations of the corporate culture. As Davenport and Prusac (1998, p.82) write, "a good story is often the best way to convey meaningful knowledge." Compared with simple gestures or sounds, storytelling is emotionally richer and more effective in fidelity, memorability, and the amount of information delivered. A plot enables both the sender and receiver of a story to make sense of otherwise random events by reconstructing a shared version of experience embedded in an information-rich context (Rappaport, 2008).

4. Positive story

Positive stories motivate people to be committed to group targets, help managers coordinate corporate activities and coordinate personal visions with group visions. They can be identified where something new is happening; they help create new organizations, states, families, teams, and communities. Positive stories also help people to understand the standpoints of others (Mládková, 2012). Denning (2004) writes that positive stories have to be accurate and believable since jaded corporate audiences know too well the experience of being presented with half-truths. Positive stories are told in situations when we need people to do things not because they have to but because they want to. This type of story initiates an adaptive perceptual categorization in an unlabeled world where order and arrangement of objects and events cannot be prefigured (Edelman, 1987).

Positive stories start with explaining troubles, deficiencies, and situations that are not ideal, and the storyteller wants to change. Later the solution is introduced, and the vision of a better future is described. Positive stories are built on connectedness, switch from I to we form and repetitions. Connectedness is represented by examples people can rely on, from common bonds, traditional and religious values to geographical references. These examples serve the same way as connectedness in negative stories – when people hear something they can rely on, they trust the storyteller and get involved. Connectedness helps to feel into other people. When introducing the vision, the storyteller introduces it as his vision initially, but later, when the audience is ready to accept it, he changes from I form to we form, and the vision becomes the vision he shares with his listeners. Repetitions repeat the vision's core idea and remind the audience about it (Kouzes & Posner, 2006). Positive stories usually do not work with a protagonist and plot and require “figurative language and symbolism” (Nonaka & Takeuchi, 1995, p. 8).

Positive stories are often used in political and motivational speeches. A brilliant example of such a positive story is a speech against racism delivered by Martin Luther King, Jr. on August 28, 1963, the famous “I have a dream speech” (American Rhetoric, n.d.; Kouzes & Posner, 2006). Or speech delivered by John F. Kennedy on September 12, 1960, known as Address to the Greater Houston Ministerial Association (American Rhetoric, n.d.), which started the campaign for human rights in the USA and played an essential role in Kennedy’s victory in presidential elections. When using positive stories in organizations, the story may be more modest than in political speeches, but the rules on creating it are the same (Kouzes & Posner, 2006).

5. Telling the story

Even though the purpose of the story determines its form (Denning, 2004), both types of stories share one common aspect. When telling them, the storyteller works with two stories, his own story and the story that the listener creates in his head. Those two stories are not and even cannot be identical as they are influenced by different personal knowledge, principles, and experience of both partners. When the listener listens to the storyteller's story, he hears his voice within him, creating his personal story from the storyteller's story. If these two stories are in a dissonant conversation, the listener loses interest. The listener invents his own story based on the storyteller's story and fully accepts it only when the two stories are parallel and in constant conversation (Denning, 2001; Mládková, 2012; Kouzes & Posner, 2006). So when telling negative and positive stories, it is necessary to have in mind that the story's power is not in the storyteller's story but the story the listener creates in his head.

Spanish neurologists mapped by CT what happens with the brain when listening to the story (Gonzales et al., 2006). They discovered that story activates centers of the brain adequate to the activity described in the story. E.g., the story about the singer velvet voice activated a sensoric center of the brain, the story about Paul who kicked the ball activated a motoric center. These findings in neurology explain how stories work and why they are so potent in knowledge sharing and creation of empathy and trust (Zak, 2014). As Humel (1991) writes, analytic science gives us events that are objective fragments of reality and leaves us detached from them; the story always gives us events intended to be coherent and meaningful to us, something that cannot happen unless we become involved with them.

6. Conclusion

The paper discusses the differences and roles of two distinct types of stories, positive and negative ones. Even though the purpose of the story determines its form, e.g., the negative story enables to share knowledge, and positive story motivates and enables vision sharing, and require different form and tools, both types of stories create a virtual environment in which people feel into one another and share their knowledge, feelings, and visions. It is necessary to keep in mind that successful storytelling depends not only on a skillful storyteller but also on the listener's willingness and ability to open his mind to the story and create his own story based on a told story.

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The Importance of Crisis in the Process of Becoming a Manager: The Evidence from IPA–EHP Case Studies

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Abstract: Current analyses of managerial practice and qualitative research aimed at capturing the lived experience point to the importance of the process of becoming a manager. It is the relationship to the world through interaction with other people and overcoming critical moments that shapes the manager in a continuous process. Following this kind of qualitative research, this paper presents the results of IPA-EHP case studies (interpretative phenomenological analysis, existential hermeneutic phenomenology) related to the significance of the crisis and critical moments in the process of becoming a manager. One case study shows that even the current crisis caused by the COVID-19 pandemic can be understood as an experience that forms a manager's identity and represents a sensemaking experience. The paper argues that analysis of the process of becoming a manager is important both for managerial self-development and for the training of future managers.

Keywords: Becoming a manager, crisis, existential hermeneutic phenomenology, interpretative phenomenological analysis

JEL classification: M14, M54

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1. Introduction

Although qualitative research has been considered of secondary importance in the past, including in the field of management (Gummesson, 1999, 1), recently there is increasing awareness that it is justifiable to meet the objectives of qualitative research that are related to the study of things and relationships in their natural settings, focusing on the interpretation of phenomena in the context of how people give them meaning and how they shape it (Cresswell, 1998, 15). Management, as a discipline that unifies the diverse knowledge of the human sciences, cannot completely neglect a qualitative understanding of phenomena. This paper presents one of the emerging themes in the qualitative research on critical moments of managerial practice. It is a process of becoming a manager, which is a topic that is currently gaining more and more attention (see for example Hill, 2003; Segal, 2017; Park, Faerman, 2019, Havermans et al., 2019). This paper focuses on the connection between the process of becoming a manager and the crises experienced in managerial work and its aim is to point out the importance of this relationship, which has implications for understanding managerial identity and also for self-development and training of managers.

The presented qualitative research builds on studies in the field of existentially oriented management, which can be defined as an approach that uses knowledge from the existential and phenomenological tradition applied in various philosophical and psychological directions. The beginnings of existentially

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oriented management can be recognized within the humanistic tendencies of the 1960s and especially in the work by Odiorne (1966) and then other authors whose work is based on the tradition of Heideggerian Dasein analysis (Bolle, 2006; Segal, 2010; Van der Hoorn & Whitty, 2015). Existential approaches provide a framework for interpreting the continuous formation of existential self within workplace, integrating ethics into organizational decision-making, and focusing on the meaning of work and its development as an ongoing process (MacMillan et al. 2012, 27). Existential approaches are thus close to the process of becoming a manager.

The second part of this paper presents the view of existential management on the process of becoming a manager and the importance of crisis in this process. The third part introduces research methods. The fourth part presents the results of case studies, where the connection between critical moments of managerial practice and the process of becoming a manager is evident.

2. Process of becoming a manager and perpetual crisis

Existential approaches to management have in common that (in addition to other motives and phenomena that are the subject of the analysis) they draw attention to the constant recurrence of crises. Odiorne (1966) talks about situationality – managers find themselves in a constantly new situation – a case study that requires an original solution. The manager is under constant pressure and the position at the top, which is associated with success, is just an illusion. It is clear that critical situations and crises are part of our lives. The manager is thus confronted with various crises – organizational crisis in the context of its growth (Greiner, 1972), changes in position and promotion (Park & Faerman, 2019), personal crises associated with midlife crisis (Sul & Houlder, 2006), and many other disruptions (Rolfe et al., 2016, 2017). In the context of approaches based on the thoughts of Martin Heidegger and his followers, there is often talk of alternating authentic and non-authentic experiences. It is the conventional way of being, where one is reduced only to one's role, that leads to an existential crisis.

The experience of crisis and failure is inherent in every human activity and in the case of management is amplified by the need for constant action and decision-making, which are tied with great responsibility. The manager becomes the manager through this action, which is associated with critical moments. As Segal (2017, 483) points out, our identity develops in the context of actions. However, it is important to add, as Müller and Jedličková (2020) point out, that this action is in fact an interaction with other people, through which we relate to the world. The process of becoming a manager is a process of dealing with crises – disruptions – of various types, in the context of interpersonal relationships, whose pathological forms related to inauthentic experience are frequent triggers of crises (Cserge et al., 2020; Müller & Jedličková, 2020).

There is larger awareness of the importance of existential approaches and their central themes, such as the crisis threatening existence itself, due to the societal problems caused by the COVID-19 pandemic. In the context of this crisis, many academics and the public are returning to existential themes (see Vandekerckhove, 2020). A frequently mentioned writer who influenced existential philosophies is Camus (1979). He captured several situations of the current pandemic in his novel *The Plague*. His work is even more appropriate if we read it in the context of his *The Myth of Sisyphus*. It is the motif of Sisyphus constantly rolling a boulder that is often commented in existential management (Odiorne, 1966, Segal, 2014, Müller, 2021). In anticipation of further waves of the pandemic, we realize that the crisis is something that is constantly coming back in new forms.

In the following part, two case studies will show that the crisis is closely related to the process of becoming a manager and that managerial work is characterized precisely by the fact that it is associated with the constant overcoming of crises. If the manager can acquire coping skills, the experience of crisis become a source for self-development or perception of work as meaningful.

3. Methods

The research is based on a combination of interpretive phenomenological analysis (IPA, Smith et al., 2009) and existential hermeneutic phenomenology (EHP, Rolfe et al., 2016, 2017, Müller & Jedličková 2020, Jedličková et al., 2021), which provides an interpretive framework. The research is conducted through in-depth semi-structured interviews, in which participants are asked about their lived experience. IPA-EHP research seeks a homogeneous research sample. In the case of this research, these are participants who have experienced and are experiencing critical moments in their managerial practice. The research builds on studies using in this context the term existential disruption, which can be defined as a situation where “habitual ways of doing things and threatened” (Rolfe et al., 2016, 2017), these are situations associated with the experience of failure, crisis, existential anxiety, etc. (for a more detailed definition, see Müller, 2019).

The recordings of the interviews are transcribed, followed by an analysis of the transcripts, which is based on the hermeneutic method of multiple readings by several researchers. The cases are analysed in detail and emergent themes are searched across studies and knowledge is synthesized, which leads to finding answers to basic research questions. The research questions concern in particular how managers make sense of the critical moments of their lived experience, how they are able to manage these critical situations and how the crisis – existential disruption – is related to the perception of their managerial identity. The answers to these questions are important in terms of self-development of managers, psychohygiene and prevention of negative conditions, such as burnout.

Participation in the research is voluntary. Participants are acquainted with the essentials of the research through informed consent and sign consent to the recording and processing of personal data in accordance with legislation. Case studies are anonymized. The names of the managers used in this paper are fictitious to ensure anonymity.

4. IPA-EHP case studies

Kim is a 26-year-old real-estate manager working for a company that manages large commercial properties in Hong Kong. She has been working in this area for over three years. Paul is a 29-year-old manager working for over ten years in a family company and as an entrepreneur manages several projects focused on the operation of farmers’ markets, food stalls, and production and sale of goods. While Paul has experienced several deeper personal crises and these crises are returning cyclically, Kim has experienced one serious personal crisis.

There is no place in this article for a complete analysis of both cases, so we will focus primarily on the crisis in the context of its meaning (for a more detailed analysis of Paul’s case, see Cserge et al., 2020). The interpretation of case studies is based on an interpretive framework based on existential management approaches. It is primarily an EHP framework by Rolfe et al. (2016, 2017) and the phenomenology of Fink (1965, 1969) and Patočka (1996, 1998) developed in the context of managerial lived experience by Müller and Jedličková (2020). Within this interpretive framework, the interviews with the participants are structured into several thematic areas concerning the phases of their

experienced crisis and the way of describing and redescribing this crisis. The first phase is the so-called second movement based on Patočka's division of the three movements – modes – of existence. The second movement is about living in the context of work roles and concentrating on the performance and production of products and their consumption. This is the state of inauthenticity, which is commented on by Heidegger. At this stage, a crisis is born, which can be analysed as a problem with coexistence, in various areas of relationships, as stated by Fink – work, play, love, struggle, death. The second phase is the third movement – a situation where an authentic being is achieved. We deal with people not through our roles – anonymously – but through direct personal approach to other people. In this mode of being, man gains freedom, but also takes full responsibility for his or her actions. As Kim's case shows, it is the feeling of greater responsibility that is one of the defining characteristics of managerial work (Table 1, 4a–c).

Table 1: Case Study 1 – Kim (real estate manager, Hong Kong)

Emergent themes	Original transcript	Line
<i>Disruptions</i>	I was thinking to leave my job industry last year because its somehow contradict with my political stands or believe.	1a b
<i>Inauthenticity</i>	I think this [coronavirus] is the only thing I feel positive, really positive, or really satisfactory during the past few years. Because in the past I was doing routine work.	2a b c
<i>Redescription</i>	I think I have positive feeling under the coronavirus for my company because I feel I could really help people to prevent the spread of the virus... Now I know meaning for it [job] after the coronavirus. At moment for the coronavirus, I think our industry is very important in combating the virus.	3a b c d f
<i>Importance of crisis</i>	During some critical time I would see myself as something like manager and I have to ensure safety of my clients and ensure the interests of my clients, but during usual time when I was only doing my administrative work or team work, I feel I am just an employee of my company, that I only have to complete my tasks sent by my boss, or sent by my senior managers	4a b c d f g
<i>Identity</i>	for future I hope that my identity could be something like bigger, that I could solve problems on my own, take greater responsibility.	5a b

As part of her job, Kim found herself mainly in an inauthentic second movement – her personality as a manager was reduced to the job roles she had to play. Although she had some responsibility for management, everything was reduced to fulfilling the tasks of top management and coordinating other employees (Table 1, 2b–c, 4d–g). This inauthentic experience of work and relationships began to take dramatic forms, especially in the context of anti-government protests in Hong Kong. Kim could not present her opinion at work – complete neutrality was required, which was another fact that dramatically affected the lived experience (Table 1, 1a–b). However, this personal crisis, when she was considering resigning at work, helped her realize what values she really held. The reversal occurred in another critical situation – the outbreak of a coronavirus epidemic. As Kim mentions, although some epidemics have occurred in Asia before, this situation is completely new, which requires new solutions

and procedures. Stereotypical work becomes an important activity in which Kim begins to see meaning (Table 1, 2a–b, 3a–f, 4a–c). Due to a critical situation, Kim begins to feel like a manager, and she is able to reflect on the importance of her work. At the same time, it turns out that the degree of responsibility and the ability to solve crisis situations is, in the case of Kim, a basic characteristic of managerial work.

Table 2: Case Study 2 – Paul (entrepreneur, manager, the Czech Republic)

Emergent themes	Original transcript	Line
<i>Inauthenticity Disruptions</i>	I didn't know what the hell it was going to be, so I was looking forward to it, but at the same time it was an awful lot of work that I had to do, so I got to the circle again ... I get up in the morning and I am in the same circle and I say – watch out, you get to the same circle again, when you are completely exhausted and need to regenerate.	1a b c d e
<i>Importance of crisis</i>	[Complicated situations] were the most important moments for me. Of course, the important moments are when we are happy...). But the moments that made internal changes in me were always the ones when I was in an extremely complicated situation.	2a b c d
<i>Redescription</i>	And I haven't achieved much, but what I've achieved is some awareness, self-awareness, and that has shown me a lot of things, and now I'm a much happier person than I was five years or two ago.	3a b c
<i>Identity</i>	To discover who I am and how I want to live and what I want to live, and I had to discover it for a long time and the journey was relatively difficult, but right now I'm probably the happiest in my life.	4a b c

Like Kim, Paul is very often in an inauthentic mode of being. Paul talks in many places about the motives for cyclicity and the constant repetition of stereotypic days (Table 2, 1a–e). These situations – dwelling in the second movement – and the problem of interpersonal interactions, also led to the constant recurrence of crisis situations. While for Kim the trigger for the crisis was disagreement with the organization's policy, for Paul it is about setting unrealistic goals based on patterns of behaviour he took from his family (see Cserge et al, 2020). However, thanks to his long-term work on self-development, Paul begins to realize that these critical situations are particularly important – they are the most valuable moments of his life (Table 2, 2a–d). Critical moments allow Paul to see new opportunities and he is able to redescribe his lived experience on a positive level (Table 2, 3a–c). Through the crisis, Paul begins to realize who he really is – what his identity is (Table 2, 4a–c). However, based on the research team's field notes from further interviews with Paul, his move to an authentic way of life is still not too firm. He constantly implicitly upholds his old patterns of behaviour and realizes that he is once again entering the mentioned circle of stereotype and workaholic efforts.

5. Conclusion

In this article, the issue of crisis was introduced as an important part of lived experience, which forms an identity in the process of becoming a manager. The recurring crisis is one of the basic themes of existentially oriented approaches to management that employs a philosophical view of management to understand the manager as a complete human being embedded in interpersonal relationships, not just as a set of roles and managerial functions. The example of two case studies based on IPA-EHP

research has shown how managers become aware of the importance of the crisis for managerial work. The results of these case studies cannot be generalized. However, each of the studies provides us with a better understanding of what it is like to become a manager, which is of practical importance in the training of managers and in approaches to self-development.

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Capital income shares and income inequality in Romania

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Abstract: We present a study of the income distribution in Romania using individual tax income data. We study the inequality and distribution of the income, distinguishing between the components of the total income: wages, non-wages income and capital income. The capital income contribution has the effect of increasing the total income inequality measures. Using a parametric representation, we present evidence that both the total and the capital income are Pareto distributed in the upper tail and give determinations of the Pareto coefficients.

Keywords: income distribution, income inequality, Gini index

JEL classification: O15, C46

1. Introduction

The income distribution in Romania has been relatively less studied than that in other European Union countries. This is partly due to absence of complete data on the total income, as different reporting requirements exist for each type of income and to the change in methodology for data reporting over the years. Currently the main sources of information about the income distribution in Romania are the EU-SILC survey started in Romania in 2007 when the country joined the European Union, and the Family Budget Survey started in 1990. They have been used in several studies of the income distribution in Romania (Molnar, 2010; Molnar, 2011; Precupetu & Precupetu, 2014; Rose & Viju, 2014) where the main focus was on the income polarization following the approach proposed by (Milanovic, 2000), the income and living standard inequalities (Precupetu & Precupetu, 2014; Rose & Viju, 2014) and the impact of the flat income tax introduced in 2009 (Voinea & Mihaescu, 2009).

In two recent papers (Oancea et al., 2017; Oancea et al., 2018) we presented a first study of the income distribution in Romania, using tax income data which included the contributions of wages, non-wages as well as capital income. An earlier study (Derzsy et al., 2012) used tax income data covering a limited geographical region and did not include capital income data. In this paper we present preliminary results for the distribution of the total income, including also the contribution of the capital income.

We find that the capital income distribution has a greater inequality than other types of income. This agrees with other authors (Milanovic, 2015; Piketty, 2014) which showed that the inequality in income distribution is significantly greater for the capital income than for other types of income. We also find that including the capital income contribution increases appreciably the inequality measures for the total income distribution.

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The paper is organized as follows. In Section 2 we give a descriptive analysis of our data sets, giving results for their inequality measures. In section 3 we present a distributional analysis of the income data series, using a parametric representation which includes a Pareto distribution in the large incomes region. Section 4 discusses the conclusions of the study.

2. Income data

We used for this analysis tax income data for 2013 and 2014. Three main categories of income have been aggregated: wages (A), non-wage (B), and capital (C):

- A. Earnings or labour wages: the income which can be attributed to labour.
- B. Non-wage income: income from agricultural labour, freelance and commercial activities income, intellectual property rights, gambling income, unemployment benefits, pensions, social benefits, commercial mandate income;
- C. Capital income. The main contributors to the capital income are interest income, dividends, income from real estate sales, stock and bond transfers, rental income, leasing income.

We show in table 1 the summary statistics of the partial and total incomes of each type for 2013 and 2014, determined from an analysis of the gross annualized personal tax income data. The numbers of tax payers receiving income of each type are denoted $N_{A,B,C}$. Because each given person can receive income of several types, the total number of taxpayers is different from the sum $\sum_{A,B,C} N_i$. Table 1 lists the average incomes of each type, their standard deviation, the numbers of taxpayers, and the Gini coefficients for the partial and total income. We compute averages relative to the number of persons receiving each type of income. The weights of the three types of income A, B, C in the total income are (56.6%, 24.8%, 18.6%) for 2013 and (56.0%, 24.4%, 19.5%) for 2014. The standard deviation of the capital income is larger, which suggests a much broader distribution than that of the other types of income. This can be seen also in the Gini coefficient of this income, which is larger than that of other income types. The Gini coefficients obtained in our case (0.92 and 0.93) are greater than the values for other countries: for example in (Frälsdorf et al., 2011) it is reported that the average value for this coefficient during the period 1980-2003 is 0.75 for U.K., 0.78 for U.S. and 0.81 for Germany.

The large value of the inequality coefficient for the capital income explains the increase of the Gini coefficient of the total income, after including the capital income contribution.

Table 1: Summary data for the total income for 2013 and 2014

2013				
	Average	Std. Dev.	Gini	N
Wages (A)	19,411.8	32,005	0.533	6,217,274
Non-Wages (B)	12,037.3	48,037	0.550	4,397,170
Capital (C)	11,464.1	1,236,169	0.921	3,455,928
Total	19,646.0	698,923	0.625	10,853,791
2014				
Wages (A)	20,623.1	33,361	0.530	6,302,494
Non-Wages (B)	12,017.2	49,356	0.558	4,719,291
Capital (C)	13,752.1	1,730,903	0.932	3,298,395
Total	20,826.4	942,826	0.627	11,142,053

Figure 1 presents the Lorenz curves for the total and capital income. This graphical representation illustrates clearly that the capital income is much more unequally distributed than the total income.

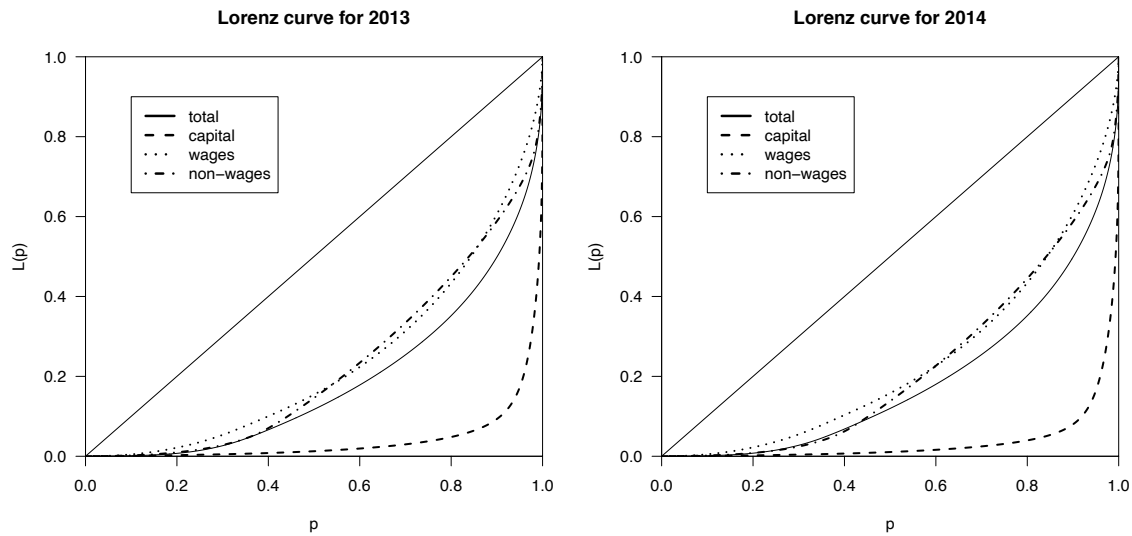


Figure 1: Lorenz curve for income distribution for 2013 and 2014

Commonly used measures of inequality are the ratio of the top 10%/bottom 10% decile shares (S_{10}/S_1), and the top 1% income shares. We define the ratio of the top 10%/bottom 10% decile shares as the ratio of the income in the 90-100% decile to that of the income in the 0-10% decile. Another definition found in the literature uses the ratio of the average incomes in the respective quantiles. Table 2 presents the numerical values of these two ratios for all three types of income separately, and for the total income. From this table one can see again that this ratio is much larger for the capital income than for the other types of income. The results also point to a slight increase of the inequality of the capital income for 2014 compared with the previous year.

Table 2: The values of the ratio S_{10}/S_1 of the top 10% / bottom 10% decile shares, and of the top 1% income shares, separately by type of income, and for the total income

2013				
	Wages (A)	Non-Wages (B)	Capital (C)	Total
S_{10}/S_1	83.8	187.1	824.4	385.7
Top 1%	10.9%	19.1%	54.7%	20.5%
2014				
S_{10}/S_1	78.7	206.5	1026.6	389.5
Top 1%	10.9%	19.1%	57.6%	21.4%

Finally, we also list in table 3 different measures of the inequality for the various contributions to the total income, and for the total income.

Table 3: Inequality measures for the components of total income and for the total income

2013				
	Wages (A)	Non-Wages (B)	Capital (C)	Total
Ricci-Schutz	0.39	0.37	0.81	0.45
Atkinson(p = 0.5)	0.25	0.31	0.78	0.37
Theil	0.56	0.81	3.47	1.07
2014				
Ricci-Schutz	0.39	0.37	0.83	0.45
Atkinson(p = 0.5)	0.24	0.32	0.81	0.36
Theil	0.55	0.82	3.96	1.18

3. Income distribution

The income distribution and of its components can be studied in detail using the individual tax data. Denote $p_i(x)$ the probability distribution function (pdf) of type i of income: $i = A, B, C$. The total income of type i is:

$$X_i = \int_0^{\infty} p_i(x)xdx \quad (1)$$

The distribution functions are normalized to 1 and we denote the corresponding cumulative distribution functions (CDF) with:

$$F_i(x) = \int_0^x p_i(y)dy \quad (2)$$

We show in figure 2 plots of $\log(1 - F_i(x))$ vs $\log x$ corresponding to the total income, wage income, and capital income. All plots show an approximately straight line in the large incomes region. This corresponds to a Pareto law, which has been widely discussed in relation to the distribution of the large incomes (Pareto, 1896).

$$f_{Pareto}(x) = c \left(\frac{x_{min}}{x} \right)^{\alpha+1} \quad (3)$$

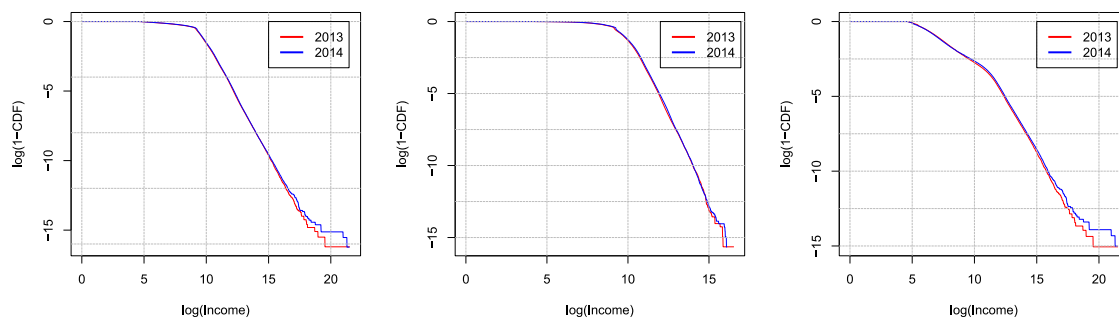


Figure 2: The plots of $\log(1 - CDF_i(x))$ vs $\log x$ with x the income. From left to right: Total income ($i = A + B + C$), Wages income ($i = A$), and Capital income ($i = C$)

Table 4: Pareto coefficients for the total income, and for wage and capital income

Income type	2013	2014
Total income	1.62	1.62
Capital income	1.44	1.43
Wage income	2.53	2.44

Subsequent research has shown that the Pareto law gives a good approximation to the income and wealth distribution in the large incomes/wealth region (A. B. Atkinson et al., 2011; A. B. Atkinson, 2017; Benhabib & Bisin, 2018; Clementi & Gallegati, 2005; Piketty, 2014) across many countries and historical periods. We determined the Pareto coefficient using the maximum likelihood estimation method proposed in (Clauset et al., 2009; Virkar & Clauset, 2014). An interested reader can find methodological details in (Oancea et al., 2018). The results are shown in Table 4, for both the total income and for the capital component of the total income. We note that the Pareto coefficient of the capital income is smaller than that of the total income. This is consistent with the observation made above (from comparing the corresponding inequality indices) that the former is more unequally distributed than the other income components. Further analysis of the functional form of the capital income distribution is performed in (Oancea et al., 2018), where the details of the distribution are studied using a parametric representation. Comparing with the Pareto coefficients corresponding to other countries (A. B. Atkinson et al., 2011), the Pareto coefficient of the total income 2.53 is larger (implying lower wage income inequality) than in the US ($\alpha = 1.55$), UK ($\alpha = 1.78$) and France ($\alpha = 2.205$).

In the small incomes region the density $p_A(x)$ of the wage income distribution was found to be well approximated by an exponential distribution (Oancea et al., 2017). Assuming an exponential distribution $f(x) = c \exp(-x/T)$, the plot of $\log(1 - F(x))$ vs x is expected to be a straight line with slope $1/T$. This is seen in the right plot of figure 3, which shows $\log(1 - F_A(x))$ vs x . These results agree with similar findings for other economies in (Drăgulescu & Yakovenko, 2001). On the other hand, the exponential distribution does not fit well the total income distribution shown in the left plot of figure 3. This is explained by the additional contributions from other types of income, which are not well described by exponential distributions.

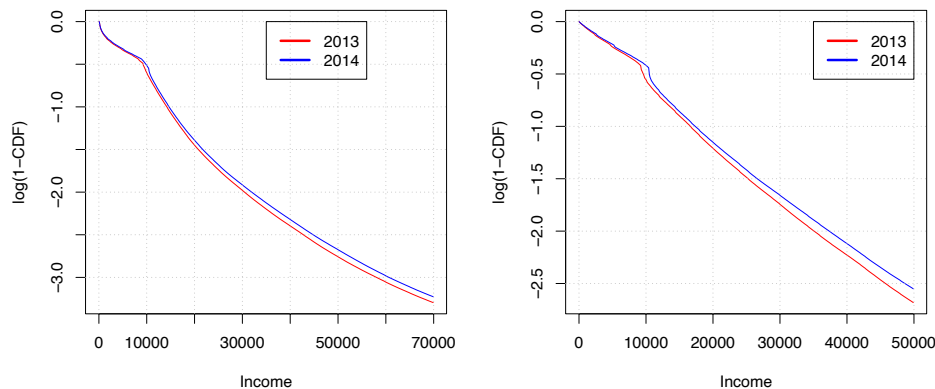


Figure 3: The plots of $\log(1 - \text{CDF}_i(x))$ vs x with x the income. From left to right: Total income ($i = A + B + C$), Wages income ($i = A$)

4. Conclusions

We present in this paper the first study of the income distribution in Romania, using individual tax income data for 2013 and 2014 and give results for the inequality measures for the capital income and its effect on the distribution and inequality of the total income. The distribution of the total and capital incomes is well approximated in the high incomes region by a Pareto distribution. Previous studies of the income distribution and inequality in Romania used either partial data, covering a single region (Derzsy et al., 2012), or used income survey data (Molnar, 2011; Molnar, 2010; Rose & Viju, 2014). To our knowledge the present paper is the first study of this type taking into account capital income data.

Although income survey data are also available, tax records are known to be more reliable. This is especially true for capital incomes, since apart from rents, the other capital incomes are taxed at the source. For example, interest income is declared by the bank where the interest is paid, and real estate sales are declared by the public notary recording the transaction. Comparison with the results of (Molnar, 2011; Molnar, 2010) show larger income inequalities. This comparison should take into account that these papers used the equalized disposable income at household level, estimated from income survey data, and did not take into account capital income.

Our results show that the capital income is much more unequally distributed than the wages- and non-wage income. As a result, including its contribution increases the income inequality for the total income, as measured by a wide range of inequality measures. For example, the Gini index for capital income is much larger than that for the total income, in both years considered: while the Gini index for capital income is 0.92 for 2013 and 0.93 for 2014 it is only 0.53 for the total income. The capital income has a greater concentration than the labor income, the Herfindahl concentration index for the capital income being 0.0033 and 0.0048 for 2013 and 2014 while for the total income it is 0.0001167 and 0.000184 which agrees with other studies in this area (Milanovic, 2015). The distribution of the capital income has a Pareto distributed tail with coefficient 1.4 which is much smaller than the corresponding coefficient observed for the wage income (2.53 in Oancea et al., 2017). This agrees with the higher inequality for the capital income distribution compared to that of the income sources, noted from the inequality indices.

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Well-educated workforce as a key to state prosperity: Case of the Czech Republic in the economic slump

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Abstract: Economic growth has been stopped in the first quarter of the year, due to the government's measures to contain the Covid-19 virus. Restarting the economy will be an uphill struggle. It is the responsibility of the state government to choose the right strategy of the measures taken to ensure balanced and sustainable economic growth. For future development of the strongly industrial oriented Czech economy well educated truly tech literate workforce with skills and flexibility, able to adapt to new challenges of technological progress presents an urgent need. The paper shows recent structure development of graduates of secondary schools and point out current educational mismatch. The increasing percentage of less qualified workforce is in a strong contradiction with the future industrial trends and pose a threat to economic and social development.

Keywords: Education and Economic Development, Labour Force and Employment, Education and Training

JEL classification: A20, A23

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1. Introduction

Being hit hard by economic losses caused by ordered nationwide lockdown it is absolutely essential to develop and implement crucial and efficient strategies in order to restart and boost national industry based on the production increase. From the long-term perspective it is necessary to place on one of the most important path to increase productivity: to set up an appropriate educational structure of the future workforce. Major findings of this report are the following: There is a clear and strong correlation between the IPI index and economic growth of the Czech economy. Well organised and structured system of vocational education is crucial for a long term economic prosperity. Expanded high quality secondary vocational education will not only affect the industrial growth but is also likely do more to strengthen the overall state economy and other social well-being benefits.

That's why it is important to carry out a quantitative research of the structure of graduates from upper secondary schools with maturita and graduates from upper secondary schools without maturita. These information are vital for decision and strategy taken by the authorities regarding the fields of study, the appropriate skills and abilities of future workforce respectively human capital that should stand for the competitiveness of the country.

2. Sources and methods

The data collection analysis took place in 2019 and consisted of desk research and interviews carried out by country experts from MŠMT, Czech Statistical Office (ČSÚ), National Institute for Education (NÚV), data platform of the Zlín region – Monitor. The collected data are in compliance with regulations of Eurostat the industrial production and covers CZ-NACE sections B, C, D. The data sources of educational statistics are based on instruments developed for International Standard Classification of Education (ISCED). Based on these methods of classification the proposed survey focuses on category orientation 34 - Upper secondary

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general education and 35 - Upper secondary vocational education and sub-category 344, 345 - with direct access to tertiary education, 353 - without direct access to tertiary education.

The paper starts by quick overview on the macroeconomic situation of the country providing the temporal description of main indicator - the growth development with regard to the industrial production that is considered to be as one of the essential component in terms of the Czech economy.

3. Economic growth and IPI of the country

Czech Republic belongs to that group of EU members that have a stable economic environment. Since 2014 there has been a balanced growth (Figure 1). Historically, since 1990s the Czech economic growth and prosperity have been achieved by low wage and high reliance on foreign direct investments. In 2018 output growth has slightly slowed down to 3 %, in comparison with 4.6 % in 2017 beside another on account of labour supply constraints, and will remain around 2.6 % (MPO, 2019). Increasing wages and employment kept household consumption and internal demand high. The GDP growth in the Czech Republic is considerably influenced by industrial production. The IPI is an important tool for forecasting future GDP and economic performance here. The IPI seems to be leading indicator of economic performance due to its general importance for Czech GDP growth and its sensitivity to consumer demand. Developments of the GDP growth and the IPI index shows Table 1.

Table 1: GDP growth and IPI index, source ČSÚ, own calculations.

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
IPI growth (%)	-1,8	-13,6	8,6	5,9	-0,8	-0,1	5	4,3	3,4	6,5	3
GDP growth (%)	2,7	-4,8	2,3	1,8	-0,8	-0,5	2,7	5,3	2,5	4,4	3

Strong dependence between IPI and GDP growth is evident in Figure 1. In 2009, year of significant economic decline, the IPI sharply dropped of 13.6 %, warning the Czech economy that was being hit by structural problems. The production took another tumble and the recession repeated in 2011-2012, the IPI fell by 6.7 % in 12 months underlining how a sector that had long been the motor of the Eurozone economy stalled dramatically. Since 2014 the Czech Republic has recorded annual growth over past 5 years. Strong and positive relation of IPI index and employment in industry is illustrated on the graph Figure 1.

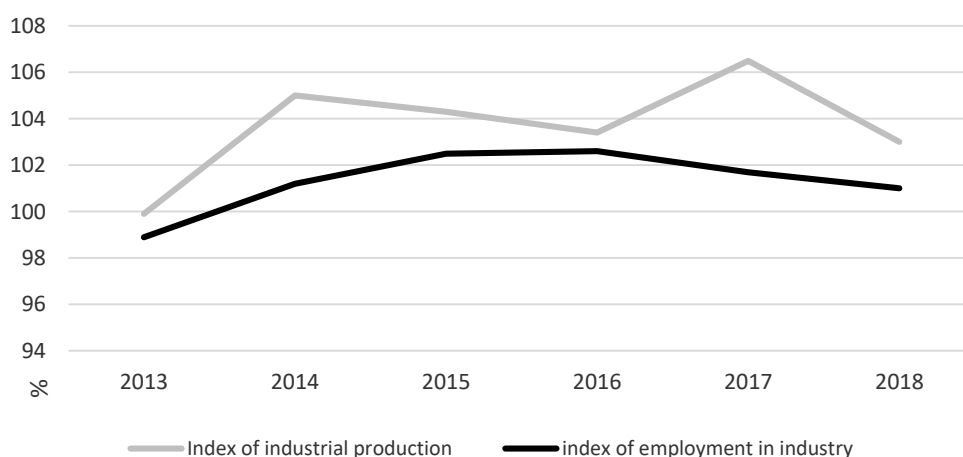


Figure 1: GDP growth and IPI index, source ČSÚ, own calculations.

The historical model successful in 1990's based on low wages and luring employees from other states cannot satisfy the needs on the long-term perspective as they do not make the workforce more productive. Even worse, this focus drains resources. By implementing the Strategy 2020 the state and local governments assumed primary responsibility for the future functional education system that should produce a more skilled and productive workforce.

4. Organisation and quantitative analysis of vocational education

The secondary vocational technology education in the Czech Republic is provided by secondary technical schools (SOŠ) that correspond to ISCED 354 and secondary vocational schools (SOU) corresponding to ISCED 353. SOŠ present one type of secondary schools which provide initial vocational education and prepare their students for the labour market. Education at secondary technical schools is offered in four-year programmes which are completed by the maturita exam. SOU provide vocational education and prepare for „blue-collar“ positions. The education mostly takes place in three-year or two-year educational programmes completed by a final exam or an apprenticeship certificate (NÚV, 2018). The latter is intended mainly for direct entry to the labour market. Table 2 shows the number of graduates from upper secondary schools in the Czech Republic.

Table 2: Graduates at upper secondary level in the Czech Republic, source NÚV, own calculations.

Year	2007/08	2010/11	2013/14	2016/2017	2007/08	2010/11	2013/14	2016/2017
Vocational with maturita (ISCED 354)	101 048	85 504	68 832	58 136	63,11%	61,70%	59,67%	57,30%
Vocational without maturita (ISCED 353)	24 445	24 010	21 244	20 466	15,27%	17,33%	18,42%	20,17%
Total	160 112	138 583	115 350	101 460				

As per general demographic data the number of young people decreases. This phenomenon results also in a declining share of students in vocational education. There has been a strong decline in interest for vocational secondary education with maturita for ISCED 354. For present research the information on increasing percentage of graduates at vocational secondary schools without maturita in comparison with decreasing percentage of graduates at vocational secondary school with maturita seems to be significant.

The connection between education and income is strong. A more educated individual is more likely to participate in the job market, to have a job, to work more hours, and to be paid more, and less likely to change the jobs. Furthermore skilled employees in workplaces help to raise the productivity of low-skilled colleagues (Cedefop, 2018). But the benefits of education go beyond the economic returns. Higher levels of education also correspond to lower job fluctuation and unemployment rate.

Many of the economic effects of different kinds of skills are hard to identify because they are indirect. Skills are not deployed in isolation but have to be combined with other production inputs, such as machinery and equipment before they can make a contribution to economic performance.

The next chapter shows the result of a quantitative research executed in the region of Zlín - traditionally focused on industry.

5. Level of education and the rate of unemployment – quantitative research

The fact that graduates of vocational education tend to be less employable and more sensitive to fluctuations between the jobs is supported by a representative study carried out in the Zlín region for its advanced industrial importance with a long tradition in engineering industry. The region of Zlín is the forth smallest region in the Czech Republic but the population density is quite high (6th place). There has been a strong decline (by 1 %) of population over last 10 years. The downward population trend is caused by vital events and migration flows on a long-term run. The consequence is the substantial decline in the part of the active working population on the local labour market. As far as the industry importance is concerned currently, there are 46 secondary schools. Table 3 shows the unemployment rates of both graduates with and without maturita in the region of Zlín over last four years.

Table 3: The unemployment rate of graduates at upper secondary levels in the region of Zlín, source Monitor ZK, own calculations.

year	2016	2017	2018	2019
míra nezaměstnanosti absolventů středních škol ve Zlínském kraji v %	7,31	4,54	2,8	2,87
míra nezaměstnanosti absolventů učebních oborů ve Zlínském kraji v %	9,84	5,66	3,75	3,75

So far national unemployment rate has been low for two main reasons (1) assembly plant jobs have been relatively easy to create due to government incentives (2) Czech business cycle is closely connected to the economic health of the EU (OECD, 2019b). For both groups the unemployment rate follow a downward trend due to general overall economic growth. The graduates with lower educational degree tend to report continual higher unemployment rates. The allocation of applicants to a matching or permanent job is a risky hiring decision for employers to make under imperfect information conditions. These risks can be reduced by relying on more direct information about applicants' productivity and educational background: their actual skills (Muja et al. 2019). These risks are closely connected with another negative feature is worse labour market participation of the graduates without maturita. Various research have been proceeded in rich industrial countries and confirm the hypothesis on better chances of entering a stable job for graduates with maturita. In Germany, approximately 50% of the higher education dropouts with a pre-tertiary vocational qualification enter a stable job immediately after leaving the educational system and two-thirds of this group make a transition within the first year. Their transition rates thus are comparable to those of higher education graduates. This indicates that pre-tertiary vocational qualifications can be used as a safety net by higher education dropouts and protects them from the risk of remaining unemployed or in precarious job situations (Scholten, 2017).

The graduate programmes without maturita are often seen as a second choice for those who are not able to obtain the level of education with maturita. That's why the graduates of vocational schools without maturita often lack motivation for the vocational field (NÚV, 2018) and tend to be dependent on assembly-line jobs with low value added. Which means that not only the Czech republic will not be able to meet the commitments to raise the productivity with a view to recover from the crises but seems to intensify the risk of job losses of the less qualified workforce – graduates without maturita (Berger, 2013). This fact is a matter of global concern since the quantitative research in chapter IV displays the increasing number of less qualified graduates that are likely to change the jobs, their basic digital skills are very low (European Comission, 2019b).

6. Conclusion

The present survey displayed the current structure of the secondary education graduates and the position of both groups on the labour market (case study – Zlín region). The present research shows the trend of increasing ratio in favour for graduates without maturita. On the contrary there should be stronger emphasis on upper secondary education for graduates with maturita and modern upper secondary educational institutions must equip people not only with vocational skills, but also with a broad range of knowledge, skills and attitudes recognized as indispensable for meaningful participation in work and life. The industrial report predicts a global workforce crisis powered by extreme automation. Apparently, this discrepancy seems to present important challenges for the national educational system provided that better skilling is necessary to increase labour productivity and innovation to maintain the competitiveness and to favour upgrading in value added. In order to improve the quality in modern educational line various initiatives and projects have been developed over recent years but the Czech vocational education system has not undergone any conceptual conversion or transformation process. It seems highly promising for nations to create quality vocational education programs at both the secondary and post-secondary levels that are closely aligned with the national and local economic needs for workforce skills; and that engage employers in the design of training programs and the creation of apprenticeship opportunities (Metzger et al, 2010). A comprehensive skills strategy and an overall planning on national level could help to adapt the educational trends to future changes. These have not yet been transformed into a coherent framework with comprehensive methods for producing and interpreting intelligence skills. The strategies are prepared by regional authorities that often reflects short-term local or personal interests. MŠMT published underlying document Main directions of Educational policy 2030+ that is intended to be a platform for professional debate and create the main visions, priorities and goals of educational policy beyond the year 2030.

The findings of the presented study come at an important time. The balanced industrial growth is essential for the Czech economy as it contributes with 35 % to its GDP and employees over 40 % of active population (MPO, 2019). In order to keep the country's competitiveness based on a high value added outputs and

prevailing high-tech exports there is high time for policy actions aiming to foster productivity of labour force with technical backgrounds, skills and capacities of innovation. It has been proved that skilled and educated workforce increases the ability of the country to innovate and adopt new technologies making the competitive advantages. Resilient competences, significant proportion of innovation and creativity skills are to play an important role in Czech industry oriented production sectors.

The present research indicates that in light of the 2030+ vocational studies development needs the fundamental rethink and transformation to respond to the current and future skills requirements. There is an important message to be aware of for future role of educational institutions in vocational education: they mustn't exist separately, they must be closely connected with innovative practice strategies and be constantly involved in research and innovation activities already on the upper secondary level. This must become the future role of vocational education institutions on upper secondary level: to become the power sources on which new innovative challenges rely.

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Economic Crime in the Czech Republic

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Abstract: Economic crime is a very topical and extensive problem. It is developing dynamically with the development of a market economy. In addition, the development of information technology leads to emergence of its new forms. The article focuses on defining economic crime in terms of its development, clarity and damage caused in the Czech Republic. The aim of the article is to find out which economic factors influence economic crime the most because finding such factors is a precondition for preventing and effectively combating it. The method of regression analysis is used for this purpose. Economic factors entering into model are gross domestic product, inflation, unemployment, inequality in distribution of income, average gross monthly wage, public expenditure on safety and public order, expenditure on social benefits and state management. The model works with time series for the period 1993 – 2019. Input data are based on sources of the Czech Statistical Office, Ministry of Interior of the Czech Republic and Police Presidium of the Czech Republic.

Keywords: Economic Crime, Economic Factors, Clarity, Damage, Regression Analysis

JEL classification: B15, H50, K14

1. Introduction

Economic crime has become a serious problem in a Central and Eastern European countries in the context of their transition to a market economy. Fraud, corruption and other forms of economic crime have become characteristic of these countries. Since 1989, we have seen a gradual increase in economic crime also in the Czech Republic. Political factors and changes in the social and political environment after 1989 promoted economic crime. In particular, the rise in unemployment, the opening of borders, and the legal vacuum in the transition to a market economy and economic problems in neighbouring countries contributed to the rise in crime. Economic crime was also affected by legislative developments such as labour, tax legislation, the functioning of the political system or other macroeconomics factors, such as corruption, bureaucracy, price stability or macroeconomic policy. (Klimentová, 2008)

Economic crime is very topical and extensive problem. It takes many forms and changes over time. Especially the development of computer technology enables emergence of new its forms. Money laundering and the use of counterfeit payment cards are growing. The ways of dealing with economic crime are variable and adapt very flexibly to changes in economic and social conditions. The proportion of economic crime in total crime is not very large, but this proportion is not negligible in terms of damage. Economic crime has reached such proportions in recent years that it destabilizes not only citizens' legal consciousness but also the entire economy. Since it will break the quality of life throughout society, we should not take it lightly. (Fryšták, 2008)

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2. Definition of economic crime

When investigating economic crime, there are problems with defining the term itself, i. e. what offenses constitute economic crime as well as the detection of this crime. Many authors have tried to define economic crime. The most important definitions are noticed here.

According O. Novotný, economic crime is a crime directed against the economic order and it's functioning, in which economic instruments are abused. (Chmelík & Bruna, 2015) Z. Konrád defines economic crime as a non-homogeneous group of offenses, which includes a set of offenses that are common, that by misusing the trust necessary for the functioning of the market and the economic life of society, they harm and threaten economic order and cause considerable damage. (Chmelík & Bruna, 2015) E. H. Sutherland connects economic crime with white-collar negotiations. The concept of white collar first appeared in the United States in 1939 and it is subordinated to the acts committed by an esteemed and highly socially based person in his profession, using his credibility because of his high social status and prestige. (Fryšták, 2007)

Definition of J. Chmelík (2015) says that economic crime is a culpable, socially dangerous behaviour described in a special section of the Criminal Code damaging or threatening economic order, a system of economic and related legal relationships, their functioning, the rights and legitimate interests of those relationships. M. Fryšták (2007) defines economic crime as an infringement that has received financial or other benefits at the expense of a particular economic entity, which may be a natural person, a company or a state. According to P. Polak (2008), economic crime is a new emerging form of crime that attacks a newly built market economy, including property offenses that damage or threaten economic relations. L. Klimentová (2008) defines economic crime as a specific type of crime that causes economic damage to the state, organizations and individuals by violating the laws, principles and practises of economic contact.

Z. Častorál (2011) in his book gives a definition of Institute for Criminology in the Czech Republic, according its economic crime is and unlawful economic activity that has achieved financial or other benefits at the expense of a particular economic entity (state, trading company, natural person) and which simultaneously fulfils the legal feature of the facts of particular offenses.

The most important area of economic crime is financial crime, which, according to P. Šámal, is defined as a crime directed against the functioning of the banking system, the capital market and financial institutions, in particular banks, stock exchanges, insurance companies, investment companies and investment funds, pension funds and recently European Union funds. (Fryšták, 2007)

Economic crime must be distinguished from general property crime. While property crime is directed against property, economic crime is directed against the economic system and its functioning, such as attacks on the economy and finances in connection with various forms of business, detrimental to or threatening the economic system, the economic relationship system, the rights or legitimate interests of economic operators. (Zoubková, Sadílek & Firstová, 2008)

Police of the Czech Republic defines economic crime as a non-violent crime with extraordinary social and economic impact on the state's internal stability. Economic crime includes offenses from the area of taxes and charges, accounting, counterfeiting of money, bills of exchange and payment cards, corruption, money laundering, offenses related to tenders and auctions, but also infringements in environmental and copyright protection. In particular, case of bank tunnelling and various forms of

fraud are known from property offenses. (Policejní presidium ČR, 2019) Economic interests in the Czech Republic are protected in Title Second of the Criminal Code – Economic Offenses, but also in other titles of the special section of the Criminal Code, e. g. in Title Ninth – Offenses Against Property. In this article, economic crime is defined in accordance with the definition of Police of the Czech Republic, as police statistics are used in the regression analysis in the article.

3. Economic crime in the Czech Republic in 1993-2019

Economic crime started to develop in the Czech Republic after 1989. From Figure 1 we can see that economic crime peaked in 1999, 2002 and 2005, when it was more than 40,000 offenses per year, on average it was 31,000 per year. Since 2006 it has a downward trend except for the years 2013, 2014 and 2015. About 25,000 economic offenses were committed in 2019. Clarity of economic crime is relatively high, on average over the reporting period it was 69.7% and ranging from 46.7 % in 2009 to 95.4 % in 2000. However, the Figure 1 shows a decreasing trend of its clarity.

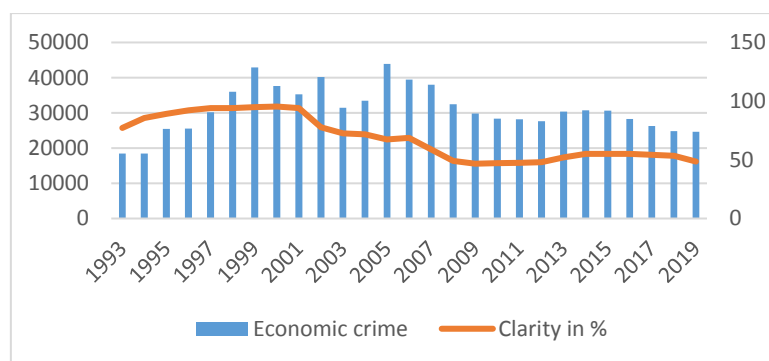


Figure 1: Economic crime in the Czech Republic and its clarity

Source: author's own processing based on data from Police Presidium of the Czech Republic

The proportion of economic crime in total crime is not high (as can be seen in Figure 2), the average was 9.5 % in the period under review and ranged from 4.6 % in 1993 to 14.0 % in 2016. This low proportion reflects the high latency of economic crime. This latency is caused by low criminal sensitivity of the public. In many cases, the behaviour of the offenders of economic crime has hidden or directly open public sympathy. That is why economic crime is difficult to detect and prove. The Figure 2 also shows the growing trend in the share of economic crime in total crime.

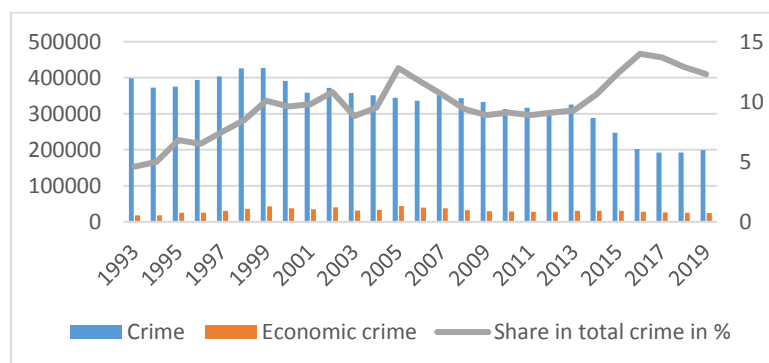


Figure 2: Share of economic crime in total crime

Source: author's own processing based on data from Police Presidium of the Czech Republic

Although the proportion of economic crime in total crime is not high, damage caused by economic crime in relation to total crime is not negligible and has a growing trend as shown in Figure 3. This share was 62.4 % on average over the period under review and ranged from 28.9 % in 1993 to 80.1 % in 2000.

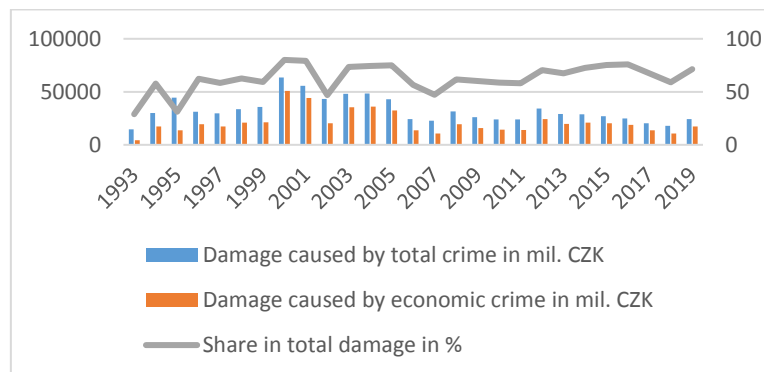


Figure 3: Damage caused by economic and total crime

Source: author's own processing based on data from Police Presidium of the Czech Republic

Police statistics show that the following economic offenses were most frequently committed in the Czech Republic in 2018: unauthorized action, counterfeiting and alteration of a payment instrument (6,252), credit fraud (3,541), scam (3,372), embezzlement (1,594), tax cuts (1,296), counterfeiting and altering money (1,268), forgery and alteration of a public document (887), deterioration and misuse of information media (893), non-payment of taxes, insurance premiums and social security contributions (682), social security and sickness insurance (669). (Policejní presidium ČR, 2019)

According to Global Economic Crime and Fraud Survey 2018, 33 % of Czech respondents experienced economic crime in the last two years. 42 % of the affected companies experienced direct losses exceeding 50,000 USD. Only 30 % of Czech companies use modern technologies to combat fraud compared to the 37 % in CEE and 36 % globally. 41 % of Czech respondents were targeted by phishing attack. It is significantly higher than the CEE (28 %) and global level (33 %). (PWC, 2018)

From Figure 4 we can see, that asset misappropriation has been the leading type of fraud for a number of years. Its high rate of detection is expected considering asset misappropriation is one of the easiest fraud types to uncover. This also corresponds with the CEE (42 %) and global (45 %) results. Fraud committed by the consumer is a type of fraud whose prominence has grown so much in the past years that we have measured it as a separate threat for the first time. In the Czech Republic, it was reported as the second most common fraud faced by 38 % of respondents. This is in line with the CEE results (36 %) but it is significantly higher than global level (29 %). Procurement fraud took third place being reported by 29 % of respondents. Similar to asset misappropriation and consumer fraud, procurement fraud occurs more often in the Czech Republic than at the global (22 %) or CEE (23 %) level. Contrary to the above, cybercrime is reported significantly less frequently in the Czech Republic (25 %) in comparison with the CEE (30 %) and global (31 %) results.

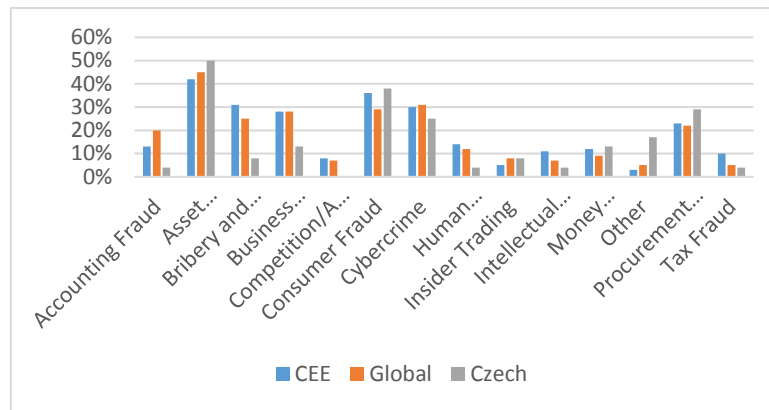


Figure 4: Types of economic crime

Source: author's own processing based on data from PWC

Similar to cybercrime, Czech companies seem to have experienced less misconduct, bribery and corruption or HR frauds compared to businesses in the CEE region or globally. As previously mentioned, the fact that Czech companies reported fewer fraud cases detected over the last two years does not necessarily mean that fewer frauds actually occurred in Czech firms. The fraud cases might have been committed in such a way that existing detection mechanisms in the organisations were not able to identify them. This conclusion is in line with the latest Transparency International Corruption perception index for the Czech Republic, which state that "corruption has not disappeared, but is performed in a more sophisticated and delicate way". (PWC, 2018)

4. Economic factors influencing economic crime in the Czech Republic

Economic crime arises as a result of several factors: social, cultural, political and, last but not least, economic. The article seeks to answer the question of which economic factors can significantly affect economic crime in the Czech Republic. In accordance with the studies of various authors, the following factors were selected: gross domestic product, inflation rate, unemployment rate, Gini coefficient measuring the degree of inequality in the distribution of incomes, average gross monthly wage, expenditure on security and public order, expenditure on social benefits and state management measured as the share of the state budget balance in GDP. The intention was also to include the costs of economic crime prevention into model but these data are not available.

The method of regression analysis is used to determine the impact of individual factors on economic crime in the Czech Republic. The model is based on hard data only and it can be used for prediction of economic crime. The reporting period is from 1993 to 2019. Input data are based on sources of the Czech Statistical Office, Ministry of Interior of the Czech Republic and Police Presidium of the Czech Republic.

The results of the model are shown in Table 1 and in Table 2. Correlation index is high (0.8162), the model can account for 66 % of economic crime. From the explanatory variables mentioned above only one is statistically significant at a 5 % level of significance, namely rate of long-run unemployment. The coefficient is positive, which means that an increase in long run unemployment will lead to an increase in economic crime.

Table 1: Regression statistics and model significance test

Correlation index R^2	0.8162
Determination index R	0.6662
Adjusted determination index R	0.5178
Average estimate error	0.1526
Observation	27
Test criterion	4.4902
P - value	0.0039

Table 2: Economic factors influencing economic crime

	Coefficient	P-value	t-statistics
GDP	1.022729	0.656263	0.452573
<i>Long run unemployment</i>	<i>0.143487</i>	<i>0.004084*</i>	<i>3.288453</i>
Inflation	-0.0137	0.399182	-0.86358
Average gross monthly wage	-0.7987	0.647035	-0.46567
Public expenditure	-0.30296	0.6356	-0.48202
Gini coefficient	-0.7028	0.871908	-0.16355
Expenditure on social benefits	0.392082	0.395744	0.87002
State budget/GDP	0.020952	0.578233	0.566225

*indicates level of significance to 5 %

Source: author's own processing based on data from Czech Statistical Office, Ministry of Interior of the Czech Republic and Police Presidium of the Czech Republic

Many studies investigate the impact of unemployment on various types of crime (Andresen, 2015), (Oster & Agell, 2007), (Raphael & Winter, 2001). These studies have come to the simplified conclusion that the crime of the unemployed is traditionally high. For example, according P. Polak (2008) economic crime is from the 40 % committed by the unemployed in the Slovak Republic. In terms of economic factors, reducing unemployment would help reduce economic crime in the Czech Republic.

5. Conclusion

Economic crime is a non-violent crime with an extraordinary social and economic impact on the internal stability of the state. The share of economic crime in total crime in the Czech Republic is not high (12 % in 2019), but in the period under review shows an increasing trend. In contrast, clarity has a declining trend, in 2019 it was 48 %, which is related to its high latency. Economic crime is perceived as a high-cost item for the state - the share of damage caused by economic crime in total damage was 71 % in 2019. Asset misappropriation, consumer fraud, procurement fraud and cybercrime are among the most widespread types of economic crime in the Czech Republic. It should contribute to the design of preventive measures in the monitored area. The research focused on economic factors and found that of these factors, unemployment has the greatest impact on economic crime, so reducing long-run unemployment could help reduce economic crime in the Czech Republic.

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The Tourism in France affected by the COVID-19 Pandemic in 2020: The Case of Hospitality Industry

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Abstract: This paper deals with one of the most affected sectors of tourism industry by global COVID-19 pandemic – hotel industry. It focuses on the description of the current situation in France based notably on the secondary sources of information. To introduce the topic, the global receipts of international tourism and arrivals of international tourists being considerably interconnected with national tourism are presented. Subsequently, the case study of three hotel groups in France would describe the impact of COVID-19 pandemic and its starting point on the hotel groups concerning the occupancy of hotel rooms in Q1 2020 against Q1 2019. At the end of this paper, several topics for future research connected with the impacts of COVID-19 pandemic are formulated.

Keywords: COVID-19, pandemic, impacts, hotels, France

JEL classification: Z320

Grant affiliation: IGA_FF_2020_001 Shifts in Entrepreneurial Approaches in the Contemporary Economy 2

1. Introduction

Like the rest of the world, France is facing the COVID-19 crisis. Unconditionally, we must assert that the crisis caused by COVID-19 pandemic affected majority of economic sectors. According to S. Zenker and F. Kock (2020), the pandemic is considered to have one of the biggest impacts of all the events in the 21st century, notably on tourism sector. The goal of this paper is to describe how was the international tourism sector affected the global economic crisis in 2009 and to compare the data with 2020 prediction. Subsequently, we will try to answer these questions: How much has the hotel occupancy changed in France since January 2020? What was the starting point?

2. International tourist arrivals and receipts of international tourism with focus on global economic crisis in 2009 and the current situation in 2020 in the world and in France

According to estimation of M. Nicola et al. (2020), the COVID-19 will have a negative influence on almost 50 million travel and tourism jobs across the world because of the closure of international borders, public health measures put in place. And furthermore, people have chosen not to travel.

According to the data presented by The World Tourism Organization (2020), a double-digit decrease of 22% in of arrivals Q1 2020 was noticed in March 2020. To be able to perceive the previous statement

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much better, The World Tourism Organization (2020) talks about a loss of 67 million international arrivals and about USD 80 billion in receipts.

Table 1: Arrivals of international tourists worldwide in million (2020 prediction)

Year	Billions of tourists	Year	Billions of tourists
2002	694	2012	1 044
2003	691	2013	1 097
2004	756	2014	1 143
2005	809	2015	1 197
2006	855	2016	1 243
2007	912	2017	1 333
2008	929	2018	1 408
2009	892	2019	1 460
2010	952	2020 (estimated)	1 020 – 1 170
2011	997		

Source: Author according to UNWTO (2020)

Table 1 is aimed at the prediction of the possible situation we might be dealing with in 2020 concerning the number of arrivals of international tourists worldwide. It would be very interesting to focus on the global economic crisis in 2009 which is characteristic by the decreasing of number of arrivals, too. But, in comparison with the previous event, the impact of COVID-19 would be almost ten times more significant for tourism industry than the global economic crisis in 2009.

The French tourism sector reflects the worldwide situation in 2009 by the decreasing number of arrivals – 76, 8 million of tourists in 2009 compared to 79, 3 million of tourists in 2008 (O. Lacoste & B. Levy, 2011).

In 2020, France is considered to be the on the second place of ten most affected destinations by COVID-19. International tourist arrivals in France dropped -77 % from the beginning of 2020 till July 2020 (M. Gourtsilidou, 2020).

Table 2: Receipts of international tourism in the world in billion USD (2020 prediction)

Year	Billion USD	Year	Billion USD
2002	506	2012	1 135
2003	555	2013	1 224

2004	658	2014	1 285
2005	707	2015	1 227
2006	773	2016	1 253
2007	892	2017	1 351
2008	989	2018	1 463
2009	901	2019	1 507
2010	979	2020 (estimated)	1 060 – 1 210
2011	1 096		

Source: Author according to UNWTO (2020)

Table 2 presents the receipts of international tourism worldwide the prognosis anticipates the drop of more than 300 billion USD in 2020.

The French tourism sector reflects the worldwide situation in 2009 by the decrease of receipts – 49, 5 billion USD in 2009 compared to 56, 5 billion USD in 2008 (O. Lacoste & B. Levy, 2011).

Because of the COVID-19 pandemic, international tourism revenues fell by 49, 4 % from January to the end of July 2020 in France – the receipts amounted to 19, 7 billion USD in 2020 against 39, 1 billion USD in 2019 (Wein J. A., 2020).

3. Situation in France focusing on the hospitality industry

According to the Bank of France, the impact of the pandemic combining all economic sectors in France was estimated to -37 % in March 2020. The National Institute of Statistics and Economic Studies presented similar results as Bank of France in April 2020 and emphasized the biggest slump in hotel industry – almost -90 % of turnovers.

J. Baptiste-Lemoyne, the minister of tourism in France, discussed the impacts of the pandemic on tourism in France in an interview for *Le Journal du Dimanche*. His speech was transcribed and published by *Le Figaro* (2020). He affirmed: *“In normal circumstances, tourism generates €180 billion, €60 billion of which comes from international tourism. The immediate impact of the epidemic is [losses of] at least €30-40 billion.”*

We should focus on the data published by the Bank of France (April, 2020), the hospitality sector is considered to be the most affected by COVID-19 pandemic in France – loss of almost 90 % of turnovers.

According to Deloitte (2020), the occupancy rate has dropped very quickly since mid-March 2020. On the basis of the study realised with contribution of 150 actors of the hospitality sector by Deloitte UK (April, 2020), we are able to define their priorities within the struggle, notably with economic impacts of the pandemic:

- to keep the business afloat,

- to take heed of employees' security,
- to take heed of employees' health.

J. Dreyfus (2020) presents some suggestions for hotels' leaders: *"Les leaders des hôtels doivent envisager dès maintenant des pistes d'actions qui viseront à sécuriser les collaborateurs à court-terme et assurer leur mobilisation et leur fidélisation dès le premier jour de la reprise (qu'elle soit progressive ou total)."*

The core of the citation consists of the support of these activities which would give short-time employees a sense of security, their mobilisation and fidelity from the very first moment of market recovery in hospitality sector. To sum it up, the author emphasizes the importance of human capital for each organisation in hospitality sector and the importance of activities giving rise to employees' mobilisation and fidelity.

4. Decrease in the number of people staying in hotels in France: the case of Accor, B&B and Louvre Hotels Group

In general, the COVID-19 pandemic has influenced considerably the number of people booking hotels in France. B. Canonero, P. Girard and N. Millet (2020) published a study focusing on the impact of the crisis caused by the interconnection of COVID-19 and quarantine. Their focus was on the number of hotel rooms occupied and the number of residents' overnight hospitality stays in Accor, B&B and Louvre Hotels Group during the period of January–March 2020.

Table 3: The development of the number of occupied and offered hotel rooms during the period of January – March 2020 in comparison to the period of January–March 2019 (Accor, B&B and Louvre Hotels Group)

	Occupied hotel rooms (in %)	Offered hotel rooms (in %)
One- and two-star hotels	-38, 6	-13, 6
Île-de-France	-34, 9	-13, 1
Country	-37, 5	-13, 7
Seacoast	-36, 4	-18, 0
Ski resorts (the Massif)	-26, 8	-13, 8
Another areas	-45, 3	-16, 7
Total number of hotels	-36, 7	-14, 1

Source: Author according to INSEE

Owing to data in table 3, the authors observe that during the first four months of 2020, the number of occupied hotel rooms decreased by 37 %. In January and February, the number of occupied hotel

rooms was identical to the previous years. The most considerable slump can be seen, when compared to the same period in 2019, in March 2020 – almost 61 %. As a consequence of the government restrictions, a great majority of accommodation facilities was forced to close down. On the grounds of these restrictions, the second half of 2020 brought along even bigger slump in the occupancy rate. There was a decrease of 79% when compared to the same period in 2019.

Table 4: The hotel occupancy in January, February, March and April 2020, compared to the same period of 2019 (Accor, B&B and Louvre Hotels Group)

	Number of hotels	Occupancy rate (in %)	Development compared with the same period in 2019		
			Occupancy rate (in points)	Number of offered hotel rooms (in %)	Number of occupied hotel rooms (in %)
January	1 086	58, 0	1, 3	0, 1	2, 4
February	1 084	60, 2	-0, 4	3, 9	3, 1
March	1 072	38, 6	-26, 9	-34, 0	-61, 1
April	1 125	20, 6	-51, 8	-25, 5	-78, 8

Source: Author according to INSEE

Table 4 presents the hotel occupancy in January, February, March and April 2020 compared to the same period of 2019. For three representative accommodation facilities, the occupancy rate is stable in January – February 2020. In March, the occupancy rate decreased by 21 points when compared to February 2020. This slump went hand in hand with the decrease of demand. Together with the accommodation facilities closing down in the second half of March, the number of available hotel rooms fell by 34 % in March and by 26 % in April 2020 in comparison to the same period in 2019.

Concerning the number of residents' overnight hospitality stays, B. Canonero, P. Girard, and N. Millet (2020) observed a downswing in the tourist demand in March 2020. This number fell by 45 % in Metropolitan France. In the case of guest paid accommodation (hotels, camping, etc.), the number of overnight stays decreased by 49 %. For the guest non-paid accommodation (secondary residences, in the families, etc.). There was a decrease of 42 %.

According to B. Canonero, P. Girard and N. Millet (2020), the main cause of this development is the number of announced government restrictions which have been applied in France since Tuesday 17th March 2020.

5. Conclusion and discussion

In conclusion, we can assuredly state that the tourism industry in global is abundantly affected by COVID-19 pandemic. In comparison with the global economic crisis in 2008, the impacts of the current crisis will be much more significant in France concerning the decrease of arrivals of international tourists and the decrease of receipts. The decrease in arrivals of international tourists and in receipts

of international tourism reflect the situation in tourism sector of each country, including France and its hospitality industry. It is the main reason why we decided to propose global data in comparison with French one's.

In France, the hotel occupancy has considerably changed since January 2020 in comparison to the same period in 2019. A massive acceleration in the downturn concerning the hotel sector in France and its connection to the government issued restrictions applied in mid-March 2020 was already pointed out. The hospitality sector is suffering from deficiency in visitors, rigidity of government mandated quarantine and acute shortage of means to be able to cover operating costs, labour costs and to meet their liabilities to creditors.

Within this topic, it may be really interesting to focus on impact of COVID-19 pandemic not only on the hospitality industry but on travel agencies which are very affected by the pandemic. In the sector of social tourism, we can see the potential for future research. Perhaps, the modification of legislation or of consumer behaviour could be considered like very interesting starting points within the sector of social tourism being affected by COVID-19 pandemic, too.

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The Budgetary Impact of the Occurrence of Mad Cow Disease in the Czech Republic till 2019

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Abstract: This work deals with the analysis of economic impacts of bovine spongiform encephalopathy (BSE) in the Czech Republic, specifically financial compensation to farmers whose herds were affected, and the costs of killing animals and disposing of carcasses in a rendering plant. From February 2001 to the end of 2019, a total of 1,977,881 cows were examined and 30 cases of BSE were detected. The total amount of compensation in this period amounted to EUR 8,013,000. Of this, 80.6% (EUR 6,458,000) was compensation for animals killed, 12.7% (EUR 1,020,000) for related costs, ie killing, safe disposal of carcasses and BSE control, and 6.7% (EUR 535 000) for losses due to intangible production. The average cost per BSE positive animal was € 267,100 and the average cost per cohort animal was € 1,889. In the rendering plant, which is responsible for killing infected and cohort animals and for the safe handling of their bodies, a total of 2 342 tonnes of raw material were processed between March 2003 and 2009, costing EUR 363 777.

Keywords: bovine spongiform encephalopathy, BSE, cattle, infectious diseases, OIE organization

JEL classification: Q14

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1. Introduction

Bovine spongiform encephalopathy (BSE), along with other diseases such as scrapie in sheep, belongs to the group of transmissible spongiform encephalopathies (TSEs). It is a neurodegenerative disease manifested by changes in behavior, impaired movement coordination and always ends in death.

BSE is relatively less up-to-date because of the fact that the last case of this disease was recorded in the Czech Republic in 2009. During the period of the disease in the Czech Republic from 2001 to 2009, a total of 30 diseases were recorded. But for more than two decades, the European beef demand was affected by the existence of BSE because of its potential danger to human health (Wilesmith *et al.*, 1988). In the rest of Europe, sporadic BSE is still present. While in 2017 no case of the classical form of BSE was reported throughout the European Union, in 2018 we registered one new one from the United Kingdom.

In the industrialized countries, for the sake of public health cattle slaughtered at 30 months and older was examined for the presence of priors in the brain tissue. In the Czech Republic, the regular examination of animals came into effect on 1st February 2001 and, by 31th December 2019, a total of 1 977 881 cattle were examined, of which 30 animals were tested positive. Only two outbreaks of the *bovine spongiform encephalopathy* in 2009 and no case of the *BSE* within the last 10 years confirm that, in the Czech Republic, the disease incidence has had definitely a decreasing trend, which is in agreement with the situation in the other EU countries. As a result of 30 positive *BSE* findings, the total of 4 243 cows were killed and their carcasses were destroyed. The animals selected to be killed in relation to each *BSE* occurrence constitute a cohort, which is a group of animals born in

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the same herd within 12 months preceding or following the date of birth of the affected bovine animal.

Nowadays according to rules of World Organization for Animal Health (OIE) each of 182 member countries registered for this organization has assigned a risk status with the degree of risk of *BSE*. As the official *BSE* status of a country or zone is determined on the basis of an overall assessment of risk, the occurrence of a new *BSE* case implies a re-assessment of the official risk status only in the event of a change in the epidemiological situation indicating failure of the *BSE* risk.

Member countries recognised as having a negligible *BSE* risk in accordance with Chapter 11.4. of the Terrestrial Code of OIE - World Organization for Animal Health shows Table 1.

Table 1: Negligible BSE risk countries

Argentina	Cyprus	Italy	New Zealand	Singapore
Australia	Czech Republic	Japan	Nicaragua	Slovakia
Austria	Denmark	Korea (Rep. of)	Norway	Slovenia
Belgium	Estonia	Latvia	Panama	Spain
Brazil	Finland	Lichtenstein	Paraguay	Sweden
Bulgaria	Germany	Lithuania	Peru	Switzerland
Chile	Hungary	Luxembourg	Poland	The Netherlands
Colombia	Iceland	Malta	Portugal	United States
Costa Rica	India	Mexico	Romania	Uruguay
Croatia	Israel	Namibia	Serbia	

Source: OIE; 2019

According to Regulation EU No. 2013/76/EU (from 4th February 2013) it is not necessary to investigate in healthy animals in these countries (from 1st July 2013). Only suspect animals, dead animals and so-called necessary slaughter animals are now tested.

Table 2 shows countries with controlled *BSE* risk that are required to test all animals aged over 30 months, based on Resolution No. 19 (87th General Session of World Assembly, May 2019) in accordance with Chapter 11.4. of the Terrestrial Code of World Organization for Animal Health.

Table 2: Controlled BSE risk countries

Canada	Ecuador	Greece
Chinese Taipei	France	Ireland

Source: OIE; 2019

And finally selected countries or certain territories of selected countries may be granted OIE status as a “zone with a controlled *BSE* risk” in accordance with Chapter 11.4. of the Terrestrial Code. This is: United Kingdom – zones consisting of England and Wales, and Scotland as designated by the Delegate of the United Kingdom in documents addressed to the Director General in September and October 2016, and in December 2018. The zone with a controlled *BSE* risk also includes Aland Islands, Azores and Madeira, Kosovo administrated by United Nations and Balearic and Canary Islands.

As a result of *BSE* in the Czech Republic, it was forcedly killed until its last occurrence in 2009 the total of 4 243 cows. The procedure for the destruction of the killed animals developed over years. At the first, 2001 *BSE* occurrence, the animals were killed on the farm and buried within its boundary. However, this proved difficult in terms of hygiene and sanitation and was ethically unacceptable. Therefore, on the following five occasions, the animals were killed and their carcasses disposed of at the regular rendering plants. This, however, carried a risk of contaminating both the premises and products and thus, in 2003, the rendering plant Asanace Žichlínek Ltd. was assigned by the State Veterinary Administration to become an institution specialized in killing all the *BSE* suspected animals,

and in processing and disposing of their carcasses in the following years. The meat and bone meal produced was subsequently incinerated in cement works.

In accordance with the EU common Agricultural Policy and farming promotion, the EU provides financial compensations to farmers who have suffered losses due to the BSE. Their allocation is regulated by the Act no. 166/1999 on Veterinary Care and on Amendment of Certain Related Acts (Veterinary Act), with particulars given in the Title IX Compensation of Costs and Losses Incurred in Connection with Dangerous Contagious Diseases (Anonym, 1999). This defines reimbursements to farmers whose cattle herds have been affected by the transmissible diseases specified in the Annex 2 to this Act. for 92 specified dangerous diseases and transmissible diseases, it outlines the indemnity strategies and the general itemisation of the compensation. The Czech legislation is in full agreement with the Regulation No. 999/2001 of the European Parliament and of the council, of 22nd May 2001, laying down the rules for the prevention, control and eradication of certain transmissible spongiform encephalopathies, as amended (Pospíšil, 2008).

To provide a deeper insight into the legal and economic aspects associated with the BSE in the Czech Republic, the first part of the study was focused on the evaluation of the indemnity policy and quantification of reimbursements provided for farmers according to the Veterinary Act in the period from 2001 to 2019. The total costs were itemised and the cost items broken down to cover the individual operations the farmers were responsible for in the BSE management and for which they were subsequently reimbursed.

In the second part, our aim was to calculate the costs related to the killing and disposal of the animals brought to the rendering plant Asanace Žichlínek Ltd. between October 2003 and 2009. This calculation is divided into two parts. First part of the calculation ends in 2009, because after this year there was no occurrence of BSE in the Czech Republic and no killing and disposal of animals in this rendering plant. The second part of the calculation continues after 2009, when there were forcibly decontaminated the specified risk material excluded from sale and commercial use. This material is skull, brain, eyes, spinal cord, trigeminal ganglia, dorsal root ganglia and vertebral column as specified in Regulation (EU) No. 999/2001 laying down rules for the prevention, control and eradication of certain transmissible spongiform encephalopathies.

2. Material and methods

The chief method used in the first part was the evaluation of legal rules, i.e. legal acts, regulations and implementing provisions, and their application to the BSE occurrence in Czech herds. In addition, the EU legislation concerning this issue was analysed and compared with the relevant legislation of the Czech Republic.

The method of economic evaluation was the analysis of statistical data related to the costs of the BSE eradication in the Czech Republic; this information was provided by the Ministry of Agriculture of the Czech Republic (Saksún, 2019). Subsequently, the data was related to the individual cost compensation items, as specified by the Veterinary Act.

Total costs by the Veterinary Act included the cost of killing or slaughtering sick and suspect animals, the cost of killing or slaughtering the animal, the cost of cleaning, disinfecting, disinfecting and exterminating the farm and its facilities and equipment, the cost of mandated vaccination, protection zones, surveillance zones and other restricted zones, and compliance with the measures within a specified observation period before the end of the emergency veterinary measures and the reintroduction of animals on the holding.

The analysis presented in the second part was based on account records provided by the rendering plant Asanace Žichlínek Ltd. (Níčák, 2019). It included an evaluation of the whole process consisting of animal killing, carcass mechanical processing, heat treatment, sterilisation, drying, hammer-mill pressing and pulverisation, and dispatching of the processed material. The costs of transporting the animals to be killed at the rendering plant were not included. These costs were borne by the farmers who were subsequently reimbursed by the Ministry of Finance in accordance with the Veterinary Act. The first part of the cost calculation is analyzed in the time period 2001-2009, when the captured

animals and their cohorts were spent in the rendering plant. The second part of the cost calculation covers the years 2010–2019, when only the specified risk material of the tested and killed animals was liquidated at the rendering plant. For the purpose of analysis it is calculated at the rate of 55 kg per 1 animal. All costs in Czech crowns (CZK) considered in this paper were converted into euro at the rate of 25 CZK/EUR.

3. Results

Economic evaluation of loss compensations

From 2001 to 2011, all killed animals, suspect animals, dead animals, animals from the so-called necessary slaughter, reassigned animals and animals from normal slaughter were compulsorily tested in the age categories up to 24 months, 24–30 months and over 30 months. Because BSE has not been reported in the Czech Republic for 10 years and the Czech Republic is among the countries with negligible BSE risk, from 2011 testing is still ongoing only of suspect animals, dead animals and so-called necessary slaughter animals in the age categories up to 48 months, 48–72 months and over 72 months. Table 3 shows the number of animals tested for BSE in the Czech Republic between 2001 and 2019 and number of disease occurrences in individual years. For this reason, the table shows the decreasing number of animals tested after 2011.

Table 3: Number of animals tested for BSE and positive BSE animals in the period 2001 to 2019

Year	Number of tested animals	Number of BSE positive animals	Year	Number of tested animals	Number of BSE positive animals
2001	114 146	2	2011	97 848	0
2002	175 435	2	2012	54 794	0
2003	210 456	4	2013	36 057	0
2004	200 873	7	2014	18 293	0
2005	170 857	8	2015	20 096	0
2006	174 470	3	2016	15 516	0
2007	160 420	2	2017	20 158	0
2008	157 269	0	2018	21 732	0
2009	156 472	2	2019	26 534	0
2010	146 455	0	Total	1 977 881	30

Source: SVA; 2020

The reimbursements for the 2001–2019 periods were itemised, analysed and finally summarised. Table 4 shows the compensations for all costs spent in relation to the BSE between 2001 and 2019. A total of 30 animals tested BSE-positive and, consequently, 4 243 animals coming from 141 herds were killed due to the constitution of cohorts. The total of compensations in this period reached EUR 8 013 000. The average occurrence was 1.58 BSE-positive animals per year, the average costs per 1 BSE-positive animal were EUR 267 100, and the average costs per 1 cohort of animals (killing and carcass disposal) were EUR 1 889.

Of these, 80.6 % (EUR 6 458 000) were compensations for the value of the killed animals, 12.7 % (EUR 1 020 000) for the related costs, i.e., killing, safe disposal of the carcasses and examination for the BSE, and 6.7 % (EUR 535 000) for the losses due to the non-materialised production.

The number of cohorts is not in agreement with the total of 141 herds affected, as shown in Table 4. This is because there were instances when an animal from the original cohort was transferred or sold to another herd. Its new keeper, having to comply with the Emergency Veterinary Measures, then had this cows killed and thus one cow was reported in association with two or more herds.

Table 4: Total costs (in EUR thousand) associated with 30 BSE cases in the period 2001 to 2019

Period	Number of herds by cohort size	Number of animal killed	Value of animals	Killing	Safe carcass disposal	Examination for BSE	Related costs*	Observ. of emerg. veter. measur.	Non-material production	Total
2001 to 2019	A. 109	219	383.4	8.6	39.9	16.0	3.8	0.0	5.0	456.7
	B. 17	854	1 164.5	16.2	90.1	65.7	6.3	4.0	97.4	1 444.2
	C. 15	3170	4 910.1	55.1	321.2	350.8	27.0	15.3	432.6	6 112.1
	Σ 141	4243	6 458.0	79.9	451.2	432.5	37.1	19.3	535.0	8 013.0

Source: Mze CR; own processing

A = 1 – 10 animals in a cohort; B = 11 – 100 animals in a cohort; C > 100 animals in a cohort

* Costs related to killing and safe disposal of carcasses and farm decontamination

4. Discussion

Although early and stringent veterinary precautions were adopted, in the first place a ban on feeding meat and bone meal (MBM) to cattle in 1991, the first case of the BSE in the Czech Republic was detected in 2001. The most probable cause was an indirect contamination of cattle feed with the imported MBM or with the MBM intended for feeding pigs and poultry and allowed for use before 2003 (Semerád, 2007). In the period from 1st February 2001 to 31st December 2019, 30 BSE-positive cases were identified by the active monitoring for the BSE involving 1 977 881 cows. The detection was so effective thanks to the well co-ordinated laboratory diagnostic procedures carried out in the laboratories of the State Veterinary institutes in the city of Prague, Jihlava and Olomouc.

To reduce the economic impact of the BSE on farmers, legal means have been established to reimburse farmers for the losses both direct and related. The latter involve costs of the examination for the BSE, transport of animals to a specialised rendering plant, their killing and safe disposal of their carcasses, and cleaning and disinfection of the holding and its equipment, though this procedure is questionable, because the BSE is not a truly contagious disease. In addition, the farmer is reimbursed for losses due to the non-materialised production. However, all these compensations cannot completely cover the costs incurred in relation to the BSE.

In the first place, the producer-consumer relations, usually taking a long time to establish, are destroyed and the return to the market is difficult; also, large costs are necessary to build up the herd again. These costs are difficult to calculate and their compensation cannot be claimed because they are not treated by the legislation. A BSE incident is also associated with several adverse consequences, such as a loss of jobs in an agricultural enterprise, which can have a deep impact on rural populations. The ensuing problems in the broadest sense of the word can partly be eased by the commercial insurance policy. The past experience showed that most of the farmers were insured. Any payment of insurance benefit has no effect on the amount of cost compensation based on the Veterinary Act. Since a farmer-insurance company relationship is a business one, it was not possible to find out the information on benefit payments and to include it in this study.

The total amount of compensations paid was EUR 203 704 in 2001, EUR 59 259 in 2002, EUR 1 740 741 in 2003, EUR 1 474 074 in 2004, EUR 3 403 704 in 2005 and EUR 411 111 in 2006. In 2007, it was only EUR 6 278, because the 27th case was an eleven-year-old cow whose cohort included only three animals left due to slaughtering of the other cows. Compensations provided in relation to the 28th BSE-positive case detected on 19th December 2007 were paid in March 2008 and reached EUR 50 222. The last two cases of BSE occurrence in 2009 cost EUR 402 907.

Since 2009 no BSE has been detected in the Czech Republic, but examination of defined groups of animals is still ongoing. Currently, the examination is carried out according to the following scheme:

dead animals and so-called necessary slaughter animals in the age categories up to 48 months, 48-72 months and over 72 months and suspected bovine animals infected with BSE irrespective of age. The total costs associated with the BSE occurrence in the Czech republic amounted to EUR 8 013 000. The average costs per 1 BSE-positive animal during all period 2001 to 2019 were EUR 267 100 and the average costs per 1 cohort of animals (killing and disposal of the carcasses) were EUR 1 889. To ease the negative economic impacts of the BSE, the EU provides financial support for all member states. For instance, in 2007 the Czech Republic received EUR 1 640 000 for the active monitoring and EUR 2 500 000 for the eradication (EU-Dg-SAnco, 2006).. Since then, financial support has been steadily declining since the last incidence of the disease was recorded more than 10 years ago. In the whole period since the first occurrence of the disease they have reached compensation total EUR 5 545 000.

It is interesting that the amounts of reimbursement presented in the international literature are reported only as the total costs per certain period. This is also the case of Great Britain and Japan, who suffered most. The calculation of cost compensations is based on tables prepared in advance in which, for each cattle age category, the amount of compensation is given without any respect to the animal's actual productivity (Defra, 2007). The British government study has reported that the total net cost of the BSE crisis to the Exchequer from 1985 by the end of the fiscal year 2001/2002 reached EUR 4,80 billion, to which the EU contributed EUR 560 million, which is 11.6 % (Brinkle, 2002). It is evident that this high sum of money was relevant to the exceptionally high number of the BSE-positive cows that had exceeded 187 000 animals by that fiscal year. This sum also included EUR 828 million to compensate for the loss of markets in the EU countries, because the European commission banned beef export in March 1996 (in the USA, import of British beef was banned in the late 1980s). The beef production accounts for about 0.5% of the British gross domestic product and the British beef industry has over 130 000 employees. With the decrease in beef meat prices, the prices of all other kinds of meat increased in the great Britain. This chiefly concerned poultry and lamb meat, which increased in price approximately by 5%, with pork price remaining generally unchanged (Leeming and Turner, 2004). From the first occurrence of the disease in 1985 the BSE crisis as a whole is estimated to have cost the Great Britain GBP 5.70 billion (Nelson, 2019).

Japan's outbreak of BSE has cost at least JPY 365 billion (EUR 3,15 billion) since the beginning of disease occurrence. Revenues of Japanese farms have slumped an estimated JPY 131 billion (EUR 990 million). The Japanese government has already spent about JPY 206,4 billion compensating farmers for their losses. Of the total JPY 178,5 billion has been earmarked to compensate farmers and the food industry and JPY 23 billion has been used for incinerating meat-and-bone meal, as the cause of the disease (Reed, 2019).

In Northern Ireland, the beef producing industry employs over 5 000 workers and the additional 600 000 are employed in the related industrial branches (Caskie *et al.*, 1998). Thus, the rate of employment in this industry has a deep social impact. The costs of re-qualification for workers who had lost their jobs due to the reduced beef production were estimated to be 7.9% of all costs related to the BSE crisis (Muth *et al.*, 2005).

Spain is fifth in the EU ranking of BSE cases registered since 1987, after the United Kingdom, Ireland, Portugal, and France. The number of cows infected by BSE in Spain from 2000 to the end of 2019 was 785. The number of cases increased from 82, in 2001, to a peak of 167 cases, in 2003. Four years later, the number had fallen to 36. This evolution of the BSE crisis in Spain was consistent with the whole EU situation where the number of BSE-infected animals is also declining. The latest disease incidence was recorded in 2016 (OIE, 2019).

This study paid attention to the costs of animal killing and their carcass disposal in the rendering plant specialised for this purpose. The evaluation was based on the cost per 1 kg of the processed material, which ranged from EUR 0.15 in 2003 to EUR 0.90 in 2019. Between March 2003 and the end 2019, the total of 4 243 bovine animals associated with the BSE occurrence were killed there and their carcasses were destroyed and disposed of. This ; this accounted a total of 25 357,6 tons of the processed material. The total costs for the whole period amounted to EUR 590 231. The considerable increase in costs during this period is in agreement with the inflation development (wagepush,

energy price increase) in the domestic economy and is also related to the increased financial demands for the hygienic and technological quality of the rendering plant operation (septic and aseptic units, disinfecting fords, separation of processing routes) after the CR joined the EU.

In one instance, no long-distance transport was needed. It was when the very first *BSE* case was discovered in 2001 in the village of Dušejov in the Jihlava district. All 134 cows of the cohort were killed on the farm and buried in its vicinity. The carcasses were placed four metres deep in the ground and were covered up with a 1.5-to 2-metre layer of soil (Meloun, 2006). Although this method of disposal may seem complicated, the total costs were only EUR 2 866 (hydrogeological expert report EUR 300, wages EUR 478, local transport EUR 1593, fencing EUR 495) (Saksún, 2008), which was much less than what the process of disposal would have cost in a rendering plant.

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The potential of local food markets based on direct sales

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Abstract: The Farm to Fork Strategy is a key element of the European Green Deal. It addresses the challenges of sustainable food systems in a comprehensive way. A key element of this strategy is the creation of efficient local food markets, based on short supply chains. This includes the development of direct farm sales systems. In order to implement this strategy effectively, the potential of these forms of market should be diagnosed.

The article presents research results which are an attempt to fill this research gap. Its construction is based on the implementation of two objectives:

- to provide an overview of the literature on methods and results of the research on identifying the potential of local markets based on direct sales;
 - to present the results of research on the local market potential on the example of a selected area in Poland.
- The presented research has universal values and may inspire its application in other countries.

Keywords: Farm to Fork Strategy, direct sales, local government, short food supply chain

JEL classification: Q13, L11, O43

1. Introduction

The issue of local food markets as an alternative food chains returned to the public space a decade ago with the emergence of the concept of short food supply chains. This was largely due to the crisis of the industrial farming model and the negative (both environmental and economic) externalities generated by conventional (extended) food supply systems (Banks et al., 1999) and farmers' limited control over these chains (van der Ploeg et al., 1999). Consumers (so-called "locavore"), who attach increasing importance to local food that are not transported over long distances, also play an important role in the development of local food markets (Scharber et al., 2016).

Most often, short food supply chains are defined as a distribution model, based on the three types of "proximity" between participants in the trade: physical, organizational and social (Malak-Rawlikowska et al., 2019). In the case of physical proximity, the key element is the locality in order to reduce transport (measured in food miles). Organizational proximity concerns the number of links in the chain. The ideal model is the direct sales, or with a maximum one link, but excluding commercial networks). Social proximity is based on the assumption that interpersonal relations determine business relations, and vice versa (Uzzi, 1997). In this approach, the crucial factors are: communication, trust, knowledge and the flow of information between the producer and the consumer (Struś et al., 2020).

The concept of short supply chains is dynamically developing both in theoretical and practical space around the world. The European Commission also sees the potential of local food markets which is confirmed by acceptance in May 2020: "The Farm to Fork Strategy on for a fair, healthy and

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environmentally friendly food system” (COM 381, 2020). This strategy assumes a transition to a sustainable food system based on shortening the supply chains in the Member States, which is to ensure food security and access to healthy nutrition. The implementation of the strategy is also expected to contribute to the reduction of the environmental and climate footprint produced by the EU food systems and to ensure livelihoods for economic entities. This strategy is also closely related to the European Green Deal, adopted in 2019 at the EU forum, which sets an ambitious action plan (with a guaranteed budget of EUR 100 billion) enabling a more efficient use of resources thanks to the transition to a clean, circular economy in which economic growth it is not dependent on resource consumption (COM, 2020).

However, in the face of such an ambitious strategy, it raises questions about the feasibility of these assumptions. Therefore, the main goal of this article is firstly to diagnose the potential of local markets in selected regions of the European Union based on literature studies. Secondly, to confront it with the pilot study of local food markets in Kamienna Góra - selected region of Poland, strongly supported by their local government in promoting direct sales.

2. Methodology

The first part of the research is based on scientific literature which concern the issue of estimation of the short food supply chains potential in different European Union countries. The second part is based on the own pilot study on local food markets which conducted in the Kamienna Góra municipality (Lower Silesia region) in Poland. The survey consisted of two parts - the first one based on the analysis and verification of available databases on farms, and the second one based on direct research (surveys, direct interviews). Both parts of the research were performed in the period from January to July 2020.

The specificity of Polish agriculture is its fragmented area structure. The average Polish farm has a little over 10 ha, and 85% of it does not exceed 15 ha. The legal definition assumes that a farm is an agricultural activity with a total area of not less than 1 ha. In practice, however, not every owner of such an area conducts de facto agricultural activity. Therefore, in order to select the potential of direct sales, the first part of the analysis and verification of the number of farms that actually carry out agricultural production was necessary. To this purpose, the databases of the Central Statistical Office were verified with other, branch databases, in order to separate farms conducting actual agricultural activity. On the example of the Kamienna Góra commune, it turned out that out of about 800 formal farms, only 166 are actually engaged in agricultural production. In the second part of the pilot study a survey of such a separate group of active farms was conducted. 166 questionnaires were addressed to them, from which 95 responses were obtained (57%). In addition, 40 structured direct interviews were conducted (with two selected local leaders in each of the 20 villages belonging to the municipality). These in-depth interviews allowed to accurately determine the scale of agricultural production, direct sales, and the potential for its development.

3. Results

Despite many studies on various aspects related to the local food market (e.g. their impact on sustainable development (Malak-Rawlikowska, 2019) or analysis of the livelihood of farmers participating in direct sales (Blumberg, 2018), the issue of the potential for the development of short supply chains and farmers' readiness to engage in this form of sales has not yet been sufficiently explored and is based mainly on fragmentary case studies of selected entities included in monographic

threads, which are usually related to one product or one territorial unit. If, on the other hand, examples of short food supply chains are presented on a larger scale, they often relate to incomparable case studies of selected countries (Belletti et al., 2020). The main problem with the analysis of short supply chains is that research results differ significantly from each other (Gallaud et al., 2016), and the assessment of the effects of short supply chains still remains fragmented (Mundler et al., 2015).

According to estimates by the European Parliament (Augère-Granier, 2016), around 15% of EU farms (mostly small) sell more than half of their production directly to consumers. These estimates vary considerably between countries. The least popular (less than 5%) short food supply chains are in Spain, Austria and Malta, while the most popular among farmers are Greece (25%), Slovakia (19%), Hungary, Romania and Estonia (18%). In France, 21% of farmers sell their products through short supply chains, while in the case of vegetable and honey producers this figure is as high as 50%. These estimates were based on the results of research commissioned by the European Commission on the basis of literature studies and fragmentary case studies (Kneafsey et al., 2013) in individual EU countries. It should be noted that there is no precise EU data on short food supply chains in the European Union.

However, EU estimates differ significantly from field studies in individual countries. For example, in Serbia it is assumed that the penetration potential of the direct sales market is 1% (Todorovic et al., 2018), while in Helsinki it is 2% (Kamarainen et al., 2001). In Slovakia, sales in short supply chains are estimated at 3% and the ambitious government target of increasing it to 7% by the end of 2020 (Floriš et al., 2018). In Greece, studies by C. Charatsari et al. (2019) showed that only around 14,000 growers sell their produce at marketplaces, which is only 0.02% of the total farmer population in Greece. Whereas in the Province of Malaga in Spain, T. Rucabado-Palomar et al. (2020) defined the share of farmers in short supply chains as less than 2%.

The issue of the potential of short supply chains was most widely studied in France. There, as much as 21% of agri-food products are sold directly (AGRESTE), but this sales corresponds to only 12% of the value of the total sales of agri-food products (Gallaud et al., 2016). The wealth of France's statistical data is due to the fact that the general census includes questions about short food supply chains (Chiffolleau, 2019), which is unique on a global scale. Based on the agricultural census, it is easy to calculate that in 2010 one out of five farms (105,000) sold at least some of their products in direct sales (Bary, 2012). And it is a growing tendency, because in 2005 this share was declared by only 16% of farmers. On the consumer side, 6 to 7% of food purchases are made in short supply chains (ACTU). However, 65.5% of sales (in terms of value) of food products still take place in large stores, even if super and hypermarkets themselves offer some local products, directly from the producer.

In Poland, a pilot study on local food markets was conducted in the Kamienna Góra municipality (Lower Silesia region). The survey consisted of two parts - the first one based on the analysis and verification of available databases on farms, and the second one based on direct research (surveys, direct interviews).

The first issue of the study was to determine the accurate number of farmers in this region. According to formal data, there are 812 agricultural tax payers in the Kamienna Góra municipality (about 10 thousand inhabitants). All of them own agricultural land of more than 1 ha.

Slightly different statistics come from the Agency for Restructuring and Modernisation of Agriculture in Poland, which operates the system of area direct payments. In 2020, applications from 718 farms were received from the Kamienna Góra commune.

Both the list of agricultural tax payers and the list of beneficiaries of direct payments is related to the ownership of agricultural land and not to the actual agricultural activity on them. Therefore, this number should be regarded as significantly overstated in relation to the farms conducting production. In order to verify it, data on the reimbursement of part of the excise tax included in the price of fuel used for agricultural production were used. According to the data from 2019, there were 166 beneficiaries of such subsidies in the Kamienna Góra municipality. Almost identical number - 165 farms - is also on the list of entities registered in accordance with Regulation (EC) No. 183/2005 in the State Veterinary Inspection. At this stage, it can be demonstrated that in the Kamienna Góra commune, only 165 out of 700 - 800 formally registered farms, are actually engaged in agricultural production. Therefore, it is only 20 - 23% of their total number. That proves that merely a part of such a number of farms may constitute the potential of the local direct sales market. Based on the official data (State Sanitary Inspection, State Veterinary Inspection), only 14 farms in the commune have registered the operation of various forms of direct sales. It is well known, however, that a large part of the farms conducts *de facto* direct sales without reporting it to the relevant institutions. This “grey area” was investigated in the form of questionnaires conducted among all the farms and direct interviews with local leaders conducted in each of the 20 localities.

The results of the research indicated that the total number of farms in the municipality was 180, which was slightly higher than that found in the previous analyses of databases (165). Of this number, the respondents indicated 35 farms (19.4% of the total), which had officially registered sales. As could be expected, this number was 2.5 times higher than that reported to the official registers (14 farms).

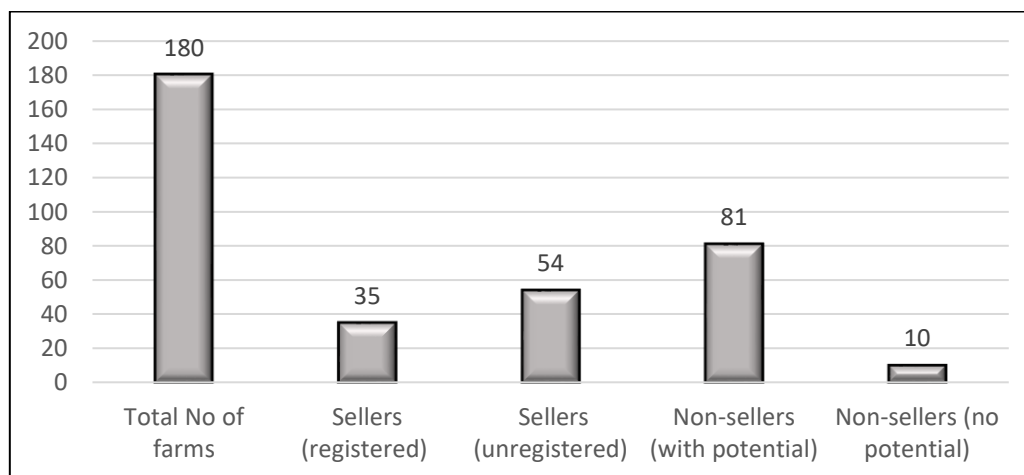


Figure 1: Number of farms by category in the Kamienna Góra municipality (own compilation)

As can be seen in Figure 1, 54 farms (30% of their total number) sold their products in direct form, but without registering this fact in the relevant institutions. Even more, 81 farms (49.4% of the total) were qualified to the group “no direct selling”, but with potential. Only 10 farms (5.6% of the total) have been identified as having no potential to sell their products directly. Summarizing the results, it can be stated that the share of farms operating in short food supply chain systems, in relation to the total number of farms, is 4.8% in Kamienna Góra municipality.

Such a picture is created using the ratio of the number of farms that have officially registered direct sales to the total number of farms according to the legal definition. This situation changes when we take into account the number of farms actually conducting direct sales, regardless of whether it is registered. In this case the percentage of such farms increase to 11%. A radical change takes place when we compare the farms using direct sales (registered and unregistered) with the number of only those farms which *de facto* conduct agricultural activity. Then we get a result where almost half of them (49%) use short food supply chains. This indicates the great potential of this form of sale, which, however, is not shown in official statistics.

4. Conclusion

On the basis of the conducted analysis, it can be concluded that the idea of local food markets dynamically develops both in the theory and practice. However, it requires further in-depth research, especially in the field of methodology. The research have shown that there is no single universal methodology for estimating the potential of local sales markets. Each country does it its own way, and European Commission estimates vary dramatically.

The pilot study carried out in the Kamienna Góra municipality has a universal value and can be replicated in other polish areas. At the same time, this case study shows that the results obtained may depend on the accepted context and reference point, grey area and even the adopted definition of a farm. This should be noted especially in international comparisons, where different contexts may have a significant impact on the results obtained.

It seems that our research is a clear premise for deepening this direction of interest. Under the conditions of the “from field to fork” strategy, adopted by the European Union, it is crucial to improve the analytical skills. It is necessary to formulate correct diagnoses, as well as to closely monitoring changes resulting from the implemented policy.

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Assessment of the competitiveness of creative industries in the national economy

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Abstract: The competitiveness of the company is considered as one of the key factors of survival in a turbulent market. However, it is more important in the cultural and creative industries, of which the main features are that they operate in difficult market conditions, produce goods that are inherently 'cultural', work with people who are often more content-oriented than commercial and usually create very small businesses that exist on permanent networks. The aim of this article is to map the current situation in the creative industries and assess the level of competitiveness through quantitative indicators.

Keywords: creative industry, competitiveness, indicators

JEL classification: H81, O30, J24

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1. Introduction

The ability of a company to successfully resist and compete with other companies with the same or similar focus could be characterized as competitiveness. There are currently several perspectives and definitions of competitiveness, depending on the level at which competitiveness is examined. According to the World Economic Forum, competitiveness is a country's ability to achieve sustainably high per capita GDP growth rates, examining the ability of a national economy to grow using a set of factors, policies and institutions that determine a country's level of productivity (Gordíaková, 2011). Another definition focuses on the most common assessment of competitiveness – namely competitiveness at the enterprise level, as it is a basic condition for the existence of an enterprise. It can be defined as the ability to maintain and expand the assets of business owners, and represents a major strategic role for senior management. It can be measurable of the production capacity of goods or the volume of services for the open market, it creates value, it obtains a profit from the invested capital, which is equal to or higher than its opportunity costs (Vida, Kádár, Kádárová, 2009). In a competitive struggle, the company that appropriately exercises a competitive advantage wins. Being permanently competitive means for a company to create tomorrow's competitive advantages faster than its opponent can copy its current competitive advantages (Rajčániová, 2006).

2. Methods of assessing the competitiveness of countries

Measuring and evaluating the competitiveness presupposes the creation of a set of suitably defined variables. The measurement of competitiveness at the macroeconomic level is carried out through several indicators and compares the level of competition between individual countries and national economies. One such highly frequented indicator is the Global Competitiveness Index. It is a highly

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complex index for measurement of competitiveness of nations, taking into account the microeconomic as well as the macroeconomic foundations of the national competitiveness. It defines the concept of competitiveness as a set of provisions, policies and factors that determine the level of productivity of the country. The level of productivity, on the other hand, determines the level of sustainability of prosperity that the economy can achieve. This means more competitive economies are able to produce higher income levels for their citizens. The level of productivity also determines the rate of return on investment in national economy. Given that rate of return is a key determinant of economic growth, those with higher competitiveness are those that tend to grow faster in the medium and long term (Gonos, 2019). The index was compiled by the World Economic Forum, and contains indicators arranged into 12 homogeneous groups - pillars.

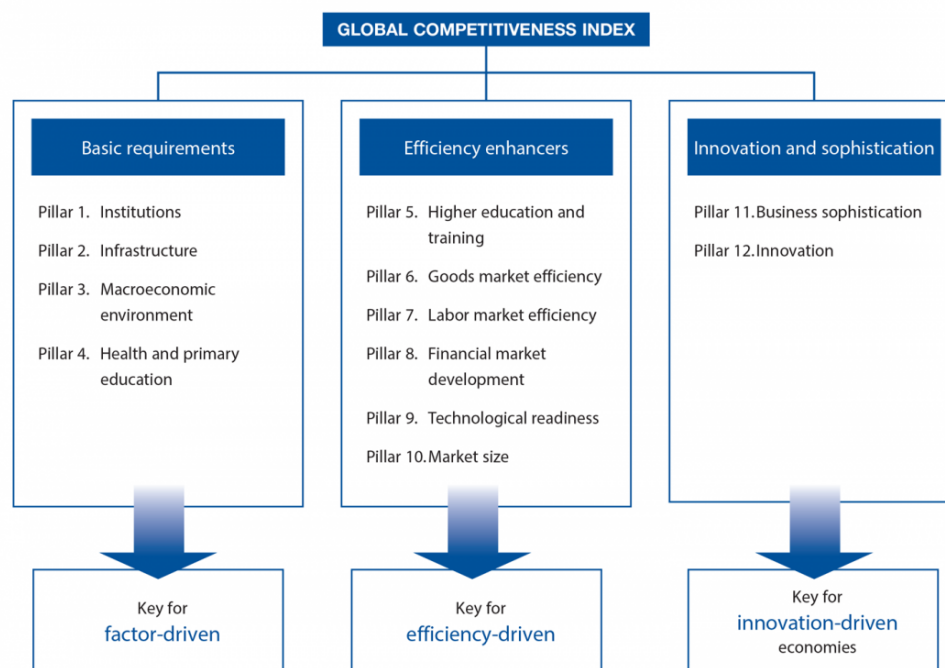


Figure 1: Pillars of Global Competitiveness Index by World Economic Forum

Figure 1 shows the individual pillars divided into three sub-indices divided into basic requirements, efficiency stimulators and the area of innovation and high complexity. The pillars influence each other, and if one pillar gradually begins to weaken, this negative effect will affect other factors and their economy (Vagaš, 2018). Quantitative expression of the values of individual pillars will be obtained by the procedures defined by the methodology of the World Economic Forum. In this way, a numerical value is determined for each pillar, taking values from the range from 1 (lowest value) to 7 (highest or most desirable value). From the acquired knowledge, a value is then derived, which determines the overall competitiveness of the country (Bondareva, Tomčík, 2013).

3. Methods of assessing the competitiveness of companies

The issue of identifying a company's competitiveness can be placed in different contexts and assessed in different ways. One of the ways to assess the competitiveness of a company is to evaluate through performance represented by financial indicators. Financial indicators can be divided into classic indicators (focused on profitability, profitability of the company) and modern indicators (focused on the increasing the value of the company) (Knápková a kol., 2013). These are usually profitability ratios, but productivity ratios are also used. In the first case, the numerator contains a suitable analogy of

profit and the denominator contains a suitable quantity related to the inputs or outputs of the activity, according to which they characterize either the return on (passive) invested resources or the appreciation of (active) funds involved in the evaluated activity (Boďa, 2015).

In addition to the above financial indicators, we focus on those indicators that we currently consider to be the drivers of performance and competitiveness, focused on innovation, research and development and human capital. For this reason, for the purposes of the article, the monitored indicators will be classified into 3 main categories:

- science and research (level and structure of R&D expenditure, number of staff in science and research)
- technologies (revenues for own services and goods, added value, gross investments)
- innovation (level of innovation in enterprises, share of expenditure on innovation, intensity of innovation)

4. Object of research

The basic object of research in this paper are companies in the creative industries. The basis of the concept of creative economy is creativity, while they are characterized by novelty or improvement, creativity is combined with originality. The set of enterprises that make up the creative economy is part of several sectors, but there is currently no clear division. In our paper, it is considered the division according to Table 1 to be the authoritative definition of enterprises in the cultural and creative industries.

Table 1: Cultural and creative industries by The Economy of Culture (2006)

	Sector	Subsector
Key arts	Visual art	Crafts, painting, sculpture, photography
	Performing artists	Theatre, dance, festivals, circus
	Cultural heritage	Museums, libraries, archives, archaeological sites, archives
Cultural industry	Film and video	
	Television and radio broadcasting	
	Video games	
	Music	Music publishing market, live music performances
	Books and print	Book publishing, magazines and press
Creative industry	Design	Fashion design, graphic design, interior design and industrial design
	Architecture	
	Advertising	
Related industries	Manufacture of PCs, MP3 players, mobile phone industries, etc.	

The basis of a creative economy are creative people as the main bearers of creativity. These people are characterized not only by their knowledge and professional skills, but also by their creativity. Creative activity takes place in a space where the concentration of creative people, cultural and creative industries manifests itself in the form of outputs, where cooperation is an important element, in the form of creative incubators, clusters and others. The main importance of the creative and cultural industries is that it is one of the promising drivers of sustainable development and economic growth. It is one of the fastest growing industries in the world (Kačírková, 2017).

5. Results and discussion

The main goal of the presented article is to evaluate the competitiveness of the cultural and creative industries in the Slovak Republic through specific indicators. For this reason, we will not focus on a deeper analysis of the position of the Slovak Republic in the Global Competitiveness Index. However, it should be noted that according to the results, the Slovak Republic achieved a total score of 66.80 points in 2019, placing it 42nd. Compared to the previous year, it deteriorated by one place in the index, which represents a decrease of 0.1 points (World Economic Forum, 2019).

The data base used to assess the competitiveness of enterprises in the creative and cultural industries comes from the Statistical Office of the Slovak Republic, which carries out surveys on a sample of enterprises operating in the country at regular two-year intervals. Using the assigned SK codes, we have selected those companies that, according to their characteristics, fall into the creative and cultural industries. Figure 2 shows the number of companies that have implemented any innovation activity during their existence and a comparison between 2008 and 2018. As we can see, the decrease in innovation activities occurs in 2010, by more than 50% compared to the previous reporting period, with a further decrease in 2016, when it is negligible, at 0.27%.

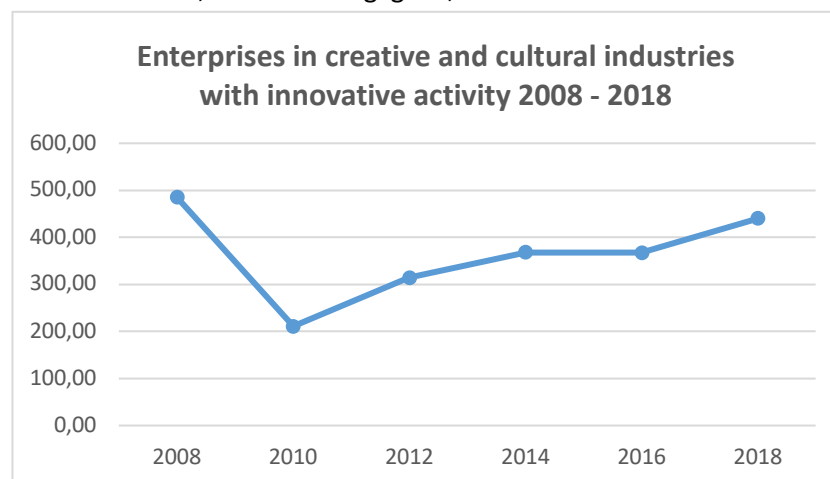


Figure 2: Enterprises in creative and cultural industries with innovative activity 2008 – 2018 based on data from Statistical Office of the Slovak republic

The second indicator examined is the level of expenditure that companies in the creative and cultural industries invest in research and development and innovation. The achieved results are shown in Figures 2 and 3. The development of expenditures on research and development has a fluctuating tendency, with the largest increase observed in 2014 and the largest decrease in the level of expenditures recorded in 2016, when companies invested approximately 33.31% less in research and development.

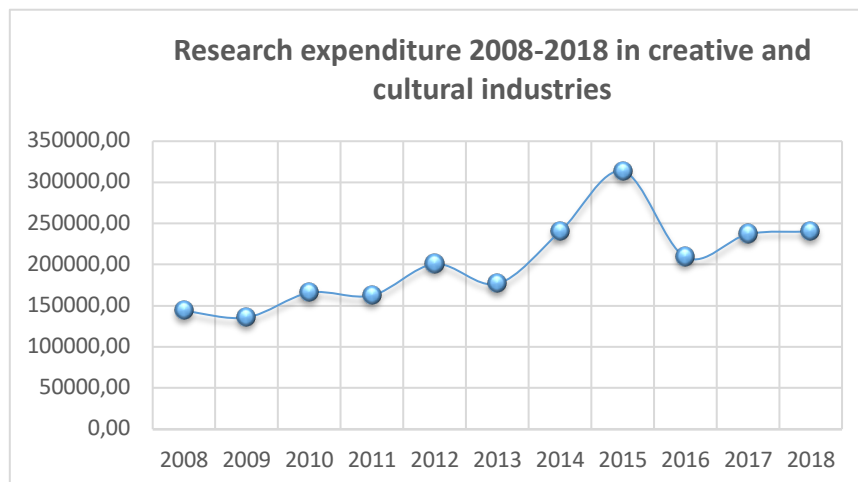


Figure 3: Research expenditure 2008 – 2018 in creative and cultural industries based on data from Statistical Office of the Slovak republic

On the other hand, the development of expenditures on innovations has only an increasing tendency and for the observed period 2008 - 2018 we do not record any declines. The most significant increase in the volume of expenditures on innovations and innovation activities is recorded in 2010 and 2018, when the increase is more than half compared to the previous monitored periods.

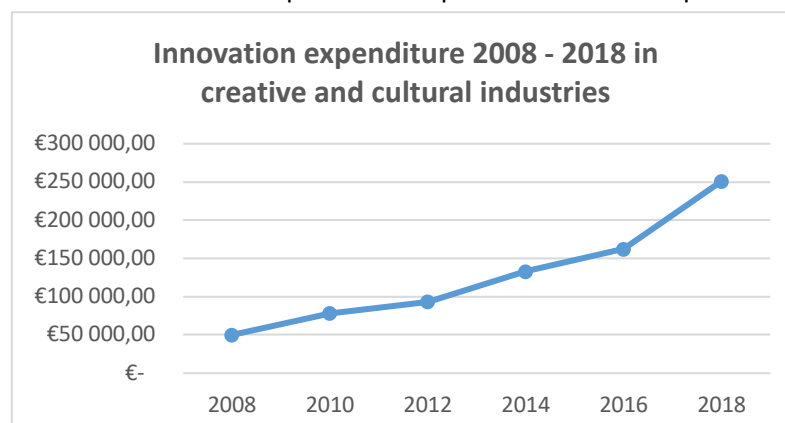


Figure 4: Innovation expenditure in creative and cultural industries activity 2008 – 2018 based on data from Statistical Office of the Slovak republic

As the main drivers of creativity and creativity are people, another important indicator that we focus on when assessing competitiveness is the number of employees working in innovatively active companies in the cultural and creative industries.

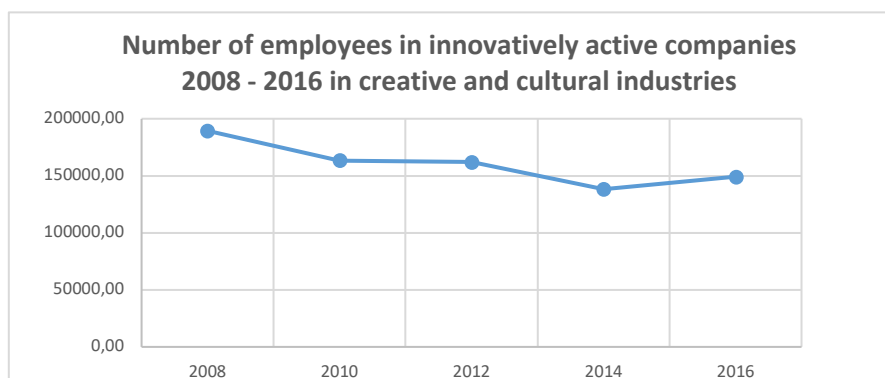


Figure 5: Number of employees in innovatively active companies 2008 – 2016 in creative and cultural industries based on data from Statistical Office of the Slovak republic

However, the data we processed and which are shown in Figure 5, were only for the period 2008 to 2016, nevertheless it can be said that after a decrease in 2010 and 2012, there was an increase in the following years at the level of 11-12%, which represents an increase in the number of creative employees by about 3,000 people.

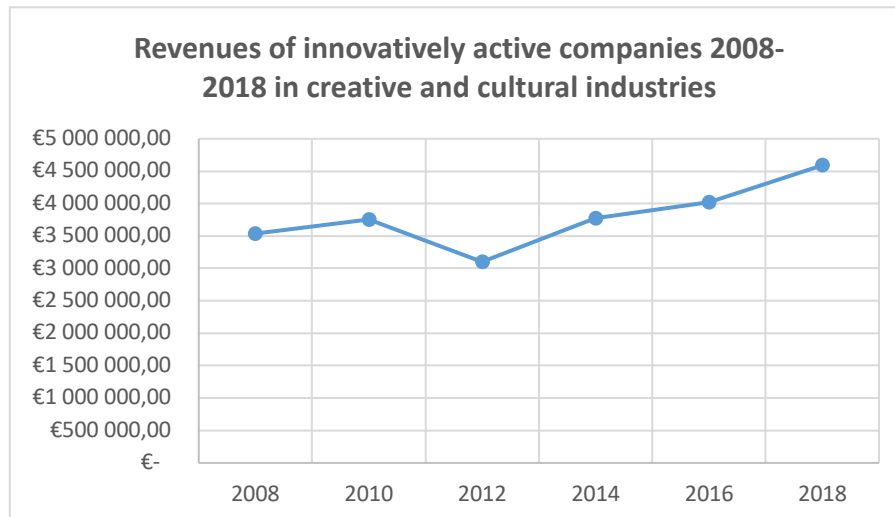


Figure 6: Revenues of innovatively active companies 2008 – 2016 in creative and cultural industries based on data from Statistical Office of the Slovak republic

The last examined indicator is the sales achieved by innovatively active companies operating in the cultural and creative industries. We record the largest drop in sales in 2012, when compared to the last observed period, 2010, sales decreased by almost 17.50%, which is approximately by more than 650 thousand euros. When comparing other periods shown in Figure 6, it is a positive development, as the value of achieved sales increased year-on-year.

6. Conclusion

In current turbulent business environment, competitiveness is considered one of the key factors in staying in the market. Competitiveness itself is not clearly defined, but we can talk about different levels of competitiveness - at the level of the company, region, country and the world. In this paper, we marginally present one of the most important global indicators focused on the competitiveness of the countries of the world - the Global Competitiveness Index, in which the Slovak Republic ranked 42nd in 2019. However, the main goal of the paper is the competitiveness of cultural and creative industries operating in the Slovak Republic, while in evaluating the competitiveness it was selected specific indicators focused on areas supporting and increasing creativity - people, innovation and research and development. In the final evaluation based on the data of the Statistical Office of the Slovak Republic, it can be stated that in each of the mentioned indicators companies achieve growth in values between 2016 and 2018, which can be assessed positively - whether increasing expenditure on research and development and innovation creativity), or the number of people working in innovatively active companies (which also increases creativity as people are the bearers of creativity and creativity).

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A review on the antecedents of consumer participation in the sharing economy and insights for future research directions

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Abstract: The sharing economy is a growing innovative business model that revolutionizes the traditional concept of "sharing" through exploiting the opportunities brought about by the advances in technology such as the existence of the Internet and Web 2.0. Its increasing popularity produces a surge of research over the last five years. Streams of studies have attempted to specifically understand consumer behaviour in the sharing economy, nevertheless, results are still contrasting. Thus, this comprehensive review outlines the findings of extant consumer behaviour studies from 143 articles published in 2017-2020 from the Scopus and Web of Science databases. It follows a systematic review process and content analysis. The categorization and analysis focuses on the research theme, theoretical approaches, methodology and key findings of the reviewed studies. Ultimately, this provides base line information for future research directions and managerial implications for academicians and business practitioners.

Keywords: sharing economy, collaborative consumption, consumer behaviour

JEL classification: D16, M30, M31

1. Introduction

New business models emerge as a result of the opportunities brought about by advances in technology. Aside from the expansion of e-commerce and m-commerce, which have caused interference in the traditional brick-and-mortar businesses, another growing business trend alludes to the "sharing economy". It is grounded on a longstanding term "sharing", which is "the act and process of distributing and/or accepting resources from a person to another" (Belk, 2007). It is facilitated by information technology in revolutionizing the traditional form of sharing. Basic to this model involves the exchange of idle resources between suppliers and users which are brought together through an electronic platform (Habibi et al., 2017; Hamari et al., 2016).

Growth forecast shows that sharing economy companies are likely to generate around 335 Billion dollars sales in 2025, up from 15 Billion dollars revenue in 2013 (PriceWaterhouseCoopers, 2015). This suggests that many sharing economy service providers in home sharing, car sharing, community financing, online music and video streaming sectors are rapidly increasing and has greater prospect of success in the near future. Hence, its popularity has caught the attention of academicians and researchers in the field of management, marketing, tourism, social science, environmental science and others. Accordingly, research in relation to sharing economy is rapidly growing. A number of studies have linked consumer behaviour and sharing economy over the past ten years.

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The initial literature search in the Scopus and Web of Science databases found extant systematic literature review (SLR) papers in the sharing economy context. Most of these reviewed papers that are published from 2010 to 2017. Further keyword search yielded a number of articles already published in 2017-2020. A total of 143 research articles published from 2017 to February of 2020 in the Scopus and Web of Science database were reviewed. Owing to the dynamic nature of consumer behaviour and technological progress, this research carried-out a systematic literature review particularly on the motivations, attitudes and factors influencing behavioural intentions and/or actual behaviour in the sharing economy. A summary and discussion of insights on these articles are presented based on thematic focus, theoretical approaches, methodology, research gaps and future research directions.

2. Methodology

This research follows a systematic review process involving three main stages: a) planning the review process, b) conducting the review and c) reporting and dissemination. An initial literature search in Scopus and Web of Science database was performed using popular terms (keywords) associated with the sharing economy as specified by Agarwal & Steinmetz (2019). The search was further refined by only selecting papers mentioning "behaviour" OR "intention" OR "attitude". After going through the titles, abstracts and availability of full-text articles, 143 papers were selected for full reading. Data such as title, author, thematic focus, publication year, journal name, theoretical foundation, key constructs, research method, key findings, research limitations and areas for future research were extracted from the selected articles. All these data were encoded in Microsoft Excel and descriptive analysis of some publication-related data were done in SPSS version 23. Furthermore, content analysis and summarization were used to determine and structure key findings.

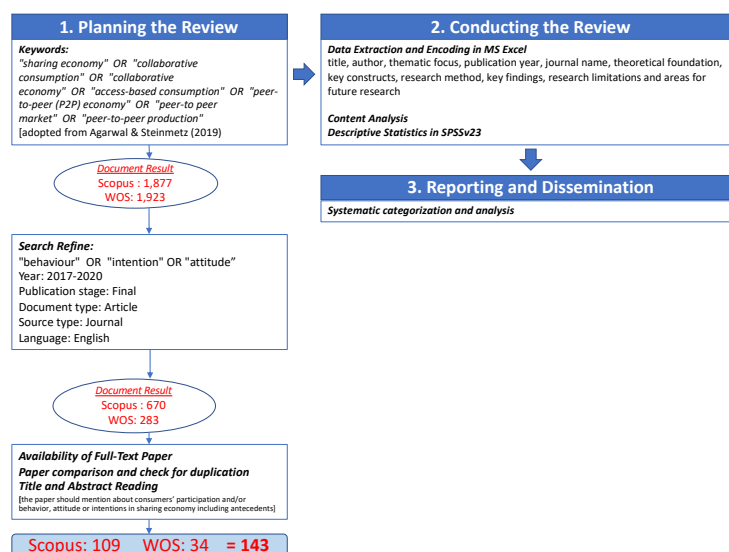


Figure 1. The systematic literature review process

3. Results and Discussion

3.1. Categorization and Analysis

Publications dealing with consumer behaviour in the sharing economy is growing rapidly. It shows that the distribution of publication selected for this review from 2017 to 2020 demonstrated an upward trend (Figure 2A). It reveals that most of the studies focused on accommodation (e.g. Airbnb) and ride sharing which happen to be the most popular and successful sharing economy sectors globally (Figure

2C). Studies on fashion, financial services and energy sharing were slowly emerging for the past 3 years. Most of these publications originated from developed countries such as in the United States of America, China, Germany, South Korea, France and Spain (Figure 2B). This is attributable to the evident and remarkable success of sharing economy operations in these countries. Moreover, a number of studies on understanding and explaining the behaviour of consumers were solely grounded on the theory of planned behaviour (TPB) and theory of reasoned action (TRA). Others integrated different theories such as the integration of the model of trust building and attachment theory (Yang et al., 2019), integration of technology acceptance model and innovation diffusion theory to examine customers perceptions on Airbnb website and their stay (Wang & Jeong, 2018) and the extension of the theory of planned behaviour with value-based personal norms in understanding collaborative consumption (Roos & Hahn, 2019). Meanwhile, other empirical studies have relied on extant literature to adopt constructs/variables that would explain consumers' behavioural outcomes. On the other hand, in terms of methodology employed, majority of the reviewed articles were using quantitative research methodology (Figure 2C). Specifically, the studies employed survey method and data were analysed through quantitative statistical approaches particularly the structural equation modelling and regression analysis.

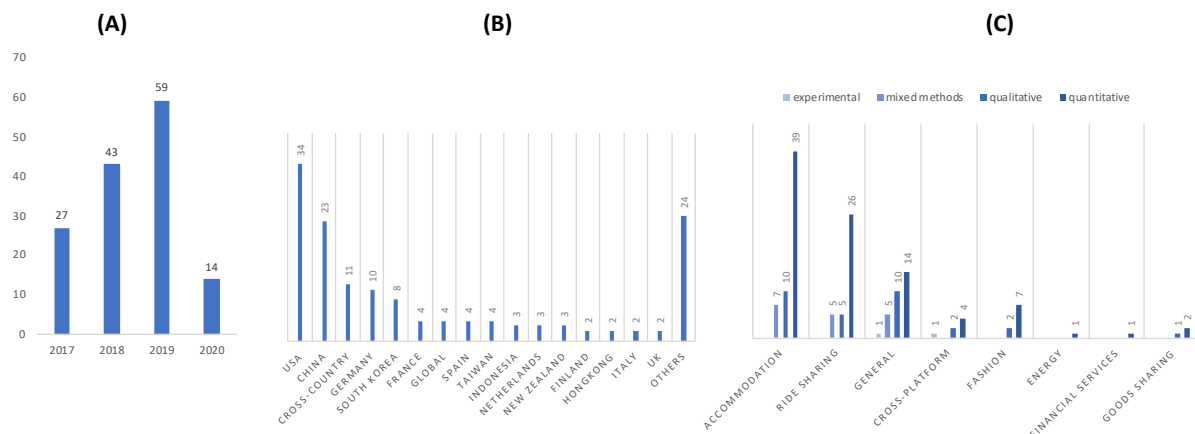


Figure 2: Distribution of publications by year (A), country of focus (B) and research design (C)

3.2. Factors influencing sharing economy participation

The literature review and analysis reveal an array of factors that are influencing attitude, behavioural intentions or actual behaviour of individuals in the sharing economy context. Primarily, studies consider economic advantages as a dominant factor which drives consumers to choose sharing economy offerings (Amirkiaee & Evangelopoulos, 2018; Godelnik, 2017; Hallem et al., 2019; Hawlitschek, Teubner, et al., 2018; Lu & Tabari, 2019; Pappas, 2017; Tran & Filimonau, 2020). However, Hamari et al. (2016) and Laurenti & Acuña (2020) pointed out opposite claims.

The desire for social interaction and social relationship between the customers and service providers has also been found to affect usage of sharing economy services (Gazzola et al., 2019; Godelnik, 2017; Hawlitschek, Notheisen, et al., 2018; Mayasari & Chrisharyanto, 2018). This is usually manifested in the accommodation sharing sector, wherein, customers' get to know, meet and interact with the accommodation provider (hosts) which deepen experiences. Meanwhile, the social influences such as the pressure put forth by peers drive consumers to engage in the sharing economy (Becker-Leifhold, 2018; Kim et al., 2018; Roos & Hahn, 2019; So et al., 2018).

Others also claim that enjoyment, pleasure and fun derived from online sharing activities are seen to encourage usage intentions (Hwang & Griffiths, 2017; Xun Xu, 2020; Yan et al., 2019; Ye et al., 2019). Furthermore, as the sharing economy is rooted in a digital platform, several studies have investigated website or application features as drivers of customers behaviour. The overall website quality and the attributes of privacy and security of information, website function, design, usability and responsiveness are also found to be critical in building trust and encourage usage among consumers (Agag & Eid, 2019; Mao et al., 2020; Wang & Jeong, 2018; Xiaowei Xu & Schrier, 2019).

On the other hand, extant studies have identified deterring factors in sharing economy participation. One major barrier is the consumers' perception of risk. In the digital age, risks associated with online transactions discourage consumers in e-commerce or any other internet-based markets (Ert et al., 2016). Huang et al. (2020) and Wang et al. (2019) indicate that personal, privacy or security threats experienced by users highly affect their trust and decisions to use peer-to-peer accommodation services. Likewise, Mao et al. (2020) and Shao & Yin (2019) point out that this risk perception is crucial in shaping consumers' trust and is driving affirmative behavioural outcomes. van der Crujsen et al. (2019) emphasize the effect of trust in other people towards the use of peer platform markets while, trust-in-platform also poses a strong impact on behavioural intentions (Lee et al., 2018; Mittendorf, 2018; Shao & Yin, 2019). The weaker the trust, the stronger it is to impede peer-to-peer sharing usage intentions.

Concurrently, the increasing popularity of the sharing economy phenomenon has been associated to its contribution to environmental sustainability. The analysis reveals that sustainability-related motivations such as waste reduction, efficient use of resources and environmental impact reduction stimulate sharing economy participation (Gazzola et al., 2019; Hawlitschek, Teubner, et al., 2018; Lang & Joyner Armstrong, 2018; Lee et al., 2020). However, the effects are fairly conclusive as some studies are suggesting that environmental consciousness/concerns had no effect towards sharing economy participation among consumers. Frenken & Schor (2017) argues that sharing economy participation may induce more consumption due to cheaper and efficient services, thus, highlighting the possible indirect rebound effects.

3.3. Future Research Directions

Based on the results of this review, the following research directions are proposed.

- a. *Context and cultural considerations.* Several authors cautioned on generalizing their findings. Thus, future studies can include other nationalities from other countries to account cultural differences. Moreover, in light of the increasing popularity of this new economic model in the emerging markets, studies on this milieu will provide wider and enriching insights on sharing economy behaviour in other parts of the globe.
- b. *Sharing perspectives.* The sharing economy follows an innovative business model where interaction between the customer, service provider and platform provider are involved. As most extant studies focused on the demand side of the sharing economy, further research on the suppliers and platform provider perspective is deemed necessary.
- c. *Other forms of sharing.* Accommodation and ride sharing sectors of the sharing economy are highly studied in the literature. However, there are other existing forms of sharing services like business, financial and household services. Interestingly, studies on these services is another avenue for future studies.

- d. *Research approach and robustness of findings.* Extant publications employed quantitative research approach particularly on the use of self-reported questionnaire surveys. It is suggested to employ experimental and/or mixed-method research design to enhance robustness of investigation and results.
- e. *Theoretical foundation and model building.* As most sharing economy related studies utilized the theory of planned behaviour (TPB) and theory of reasoned action (TRA), the use of other consumer behaviour theories and/or integrate theories is suggested. Moreover, the incorporation of other constructs as independent, mediating or moderating variables in empirical models is another research opportunity.
- f. *Behavioural changes over time.* As consumer behaviour is dynamic in nature, thus, longitudinal studies on how sharing economy behaviour changes over time would be beneficial.
- g. *Quantification of environmental impacts.* Previous studies have associated sharing economy to environmental sustainability as it is thought to reduce hyper-consumption, overproduction, greenhouse gas emissions, pollution and other climate change related issues. However, only a few studies have quantified its environmental impacts. Thus, future research could focus on this area.
- h. *Policy-related influences.* Governments express different stance on the operation of sharing economy sectors. Thus, understanding how policy-related factors influence consumer behaviour in the sharing economy would enable the government to develop effective regulative measures.

4. Conclusion

The review highlights the current state of consumer behaviour research in the sharing economy on basis of related articles published in Scopus and Web of Science database from 2017 to 2020. The analysis underlines the key influencing factors on consumers participation in the sharing economy. Extant studies have shown diverse findings, thus, presenting an avenue for researchers to carry out further investigation in a different perspective (e.g. country of focus, type of sharing platform, user-provider perspective) and account cultural influences as well. Moreover, the use of other consumer behaviour theories, quantification of environmental impacts and policy-related influences are also deemed necessary. Meanwhile, platform and service providers can take into consideration the results of extant empirical studies to acquire insights on the behaviour of consumers and design appropriate and effective marketing strategies.

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Family conflict and non-family managers' turnover in family firms: A conceptual framework

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Abstract: Based on a review of the family business literature, this paper presents a conceptual framework for the main antecedents of non-family managers' (NFM) turnover in family firms related to family conflict. We hypothesize a structural model consisting of the importance of socioemotional wealth (SEW), non-family team size, family conflict, non-family managers' turnover, and firm performance. Specifically, we assume that SEW importance will lead to a lower professionalization of family firms but also to lower family conflict. NFMs may play a mediating role in family conflict. By employing NFMs, family firms will also benefit from advanced risk-taking and bridging social capital of outsiders. Should the family conflict become too severe, however, NFMs may voluntarily leave the firm and firm performance will suffer. Moreover, NFMs may be dismissed under bad performance. In the paper, we also propose how to measure the individual variables.

Keywords: Management turnover, non-family managers, family conflict, family business

JEL classification: M10, L22

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1. Introduction

The literature on the role of non-family managers in family firms is not much developed (Hiebl & Li, 2020). Many family firms are reluctant to hire non-family managers (Chua et al., 2003) because family members are perceived as more credible and having valuable information about business processes. On the other hand, family members are not the only people in the family business, and growing family firms, especially those which need to internationalise or foster innovation, require managerial skills from the external labour market. The tensions about who should occupy top management positions is one of the possible sources of conflicts among family members. However, in general, family firms as such represent fertile fields for various conflicts among family members (Harvey & Evans, 1994). The topic of conflicts in family firms is widely discussed, yet not much empirically investigated in the family business literature (Kubíček & Machek, 2020). The issues of non-family management and family conflict are connected to each other. Escalated family conflicts can make non-family managers leave the firm (Hiebl, 2013), but non-family managers are also often said to act as mediators of family conflicts (Ibrahim et al., 2001). Thus, this paper aims to bridge the two topics and address the issue of the role of non-family managers in family conflict. Specifically, we theoretically evaluate the interplay of factors affecting non-family managers' turnover in family firms. In our theoretical model, we conceptualise family conflict using the relationship conflict (Jehn, 1995). Thus, the conflict we address

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is of detrimental nature. In the family business literature, this type of conflict is often referred to as “dysfunctional conflict” (see e.g. Eddleston & Kellermanns, 2007).

The article is divided into several subsections. First, we propose a conceptual model along with the theoretical justification of our propositions, i.e. the assumed relationships between the model variables. Second, we consider the suggested research design and measurement issues. Finally, we provide concluding remarks.

2. Model development

2.1. Consequences of socioemotional wealth importance

Socioemotional wealth (SEW) refers to non-economic utility derived by family members from running the family firm (Gómez-Mejía et al., 2007). According to Berrone et al. (2012), SEW is composed of five dimensions: family control, identification of family members with the firm, binding social ties, emotional attachment of family members, and renewal of family bonds to the firm through dynastic succession. Generally, family firms can be assumed to have dense social ties characterized by trust, feelings of closeness and solidarity (Cruz et al., 2010). The resources embedded in dense networks and strong ties are known as bonding social capital (Sobel, 2002), which has the structural (density), cognitive (shared values) and relational (trust) dimensions (Nahapiet & Ghoshal, 1998). Cohesive social networks, characterized by higher bonding social capital, are expected to experience less interpersonal conflicts (Cao et al., 2013). It can hence be assumed that family firms with strong preference for SEW will display greater levels of quality of relationships, family harmony and shared values, which are known to inhibit conflicts among family members (Kubíček & Machek, 2020).

Proposition 1: Importance of socioemotional wealth is negatively related to family conflict in family firms.

Strong preference for socioemotional has other behavioural consequences. Specifically, the intention to preserve family control over the firm and the intention for transgenerational succession make family businesses reluctant to hire outside managers (Chua et al., 2003). For instance, Lutz and Schraml (2011) show that family-specific goal of independence and control is negatively associated with the employment of a non-family financial manager. This way, family firms can also avoid the conflict of interest which may threaten the satisfaction of family owners’ visions and goals (Chua et al., 2003).

Proposition 2: Importance of socioemotional wealth is negatively related to non-family team size in family firms.

2.2. Consequences of family conflict

Conflicts among family members are often transferred to non-family managers (Hiebl & Li, 2020). However, non-family managers do not want to find themselves in the middle of a family conflict (Klein & Bell, 2007). Conflicts between family members are often accompanied by emotions, which, through emotional contagion, may also harm interpersonal relationships with non-family managers. When there are multiple conflicting family factions in the firm, non-family managers may also receive conflicting instructions (Hiebl, 2013). As a result, non-family managers may voluntarily leave the firm.

Proposition 3: Family conflict is positively related to non-family managers’ turnover in family firms.

Family businesses represent a fertile environment for relationship conflicts, which may be very costly. In the family business literature, these conflicts are generally perceived as a negative phenomenon (Kubíček & Machek, 2020), and consequently, many authors find negative performance effects of family conflicts on firm performance (Eddleston & Kellermanns, 2007; Nosé et al., 2017). The main reasons include the reduction of mutual understanding, increased animosity and hostile behaviours (Eddleston & Kellermanns, 2007). During dysfunctional conflicts, family members will focus on each other rather than on the accomplishment of goals (Nosé et al., 2017).

Proposition 4: Family conflict is negatively related to firm performance in family firms.

2.3. Consequences of non-family team size

Although family firms are often reluctant to hire outsiders in management positions (Chua et al., 2003), some family firms proceed to professionalization, which also includes the employment of non-family managers. Although this process may dilute family control, non-family managers may bring considerable benefits in the family business. First, through additional (external) non-family social capital, family firms may improve the acquisition and assimilation of knowledge (Sanchez-Famoso et al., 2019). The employment of non-family managers may enhance task-related conflicts (Binacci et al., 2016), which may improve the range of options for CEOs, thus fostering decision-making processes. Finally, while the employment of non-family managers may increase managerial short-termism, it can also be assumed to increase the willingness to take risks and support innovativeness.

Proposition 5: Non-family team size is positively related to performance in family firms.

The size of the non-family team plays an important role in conflicts between family members. From the literature review, there is no clear direction if NFT size increase, decrease or have no effect on family conflict. Family conflict may permeate the whole firm and use of third party (i.e. coach) can be seen as a solution to these conflicts (Kelleci et al., 2018). Non-family managers may diffuse tensions between family members and be a stabilizing factor as they are able to bring objectivity to the family issues (Ibrahim et al., 2001) and are not emotionally tied to the business. It is assumed non-family managers are mediators in resolving conflicts among family members (Hiebl & Li, 2020; Klein & Bell, 2007; Miller, Minichilli & Corbetta, 2013) and may mitigate conflicts during family business succession (Brockhaus, 2004). We suggest that with increasing percentage of non-family managers, family conflict will be reduced as very presence of non-family managers seems to be a solution to conflicts.

Proposition 6: Non-family team size is negatively related to family conflict in family firms.

2.4. Consequences of performance

The literature frequently mentions CEO turnover sensitivity, which refers to the relationship between CEO and poor firm performance. Li (2018) suggests that firm performance may lead to CEO's turnover. The same author pointed out that non-family managers in family firms may follow their own interests, while not being supported by family members and having fewer information to make proper decisions. Under poor performance, whether or not it is the fault of the non-family managers, family owners may decide to dismiss non-family managers.

Proposition 7: Firm performance is negatively related to non-family managers' turnover in family firms.

The full theoretical model is graphically displayed in Figure 1.

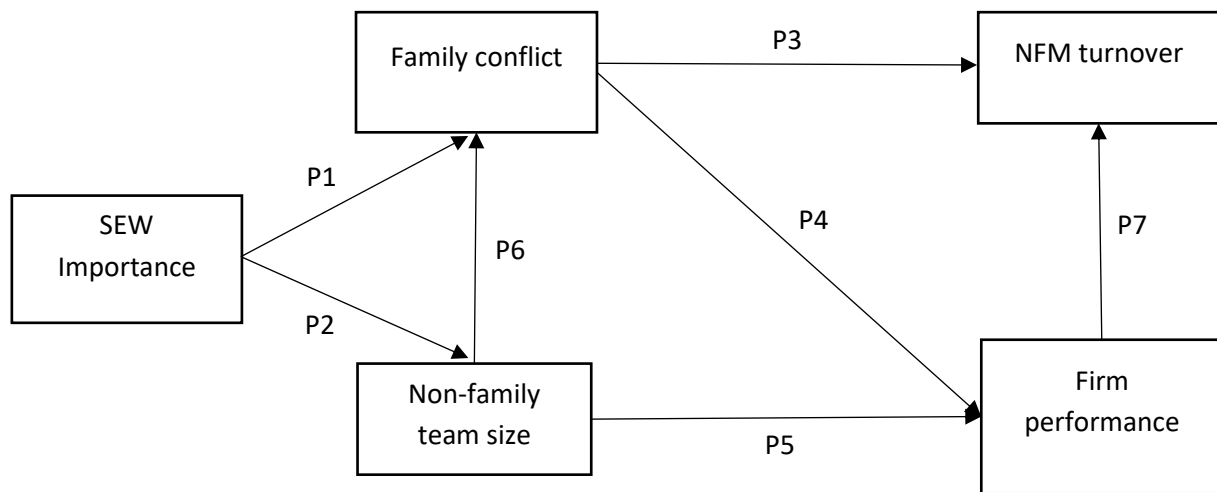


Figure 1: Proposed model

3. Model testing

The measurement of conflicts is very challenging because the topic is highly sensitive and conflicts may be perceived asymmetrically (Kubíček & Machek, 2020). Thus, for data collection, there are two major suggestions that we propose. First, researchers should survey multiple respondents per one firm to reduce single-respondent bias. This approach also allows for resolving the issue of conflict asymmetry. The responses on conflicts may be averaged or treated as a higher-level construct (i.e. discrepancy of conflict perception). Second, the survey requires guaranteeing the anonymity of the survey. By ensuring respondents that the data are confidential and that it will not be possible to track which company and people answered, the response bias may be reduced. A letter from the ethical committee, if applicable, may help increase the credibility of the research design.

Figure 1 represent a structural model which may be analysed in a suitable structural equation modelling tool, e.g. IBM SPSS Amos or Lavaan in R. The model is composed of several latent constructs. For measurement models, we suggest using the following scales, which are validated by the existing family business research:

- *Socioemotional wealth importance*: While there is no consensus on how to measure socioemotional wealth as such, Debicki et al. (2016) developed a scale for measuring the *importance* of socioemotional wealth (SEWi scale). The scale has nine items and three components: family prominence, family continuity, and family enrichment.
- *Family conflict*: For measuring relationship conflict, we suggest using the original Jehn's (1995) tripartite classification of conflict, adapted to the family business setting by Eddleston et al. (2008) in the form of a three-item scale.
- *Non-family team size*: Following Sonfield and Lussier (2009), this variable may be measured using the proportion of non-family managers. Thus, unlike the previous two variables, this is not a latent construct, but a single item.

- *Non-family managers' turnover*: We suggest employing a single item reflecting the ratio of how many non-family managers left the firm in the past twelve months, over the number of non-family managers.
- *Firm performance*: The management literature offers countless measures of firm performance (Jarvis et al. 2000), which may be approach in a subjective or objective manner. An example may be the paper of Kraus et al. (2012) who measured on a five-point Likert scale the firm's financial performance on gross margin, profitability, and cash flow. Non-family managers, who should belong to the key informants in the survey, should be competent to provide an unbiased assessment of performance.

4. Conclusion

In this conceptual paper, we propose a theoretical model which contains the assumed antecedents of non-family managers' turnover and the expected interplay between these variables.

We expect that many family firms are not willing to employ non-family employees because of their commitment to preserve their socioemotional wealth (SEW). With the increasing importance of SEW, family members will also have stronger bonding social capital which will reduce family conflict. Conflicts among family members may be transferred to non-family managers who may eventually decide to leave the firm. On the other hand, non-family members may mediate family conflict. At the same time, conflicts among family members are very costly and may harm firm performance. Finally, while we expect that non-family managers will contribute to family firm performance, they may be dismissed by family owners if the firm performance is poor.

Our work presents several contributions to the family business literature. First, the question of how NFM turnover is related to family conflict represents an underresearched area. The proposed model contributes to the literature by theoretically developing the reasons why and how non-family managers fluctuate in family firms. Second, our paper has several possible managerial implications. It may help family owners realize how to deal with the tension between socioemotional wealth importance and professionalization. Family firms should know that non-family managers may help reduce family conflict and contribute to the family business performance. By carefully evaluating their contributions, both in terms of economic performance and fulfilment of family goals, and by avoiding the spill-over of family conflicts to non-family members, the chance of family firm's prosperity and a successful family business succession may be increased. Non-family managers, on the other hand, should be aware of the specifics of family firms that we highlight in this paper.

This paper has several limitations. First, we analyse only the dysfunctional type of conflict, i.e. relationship conflict among family members. However, some conflicts, such as the task or process conflict (Jehn, 1995) may be beneficial for the firm, because they allow for exchange of opinions and a better understanding of the task. Second, we may have omitted other factors (such as family firm heterogeneity or cultural aspects) which may affect the interplay among our model variables.

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Relevance of financial literacy education: Perception of non-business students

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Abstract: Knowing how to manage and grow personal finances and taxes is the key to succeed, both in business and in personal life. The entrepreneurial skills are identified as an EU priority because of their impact on people's economic, personal and social life, regardless of whether a person sees their future in their own business or not. The goal of the research is twofold: (1) to investigate if there is a relationship between student's characteristics and perception of relevance for financial literacy education, and (2) to investigate if there is a relationship between student's characteristics and perception of using actively financial knowledge in business and private life. In order to investigate research goals, the empirical survey has been conducted on the sample of non-business students in Croatia. The research results showed that students are aware of the perceived need to be educated in finances as well the need to use this knowledge in everyday business and personal life.

Keywords: financial literacy, tax, accounting, controllership

JEL classification: A2 Economic Education and Teaching of Economics

1. Introduction

Managing business is impossible without understanding the basic categories of financial statements, taxation or controlling. Financial literacy can be defined "as specialized kind of consumer expertise pertaining to how one manages one's financial affairs successfully" (Alba and Hutchinson 1987 in Fernandes et al. 2014, p. 4) or "a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial well-being" (OECD, 2017, p.13). The area of accounting, finance, taxation and controlling has been elaborated and described through numerous scientific books and scientific research that broadly addresses these issues. All these areas are a part of financial literacy that is necessary to be understandable for all participants in the labor market and those who are not yet participants in the labor market but will be included through the education system. There are not many researches that deals with the importance of financial literacy (accounting, finance, taxing and controllership), and their involvement in the education system to ensure the appropriate level of financial literacy. Education in financial literacy is crucial to every individual, no matter what educational structure he is coming from. Financial literacy is related to knowledge in the field of accounting, finance, taxation and controllership, which are key to successful management. Research conducted in the Republic of Croatia by Anđelinović et al. (2016) examines the level of financial literacy of students at the University of Zagreb. The results of the research indicate a great heterogeneity in the level of financial literacy among students of different study areas, while the conclusion of research is that formal financial education significantly improves the level of student financial literacy. Balen (2017) explores financial literacy in the Republic of Croatia, where the author expresses opinions and findings, as well as the need to advocate financial literacy and promote financial education. One of the significant, if not the most important, surveys in the

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Republic of Croatia was carried out by the Croatian National Bank and the Croatian Financial Services Supervisory Agency in cooperation with the Ministry of Finance of the Republic of Croatia in 2015. The survey was conducted on a sample of 1049 respondents at the age of 17-78 and shows that the lowest level of financial literacy have citizens under the age of 19 and the highest level have highly educated citizens (MINGO, 2016). Significant changes taking place in the market and all the negative consequences that are the result of economic crises reveal an increasing need for financial education and financial literacy. Numerous world authors and numerous global researches have recently been involved in researching this area that is becoming increasingly important for the development of society (Lusardi, 2009, Lusardi and Mitchell, 2014, Atkinson and Messy, 2012, OECD, 2017).

2. Methodology

In this section demographic characteristic of students will be represented and data collection will be defined. The research was conducted on the students of University North who are characterised as non-business students since they attend technical or biomedicine studies and not business studies. Table 1 represents departments on the University North that were included in the research. Those students did not have former education in financial education specifically in accounting, taxing or controllership during their educations. From total number of students 14,7% answered survey questionnaire (Table 1). In the survey participated 309 students from four departments held at University North. The survey was manually distributed among students and the results were prepared in excel for analysing in SPSS 24 program.

Table 1: Departments on the University North

DEPARTMENT	Total No. of students	No. of students participated in the research	Percentage
ELECTRICAL ENGINEERING	231	39	16,9
MULTIMEDIA	309	40	12,9
MECHANICAL ENGINEERING	333	75	22,5
CIVIL ENGINEERING	284	121	42,6
NURSING	625	34	5,4
JOURNALISAM	165		0,0
MEDIA DESIGN	131		0,0
PACKAGING	20		0,0
Total	2098	309	14,7

Demographic characteristic of students are shown in Table 2 and include: gender, employment, working experience, student status, department and plans for future employment. According to the gender there are 36,6% female students and 63,4% of male students. Most of students are unemployed (79%) while 21% of students is working where 65% has regular student status and 35% of students are working students. Further analysis showed that more than half of the students has no previous working experience, less than 1 year has 22,3%, till 5 years of experience has 16,8% of students, between 5-10 years has 0,6% of students and more than 10 years of working experience has 1,3% of students.

Table 2: Demographic characteristic of students

Characteristics	# of respondents	% of respondents
Gender		
Female	113	36,6
Male	196	63,4
Employment		
Employed	65	21,0
Unemployed	244	79,0
Working experience		
No working experience	182	58,9
Less than 1 year	69	22,3
1 to 5 years	52	16,8
6 to 10 years	2	0,6
More than 10 years	4	1,3
Student status		
Regular	201	65,0
Working	108	35,0
Department		
Electrical engineering	39	12,6
Multimedia	40	12,9
Mechanical engineering	75	24,3
Civil engineering	121	39,2
Nursing	34	11,0
Plans for employment		
Administration jobs	103	33,3
Managerial jobs	22	7,1
Self-employed	89	28,8
Free lancer	42	13,6
Other	53	17,2

Table 3 presents descriptive statistics for perceived need for financial literacy in education and using active knowledge in everyday business and private life. Average grades for variables regarding perceived need of education are above 2,6. The highest average grade is for accounting 2,80. Average grade for controllership is 2,73 and for taxing 2,69. Further, the highest average grade in the perceived need to use active knowledge in everyday business and private life is also for accounting (3,24). Average grade for taxing is 3,16 and for controllership 2,96.

Table 3: The need for financial literacy (accounting, taxing and controllership) in education and in future business and personal life

	N	Minimum	Maximum	Mean	Std. Dev.
Education					
Accounting	309	1	5	2,80	1,175
Taxing	309	1	5	2,69	1,082
Controllership	309	1	5	2,73	1,143

Active knowledge in business and private life					
Accounting	309	1	5	3,24	1,118
Taxing	309	1	5	3,16	1,083
Controllershship	309	1	5	2,96	1,094

3. Results

The goal of the paper was to (1) to investigate if there is a relationship between student's characteristics and perception of relevance of accounting, taxing and controllershship education, and (2) to investigate if there is a relationship between student's characteristics and perception of active knowledge in business and private life of accounting, taxing and controllershship. The results of a research are shown in tables 4 to table 7 and will be further explained.

Table 4: The need for financial literacy (accounting, taxing and controllershship) in education and in future business and personal life according to gender

	Gender	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
Education							
Accounting	Female	113	2,89	1,055	1,082	264,540	0,280
	Male	196	2,75	1,238			
Taxing	Female	113	2,78	0,923	1,216	277,276	0,225
	Male	196	2,63	1,163			
Controllershship	Female	113	2,76	1,002	0,364	271,243	0,716
	Male	196	2,71	1,219			
Active knowledge in business and private life							
Accounting	Female	113	3,27	1,054	0,377	307	0,706
	Male	196	3,22	1,155			
Taxing	Female	113	3,35	1,017	2,427	307	0,016**
	Male	196	3,05	1,106			
Controllershship	Female	113	3,07	1,083	1,300	307	0,195
	Male	196	2,90	1,098			

Note: ** Statistically significant at 5%

Mean grade in Table 4 is higher for female respondents representing that more female students perceive the importance of having accounting, taxing and controllershship education during their study. The mean is also greater for female respondents regarding the need for using acquired knowledge in business and private life, where specially this is statistically significant at 5% between female and male group for using taxing knowledge ($t=2,427$, Sig. (2-tailed) $< 0,016$).

Table 5: The need for financial literacy (accounting, taxing and controllershship) in education and in future business and personal life according to employment

	Employment	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
Education							
Accounting	Employed	65	3,03	1,172	1,769	307	0,078*
	Unemployed	244	2,74	1,17			
Taxing	Employed	65	2,63	1,069	-0,463	307	0,644
	Unemployed	244	2,70	1,087			

Controllershship	Employed	65	2,88	1,166	1,155	307	0,249
	Unemployed	244	2,69	1,137			
Active knowledge in business and private life							
Accounting	Employed	65	3,20	1,093	-0,346	307	0,729
	Unemployed	244	3,25	1,126			
Taxing	Employed	65	3,17	1,069	0,089	307	0,929
	Unemployed	244	3,16	1,089			
Controllershship	Employed	65	2,95	1,096	-0,087	307	0,930
	Unemployed	244	2,97	1,096			

Note: ** Statistically significant at 10%

Mean is high for employed group in accounting (mean=3,03) and controllershship education (mean=2,88) while for taxing education mean is low for employed group (mean=2,63). The mean is high for unemployed group in using active accounting knowledge in business and private life (mean=3,25). P-value test (Sig. (2-tailed) < 0,078) revealed that the difference between two groups of employed and unemployed students regarding the need for education is statistically significant at 10% for education in accounting. For taxing and controllershship education there is no statistically significant difference as well as for using active accounting, taxing and controllershship knowledge in future business and private life.

Table 6: The need for financial literacy (accounting, taxing and controllershship) in education and in future business and personal life according to working experience

	Working Experience	N	Mean	Std. Dev.	t	df	Sig. (2-tailed)
Education							
Accounting	More than 1 year	127	2,96	1,151	1,985	307	0,048
	Less than 1 year	182	2,69	1,182			
Taxing	More than 1 year	127	2,72	1,029	0,52	307	0,604
	Less than 1 year	182	2,66	1,12			
Controllershship	More than 1 year	127	2,81	1,089	1,023	307	0,307
	Less than 1 year	182	2,68	1,18			
Active knowledge in business and private life							
Accounting	More than 1 year	127	3,26	1,071	0,225	307	0,822
	Less than 1 year	182	3,23	1,152			
Taxing	More than 1 year	127	3,15	1,062	-0,121	307	0,903
	Less than 1 year	182	3,16	1,1			
Controllershship	More than 1 year	127	2,98	1,079	-0,051	307	0,960
	Less than 1 year	182	2,97	1,107			

Table 6 shows perceived need for education in accounting, taxing and controllershship education based on respondents working experience as well as a perceived need for using active knowledge in business and private life. The highest mean grades are for variables regarding need for education in accounting (mean=2,96), taxing (mean=2,72) and controllershship (mean=2,81) for students who have more than 1 year of experience. Also high means for need to use active accounting knowledge (mean=3,26) and active controllershship knowledge (mean=2,98) represent respondents who have more than 1 year of

experience. Mean (3,15) for using active taxing knowledge is high in group where respondents have less than 1 year of experience.

Table 7: The need for financial literacy (accounting, taxing and controllership) in education and in future business and personal life according to University department

	Department	N	Mean	Std. Dev.	df	F	Sig.
Education							
Accounting	Electrical engineering	39	2,85	1,226	307	3,639	0,006***
	Multimedia	40	2,63	1,192			
	Mechanical engineering	75	2,55	1,2			
	Civil engineering	121	3,09	1,088			
	Nursing	34	2,50	1,161			
	Total	309	2,80	1,175			
Taxing	Electrical engineering	39	2,85	1,136	307	2,87	0,023**
	Multimedia	40	2,53	0,905			
	Mechanical engineering	75	2,49	1,155			
	Civil engineering	121	2,89	1,055			
	Nursing	34	2,38	1,015			
	Total	309	2,69	1,082			
Controllership	Electrical engineering	39	2,95	1,099	308	1,215	0,304
	Multimedia	40	2,65	0,975			
	Mechanical engineering	75	2,63	1,194			
	Civil engineering	121	2,83	1,145			
	Nursing	34	2,47	1,237			
	Total	309	2,73	1,143			
Active knowledge in business and private life							
Accounting	Electrical engineering	39	3,26	1,141	308	1,117	0,348
	Multimedia	40	3,18	1,01			
	Mechanical engineering	75	3,04	1,299			
	Civil engineering	121	3,38	0,977			
	Nursing	34	3,26	1,238			
	Total	309	3,24	1,118			
Taxing	Electrical engineering	39	3,10	1,095	308	1,652	0,161
	Multimedia	40	3,18	1,035			
	Mechanical engineering	75	2,93	1,223			
	Civil engineering	121	3,33	0,986			
	Nursing	34	3,09	1,083			
	Total	309	3,16	1,083			
Controllership	Electrical engineering	39	3,05	0,972	307	0,606	0,659
	Multimedia	40	2,88	1,017			
	Mechanical engineering	75	2,83	1,245			
	Civil engineering	121	3,05	1,023			
	Nursing	34	2,97	1,218			
	Total	309	2,96	1,094			

Note: *** Statistically significant at 1%; ** 5%

The perceived need for education in accounting among respondents show high means for two departments (Table 7): electrical engineering (mean=2,85) and civil engineering (mean=3,09). Also the mean is high for those two departments regarding education in taxing (electrical engineering, mean=2,85, civil engineering, mean=2,89) and controllership (electrical engineering, mean=2,95, civil engineering, mean=2,83). There is statistically significant difference at 1% for accounting education (sig.<0,006) and taxing education (sig.<0,023) at the department of electrical engineering. For the perceived use of accounting, taxing and controllership knowledge in everyday business and private life there is no statistically significant.

4. Conclusion

Our research goal was to investigate students' opinion about the relevance and the need for financial education during their study which they would or would not use also in business and private life. Research results regarding respondent's attitude towards the need for having accounting, taxing and controllership in their education show that female students are more aware of the importance of acquiring knowledge in finances than male respondents. Overall, students are aware of the significance to be educated in financial area, especially accounting and the importance of using that knowledge and skills in everyday business and private life. However, curriculum in tertiary education still does not perceive the importance of including financial subjects in student education, especially for non-business students. Those young students will become directors and heads of department in organizations in the future without actual financial skills that are needed at least for managing budget's in charge if not more complex financial responsibilities. Financial literacy of Croatian citizens is pretty low due many factors but mainly due incompatible curriculum. Croatian educational system has to put much efforts in increasing financial literacy of nation. Financial literacy education has start from early age in kindergarten and then gradually be upgrade to tertiary educational levels. The fact is that higher financial literacy of citizens brings to system stability and social habits are created based on it and may influence many variables in economy.

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Best practices in the field of taxation

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Abstract: The issue of more efficient tax collection is increasingly relevant today. Even in the context of recurring crises. However, the sensitivity of tax revenues to macroeconomic fluctuations is only one of the variables that affect the actual choice. The focus on public administration reforms of the countries we have witnessed in recent years is the growing trend towards streamlining the procedures for managing the risks associated with "fair" tax collection. However, both formal and informal disparities in tax-legal relations have a common denominator - the human being. In this context, efforts are being made across countries to measure the "quality" of each individual taxpayer and to identify those who do not meet certain requirements. The information that tax administrations have about taxpayers and technological possibilities is therefore a good precondition for a paradigm shift, through voluntary tax compliance. The article points to examples of good practice in the field of tax collection.

Keywords: best practice, tax gap, benchmarking, technology

JEL classification: E7, H26

1. Introduction

Taxes are generally considered as an act of solidarity, and the question of fair taxation is a very sensitive concern. If it is justice in their choice or justice in redistribution. Analyses of historical data and trending suggest that while in some countries, despite the high tax burden, taxpayers are disciplined for rewarding better public services and a happier life (eg Sweden), in some countries cultural stereotypes result in significant tax evasion (Greece, Italy, etc.). (Steinmo, 2018) This is one of the reasons why states are increasingly relying on both technical and non-technical measures to improve tax collection. They focus not only on the tax entity itself, but also its economic environment, region and look for connections in data and patterns of behavior. This is according to identify and eliminate the risks compounded with the collection of taxes. Methodologically, the article is based on the analysis of the searched historical context and technical measures of states that use a comprehensive approach of "good tax practice".

2. Proactivity in relation to risk management in tax collection

In recent years, there has been a significant shift towards electronic tax administration. Online advice and electronic communication between taxpayers and the tax administrator, electronic tax returns and online tax payments are now common standards. Together with technical tools such as integrated accounting systems, or electronic cash registers, and in combination with other publicly available sources, offer analytical departments a set of information on taxpayers' behavior. (Sabayová & Cipro, 2017)

An inseparable part of a modern approach to tax administration are analytical tools and technical solutions to eliminate errors, prevent tax evasion and tax fraud, as well as efforts to

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ensure that taxpayers comply with their tax obligations in accordance with applicable legislation and voluntarily. States' approaches differ. Measurements at the level of the whole tax system, which reflect its performance (eg the overall tax gap), complement some countries by identifying (in) compliance with the expected and actually collected tax for a specific tax period (tax gap related to a specific tax), or even (not) compliance of the behavior of taxpayers with the so-called "Good practice" (reliability indices or benchmarking).

2.1. Estimates of taxgaps

The tax clearance is created by looking for gaps in the laws not intended by the legislator and using them to minimize the tax, tax savings by choosing the most convenient alternatives offered by law, or illegal actions in an effort to obtain an unjustified financial benefit (Šíroký, 2008).

The size of the tax clearance (the difference between what the state actually collects in taxes and what it would choose if every taxpayer paid taxes in absolute accordance with the law, is influenced by taxpayers' internal motivations and attitudes, global influences, legislation, ordinary human errors. At the same time, to a certain extent, it is a measure of something that is not visible from the outside (missing source information, shadow economy) and the validity of the measurements is questioned by the absence of a unified approach (top-down approaches are used where it is based on macro-data from national accounts, or from the bottom up, ie by random sampling, statistical modeling or regression analysis).

However, more than the scope of uncollected taxes, the professional public and state authorities are interested in the trend of the development of the gap and the causes of its creation. It provides useful information on changes in taxpayers' behavior. The main causes of insufficient tax collection in this context can be summarized in several framework areas:

- unwillingness to admit and tax all their income and tax dodge, to which taxpayers lead mainly economic reasons, respectively. Striving to achieve a certain social standard, or simply conformity and practices dominating in this system,
- misapplication of corporate goods for private purposes, resp. ineligible expenditure on private consumption,
- unintentional errors due to lack of understanding of the legislation,
- (un) intended inefficiency in business.

Thus, the efficiency of tax collection is not only related to the procedural side, but also to the possibilities offered by modern technologies and to the visionary in the field of integrated data processing. Just as companies now commonly use historical data to predict their tax obligations or to optimize internal business processes, information about taxpayers is also becoming a tool for risk management in public finances. For several years now, European authorities, as well as the OECD, have been encouraging countries to implement compliance monitoring tools in their tax systems and to report on trends in this area. Many of them relied more or less on combining information about taxpayers with a behavioral approach to their proactive use. (OECD, 2013)

Tax gaps have long been explored by the USA (IRS, 2020), the United Kingdom (GOV.UK, 2020), Australia (ATO, 2020), Denmark (Thackray at all, 2015), and Canada (Government of Canada.).

The tax gap is a macroeconomic measure. But the causes of its origin must be sought in microeconomics. Therefore, some states continue to use the information collected on tax subjects.

The diversity of tax systems and tax administration is influenced by the political and legislative environment. And no country has a complete set of statistically verifiable and reliable direct tax measures. However, we can see how they handle information and from various structured and unstructured sources, automated or ad hoc analyzes are created in which connections are sought between different areas (eg industry statistics with financial results of entities in the selected industry). In Slovakia, the Institute of Financial Policy at the Ministry of Finance of the Slovak Republic measures the tax gap. However, not comprehensively. It more or less focuses on the gap in VAT and tax on mineral oils, the results of which are published.

2.2. Evaluation of the reliability of taxpayers

The OECD has already published several practical guides based on the experience of some countries (OECD, 2008). to measure the performance of income tax for small businesses (helps to identify problems in business, to ensure that they pay the right tax). They are used to a greater or lesser extent by Australia, New Zealand, Canada, Italy and Slovakia.

Fulfillment of tax obligations cannot be seen only in black and white. Their occasional non-compliance may be the result of a wide range of unintended situations in which the taxable person finds himself. Therefore, in the intentions of changing the approach from repressive to preventive and proactive, the evaluation of taxpayers through the so-called tax reliability indices. These are usually synthetic indicators that are the result of a comprehensive analytical view of the taxable person and indicate the degree of compliance through a rating scale. The status of a "reliable" taxpayer allows them to obtain benefits from the financial administration, respectively special tax regime. The aim of such an approach is to promote voluntary tax compliance.

2.3. Benchmarking

Some countries use benchmarking explicitly or implicitly. This management method uses a continuous and systematic comparison of own products, processes and methods with those that have been recognized as suitable for comparison, in order to define areas where their own activities could be improved. (Nenadál, 2004) In this context, it should be noted that this is not a random process, but built on appropriate indicators - benchmarks. It focuses mainly on the weaknesses of its own research areas and its purpose is to constantly find inspiration on how to improve. For example, in the category of small and medium-sized enterprises, revenues are most often concealed, which is particularly difficult to prove if these revenues are not subject to third-party reporting. Businesses also resort to ineligible expenses in an effort to reduce their own tax liability. And the very effectiveness of business is also questionable. According to Finstat, 38% of Slovak companies manage long-term losses and 2-4% long-term with zero economic results. (see www.finstat.sk)

The Australian Tax Administration (ATO) assesses a series of key business performance indicators that are unique to each industry through a software tool that is publicly available (see Benchmarking.com.au). If the indicators are outside the benchmarks, they are subject to further analytical surveys. The cause is being sought, resp. whether it is a waste, or the property is used for personal consumption, whether there are not too expensive inputs, too many employees, low profit margin, not all income has been declared, or expenses are incorrectly recorded, etc. Based on individual findings, the tax the entity itself and voluntarily

may examine why it has fallen outside the reference framework for its reference group and has the opportunity to correct errors. Or, if the reasons for non-compliance are system errors in the business, it can look for solutions to make it more efficient.

The Australian approach is also copied by New Zealand and Canada. The Institute of Informatics and Statistics of the Slovak Republic (INFOSTAT) has been testing the possibilities of using benchmarking in the collection of income tax in the Slovak Republic since 2013. Based on the experience, it expects a shift from the current "coercive" approach to the "motivational-educational" approach. Non-standard deviations from the benchmarks set within the homogenised tax units for specific industries and their regular publication could motivate individual tax subjects to set their economic indicators so that they come as close as possible to the "safe interval". (Benčíč at all, 2014)

3. Conclusion

Experience from countries that used to practise the tools and insights to refine the tax collection for several years now suggests their effectiveness. As the tax collection system today is based on self-assessment of taxpayers (ie individual taxpayers are responsible for ensuring that the information they report in their tax returns is accurate and complete), similar approaches are invaluable in their flexibility in accessing the most current and historical data. The widest group of resources, flexibility in the ability to combine data with risk management and their use to influence taxpayers' thinking in terms of voluntary tax compliance.

And although the implementation of similar tools may be observed in some European countries, they are rather rare. Truncated and obtained data are published more or less informatively, not with a targeted behavioral approach, despite the recommendations of the OECD or European authorities

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Price Analysis of Selected Food Products in Relation to Development of Retirement Pension Range in the Czech Republic

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Abstract: The article deals with the questions of increase in prices of selected food products in the view of the senior demographic category of consumers receiving retirement pensions. There has been carried out a price analysis of selected food products for the time series 2010 – 2019, in which there were detected individual development trends. There has been carried out an analysis of incomes of the retired in the Czech Republic within the same time series. There were studied connections between the analysed variables for the last ten years. For each variable there was found an appropriate trend function, favourably copying the price development in time. Furthermore, there were made regression and correlation analyses for the dependent variable "retirement pension amount" which discovered a high correlation coefficient, uniquely proving a strong linear dependence and linear increasing trend ($r = 0.946$). The article is highlighting the real decrease in purchasing power of the target group of product consumers.

Keywords: Prices, food, demographic category, time series, regression and correlation analyses

JEL classification: C8, E31, J1

1. Introduction

The Czech Republic – such as many other European countries – is struggling with demographic ageing of the population, which we understand as an increase in portion of older people in the entire population. The aging of population is not only demographic but also economical problem; furthermore, the more quality health care enables gradual increase in life expectancy and longer period of active aging, i.e. the state of more-less fulfilling life of the aged people. (Medkov 2014). Average lifetime of men was 77 years, and 79.5 years for women in 2002. In 2018, men lived to an average age of 79.65 years and women even up to 83.58 years in the Czech Republic.

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In the end of 2019, there were 2 411 814 people receiving retirement pension, out of which 1 817 406 persons were receiving only retirement pension, and remaining 597 408 persons were receiving both retirement and survivors' pensions. The Czech Statistical Office data imply gradual increase in number of retirement pensioners (ČSÚ 2016-2).

It is sure that in the following years the number of persons receiving retirement pension will increase, and moreover, the pensioners will receive the retirement pension for a longer period. The crucial question is what life level will these pensioners have and what life quality will they afford. The ČSÚ statistics show that the main expenses are the housing costs including water charges and energy supplies (28.6 % of total expenses) and payments for food products (24.7 % of expenses) (ČSÚ 2019-1).

In such a context it is highly important what products will the pensioners be able to purchase after taking account on the price development dynamic of selected products, and on the retirement pension levels.

This article shows the price development of four selected products of usual consumption (bread, butter, pork ham and bottled beer) in the time series 2010 – 2019 in the contrast to an increase in number of persons receiving the retirement pension, and to an average retirement pension level in the Czech Republic.

2. Methodology

The article uses and processes the Czech Statistical Office source data (ČSÚ 2020-1) on the consumer prices of selected products – such as standard bread with caraway (price for 1 kg), butter (price for 1 kg), pork ham (price for 1 kg) and bottled light beer (0.5 l) – and the data on the number of the retirement pension recipients (ČSÚ 2020-2) in time series 2010 – 2019.

The time series were processed according to the standard methodology, as cited for example by Arlt et al. (2009). There were also applied the methods of time series processing, as conveyed for instance by Hindls et al. (2006) or Novák (2015).

The data were processed by the method of linear regression and correlation analyses mentioned e.g. by Hebák (2007). The graphical illustration to accentuate the outputs is recommended for instance by Marek et al. (2007).

3. Results

The number of retirement pension recipients in the Czech Republic was increasing in the entire monitored period. While there were 1 641 629 persons receiving full retirement pension and 5 905 receiving partial pension in 2010, there were even 1 808 814 recipients of full pension and 4 155 recipients of partial pension in 2018. In total, there were 2 819 093 pensioners in 2010 and 2 896 973 pensioners in 2018. A slight decrease in the number of pensioners only occurred in 2012 and 2013 (ČSÚ 2019-2). This phenomenon probably occurred partly due to the concurrence of demographic and economic factors, especially the fading economic crisis.

The development in number of pensioners in the Czech Republic is illustrated in the Figure 1. It shows that the number of pensioners was constantly increasing since 2014; we can identify a linearly

increasing trend in the time series 2010 – 2019 (index of determination $R^2 = 0.732$, correlation coefficient $r = 0.856$).

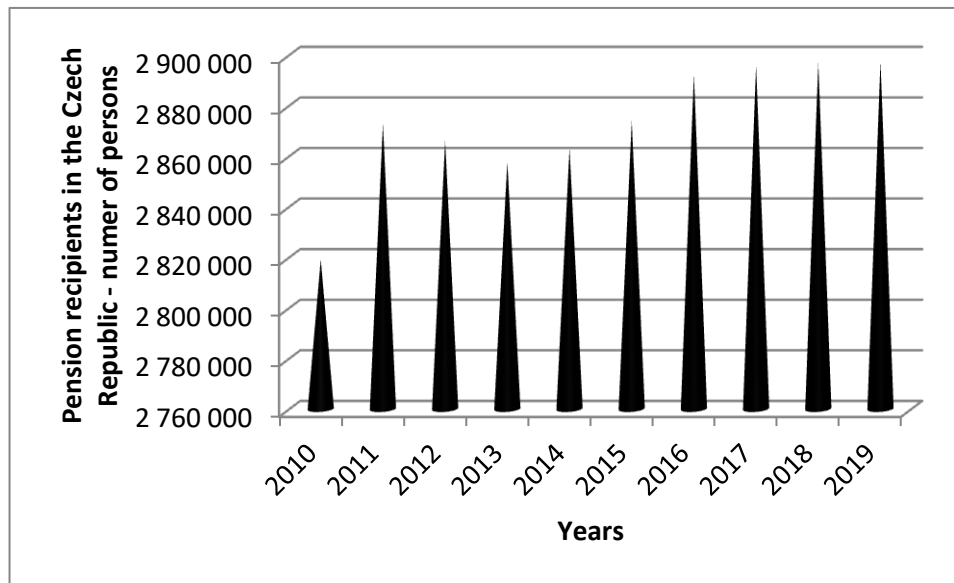


Figure 1: Pensioners in the Czech Republic in the time series 2010-2019

The average received retirement pension level was continually increasing. While it was CZK 10 138 in 2010, it was as much as CZK 13 487 in 2019. We could see a systematic increase in retirement pensions also in 2009 – 2013, thus during the application of restrictive fiscal policy in the Czech Republic. However, an increase of average pension level is not only given by valorisations, but also by further persons entering the pension age, whose pensions are – thanks to higher historical incomes – higher than those of the long-time pensioners.

Figure 2 shows the linearly increasing trend in an average retirement pension level in the time series 2010 – 2019 (coefficient of determination $R^2 = 0.895$, correlation coefficient $r = 0.946$).

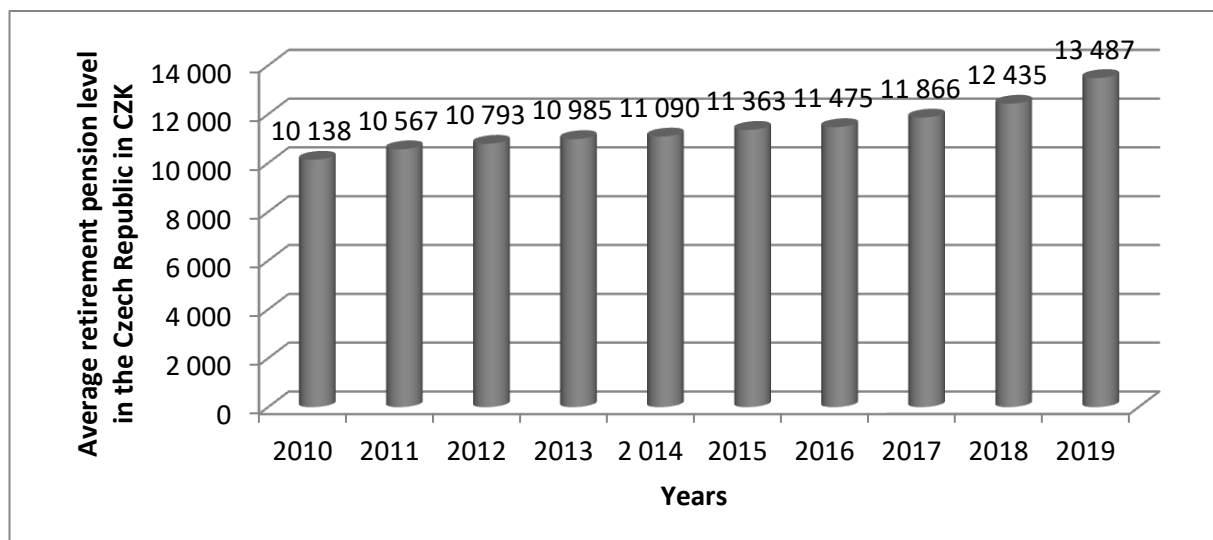


Figure 2: Average retirement pension level in the time series 2010-2019

Furthermore, there was analysed a dependence between the number of pension recipients and the average level of retirement pension in the time series 2010 – 2019. The correlation coefficient 0.791 points out a direct proportion of the dependence, which we can rate as rather close. Thus, we can state that there is an increase in the number of pension recipients and an annual valorisation of average level of retirement pension.

However, it is evident that an average level of retirement pension in the Czech Republic is not more than CZK 11 420, with the maximum in 2019 (CZK 13 487) in the time series. In addition, the real income level – i.e. the retirement pensions in this case – is influenced fundamentally by the inflation rate. Taking into account the inflation rate in 2010 – 2019, the situation seems to be completely different. Whilst in 2010 – 2013 the inflation rate oscillated between 1.4 % (2013) and 1.9 % (2011) except for 2012 (3.3 %), in 2014 – 2016 the inflation rate only ranged from 0.3 % (2015) to 0.7 % (2016). Since 2017 we could see quite rapid increase in the inflation rate to 2.1 % (2018) and up to 2.8 % (2019). In the first quarter of 2020 the consumers' prices increased by 3.6 % (ČNB 2020). Thus we can say that in 2010 – 2019 (except of 2010 and 2012) the average level of retirement pensions was growing faster than the inflation rate. However, in some years (2014 and 2016) the difference between the increase in retirement pensions and the inflation rate was very small and barely noticeable for common consumers. That is why the development in prices of individual goods of consumption was more fundamental for the resulting life level of the pensioners. Prices of food and housing costs, creating a big part of the pensioners' incomes, were increasing relatively dramatically in the last years. Namely, the inflation in food prices reached 4.1 % inter-annual increase in 2019. On the contrary, prices of new cars or consumer electronics were rather decreasing or stagnating; however, they are not the objects of the domestic pensioners' common consumption. In relation to this finding, the article deals with the price analyses of four food products (bread, butter, pork ham and bottled beer) in the time series 2010 – 2019.

All four products (Figure 3) confirmed linearly increasing trends (bread $r = 0.800$; butter $r = 0.778$; beer $r = 0.948$; ham $r = 0.980$) in the analysed time series.

In contrast to the average monthly retirement we can state that – despite the annual valorisation of retirements – there is also an increase in prices of consumed products. Cold supper such as a piece of bread with butter and pork ham, washed down with beer, it is essentially the “Czech classic”, which should be affordable to our seniors, too. The analysis results in the finding that there was a real decrease in purchase power of the target group of inhabitants with regard to prices of selected products in the monitored period.

The situation is getting worse also because of the fact, that the selected food products have very small elasticity of demand (E_D is very close to zero). In such a case the consumers' reaction on change in price of the demanded product results in only a small change (or eventually no change) in the demanded quantity. Consumer is then forced to compensate the costs connected with the purchase of the product with a non-elastic demand curve by the consumption savings as for the products with a higher demand elasticity. In the real situation there happen to occur consumption reduction of both so-called “personal services” distributed directly to a demanding person (e.g. tourist traffic, accommodation services, etc.) and several additional services, e.g. culture events (Petříček 2019). There is also probability of partial decrease in demand for luxury goods and long-time consumption goods. It could possibly result in partial change in consumption structure of pension recipients.

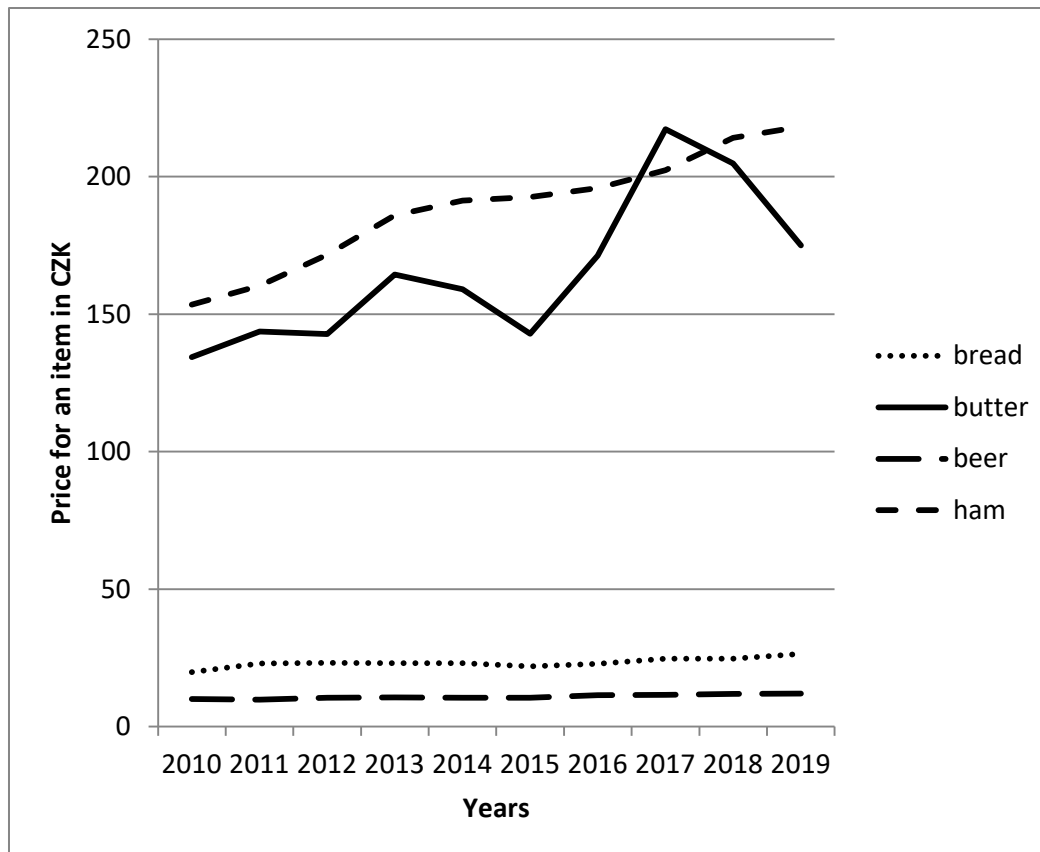


Figure 3: Average consumer prices of selected products in the time series 2010 – 2019 (Item: common bread 1kg, butter 1kg, pork ham 1kg, bottled light beer 0,5l)

The trend found out would likely continue also in following months. It is proved by the Czech National Bank report on inflation, predicting that “the food price dynamic will stay at the same level in this year, partly because of a high consumers’ demand, partly as a result of a lack of workers in agriculture, cold weather in early spring, and Covid restrictions in international transport.” (ČNB 2020).

4. Conclusion

The pensioners’ life level is one of the factors that would influence considerably a development in the entire Czech Republic society in following years. Nowadays, it is not only an economical or sociological problem, but also very intensively exploited political topic. An ongoing discussion frequently mentions the fact that from 2017 an average pension growth rate in the Czech Republic considerably accelerated. It is verified by the above stated data; for instance, retirement pensions increased by more than one third since 2010, especially in 2019. This fact than results in a statement, that the pensioners’ life level is also adequately growing.

However, the price development analysis of selected food products showed, that certain part of the pension level increase is absorbed by faster increase in prices of certain goods with a small demand elasticity, consumption of which are the pensioners not willing (or able) to reduce. As a result, the influence of the pension increase on the pensioners’ real life level is considerably lower. Especially the recipients of lower pensions are really endangered by factual life level stagnation, and – in extreme cases – even its decrease.

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Cameral Accounting as a Part of Modernization Process of Financial Management in Czech Cities

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Abstract: Cameral accounting is the specific accounting technique designed especially for the budgetary organizations. It was used in the area of the Czech Republic from the end of the 19th century to the mid-20th century. The contribution focuses on the accounting of the municipal governments in the mentioned period; describes structure and principles of two main accounting books: journal and ledger; and declares cameral accounting technique as a crucial part of modernisation process of the municipal governments in the Czech cities. As a research method was used the historical analyse of original sources, accounting records, legislation, and textbooks preserved in archives from the past. The statements are based on investigation of the group of cities in the Czech borderland made by Petr Cais (2006) and in Olomouc district.

Keywords: accounting, cameral accounting; ledger; journal; history

JEL classification: M41

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1. Introduction

In the past, cities were among the most important economic entities in the Czech lands and played important role at the beginning of industrialization and modern ways of doing business in this region. It was historically conditioned that the system of municipal administration as well as its accounting was tied to a previous tradition and even despite its inefficiency its transformation took more than one century.

The aim of this contribution is to declare cameral accounting technique as a crucial part of modernisation process of the municipal governments in the Czech cities. As a research method was used the historical analysis of original sources, accounting records, legislation, and textbooks preserved in archives from the past. The statements are based on investigation of the group of cities in the Czech borderland made by Petr Cais (2006) and in Olomouc district.

2. Changes of municipal governments and their financial management

Between 1784 and 1787, Joseph II ordered a fundamental reform of city councils and introduces so-called regulated governments (*Magistratregulation*). (Schelle 2008, pp. 15-16) The cities were newly divided into three groups: in the first group of the largest cities, including Prague, a complete or incomplete municipality was established; in the second group, the city administration was performed by newly paid state officials (syndicate, chancellor and servant) in addition to the original unpaid bodies (mayor, three councilors and two elders). In the third group of cities, which included cities with an

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economic surplus of less than 450 guildens, no civil servant was appointed, and the agenda remained with the mayor and two elders, but was limited to economic, tax and policy matters. (Janák, Hledíková & Dobeš 2005, p. 224) This reform was very much needed due to the low efficiency of the existing municipal authorities and especially the huge disorders in municipal finances, which, despite repeated attempts (the main one in 1706), could not be improved. On the other hand, this reform led to the nationalization of the municipal administration, thanks to which the influence of state regional authorities increased precisely at the level of the urban economy and finances. (Janák, Hledíková & Dobeš 2005, pp. 224-225)

The next changes happened after 1848, when the self-government in cities was established. The independent competence of municipalities included mainly management of municipal property. Under the supervision of the provincial committee, cities were free to dispose of their movable and immovable property and to do business freely. (Janák, Hledíková & Dobeš 2005, pp. 302-303) After 1918, many cities were in a very poor financial situation, which the new state repeatedly tried to resolve. However, neither the first financial amendment of 1921, the second of 1927, the third of 1930 nor the fourth of 1935 were successful. These changes have only strengthened the dependence of municipal governments and especially their financial authorities on political offices. (Schelle 2008, pp. 136, 307-308)

The fundamental opacity of finances and their management was caused, among others, by an outdated accounting system, whose origins date back to the Middle Ages. (Slavičková 2017) Although, Joseph II introduced a uniform system of accounting for state revenues, expenditures, and debts on the central level of the Austrian monarchy, i.e. cameral accounting, he did not issue the exact order to use this accounting system also on the level of new municipal governments. In contrast to the original accounting system, which contained a number of archaic elements, cameral accounting corresponded to the key tasks of managing municipal finances. Due to main principle of cameral accounting the municipal government were able to fulfill their main task: to determine the needs and obtain funds to cover them (Cais 2006, pp. 249-250)

3. Origin and main principles of cameral accounting

As a part of reform of finances of the Austrian monarchy during the period of Maria Theresa, new central accounting office was founded in 1860 headed by Ludwig von Zinzendorf. (Dickson 2007) The main goal of this new office was to ensure order in state finances, to restructure the central state finance offices and last but not least to switch to another accounting system. (Legay 2009, pp. 269) The last target was entrusted to Johann Mathias Puechberg who introduces cameralistic form of accounting in 1762 in his publication *Einleitung zu einem verbesserten Cameral-Rechnungsfuße, auf die Verwaltung einer Kameral-Herrschaft angewandt*. (Puechberg 1762)

The accounting technique proposed by Puechberg was based on a system of two main books:

a) cash register or journal called *Kassajournal*

Each income or expense was first recorded in a cash register in chronological order. According to Puechberg (1762, p.21), the purpose of the diary was to provide, if necessary, an overview of the current state of cash assets, i.e. the amount of the financial amount in the cash register (cash balance). (Cais, 2006, p. 253)

b) cameral ledger called *Hauptbuch*

The record from the diary was immediately or after a few days transcribed into a book with systematic accounting, or even into the inventory (if it was an increase or decrease in assets). The cameral ledger was divided into two sections, revenue and expenditure. Both divisions were further divided into several levels. (Cais, 2006, p. 253)

Each accounting case in the cameral ledger had two parts: the amount assumed according to the budget, the so-called necessity or transcription (*Schuldigkeit, Vorschreibung, Gebühr, Soll*); and the payment actually made, the so-called fulfillment (*Abstattung, Zahlung, Berichtigung, Beahlt, Ist*). The difference between the two amounts was referred to as arrears (*Rückstand, Rest, Ausstand*), and this was carried over to the cameral ledger in the following period. (Puechberg, 1762, p. 22)

According to Pazourek (1920, p. 9), cameral accounting is distinctive accounting technique in addition to single-entry and double-entry accounting. It was developed in the second half of the 18th century and designed especially for using by budgetary organizations. It was connected with the doctrine of cameralism at the very beginning and as a part of new public system of administration it was introduced into cities after the transformation of municipal governments at the end of the 18th century. Despite to many political and economic changes, it stayed in force in the Czech public administration till the half of the 20th century. (Janhuba, 2010, p. 12)

According to Monsen (2002) following Wysocki (1965) and Walb (1926), the development of cameral accounting is divided into four phases:

2.1 Simple cameral accounting

Although the title of Puechberg's book refers to a previous accounting practise; researchers are unable to agree on the form of this older accounting technique called "Simple Cameral Accounting". According to Monsen (2002, p. 41) and Walb (1926, p. 211), it consists of showing balance sheet changes for money and moveable property and possibly also an overview of fixed property, as well as a grouping of revenues and expenditures according to their sources.

2.2 Current Due Accounting (1750-1810)

This phase is closely connected with the work of Puechberger. Typical form of cameral accounting for this period is described above. According to Monsen (2002, p. 42), the point of departure for the considerations in this phase was the attempt not only to include already realized revenues and expenditures, but also the future revenues and expenditures.

2.3 Further Grouping of the Cameral Bookkeeping Transactions (from ca. 1810)

In 1810 Jäger von Weidenau published book named *Unterricht zur Anweisung der Gefällserträge für die Staatsrechnungszentrale*, in which he explained how to separate result-affecting items from non-result-affecting items. (Monsen 2002, p. 42)

2.4 Development of Enterprise Cameralistics (from ca. 1910)

In this phase, practitioners introduced cameral accounts which allowed them to calculate inventories for expense items, such as goods, stocks of semi-finished and finished products and physical assets due

to be written off. (Monsen 2002, p. 43) As the name suggests, this form of cameral accounting was intended for business entities, not budgetary organizations.

4. Research case: cities in the Czech borderland

In 2006 Cais investigated accounting sources of municipal governments in the Czech borderland from the period from 1850 to 1945. He focused on formal structure, content, and purpose of these sources with the aim to design a system for archival processing. (Cais 2006, p. 253) It is the most detailed research of accounting sources from the mentioned period till present. It covered accounting sources preserved in archives from the past in 13 cities: Domažlice, Aš, Skalná, Kadaň, Bochov, Horní Blatná, Jáchymov, Krásné Údolí, Stará Role, Kašperské Hory, Plánice, Horažďovice and Klatovy. These were cities of various sizes and character, political and economic centers such as Domažlice or Jáchymov, as well as small towns with only local importance such as Krásné Údolí or Plánice. (Cais 2006, pp. 282-283)

As one of a group of findings, Cais (2006, pp. 255) defined three periods in development of cameral accounting:

a) from 1850 to 1922

During this period, accounting in cities was adjusted only in a general way, and therefore various degrees of differences are evident in cities.

b) after 1922

In 1922, Decree No. 22/1922 Coll. (for Bohemia No. 60/1922 z. a n.z. for Moravia) was issued. It was a decisive moment for the first unification of the accounting practice of municipal governments. Among other things, according to Caise's (2006, p. 255) findings, this decree unified a number of accounting processes in the cities under the research.

c) after April 1, 1940

After 1940, legislation of the Czechoslovak republic was replaced by Reich-German regulations, which led to shifts in accounting, but most often only in the level of other book designations. The very essence of cameral accounting remained unchanged. (Cais 2006, pp. 272-273)

5. Research case: cities in the Olomouc district

The research of the cities in the Olomouc district made in 2020 showed huge differences, especially in the preservation of sources, which are crucial for this type of research. As has be already shown in previous research, accounting records were considered worthless after their contents expired and were therefore often intentionally destroyed. (Slavičková 2017, p. 134) A huge number of these records also played a role, which gradually continued to grow. This is why, while other resources of a particular city are preserved, accounting records are preserved only selectively or not at all. It is also a case of the archive of Olomouc district. It covers currently collections of 7 cities: Libavá, Hodolany, Litovel, Nová Ulice, Olomouc, Šternberk, Uničov, however accounting records suitable for research are available only in four of them: Litovel, Šternberk, Uničov, and Olomouc:

Table 1: Overview of accounting sources

City	Cash book	Ledger
Litovel	<p>Pokladní deník (Wochenbuch): 1712-1713</p> <p>Pokladní deník (Interims Kassa Register): 1773</p> <p>Pokladní deník (Kassa Tag-Buch): 1775-1788</p> <p>Pokladní deník (Rentamts Kassa Journal, Kassa Journal, Rent-Journal): 1834-1906, 1917, 1924-1925, 1930, 1932, 1934, 1935, 1937-1940</p> <p>Pokladní deník (Hauptkassabuch): 1941-1944</p>	<p>Hlavní kniha 1816</p> <p>Rentamtschauptbuch: 1865-1892</p> <p>Hauptbuch: 1895</p> <p>Rentamtschauptbuch: 1896-1899</p> <p>Rentamtschauptbuch (Hlavní kniha důchodů): 1900-1901</p> <p>Hlavní kniha důchodů: 1902-1903</p> <p>Hlavní kniha – příjmy: 1904-1927</p> <p>Hlavní kniha – výdaje: 1904-1927</p> <p>Hlavní kniha: 1929-1940</p> <p>Hlavní kniha (Hauptbuch): 1941-1945</p>
Šternberk	<p>Hlavní pokladní kniha (Kassahauptbuch): 1866-1917, 1924-1929, 1936-1939</p>	<p>Hlavní účetní kniha (Hauptbuch): 1870-1939, 1944-1945</p>
Uničov	<p>Pokladní kniha (Kassa): 1876-1918</p> <p>Hlavní deník (Haupt Journal): 1923-1925</p> <p>Pokladní kniha (Kassabuch): 1940/1941-1945</p>	<p>Hlavní kniha příjmů (Empfangshauptbuch): 1873-1918</p> <p>Hlavní kniha vydání (Ausgabshauptbuch): 1873-1918</p> <p>Hlavní kniha vydání (Hauptbuch Ausgabe): 1922-1945</p> <p>Hlavní kniha příjmů (Hauptbuch Empfang): 1923-1945</p>
Olomouc	<p>Hlavní účetní kniha městské pokladny (Commun Cassaamts Rechnung): 1838-1846</p> <p>Peněžní deník městské pokladny (Geldjournal): 1855-1864</p> <p>Hlavní deník městské pokladny (Haupt Journal, Kassa Haupt-Journal, Kassa Journal, Pokladniční deník): 1885-1944</p>	<p>Hlavní účetní kniha příjmů a vydání: 1851/1852-1873/1874</p> <p>Hlavní účetní kniha příjmů (Comuncassa Rechnung, Gledrechnung der Gemeinde Olmütz, Renntamts-Rechnung der Stadtcomune, Rents-Rechnung-Empfang, Communcassa-Hauptbuch. Empfang, Kumunkassa. Empfang): 1875-1945</p> <p>Hlavní účetní kniha vydání (Comuncassa Rechnung, Gledrechnung der Gemeinde Olmütz, Renntamts-Rechnung der Stadtcomune, Rentsamts-Rechnung-Ausgabe, Communcassa Hauptbuch. Ausgabe, Kommunkassa. Ausgabe): 1875-1945</p>

Source: Own elaboration based on data from the Digital Archive of Provincial Archive in Opava (www.digi.archives.cz)

Content analyse of these sources showed that all cities under the research in the Olomouc district used cameral accounting. Records from the crucial period of the end of the 18th century and the first half of

the 19th century are missing, with the exception of Litovel. However, Litovel's cash books from the 18th century and the only one ledger stay outside of the line and there are no other sources from the same period to evaluate them in context. Due to that the structure of preserved accounting records in the Olomouc district is close to the structure of sources examined by Cais (2006) and are suitable for comparison.

The city of Olomouc had the most complex structure of accounts which corresponds to the size and political and economic importance of the city in the period under the research. (see Schulz et al. 2009) In comparison, accounting of peripheral Šternberk was simple without any difficulties. With a view to increasing the number of records and for maintaining clarity, the ledgers were divided in two separated books (one for incomes and one for expenses) in Uničov in 1873 and similarly in Olomouc in 1875, in Litovel after 1904. In Olomouc and Uničov, they used a pre-printed form completely identical in content for entries in the ledgers (they differ only in the font used).

Compared to the accounting sources from the Czech borderland, the year 1850 seems also for the cities in the Olomouc district to be crucial. Around this year, the examined records acquired a clear structure, which they then maintained for almost another hundred years only with a small change of the pre-printed forms. On the other hand, the year 1922, designated by Cais (2006, p. 268) as one of the breaks, did not fundamentally reflect on the accounting of cities in the Olomouc district.

6. Conclusion

Comparing the sources from the Olomouc district and the findings about the cities in the Czech borderland published by Cais (2006), we can see many similarities with the cities in the Czech borderland on one site and several differences with the general statement of development of cameral accounting on the other.

Research made by Cais (2006) has already shown that the periodization of cameral accounting designed by Wysocki (1965) and Walb (1926) and repeated last time by Dickson (2007) is not applicable to the Czech environment. Instead of 1750 it seems more suitable the year of 1762 when the crucial textbooks written by Puechberg was published, or the years after 1784 when the regulated governments were introduced. The years 1810 and 1910 proposed by Walb (1926) and the others have also no meanings neither for development of financial management in cities nor for their accounting.

Close connection between changes in administration and financial management of cities are obvious. Unfortunately, due to the missing sources it is not possible to determine the moment when the cities began to be used cameral accounting. Nevertheless, both research cases confirm the year of 1850 as a crucial moment for unification and stabilization of accounting in the cities in the Czech borderlands as well as Olomouc district. On the other hand, the main political milestones, such as the establishment of the Czechoslovak republic (1918), or the establishment of the German Protectorate of Bohemia and Moravia (1939), were not reflected at all or only minimally in the form of accounting (e.g. the change of language from German to Czech and vice versa).

The structure of the main accounting books of the cameral accounting, ledger and cash book fully corresponded with the proposal of Puechberg (1762). Due to that accounting in these cities followed same main principles and enjoyed all benefits of the cameral accounting technique more than one century. Accounting technology remained unchanged during the 19th and the first half of the 20th century, despite fundamental changes in economic thinking as well as political arrangement. It proves

that, the cameral accounting technique introduced during the Enlightenment can be described as a unique contribution to the modernization of accounting in our territory.

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What is your problem, decision maker? Do we even care anymore?

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Abstract: This paper raises a very important, yet frequently unused, question concerning the nature of the decision-making problem. We point out that the actual definition of a multiple-criteria decision-making (MCDM) problem, when not clearly stated, could lead to erroneous suggestions provided by decision support models. To do so, we take the perspective of the (normative) multiple-criteria decision-making theory. We identify the prevailing definition of a problem in its framework and compare it to the definitions of problems and problem setups considered in behavioural economics. We compare some of the well-known decision biases and their suggested mechanisms with the definition of a problem for normative MCDM models and show the similarities and discrepancies thereof. We hypothesize that the very definition of a MCDM problem as assumed by standard MCDM theory might be the reason for the behavioural economics encountering so many decision biases and for the inability for MCDM models to provide valid normative results. The answer to the second question stated in the title is therefore at hand: “No, but we definitely should!” This is also the main message of the paper.

Keywords: MCDM, problem, definition, decision bias, behavioural economics

JEL classification: D91, C44

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1. Introduction

In this paper we intend to ask questions concerning the very foundations of mathematical models of decision-making. We do not necessarily distinguish between decision support, decision prediction, decision analysis and other related fields. We intend to focus on what all these areas have in common – on the decision-making problem, its formulation and its relation to the decision maker. Our hope is to inspire discussion on the topic and attract attention to the foundations of mathematical (and managerial) models of decision making, that are in most applications being taken for granted. We do not intend to question the standard decision-making theory or the models used therein, we just want to draw attention to the underlying assumptions (whether explicitly stated or assumed only implicitly).

To make our point, we will recall some of the frequently used frameworks and models for the formal representation of decision-making problems and discuss what is the general formulation of the decision-making problem that they assume. Even though there are many others, such as ELECTRE, mathematical programming, MAUT etc., due to space restrictions we are going to discuss mainly the examples of two frequently applied methods here, namely TOPSIS and AHP. We will, however, start with a very general formulation of a multiple-criteria decision-making problem that seems to be

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frequently assumed in the literature. We will try to identify the common features of the problem formulations and confront them with the needs of real-life decision-makers in the context of some well-known decision biases.

2. A general formulation of a decision-making problem

Let us for simplicity stick with well-structured problems. We will also assume that the actual goal of decision-making is to decide, i.e. to identify an alternative to be chosen. Obviously there are other possible goals of decision-making. But most of these can be reduced to (or solved by) the selection of one alternative, for example if the goal is set as follows:

- Finding an ordering of the alternatives – in this case the selection of the “best” alternative can be performed repeatedly
- Decision on acceptability of all the alternatives – as long as relative-type evaluation is assumed and the set of alternatives is complete and not expected to change, then the inclusion of a “borderline” alternative and selecting all those that rank above as acceptable (see the previous bullet) can be applied
- Classification, that is decision on which category/label is the most fitting for the given object – can be solved by selecting the “best” (i.e. most fitting) category/label for the purpose

Obviously there are circumstances when the above mentioned courses of action cannot be (directly) applied, such as when the set of alternatives is prone to change (i.e. when relative-type evaluation is not a good tool and absolute-type methods should be used, see for example Jandová and Talašová (2015)), when the goal is to generate a sufficient amount of reasonably good alternatives/solutions (see e.g. the modelling to generate alternatives approach (MGA; Yeomans (2011), Yeomans and Gunalay (2011)). Also cases where the identification of “efficient” or “Pareto-optimal” alternatives is of interest cannot be approached by finding the best alternative directly. In this case the “best” usually needs to be redefined to “not having a better alternative” but being able to evaluate all the alternatives. But let us restrict ourselves to problems where the selection of one alternative is the goal or problems, that can be solved by or reduced to the ability of selecting the best alternative from the set of alternatives. Let us for now assume that we have

- **The set of n available alternatives** $A = \{A_1, \dots, A_n\}$. Usually in the framework of relative-type evaluation we assume that the set of alternatives is complete, it will not be changed, all the alternatives are comparable, none of the alternatives is so inferior that it should not be considered etc. Not all the methods and models in MCDM require all this, but it is also true to say that some of these assumptions are frequently present implicitly and not spelled out visibly enough. Note that in MCDM the set of alternatives is usually finite and reasonably small. However, in the models that are based on mathematical programming (or in problems based on optimization in general) the set of alternatives can be infinite and even uncountable. Implicitly we assume $n \geq 2$.
- **The set of up to m evaluators or decision-makers** $E = \{E_1, \dots, E_m\}$ that are supposed to make the choice (i.e. to evaluate the alternatives and select the best one – in this case we talk about rational decision-makers and we assume the presence of at least one of such decision-makers in the problem; or that represent random/stochastic influences and are the so called “irrational” decision-makers) either

- **collectively** - in this case a consensus, compromise, or unanimous agreement can be sought, or simply the individual evaluations are required and someone then aggregates these and makes the final choice), or
- **competitively** - in this case the goals of the evaluators might not be compatible but a single alternative needs to be chosen. Alternatively each evaluator can have his/her own set of n_j alternatives to be chosen, i.e. we have $A_{E_j} = \{A_{1,E_j}, \dots, A_{n_j,E_j}\}$ for all $j = 1, \dots, m$.

For simplicity, we will assume in this paper that $m = 1$, that is we assume a single (rational) decision-maker. This is to be able to fit our discussion within the form required for this conference paper. Obviously a discussion of multi-expert (or group) decision-making would also be interesting, but a single decision-maker case should be enough to make our point.

Now for a decision-maker to be able to make a choice, we assume that there exists some sort of an **objective function** (e.g. a value function, utility function, cost function) that assigns evaluation(s) to the alternatives. In other words we assume that there exists a mapping e (let us call it *evaluation*) such that

$$e: A \rightarrow EVAL, \tag{1}$$

where we again have many possibilities of what the set $EVAL$ can be. The evaluation can be a real number, an interval, a fuzzy number, histogram or virtually any entity which is understandable to the decision-maker, or even a vector or combination thereof. The most frequent choices are such that $EVAL \subseteq \mathbb{R}$ or $EVAL \subseteq \mathbb{R}^p$. Obviously the set $EVAL$ should be ordered or the decision-maker should at least be able to use the elements of $EVAL$ to select the best alternative or to define efficient (Pareto-optimal) alternatives. The evaluations of the alternatives, that is the values $e(A_i)$ should be in line with the preferences of the decision-maker.

A question now arises of how to define the e mapping. If we assume that $EVAL \subseteq \mathbb{R}$ and that the decision-maker is able to provide the value of $e(A_i) \in \mathbb{R}$ directly for all $i = 1, \dots, n$, then we actually have no problem to solve. As also Zeleny (2011) points out, if we have a single criterion (or value of an objective function) to represent the alternatives and if the values thereof can be ordered, then the problem of finding the best alternative does not exist any more. Selecting the best alternative is simply a matter of finding a maximum or minimum value in a given set, which is mathematically a rather straightforward task (it is a matter of “measurement and search” (Zeleny, 2011, 5); technically this is the focus of mathematical programming and optimization).

Keeping this in mind, it might be that obtaining the value from $EVAL$, i.e. the evaluation of an alternative A_i , that is $e(A_i)$, directly is impossible or too difficult for the decision-maker. In this case the alternative can be replaced (or represented) by its features, or to be more specifically we can define the so called criteria that help us describe and evaluate the alternative. In this sense we represent the alternative via a set of its characteristic (or sufficiently important) features or criteria. Let us assume that a decision-maker considers the **set of k criteria** as $C = \{C_1, \dots, C_k\}$, and we will assume that $k \geq 2$. Obviously, the introduction of criteria already means a simplification of the decision-making problem and some information is lost. We usually discard criteria with little or no importance to make the task mathematically treatable. This is well in line with the ideas of mathematical modelling, but it might be one of the causes of the departures of results of normative models from the actual choices

of real-life decision-makers. We assume that an alternative is now represented by an n -tuple of values $A_i \sim (C_1(A_i), \dots, C_k(A_i))$, where $C_t(A_i)$ is the value of alternative A_i with respect to the criterion C_t , $i = 1, \dots, n$, $t = 1, \dots, t$. Again technically any entity can be the value of $C_t(A_i)$, as long as we are able to do further calculations with such entities, or as long as we are able to standardize such entities. Standardization is frequently applied to transform the values of different criteria to the same scale, i.e. to obtain values $C'_t(A_i)$, to be able to aggregate their values further. It is, however, not a necessity for some aggregation methods, particularly those using fuzzy rule bases (see e.g. Stoklasa, Talášek and Musilová (2014) or Stoklasa (2014)). If we adopt this approach, then (1) transforms into

$$e: \{(C_1(A_i), \dots, C_k(A_i))\}_{i=1}^n \rightarrow EVAL, \quad (2)$$

where $e(A_i) = f(C_1(A_i), \dots, C_k(A_i))$ and f is some sort of aggregation operator or function, such as a weighted or arithmetic mean, OWA operator, geometric mean, min, max, FRBS etc. For many of these a **set of weights of criteria** (representing e.g. their relative importances) is defined, $w = (w_1, \dots, w_k)$. Frequently the weights are required to be normalized and are assumed to be assigned to the criteria (i.e. are assumed to be the same for all the alternatives). Since we make no distinction among the alternatives, there seems to be no need to assign different weights to the criteria for different alternatives.

3. The standard problem formulation in the context of some frequently used MCDM methods

Let us now have a closer look at some of the frequently used MCDM methods and how the above mentioned problem formulation suits them.

- TOPSIS (Hwang and Yoon, 1981) The method assumes a given set of alternatives that is not changing during the evaluation, all the alternatives are treated identically. The set of criteria is supposed to be known along with their direction (cost/benefit) and their weights. It is a relative-type evaluation method that defines a positive and negative ideal alternative relative to the available alternatives. The standardization of the values of criteria is done so that the ratios of the values are preserved. The overall evaluation is obtained either as a pair of Euclidean distances of the alternatives from the positive and negative ideal, or as a single-number representing the similarity to the positive ideal. A single decision-maker is assumed. The method fully utilizes the above described MCDM problem definition. It is possible to order the alternatives and to select the best one based on the outputs. Additional assumptions involve monotonic utility functions for all criteria.
- AHP (Saaty, 1990) It is a pairwise comparison based method, that from its very nature provides evaluations of the relative type. It also assumes a given set of alternatives that is not changing during the evaluation, all the alternatives are treated identically. The set of criteria is supposed to be known as well. Criteria weights can be computed using the pairwise comparison too. The method identifies priorities of objects (i.e. the evaluations of alternatives w.r.t. the criteria, the weights of criteria etc.) in such a way that their ratios should be as close as possible to the respective elements of the pairwise comparison matrix. The standardization of the values of criteria is not needed directly, the computed priorities are, however, usually standardized in some way (see Krejčí and Stoklasa (2018) for more details on this). The overall evaluation is obtained as a weighted average (or weighted geometric mean) of the priorities of the alternatives w.r.t. the criteria. A single decision-maker is assumed. The method fully utilizes

the above described MCDM problem definition. It is possible to order the alternatives and to select the best one based on the outputs. Additional assumptions involve comparability and reasonably low number of alternatives to be compared, consistency of the preferences expressed through pairwise comparison matrices etc.

Decision matrices also fully utilize the problem definition described in section 2, as do many other methods. It would seem, that the formulation of the decision-making problem as presented in this paper is general enough and with possible additional assumptions can lead to normative results. The recent research in behavioural economics, however, seems to suggest otherwise.

4. What is the problem then?

A short note might be in place here – with the rise of behavioural economics (gaining strong momentum at the end of 1970s and in the 1980s and prevailing strong until today, see e.g. the research by Kahneman and Tversky (1979, 1984) or Simon (1997; with the first edition available already in 1945)) and behavioural operations research (see e.g. Hämmäläinen, Luoma and Saarinen (2013)), also the MCDM started to revise its assumptions (see e.g. Shi, Wang, Kou and Wallenius (2011)). However, even with the clear need to adapt the MCDM models to be able to mimic human real-life decision-making better, it seems that the foundations of the models become unchanged. We seem to be proposing modifications of the models that are rooted in the same assumptions as those models, that were originally deemed normative, but that fail to predict actual human decision-making. And we still seem to associate “rationality of decision-making” with the behaviour that is in line with the outputs of our normative models. And a deviation from the behaviour suggested by the normative MCDM models is frequently labelled as irrational, or at least as biased (see the huge list of behavioural or cognitive biases that you can find e.g. on Wikipedia - just to have a quick and vague idea about the number of types of biases or assumed irrationalities that have already been identified). It would seem that either the models we have currently available do not work as they should, they are too simplified or missing some crucial aspects, or people are not rational (but how have we then survive to this day being so irrational and biased in our decisions?).

A few questions come to mind – these are the ones promised in the introduction:

- What if the “normative” models are not a good representation of real-life decision-makers?
- Or even more interestingly, what if the assumed formalization of the problem is insufficient or defective in some way?
- What if the assumption on the weights being the same for all the alternatives is too restrictive, what if just the mechanism of their determination is the same for all of them, but conditional on something that might be called a reference point?
- What if no choice is also a possibility (i.e. what if we need to allow for the result to be also that the current state of things remains unchanged)?
- Is it reasonable to assume that once the choice is made, it is valid (and the best one) as long as the set of alternatives does not change (i.e. once an alternative is chosen, there is no motivation to choose a different one)?

Let us start slow with a quick look at the compatibility of prospect theory (Kahneman and Tversky, 1979) with the problem definition summarized in Section 2. This framework suggests that during the editing phase of the decision-making the process of framing takes place. In this process alternatives, or their outcomes are internally labelled as gains or losses. In other words a reference point (or

alternative?) is assumed and all the other alternatives (prospects; or outcomes thereof) are judged with respect to this reference point. This is important, as gains are subsequently processed differently than losses. But where would this reference point be in the standard MCDM problem formulation?

We can also consider the availability bias, the endowment effect and many other biases relevant to MCDM and find that there might be a specific alternative that defines the framework for the decision-making problem and/or the parameters thereof, that is missing in the standard MCDM problem formulation. It would serve as the “available alternative” that we have sufficient knowledge of or experience with, it could be the endowed object/alternative that is subsequently considered to be the “starting point” of the decision-making problem. It could be the current solution to the decision-making problem, that is an alternative that we would like to possibly get rid of and replace with a better one. It can also be the state of not having a solution to the decision-making problem yet, that can still be assessed w.r.t. all the criteria. In all these instances there seems to be a good reason to have this alternative (or hypothetical alternative) in the set of alternatives, but also a good reason not to treat it in an exactly same way as the others. We can also ask how to define weights of criteria in problems, where we have no experience with the alternatives. How reliable can the weights be, unless at least a hypothetical alternative is considered to guide the determination of the weights?

It seems as though one alternative (or prospect) might exist to define how we deal with the others. One alternative (or prospect) with a very specific role that should be treated differently from the others? *“One [alternative] to rule them all, one [alternative] to find [the sense in] them, one [alternative] to bring them all...”* (adapted for this purpose from Tolkien (1954)), but let us not get carried away too much and stop before the darkness. But what if there should be *the one alternative*? What if what we are really missing in the general formulation of the problem is an alternative, that should be treated differently from all the others, yet that has to be there to make sense of everything else? Let us call it “the one” (or TO) in this paper. What possibilities would this give us?

It might give us the possibility to explain why sticking with the current solution or an absence of solution might be preferred to selecting one of the alternatives; allow us to model cases when a slightly better alternative is not preferred to its slightly inferior counterpart, as long as the counterpart is “the one alternative”; allow us to even explain why in specific cases people get stuck in loops where they alternate between two alternatives over and over; etc. Note that an inclusion of such an alternative in the set of alternatives might not invalidate the currently available methods. It might be directly compatible with them.

5. Conclusion

In this paper we attempt to summarize the “usual” definition of a decision-making problem and shortly discuss, that while it might be used in many normative models that are currently being applied, it might be missing one important component represented here by “the one” alternative. We suggest what an inclusion of such an alternative could bring and hypothesize that doing so could also make the standard MCDM models closer to real-life decision making (and thus reduce the amount of behaviour we consider “irrational”). We have asked several WHAT IF questions and suggested some hypothetical answers to them. Our hope is to inspire a debate on the very foundations of MCDM this way.

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Do we have crystal balls? A case study of the possibility of predicting academic success using fsQCA

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Abstract: This paper explores the possibilities of using the fuzzified consistency and coverage measures recently proposed by Stoklasa, Luukka, and Talášek in the processing of data on the academic success of a specific sample of university students. We analyse the available data, its quality, completeness, and sufficiency for the given purpose, identify possible reasonable (expert) rules that should be able to predict academic success within this group of students, and evaluate these rules on available data. We also perform a search for the most appropriate rules available in the data for academic success prediction and discuss the results in the context of university admission exams, the design, and the optimization thereof. From the results, we draw conclusions concerning the possibility of prediction of academic success of admitted students. We also analyse the possibility of prediction of academic failure in order to be able to optimize the admission process such that the university resources are not wasted.

Keywords: academic success, admission, university, prediction, fsQCA

JEL classification: D91, C44

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1. Introduction

Admission exams are one of the key elements in the process of selecting appropriate candidates for the study programme at universities. Particularly for those fields where the demand for study significantly exceeds the number of available places in the study programmes, the ability to choose the most suitable candidates is crucial not only for the success of the study programme (and thus also for the production of qualified professionals for the practice in the given field), but also for further continuation of the development of the scientific field through subsequent doctoral studies. And even more importantly, the ability to choose appropriate candidates is also in the best interest of the students themselves, as it can help them to be admitted to the study programme they are suitable for. Ideally one that would not be too challenging for them so that they can successfully complete their studies without too much unnecessary study-related stress and yet receive proper training and sufficiently detailed instruction. Proper selection of students should, ideally, also be able to filter out those students that are not suitable for the programme or that do not have what it takes to successfully complete the programme. This is, in turn, linked also with reasonable and efficient allocation of resources (supervision time, instruction time, money, ...), as unsuccessful students waste resources

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and also occupy places of those that could succeed in the given study programme. Sometimes, it is also a matter of motivation and of the original intentions of the candidates, but this is another issue that will be left out of the focus of this paper. Overall, we can say that even though the (Czech) universities still accept a rather large amount of students, tertiary education is highly competitive. Particularly if talents and “best candidates” are to be identified and accepted. The globalization along with the wide use of English as academic and scientific language makes the mobility of students simple. This can also result in an even larger numbers of applicants for highly attractive study programmes and the necessity to perform at least some first screening of these applicants in a (semi) automated way, for example using an admission exam. And such a screening has to be somewhat reliable. A significant flaw in the design of the admission exam that would score talented applicants very low could prove to be fatal for the programme or the university offering it. It is therefore obvious that the quality, efficiency and usefulness of the admission exams should not only be continuously monitored, but also managed (see e.g. Viktorová, 2018). But do we have tools for that? Do we even have sufficient data for it? And do we have the balls to say something is missing, or to say what type of students we want/need in our programmes? And can we make reasonably reliable predictions concerning the academic success and potential of the applicants, so that we can make a qualified selection? Are our balls made of crystal? Are they polished enough to see the future of the students and their performance clearly?

We intend to shed some light on our ability to predict the academic success of applicants for university study programmes in this paper. To make it possible within the space allocated for a conference paper, we are going to focus on a single study programme and a specific type of admission exams. This programme is the bachelor programme in Psychology offered by the Faculty of Arts, Palacký University Olomouc, which is a good example of a highly attractive programme where the number of applicants clearly exceeds the available places in the programme. We make this choice as the data concerning this programme and the relevant admission exams are available fully to the university. This is also due to the fact that the admission exam for the Faculty of Arts has been completely designed and carried out by the faculty itself since 2011. We will denote this admission exam as SPF further in the text (which may as well stand for “Study Potential Finder”) and we refer to Viktorová (2018) or to the webpages of the Faculty of Arts, Palacký University Olomouc for a more detailed description of this tool.

We will apply the methods of fuzzy set qualitative comparative analysis (fsQCA – see e.g. Ragin, 2008; Schneider and Wagemann, 2014) to identify possible patterns in the data. We will be focusing our analysis mainly on the new fuzzified consistency and coverage measures proposed by Stoklasa, Luukka and Talášek (2017) and Stoklasa, Talášek and Luukka (2018). These measures proved to be useful in social sciences already (Kumbure, Tarkiainen, Luukka et al., 2020) and provide additional insights into the studied relationships in the data by removing ambivalent evidence and counterevidence. We will shortly introduce the problem we are dealing with and the available data in the next section, summarize the necessary notation and terminology in section 3 and then present our findings and their discussion in section 4.

2. SPF – Study Potential Finder or a Selector of Potential Freeloaders? What data do we have available?

We do not intend to analyse the construction of the admission exams or their classification or psychometric properties in this paper. We just intend to focus on their ability to predict academic success. Or to be more general, we would like to know whether there is some added value in the

admission exams, whether the selection of students based on these exams makes sense, or whether there seem to be some clear shortcomings of them. To be able to answer such question, we would obviously need to have a good proxy of academic success (a careful reader has noticed that we do not even dare to talk about measurement in this context). What would be a good representative of academic success? Several potential measures come to mind (see Viktorová, 2018, for more):

- Successful completion of studies – this seems to be a good proxy at first sight, but it is just a binary variable. It is possible to distinguish between a completion within 3 years or sooner, and within a longer time, but what is the actual difference in terms of academic success? And considering unfinished studies, without the reflection of the reasons for the discontinuation of the studies, we cannot reliably say whether our selection was correct (a good and well equipped student was accepted and found an even better school, or an even better fitting field, and left) or whether we have accepted a student that was a poor fit for the programme. Also, one could assume that successful completion of studies can be a matter of the quality of instruction (good instruction should result in most of the students graduating successfully).
- If the binary variable suggested above is not sufficient, we can turn to the mean grade from the state exam. But this is again not a very reliable proxy, as poor performance might not mean poor skill or poor knowledge. Also the grades assigned by different committees might not be directly comparable. It is also a one-time measure that does not say anything about the three years of the studies, it just reflects the performance on (usually) one day of the state exams.
- An alternative that could be considered to be more comprehensive of the students' performance could be the weighted study mean. This, however, has the same problem with comparability of grades from different subjects, and also the compensatory features of the averaging operators can distort the information significantly. Also, one runs a risk of all the values in the whole sample being close to each other.
- Success in practice, admission for further studies etc. These proxies seem to be promising in terms of reflecting the actual "value" of the student for the field, but it is difficult to get this information, as it can be reasonably obtained only some time after graduation, when the motivation of former students to provide further information concerning their performance and abilities might be very low and also desirability bias and other similar issues can compromise the data. One could ask the employers of the students, but this is simply not feasible at this point.

It seems that none of the above provides a sufficiently good measure for academic success. Either we can describe what features a good/successful graduate has, but we cannot get the values of these features, or we can get some values, which might not be very representative of the actual success of the studies. One way to bypass these issues can be to use self-assessment of the skills and competencies directly by our students before their graduation or shortly thereafter. We could still expect some bias of the desirability type, but at least we might be able to get the assessment of what the students have learned, what competencies they have etc. by the students themselves. If we design a tool for this purpose in a methodologically reasonable way, we might get useful information for the admission exam assessment. One such tool was suggested by Viktorová (2018). It consisted of a battery of self-assessment statements the answers to which were captured using a 4-point Likert scale (scored 0, 1, 2, 3). The scales were grouped into five factors, two of which will be used here for further investigation. These factors are "*Reading and essay writing*" (*reading* for short) consisting of 5 items covering the ability to study, time-management, ability to find information, ability to study scientific

literature in foreign languages and independence in report writing; the total score for this scale is a number from $[0,15]$ interval. The second scale used in this paper will be “*Systematic work and research*” (*research* for short) that consists of the ability to define hypotheses, to choose an appropriate research design, to use appropriate methods for data analysis, the ability to use and interpret results from a statistical software and the tendency to systematically prepare for the lectures; the total score for this scale is again a number from $[0,15]$ interval. The scores on these two scales will serve as proxies of the academic success in this paper. The first one reflects what we might call the ability to study at the university, the second one the ability to do research in the given field. We obviously need the SPF score as an input, as we want to investigate how well SPF is able to predict successful students on both scales (i.e. high scores on these scales). The *SPF score* we will be working with is normalized to lie in a $[0,100]$ interval.

As for the sample, our dataset consists of 137 students of the bachelor programme of Psychology who took the SPF within the period 2011-2013. This period is chosen deliberately, as SPF has been in use since 2011, but since 2014, a subject test was added to the admission procedure for Psychology. During 2011-2013, the SPF was the only input for the initial selection of candidates. The 137 students (89 students of the standard presence study programme (PS) and 48 of a combined study programme (CS)) do not constitute the full population of students admitted during 2011-2013, but a representative sample thereof. The reading and research scales were obtained from the students after three years of their studies, so we can expect that their self-assessment reflects the whole programme, its requirements and the success of the students as perceived by them in the two selected fields. We assume that self-assessment is a valid source of information here. As we have already discussed above, it might as well be the most reliable measure of study success we can obtain.

3. Methodology – hypotheses or rules? Statistics or fsQCA?

It would seem that the analysis of the ability to predict academic success can now be performed easily, e.g. using linear regression to test the hypothesis of correlation between the SPF scores and the scores in the chosen two self-assessment scales. The problem is, however, much more complicated than this. Note that the sample suffers from a huge *survivorship bias*. This is a frequent problem with any data concerning academic success – we simply have the data only from those that were admitted. We are missing the information of the (potential) academic success of those that obtained low SPF scores and were not admitted or selected for further stages of the admission process. And there is virtually no way in which we could obtain this information. This prevents us from using regression or correlation analysis to get the answers to our questions. We therefore do not formulate statistical hypotheses to obtain the needed answers. Instead, we will investigate several linguistic (fuzzy) rules and the support in their favour or disproof of them found in the data we have available.

Let U be a nonempty set representing the universe of discourse (the set of values of the given variable). A fuzzy set A on U is then defined by the mapping $A : U \rightarrow [0,1]$. For each $x \in U$ we call the value $A(x)$ a membership degree of the element x in the fuzzy set A and $A(\cdot)$ is called a membership function of the fuzzy set A . $\text{Ker}(A) = \{x \in U | A(x) = 1\}$ denotes a kernel of A , $A_\alpha = \{x \in U | A(x) \geq \alpha\}$ denotes an α -cut of A for any $\alpha \in [0,1]$, $\text{Supp}(A) = \{x \in U | A(x) > 0\}$ denotes a support of A . A fuzzy number is a fuzzy set A on the set of real numbers for which (1) $\text{Ker}(A) \neq \emptyset$; (2) A_α are closed intervals for all $\alpha \in (0,1]$; and (3) $\text{Supp}(A)$ is bounded. The real numbers $a_1 \leq a_2 \leq a_3 \leq a_4$ are called significant values of the fuzzy number A if $[a_1, a_4] = \text{Cl}(\text{Supp}(A))$ and $[a_2, a_3] = \text{Ker}(A)$,

where $\text{Cl}(\text{Supp}(A))$ denotes a closure of $\text{Supp}(A)$. The cardinality of a fuzzy set A defined on a discrete universe is computed as the sum of the membership degrees of all the members of the universe in A . A fuzzy number A is called triangular if its membership function is linear on $[a_1, a_2]$ and $[a_3, a_4]$ and $a_2 = a_3$. Triangular fuzzy numbers will be denoted using their significant values as $A = (a_1, a_2, a_4)$. More details on fuzzy numbers and computations with them can be found for example in Klir and Yuan (1995). A *fuzzy scale* on $[a, b]$ is defined as a set of fuzzy numbers T_1, T_2, \dots, T_s on $[a, b]$, that form a Ruspini fuzzy partition (Ruspini, 1969) of the interval $[a, b]$, i.e. for all $x \in [a, b]$ it holds that $\sum_{i=1}^s T_i(x) = 1$ and the T 's are indexed according to their ordering. These fuzzy numbers can be considered to represent the meanings of the linguistic terms of a linguistic variable (Zadeh, 1975).

We will assume the perspective of linguistic modelling and define uniform linguistic scales on the universes of the three relevant variables – SPF score (input) and reading and research scores (output). For each of the variables we will assume three linguistic terms represented by triangular fuzzy numbers. More specifically $\text{Low_SPF} \sim (0, 0, 50)$; $\text{Medium_SPF} \sim (0, 50, 100)$; $\text{High_SPF} \sim (50, 100, 100)$. Similarly, we will define the linguistic terms for the reading scale's scores: $\text{Low_Reading} \sim (0, 0, 7.5)$; $\text{Medium_Reading} \sim (0, 7.5, 15)$; and $\text{High_Reading} \sim (7.5, 15, 15)$. Note that according to the common rules of computing with fuzzy numbers, the negation of Low_Reading , that is not_Low_Reading would be defined as a linear fuzzy number $\text{not_Low_Reading} \sim (0, 7.5, 15, 15)$. Analogously we define $\text{Low_Research} \sim (0, 0, 7.5)$; $\text{Medium_Research} \sim (0, 7.5, 15)$; and $\text{High_Research} \sim (7.5, 15, 15)$ and $\text{not_Low_Research} \sim (0, 7.5, 15, 15)$. With respect to the survivorship bias, we will focus on the following relationships:

- $\text{High_SPF} \Rightarrow \text{High_Reading}$ (or $\text{High_SPF} \Rightarrow \text{High_Research}$) – note, that if we find support in favour of this rule in the data, then we still have no proof that SPF works well. We need to also look at the disproof of the relationship (i.e. evidence against it) and if it is present and strong, then we can suspect that high scores in SPF do not result in high performance (scores) in the reading and research scales.
- $\text{High_SPF} \Rightarrow \text{Low_Reading}$ (or $\text{High_SPF} \Rightarrow \text{Low_Research}$) – if we found evidence in favour of this relationship in the data, then SPF fails as high scores in this measure can result in low scores in reading or research.
- Unfortunately due to the survivorship bias and due to the number of applicants being much larger than the number of available places in the programme, there will be almost no datapoints with low SPF scores in the sample.

The investigation of these rules will be performed using the fuzzified set-theoretic consistency and coverage measures (Ragin, 2008) denoted as F1, their modifications proposed by Stoklasa, Luukka and Talášek (2017) denoted F2 (these measures remove the effect ambivalent evidence), F3 (these measures also reflect the effect of pure counterevidence), the degree-of-support and degree-of-disproof and finally also the F4 measures suggested recently (Stoklasa, Talášek and Luukka, 2018). In all the F1-F3 cases, high consistency can be understood as a support for the given relationship in the data, values of F4 above 0.5 have similar interpretation. Let us recall at least the F4 consistency measure here:

$$\text{Consistency}_{F_4}(A \Rightarrow B) = \frac{1}{2} \left(1 + \frac{\sum_{i=1}^n (\min(A(x_i), B(x_i)) - \min(A(x_i), \text{not}B(x_i)))}{\sum_{i=1}^n A(x_i)} \right)$$

4. Results and their discussion

Table 1 summarizes the results of the assessment of support for the High->High and High->Low rules for SPF as the input and Reading or Research as the outputs. The analysis was carried out for the whole sample, but within the spirit of fsQCA also more refined rules were investigated. The results for the refined rules (type of study added as another input variable) is presented in the right columns with grey titles, both of them predicting low values of the output scales. If we focus on the High_SPF->High_Reading relationship, it is obvious that we do not find much support for it in the data. Or to be more precise, the F1 consistency is high for both High->High and High->notHigh. Even though the data suggests that there is slightly more support for High->High than for its complement, still F4 consistency of just 0.530 and $\alpha - \text{SUP} = \alpha - \text{DISP} = 1$ suggest that the relationship High->High is not a reliable one. For High_SPF->High_Research relationship the results are even such that the High_SPF->notHigh_Research relationship seems to be supported by the data more (F1 consistency of 0.972, F4 consistency of 0.836). From these we can conclude that while high SPF scores might weakly suggest high reading scores, they definitely do not suggest a high performance in research. On the other hand,

Table 1: Results of the assessment of the validity of selected rules on the whole sample (n=137, CS+PS) denoted with black-highlighted titles and also the strongest results for the subsamples (either CS, or PS) denoted by grey-highlighted titles.

A: High_SPF, B: High_Reading (Whole sample)				A: High_SPF, B: Low_Reading (Whole sample)				A: High_SPF, B: Low_Reading (Regular presence study)			
A=>B		A=>notB		A=>B		A=>notB		A=>B		A=>notB	
F1 consistency = 0.808	F1 consistency = 0.748	F1 consistency = 0.808	F1 consistency = 0.748	F1 consistency = 0.009	F1 consistency = 1.000	F1 consistency = 0.009	F1 consistency = 1.000	F1 consistency = 0.002	F1 consistency = 1.000	F1 consistency = 0.002	F1 consistency = 1.000
F1 coverage = 0.625	F1 coverage = 0.575	F1 coverage = 0.625	F1 coverage = 0.575	F1 coverage = 0.756	F1 coverage = 0.387	F1 coverage = 0.756	F1 coverage = 0.387	F1 coverage = 1.000	F1 coverage = 0.394	F1 coverage = 1.000	F1 coverage = 0.394
F2 consistency = 0.248	F2 consistency = 0.189	F2 consistency = 0.248	F2 consistency = 0.189	F2 consistency = 0.000	F2 consistency = 0.991	F2 consistency = 0.000	F2 consistency = 0.991	F2 consistency = 0.000	F2 consistency = 0.998	F2 consistency = 0.000	F2 consistency = 0.998
F2 coverage = 0.047	F2 coverage = 0.034	F2 coverage = 0.047	F2 coverage = 0.034	F2 coverage = 0.000	F2 coverage = 0.040	F2 coverage = 0.000	F2 coverage = 0.040	F2 coverage = 0.000	F2 coverage = 0.030	F2 coverage = 0.000	F2 coverage = 0.030
F3 consistency = 0.059	F3 consistency = 0.000	F3 consistency = 0.059	F3 consistency = 0.000	F3 consistency = 0.000	F3 consistency = 0.991	F3 consistency = 0.000	F3 consistency = 0.991	F3 consistency = 0.000	F3 consistency = 0.998	F3 consistency = 0.000	F3 consistency = 0.998
F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000
F4 consistency = 0.530	F4 consistency = 0.470	F4 consistency = 0.530	F4 consistency = 0.470	F4 consistency = 0.004	F4 consistency = 0.996	F4 consistency = 0.004	F4 consistency = 0.996	F4 consistency = 0.001	F4 consistency = 0.999	F4 consistency = 0.001	F4 consistency = 0.999
F4 coverage = 0.410	F4 coverage = 0.361	F4 coverage = 0.410	F4 coverage = 0.361	F4 coverage = 0.378	F4 coverage = 0.385	F4 coverage = 0.378	F4 coverage = 0.385	F4 coverage = 0.500	F4 coverage = 0.393	F4 coverage = 0.500	F4 coverage = 0.393
SUP1(A=>B) = 0.126	DISP1(A=>B) = 0.017	SUP1(A=>B) = 0.126	DISP1(A=>B) = 0.017	SUP1(A=>B) = 0.000	DISP1(A=>B) = 0.983	SUP1(A=>B) = 0.000	DISP1(A=>B) = 0.983	SUP1(A=>B) = 0.000	DISP1(A=>B) = 0.992	SUP1(A=>B) = 0.000	DISP1(A=>B) = 0.992
SUP0.9(A=>B) = 0.126	DISP0.9(A=>B) = 0.133	SUP0.9(A=>B) = 0.126	DISP0.9(A=>B) = 0.133	SUP0.9(A=>B) = 0.000	DISP0.9(A=>B) = 0.994	SUP0.9(A=>B) = 0.000	DISP0.9(A=>B) = 0.994	SUP0.9(A=>B) = 0.000	DISP0.9(A=>B) = 1.000	SUP0.9(A=>B) = 0.000	DISP0.9(A=>B) = 1.000
SUP0.8(A=>B) = 0.218	DISP0.8(A=>B) = 0.223	SUP0.8(A=>B) = 0.218	DISP0.8(A=>B) = 0.223	SUP0.8(A=>B) = 0.000	DISP0.8(A=>B) = 0.994	SUP0.8(A=>B) = 0.000	DISP0.8(A=>B) = 0.994	SUP0.8(A=>B) = 0.000	DISP0.8(A=>B) = 1.000	SUP0.8(A=>B) = 0.000	DISP0.8(A=>B) = 1.000
SUP0.7(A=>B) = 0.361	DISP0.7(A=>B) = 0.223	SUP0.7(A=>B) = 0.361	DISP0.7(A=>B) = 0.223	SUP0.7(A=>B) = 0.000	DISP0.7(A=>B) = 0.994	SUP0.7(A=>B) = 0.000	DISP0.7(A=>B) = 0.994	SUP0.7(A=>B) = 0.000	DISP0.7(A=>B) = 1.000	SUP0.7(A=>B) = 0.000	DISP0.7(A=>B) = 1.000
SUP0.6(A=>B) = 0.451	DISP0.6(A=>B) = 0.375	SUP0.6(A=>B) = 0.451	DISP0.6(A=>B) = 0.375	SUP0.6(A=>B) = 0.000	DISP0.6(A=>B) = 0.994	SUP0.6(A=>B) = 0.000	DISP0.6(A=>B) = 0.994	SUP0.6(A=>B) = 0.000	DISP0.6(A=>B) = 1.000	SUP0.6(A=>B) = 0.000	DISP0.6(A=>B) = 1.000
SUP0.5(A=>B) = 0.451	DISP0.5(A=>B) = 0.549	SUP0.5(A=>B) = 0.451	DISP0.5(A=>B) = 0.549	SUP0.5(A=>B) = 0.000	DISP0.5(A=>B) = 1.000	SUP0.5(A=>B) = 0.000	DISP0.5(A=>B) = 1.000	SUP0.5(A=>B) = 0.000	DISP0.5(A=>B) = 1.000	SUP0.5(A=>B) = 0.000	DISP0.5(A=>B) = 1.000
SUP0.4(A=>B) = 0.625	DISP0.4(A=>B) = 0.639	SUP0.4(A=>B) = 0.625	DISP0.4(A=>B) = 0.639	SUP0.4(A=>B) = 0.006	DISP0.4(A=>B) = 1.000	SUP0.4(A=>B) = 0.006	DISP0.4(A=>B) = 1.000	SUP0.4(A=>B) = 0.000	DISP0.4(A=>B) = 1.000	SUP0.4(A=>B) = 0.000	DISP0.4(A=>B) = 1.000
SUP0.3(A=>B) = 0.777	DISP0.3(A=>B) = 0.639	SUP0.3(A=>B) = 0.777	DISP0.3(A=>B) = 0.639	SUP0.3(A=>B) = 0.006	DISP0.3(A=>B) = 1.000	SUP0.3(A=>B) = 0.006	DISP0.3(A=>B) = 1.000	SUP0.3(A=>B) = 0.000	DISP0.3(A=>B) = 1.000	SUP0.3(A=>B) = 0.000	DISP0.3(A=>B) = 1.000
SUP0.2(A=>B) = 0.867	DISP0.2(A=>B) = 0.782	SUP0.2(A=>B) = 0.867	DISP0.2(A=>B) = 0.782	SUP0.2(A=>B) = 0.006	DISP0.2(A=>B) = 1.000	SUP0.2(A=>B) = 0.006	DISP0.2(A=>B) = 1.000	SUP0.2(A=>B) = 0.000	DISP0.2(A=>B) = 1.000	SUP0.2(A=>B) = 0.000	DISP0.2(A=>B) = 1.000
SUP0.1(A=>B) = 0.867	DISP0.1(A=>B) = 0.874	SUP0.1(A=>B) = 0.867	DISP0.1(A=>B) = 0.874	SUP0.1(A=>B) = 0.006	DISP0.1(A=>B) = 1.000	SUP0.1(A=>B) = 0.006	DISP0.1(A=>B) = 1.000	SUP0.1(A=>B) = 0.000	DISP0.1(A=>B) = 1.000	SUP0.1(A=>B) = 0.000	DISP0.1(A=>B) = 1.000
SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000	SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000	SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000	SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000	SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000	SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000
alpha-SUP = 1	alpha-DISP = 1	alpha-SUP = 1	alpha-DISP = 1	alpha-SUP = 0.4	alpha-DISP = 1	alpha-SUP = 0.4	alpha-DISP = 1	alpha-SUP = 0	alpha-DISP = 1	alpha-SUP = 0	alpha-DISP = 1
A: High_SPF, B: High_Research (Whole sample)				A: High_SPF, B: Low_Research (Whole sample)				A: High_SPF, B: Low_Research (Combined study)			
A=>B		A=>notB		A=>B		A=>notB		A=>B		A=>notB	
F1 consistency = 0.301	F1 consistency = 0.972	F1 consistency = 0.301	F1 consistency = 0.972	F1 consistency = 0.244	F1 consistency = 0.995	F1 consistency = 0.244	F1 consistency = 0.995	F1 consistency = 0.175	F1 consistency = 0.995	F1 consistency = 0.175	F1 consistency = 0.995
F1 coverage = 0.785	F1 coverage = 0.440	F1 coverage = 0.785	F1 coverage = 0.440	F1 coverage = 0.809	F1 coverage = 0.434	F1 coverage = 0.809	F1 coverage = 0.434	F1 coverage = 0.752	F1 coverage = 0.404	F1 coverage = 0.752	F1 coverage = 0.404
F2 consistency = 0.023	F2 consistency = 0.694	F2 consistency = 0.023	F2 consistency = 0.694	F2 consistency = 0.003	F2 consistency = 0.753	F2 consistency = 0.003	F2 consistency = 0.753	F2 consistency = 0.000	F2 consistency = 0.820	F2 consistency = 0.000	F2 consistency = 0.820
F2 coverage = 0.024	F2 coverage = 0.043	F2 coverage = 0.024	F2 coverage = 0.043	F2 coverage = 0.009	F2 coverage = 0.044	F2 coverage = 0.009	F2 coverage = 0.044	F2 coverage = 0.023	F2 coverage = 0.063	F2 coverage = 0.023	F2 coverage = 0.063
F3 consistency = 0.000	F3 consistency = 0.671	F3 consistency = 0.000	F3 consistency = 0.671	F3 consistency = 0.000	F3 consistency = 0.751	F3 consistency = 0.000	F3 consistency = 0.751	F3 consistency = 0.000	F3 consistency = 0.820	F3 consistency = 0.000	F3 consistency = 0.820
F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000	F3 coverage = 0.000
F4 consistency = 0.164	F4 consistency = 0.836	F4 consistency = 0.164	F4 consistency = 0.836	F4 consistency = 0.125	F4 consistency = 0.875	F4 consistency = 0.125	F4 consistency = 0.875	F4 consistency = 0.090	F4 consistency = 0.910	F4 consistency = 0.090	F4 consistency = 0.910
F4 coverage = 0.428	F4 coverage = 0.378	F4 coverage = 0.428	F4 coverage = 0.378	F4 coverage = 0.413	F4 coverage = 0.382	F4 coverage = 0.413	F4 coverage = 0.382	F4 coverage = 0.387	F4 coverage = 0.369	F4 coverage = 0.387	F4 coverage = 0.369
SUP1(A=>B) = 0.000	DISP1(A=>B) = 0.461	SUP1(A=>B) = 0.000	DISP1(A=>B) = 0.461	SUP1(A=>B) = 0.000	DISP1(A=>B) = 0.539	SUP1(A=>B) = 0.000	DISP1(A=>B) = 0.539	SUP1(A=>B) = 0.000	DISP1(A=>B) = 0.665	SUP1(A=>B) = 0.000	DISP1(A=>B) = 0.665
SUP0.9(A=>B) = 0.000	DISP0.9(A=>B) = 0.625	SUP0.9(A=>B) = 0.000	DISP0.9(A=>B) = 0.625	SUP0.9(A=>B) = 0.000	DISP0.9(A=>B) = 0.693	SUP0.9(A=>B) = 0.000	DISP0.9(A=>B) = 0.693	SUP0.9(A=>B) = 0.000	DISP0.9(A=>B) = 0.728	SUP0.9(A=>B) = 0.000	DISP0.9(A=>B) = 0.728
SUP0.8(A=>B) = 0.019	DISP0.8(A=>B) = 0.780	SUP0.8(A=>B) = 0.019	DISP0.8(A=>B) = 0.780	SUP0.8(A=>B) = 0.000	DISP0.8(A=>B) = 0.823	SUP0.8(A=>B) = 0.000	DISP0.8(A=>B) = 0.823	SUP0.8(A=>B) = 0.000	DISP0.8(A=>B) = 0.892	SUP0.8(A=>B) = 0.000	DISP0.8(A=>B) = 0.892
SUP0.7(A=>B) = 0.037	DISP0.7(A=>B) = 0.780	SUP0.7(A=>B) = 0.037	DISP0.7(A=>B) = 0.780	SUP0.7(A=>B) = 0.009	DISP0.7(A=>B) = 0.823	SUP0.7(A=>B) = 0.009	DISP0.7(A=>B) = 0.823	SUP0.7(A=>B) = 0.007	DISP0.7(A=>B) = 0.892	SUP0.7(A=>B) = 0.007	DISP0.7(A=>B) = 0.892
SUP0.6(A=>B) = 0.074	DISP0.6(A=>B) = 0.877	SUP0.6(A=>B) = 0.074	DISP0.6(A=>B) = 0.877	SUP0.6(A=>B) = 0.030	DISP0.6(A=>B) = 0.907	SUP0.6(A=>B) = 0.030	DISP0.6(A=>B) = 0.907	SUP0.6(A=>B) = 0.007	DISP0.6(A=>B) = 0.964	SUP0.6(A=>B) = 0.007	DISP0.6(A=>B) = 0.964
SUP0.5(A=>B) = 0.074	DISP0.5(A=>B) = 0.926	SUP0.5(A=>B) = 0.074	DISP0.5(A=>B) = 0.926	SUP0.5(A=>B) = 0.030	DISP0.5(A=>B) = 0.970	SUP0.5(A=>B) = 0.030	DISP0.5(A=>B) = 0.970	SUP0.5(A=>B) = 0.007	DISP0.5(A=>B) = 0.993	SUP0.5(A=>B) = 0.007	DISP0.5(A=>B) = 0.993
SUP0.4(A=>B) = 0.123	DISP0.4(A=>B) = 0.963	SUP0.4(A=>B) = 0.123	DISP0.4(A=>B) = 0.963	SUP0.4(A=>B) = 0.093	DISP0.4(A=>B) = 0.991	SUP0.4(A=>B) = 0.093	DISP0.4(A=>B) = 0.991	SUP0.4(A=>B) = 0.036	DISP0.4(A=>B) = 0.993	SUP0.4(A=>B) = 0.036	DISP0.4(A=>B) = 0.993
SUP0.3(A=>B) = 0.220	DISP0.3(A=>B) = 0.963	SUP0.3(A=>B) = 0.220	DISP0.3(A=>B) = 0.963	SUP0.3(A=>B) = 0.177	DISP0.3(A=>B) = 0.991	SUP0.3(A=>B) = 0.177	DISP0.3(A=>B) = 0.991	SUP0.3(A=>B) = 0.108	DISP0.3(A=>B) = 0.993	SUP0.3(A=>B) = 0.108	DISP0.3(A=>B) = 0.993
SUP0.2(A=>B) = 0.375	DISP0.2(A=>B) = 0.981	SUP0.2(A=>B) = 0.375	DISP0.2(A=>B) = 0.981	SUP0.2(A=>B) = 0.307	DISP0.2(A=>B) = 1.000	SUP0.2(A=>B) = 0.307	DISP0.2(A=>B) = 1.000	SUP0.2(A=>B) = 0.272	DISP0.2(A=>B) = 1.000	SUP0.2(A=>B) = 0.272	DISP0.2(A=>B) = 1.000
SUP0.1(A=>B) = 0.375	DISP0.1(A=>B) = 1.000	SUP0.1(A=>B) = 0.375	DISP0.1(A=>B) = 1.000	SUP0.1(A=>B) = 0.307	DISP0.1(A=>B) = 1.000	SUP0.1(A=>B) = 0.307	DISP0.1(A=>B) = 1.000	SUP0.1(A=>B) = 0.272	DISP0.1(A=>B) = 1.000	SUP0.1(A=>B) = 0.272	DISP0.1(A=>B) = 1.000
SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000	SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000	SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000	SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000	SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000	SUP0.0(A=>B) = 1.000	DISP0.0(A=>B) = 1.000
alpha-SUP = 0.8	alpha-DISP = 1	alpha-SUP = 0.8	alpha-DISP = 1	alpha-SUP = 0.7	alpha-DISP = 1	alpha-SUP = 0.7	alpha-DISP = 1	alpha-SUP = 0.7	alpha-DISP = 1	alpha-SUP = 0.7	alpha-DISP = 1

if we consider the rules predicting low performance in Reading or Research, then both of them are by the same logic rather strongly disproved, meaning that High SPF scores do not result in Low scores in Research or Reading (and this conclusion is very strong for both, but even stronger for Reading). If we add the type of the studies as another input variable and build rules such as indicated in the grey part of Table 1, we can see that High SPF score is a rather strong guarantee of not Low performance in reading for standard presence students and surprisingly High SPF scores seem to be slightly better predictors of not Low Research scores for distance students.

5. Conclusion

In this paper we have identified the key issues connected with the assessment of usefulness of admission exams and proposed a methodology for the investigation of their ability to predict academic success using self-assessment scales as proxies for academic success and fsQCA as the underlying computational methodology. On an example of SPF for a Psychology study programme we have shown how to perform the analysis and interpret its results. The results suggest that while SPF might not be a strong predictor of high performance in the investigated two areas (Reading and Research), it seems to work well in ruling out Low performance in these two areas. Given the presence of survivorship bias, these results can be interpreted as speaking in favour of the usefulness of SPF. We just need to keep in mind that the self-assessment as well as the numerical coding for the Likert scales and the definition of the linguistic scales all can have an effect on the results of the analysis.

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CIVILIZATION LEAP AND SOCIETY 5.0

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Abstract: Cooperation strategies analysis system implications of the fifth industrial revolution and adaptation processes of the information society (economic, technological and cultural aspects) Changes in production and consumption. The end of the mantra of GDP. Recycling as a phenomenon of the future. A change in society affected by natural change. New understanding of medicine, holistic approach. Why fundamentally change education towards the information society, not to the education of the new generation, but to a comprehensive opportunity to work with information and the ability to perceive the world in a holistic dimension. Security protocols of people in connection with cyber security and information society controlled by artificial intelligence..

Keywords: Artificial Intelligence, Holistic Medicine, Recycling, Future, Society, GDP, Information Society

JEL classification: A12, I0, M14

1 Introduction

When we deal with the company of the future, there are several possible avenues of development. One of them is the constant continuation of the current trajectory, only with the change of equipment and technological background. Or the society of the future as a new configuration of social systems, infrastructure, goals and its own functioning. Why are we dealing with the company and its big jumps? The company and its development can be similarly classified. Is it modern to adapt business companies to the level of Industry 4.0. where we have company 2.0, 4.0 or does the article refer directly to 5.0? Company 4.0 should be characterized by a sociable change based on scientific and technological development, new discoveries and innovation of higher order. We expect vertical and horizontal integration, interconnection of production and distribution systems. It expresses a new vision, concept, a fundamental comprehensive society-wide change with an overlap into a change in thinking. A radical change may be the arrival of ASI, i.e. "Artificial Super-Intelligence". The question, however, is whether human evolution will continue at all.

2 Vision of the future company

Contemporary society is governed mainly by economic laws, which are often illogically constructed, but supposedly support the logicity or illogicality of the behavior of mankind. Everything is tied to GDP, which includes more and more distorted parameters. The result is overcrowded highways carrying trucks of goods across Europe or the world. Nowadays, It is common for merchants who are transporting goods to pay for the ferry to take a significantly longer route around several continents, just because they will need it for Christmas and at the moment they have full warehouses, there is no cash flow to pay for these goods to suppliers. Distortions in both microeconomics and macroeconomics take place here. A common example is that, a bank or a small business charges the

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price of a product or service in full, as they have it in their price lists. You then have a registered discount amount in your account that makes the product cheaper. However, this discount must not be recognized in the accounts as a decrease in sales, as it would reduce all the economic parameters observed. This discount is billed as a "marketing expense". This will make the end customer's view of the sales price realistic. From an economic point of view, the discount is recognized as an advertising expense, which from the point of view of shareholders or the bank is taken as a positive step because the supplier invests in advertising and thus promotes sales growth. Does that sound illogical? Franchise chains routinely transfer fees between the franchisee and the franchisees this way, so there is a dramatic increase in similar costs and revenues. The shareholder does not have a chance to unprop this even with detailed examination, so he is satisfied, the value of the shares is growing or the dividend of them. There are estimates that in this way, at the macroeconomic level, they are deformed with the help of transnational corporations, budgets in the range of 5 – 15 percent of GDP. Everything is included in national budgets, including health insurance and social pensions, just to ensure that GDP's ratio to the national budget is correct, because that is what the price of debt service is all about at a given percentage of the state's debt. There are several countries in the world that do not follow GDP, but are mostly at the very bottom of the economic rankings of the entire planet.

2.1 Production, industry, services

Processes and production are deformed in the same way as GDP. For the correct economic calculation of the product or for the value of the company's shares (and subsequently its credit value, dividends and others), it is necessary that the product is simply sold a given in the scheduled quantity. Banks and other institutions have segmentation according to how reliably manufacturers achieve this parameter.

2.1.1 Industry 2.0

V4 economies are called the assembly plants of Western Europe. We qualified for this position. We have production here, often top production. Why are these economies weaker than their western part? Where the added value is hidden, the margins. Most of the population thinks they are hidden in export dividends from these businesses. The opposite is true. In Central Europe, there is a significantly smaller share of the pre-production part, i.e. the development and post-production part, i.e. trade and marketing. This is mostly retained by the producers' headquarters under their own supervision as part of the parent company. Production margins are often only in single digits, and everything is catching up with the production volume. Development, trade and marketing have a margin component often several orders of magnitude higher. A key position in the area. For the last 30 years, foreign and Czech producers have loved the Czech economy for 3 factors.

- 1) Discipline and low cost of the Czech workforce. Low mainly labor costs related to Western Europe or North America.
- 2) Geopolitical proximity = neighboring with Germany, as Europe's industrial leader.
- 3) Quality production. Within the VW Group, for example, the quality of production in Czech Skoda Auto plants is higher than in the parent VW. But these are factors for Industry 2.0. These 3 factors may be uninteresting within a few years, and foreign investors may begin to withdraw their industrial capacities during the current nationalization.

2.1.2 Industry 4.0 and influence on Company 4.0 and 5.0

Industry 4.0 is characterized by a high degree of robotization of production and individualization of production. This trend is already underway. A large manufacturer of railway vehicles, the Swiss company Stadler, decided to produce a large order of decker trains KISS (2010 and 2014) directly in

Switzerland with the deployment of a high degree in robotization and automation of production. The manufacturer Stadler has its plants in Germany (Pankow), Poland (Siedlce) and many others, for the production of "cheaper" countries. This is the first example, as early as 2011, of the use of modern production lines in Europe. VW has taken a similar path, building a new electric car production line (EmDem) in Germany over the past two years, where instead of the classic few thousand employees, there are only about 100 technical engineers with tablets in their hands, which are controlled and adjusted by production robots, chatbots. Manually working human hands can only be found here minimally. Deploying robots and artificial intelligence costs a similar amount everywhere. But we do not need to educate thousands of employees for specific fields, a few dozen engineers and system specialists are enough to replace them. What will those thousands of lower-level employees do? From an environmental point of view, this is about saving resources for transporting intermediate stages of production across the continent, from an economic point of view, this is precisely the threat to the employment of "manufacturing" not to the production countries.

2.1.3 Professions of the future

Which professions will remain, which will arise and which will disappear? Anything that is just routine work, described in an algorithm, will be performed by robots. We are already routinely sending so-called case from the company 4.0, to production processes in India, where workers in Industry 1.0 produce or assemble products. This thinking is important to society 5.0. The most common profession will be the profession of a programmer or an analyst. The customer will present them their vision of what they would like to produce or obtain, and the programmer will have to carry out modeling for robots for individual production of the given product. The professions they replace are now unimaginable as a vehicle driver or accountant, where automated data processing will take place, and the accountant will be left with a role that is now called a tax advisor and solves optimization processes. All professions that demand creativity will surely stay. Robot and artificial intelligence, certainly in the beginning cannot creatively prepare food, here the role of chefs will surely remain. Within 20 years, call center workers, telemarketers, telephone salespeople, insurance and pension fund agents will disappear. (VRBA 2014)

2.2 Education

Covid's situation has fundamentally changed education. At least 80% of pupils and students learn a different style of work. They were always ready to learn what they received from their teachers. Now pupils and students themselves have to learn based on what they already know. This is crucial for them in the future, because they will learn to learn based on their own knowledge and skills. They will need this core knowledge and experience for the rest of their lives for their own lifelong learning. We could call the 21st century a century of lifelong learning. It is no longer enough for us to acquire a certain pumice of knowledge and skills by the age of 25, but we must learn to learn all our lives. Self-learning will become an organic part of our lives. From the point of view of the current model of education, thanks to the Covid crisis, there was a strong pressure not to draw a line between what the student should learn at home from common sources and what activities need to be implemented in the school team with the support of the teacher. All this had to be absorbed by the parents of pupils and students, where many of them understood that it is not only a problem in the teacher but to find a way to educate and motivate their children internally. This will also be helped by artificial intelligence, which does not replace the teacher in their complex role, but can correct written works for them.

2.3 Finance, banking

From a financial point of view, the world will change fundamentally. Physical money is likely to be abandoned with a switch to electronic money. Moving from traditional currencies to cyber currencies. The world's strongest companies will create their own currencies (Facebook = Pound). At the same time, these global companies have so much client information that they can offer targeted loans in better ways than existing banks. What happens when these financial giants pool their resources in parallel with the fall in the share price of today's "normal companies". They will gradually buy them. Ordinary companies will adapt their digital strategies not to a potential customer, but rather with the vision of getting as many customers as possible and we will sell our services to these multinational corporations (Facebook, Google, Apple, Microsoft and others). The use of these currencies will be a flexible and efficient tool for exchanging domestic and international payments characterized by low costs. Similar digital currencies can have far-reaching macroeconomic implications. First of all, they can change the position of traditional banks and the whole process of digital currency spread may, in the worst case, disrupt the process of intermediation and the stability of the financial. Some countries could also face declining demand for their domestic currency and capital outflows. In terms of macroeconomic impact, this is a situation similar to the process of dollarization.

2.4 Transport, logistics

Changing transport systems and preferences takes time. In agglomerations it's in units of years, in small territorial units it is often even decades. At least on a European scale, construction does not take place in the order of months, but in the order of years to decades. All approval processes are complicated and lengthy, there must be an EIA for everything, many institutions comment on the issue and there are also many associations and lobby groups that boycott this.

Attempts to solve this using capacity railway transport by raising it to the level of the 21st century. We can reduce the interval between trains to the frequency of connections below 2 minutes, but the limit will still be the boarding and alighting of passengers. This is a technological limit. Measure the travel time from point A to point B. Door to door. It is not a problem to have a high-speed train that will cover a distance of 100 km in 25 to 30 minutes instead of an hour. However, it is then necessary to add the travel time to the train and especially the transfer times. The stations in the larger nodes are so extensive that even a change in the platform takes, for example, 5 minutes, a change in the means of transport, for example 10 to 15 minutes, from the express train to the metro. During that time, however, the high-speed train traveled 50 km. Now, China, with regard to energy intensity, has forced itself to reduce the speed of trains to a maximum level from 380 to 320 km/h. A more important parameter is that the correct time block for transport from agglomeration to agglomeration occurs. The same problem, of course, is also with ordinary trains. But there is no place to take up more space for the construction of other roads, the existing capacity is overloaded, the construction is lengthy, the synergy effects in terms of impact on nature are catastrophic. From a simple economic point of view, do we want a doctor, an IT engineer with an hourly salary of 500 EUR, to normally make a driver with a salary of 10 EUR per hour for the same amount time? With the help of artificial intelligence and self-driving vehicles, we can handle equally efficient transport, but with a significantly smaller number of employees. Self-driving trains or self-driving subways are common in the world. It's just about prejudice and implementation and also about hundreds of thousands of jobs (political pressure).

2.5 Information society

Society 4.0 already contains elements of artificial intelligence. The timeline is poorly predicted, but the future 5.0 company will be more virtual than real. In everyday life, work life or private life, virtual assistants of the next generations will come to organize our day with us, monitor our life functions and health status, and help with future routine activities. They give us psychological support, they can translate between languages simultaneously. It will not be a robotic replacement for a human, but rather his software support. In today's form, it is, for example, Google Assistant, Amazon Alex, Siri from Apple. Smart dresses will change shape, look, and structure. The human body will be serviced by nano robots. For a long time, only emotional abilities, creativity and social intelligence remain. Virtual reality penetrates our lives. There will be a small percentage of people on the planet who will have "real" experiences (estimated at 10% in 2050), 80% of the population will be able to afford the experience in a virtual environment and the rest will have none or no need. It is estimated that around 2040, 50% of the electricity produced on the planet will be used to run data servers with low or even unnecessary video content.

2.6 Population trends

People are the predominant animal species whose requirements for resources keep growing. In Europe (and other developed countries such as the USA, South Korea, Japan, Singapore etc.) we have seen depopulation for at least the past 30 years. Fewer babies are born than before. The average in Europe has been around 1.4 baby per mother in the past 30 years, the exception being rich countries such as Norway and Switzerland with average near 3. In the USA, the natality growth is mainly due to the Hispanic minority that has historically always had more children. The fundamental difference is quite obvious. Africa and a large part of Asia prefers quantity to quality, while Europe, the USA, Russia, South Korea, Japan, Singapore are heading down the quality street. The policy of one child with the preference of a son was applied for decades in mainland China. Is it normal that we decided, on our own accord, to decrease the population in the northern hemisphere? No country from the G20, the most developed economies in the world, does not achieve - with the exceptions of aforementioned (Norway, Switzerland) - the reproduction value of 2.1 (VRBA. 2020). According to a new IHME study, (Lancet, 2020), civilization will grow to 10 billion by 2050. In 2100, the original estimates were between 11 and 16.5 billion people on the globe, (Vollset, 2019), with the dominant powers of India, Nigeria, China and the United States. (United Nation, 2019). The new scenarios predict the end of population growth around 2064 of around 9.7 billion people, and the population will then start to decline. According to this scenario, in 2100 there should be about 732 million people in China, 1.1 billion in India, 791 million in Nigeria, 6.7 million in the Czech Republic, 2.5 million in Slovakia, 15.5 million in Poland, 7.8 million in Romania, Bulgaria 2.6 million, Serbia 4.4 million. Birth rate falls to Poland 1.17 and the Czech Republic to 1.37 children per woman. The average in Africa will drop from today's 4.3 to 1.8 children.

2.7 Healthcare

Artificial Intelligence processes a patient's diagnostics, but it cannot tell what disease it is, what the prospects of healing are and what are the consequences. Telling patients whether they are terminally ill or whether they will suffer lifelong consequences depends only on a physician's empathy and approach. The Hippocratic Oath includes an ethical dimension. The crucial dimension of ethicality in medicine is to do no harm to patients. There are still many diseases that do not need to be treated, the effort should only be to manage it. But it is often omitted that patients should be done no harm.

How can this be achieved in the modern over mechanized times we are living in when everyone is extremely busy and don't have time for anything? By giving patients the time. (VRBA. 2020) The second crucial moment in medical ethics is the patient - physician relationship. What relationship can we actually establish when a patient only answers a physician's 3-4 questions? This could be the solution to the problem: giving medical staff in the health care sector where everything is limited and physicians are rather clerks who spend 3 minutes out of the 4 they have typing on their computer. Health care costs keep growing. While it is to the joy of pharmaceutical companies, physicians often work extremely long hours and their job requirements are huge: their mistakes can damage patients' health fatally. Physicians should avoid prescribing statistically defined medicine that has no effect on solving a patient's problems whatsoever. Artificial Intelligence can make operations more considerate shortening in consequence the time of hospitalization, in some cases it might no longer be needed at all. Artificial Intelligence can also help with a personalized medical procedure as it will check all medicine used by a patient together with their contraindications. Personalized medicine, tailor made to a given patient, can also be useful in the future. Estimates of decreasing the medicine consumption are about 50 - 60% of current values. This economic dimension will often have a positive impact on the ethical dimension as these measures will significantly improve patients' quality of life.

2.8 Artificial intelligence

Society 4.0 can characterize the initial onset of change in working relationships and life reality models. (Mařík, 2018). We left our privacy for money, or in worse cases for free, to multinational companies and social network owners, who make a lot of money from it (Vrba, Slovakia, 2020). For a large part of the population, social networks have become an electronic drug. However, they were not here at all 20 years ago. Company 5.0 will be characterized by virtual reality. An emerging phenomenon, today imaginable as a 5D cinema, but in practical real life it is already imaginable in many forms. In addition to self-driving cars, we have electronic assistants controlled by artificial intelligence. Artificial intelligence can, for example, design a new painting from thousands of scans of Rembrandt's paintings, which has a clear characteristic of the painting from this legendary painter. He can compose music by studying the Beatles style, speaking in the voice or image of politicians, so we don't have a chance to recognize at first sight or listening whether it's real news or a hoax. This phenomenon now starts under the term Deep Fake. It will be the next message from the president, broadcast on television, reality or it will be Deep Fake, Text messages are much simpler, today part of the content is compiled using algorithms and artificial intelligence, actually at the request of the target listener or reader segment. It will become a complete part of our lives, and we cannot distinguish between the real reality and the reality created by artificial intelligence. Artificial intelligence is now based on the use of neural networks and maps. Artificial intelligence does not yet understand the human context. When driving a vehicle, it is able to drive with maximum overload, which will be perfect in terms of time, but unusable in terms of the human body. Sci-fi is artificial intelligence at the human level, also called general artificial intelligence. Its risk to humanity is that this artificial intelligence can control itself and will not need humanity to do so.

2.9 Political, military and power interests

The basic rule is that war is just a policy waged by other means. (Dolista, 2005). We have autonomous weapons that are not controlled by man. Today we envisage a ban on autonomous weapons of all kinds. But it is especially true in politics that we cannot ensure that these weapons are not produced illegally in the world. Only artificial intelligence can protect us from this form of weapon, controlled

by artificial intelligence. The key conclusion, then, is who controls this artificial intelligence. Game theory tells us that we assume that our competitor is secretly developing this, so we have to do it too.

3 Conclusion

How will we live with this and how will we resist it. Do we want to be in control? Or are we controlled? What can you do? It always starts with education. We need to have properly educated people at the right time in the right place and in the required quality producing the required activity or performance. It is still about investing in education, science and research and also the ability to apply this research in practice. Silicon Valley (USA) and Silicon Valley (Israel) are clearly the world leaders in connecting science and business. We are more and more subject to fashionable technological waves, and we involve our own selves less as a defensive element. It can maneuver us in the information society that is controlled by artificial intelligence. We probably only have the chance to change for a few more decades. The human species will survive this as well, but the question is the degree of futility and nonsense of the sacrifices it will bring. It is necessary to reflect changes in the conditions in which the company operates. Both external = natural conditions and internal, which are in the hands of society itself. Natural change has its own autonomy and mechanism of functioning, human society must find a new way to homeostasis with nature. It is not a question of whether or not society is able to change and adapt to natural changes on the planet, but whether it is willing to do so. Even now, the popular bird flu affair (Covid 19) suggests that nature is able to eliminate humanity on the planet as a useless species, drawing vast amounts of sources of drinking water, clean air and energy for survival.

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Do rural workers engage in their work differently than urban workers? The mediating role of work engagement in the core self-evaluations-work satisfaction relation in and out of urbanized areas.

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Abstract: Economic development forces more and more people to abandon their native villages and move to a city in search for work (Qin et al., 2014). Yet the city migration does not guarantee work satisfaction, as the type of work differs significantly for rural and urban workers (Soosai-Nathan & Fave, 2016). An explanation for the differences in work satisfaction may lay in work engagement (Warr & Inceoglu, 2012) but also in the perception of the work-related self (Bono & Judge, 2003). The present study compares the impact of the core-self evaluations on work satisfaction, with the moderating effect of work-engagement, for people working in the city versus in the country. The study sample consisted of n=438 people, of which n=184 worked outside of a city, and n=254 in a city. The respondents answered an online or a pen&paper questionnaire, indicating their wage, work experience, place of work, and other psychological variables. The results confirm the moderating role of work engagement in the relationship between core self-evaluations and work satisfaction, with some differences between rural and urban workers.

Keywords: Work satisfaction, Core self-evaluations, Work engagement, Rural and urban workers

JEL classification: M540 Personnel Economics: Labor Management; Job Satisfaction; Job Motivation Y80 Psychology – Personality & Individual differences

1. Introduction

1.1. Work engagement in rural and urban work

Work engagement is defined as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli, 2018). It is often perceived as opposition to occupational burnout (Maslach & Leiter, 1997) but both components are not completely exchangeable. What is important, engagement is most often studied in organizations (Bakker & Leiter, 2012; Schaufeli & Bakker, 2004) but to date, this topic is understudied in the case of rural workers (recent notable exception: Hakanen et al., 2019). It is a problem, as a big part of the total workforce, especially in lesser developed countries, consists of rural workers (Soosai-Nathan & Fave, 2016). These issues appear to be highly important, as work engagement is an important predictor of Job Performance, according to the Job Demands-Resources model (JD-R, Bakker & Demerouti, 2017). This means that the more a person engages in her or his work, the greater will the effectiveness of that work be. Additionally, work engagement is negatively related to turnover intentions (Qin et al., 2014; Schaufeli & Bakker, 2004b), meaning workers engaging in their work will be less likely to quit and search for a different job. This however indicates, that work engagement should be somehow related to broader availability of different potential occupations. If a person does not have an alternative to the current job, then a potential lack of engagement should not predict a desire to leave the current job. It is often the case for rural workers, who might have fewer work opportunities, compared to city dwellers (Qin et al., 2014; Soosai-Nathan & Fave, 2016).

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1.2. Work satisfaction in rural and urban work

Besides turnover intentions, work engagement seems to be closely related to work satisfaction. Both engaged and satisfied workers tend to work more effectively (Wright & Cropanzano, 2007) take fewer sick leaves (Schaufeli, 2018), and have generally better health, both physical and mental (Hakanen & Schaufeli, 2012). Yet engagement and satisfaction are not the same, as a study of Alarcon & Lyons (2011) shows. The relationship may be reciprocal, but because engagement is a predictor of life satisfaction (Hakanen & Schaufeli, 2012), and work satisfaction is an important component of life satisfaction throughout the working life (Sirgy, 2012; Skłacka & Derbis, 2015; Zdybek & Walczak, 2009), it might be assumed that work engagement precedes work satisfaction more often than the other way around. This assumption should hold, regardless of the type of work, that there should be no differences between rural and urban workers.

1.3. Core self-evaluations and work satisfaction

In the JD-R theory (Bakker & Demerouti, 2017), the positive work-related effects come from two principal sources: work resources and personal resources. Work resources are those properties of a given work environment, which can be utilized to increase work effectiveness (and in consequence can lead to more satisfaction with work), especially when work demands are high (Karasek, 1979). Those work resources include – among others - the typical positive work properties described by Hackman & Oldham (1980): skill variety, task identity, task significance, autonomy, and feedback. It is important to note, however, that it may be difficult to compare the work properties of urban and rural workers, due to a very different type of work relations. A rural worker (especially self-employed) rarely has a direct supervisor, and the potential cooperation with other workers is different than in a modern plant or office setting. In a similar vein autonomy of an office/factory worker may be different from the autonomy of a rural worker. Fortunately the JD-R (Bakker & Demerouti, 2017) puts also personal resources as predictors of work engagement. Researchers specify self-efficacy (Xanthopoulou et al., 2013) as directly related to work engagement, but other personal resources (Hobfoll, 2002) could play a similar role. It should be especially true for core self-evaluations, a higher-order personality variable, consisting of self-efficacy, self-esteem, positive emotionality, and internal locus of control (Judge et al., 1997). Core self-evaluations (CSE) are the internal disposition, which has been proven to predict work satisfaction (Bono & Judge, 2003; Walczak, 2014) and which is utilized in many countries in studies of workers' satisfaction (Heilmann & Jonas, 2010; Pujol-Cols & Dabos, 2019; Walczak & Derbis, 2017).

1.4. Work engagement as a mediator between core self-evaluations and work satisfaction

Considering that both work engagement and core self-evaluations may impact the workers' satisfaction, it is important to analyse their mutual relations. Because CSE is a higher-order personality trait, which is partially genetically determined (Judge et al., 2012), it should impact both the engagement in the current work and the satisfaction with it. A similar model was verified by Best et al. (2005), with the only difference that they checked the mutual relations between CSE, Job Burn-out, and satisfaction, and the current research uses the antithesis of burn-out, that is work engagement. Therefore, a modification of the model of Best et al. (2005) is proposed, with the following assumption, depicted in Figure 1.

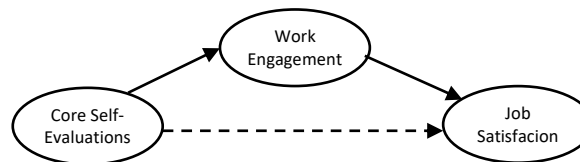


Figure 1. Theoretical relations between researched constructs

2. Method

2.1. Study assumptions

Based on the abovementioned considerations, the following hypotheses have been assumed:

H1. Core Self-evaluations are positively related to work satisfaction

H2. Work engagement mediates between core self-evaluations and work satisfaction

H3. Work engagement differs between rural and urban workers.

2.2. Sample

Two samples were used to test the hypotheses. The first consisted of 133 rural workers, who filled a pen&paper set of questionnaires during the second half of 2017. The second sample consisted of 305 working adults, who worked both in various organisations in a city and the country. All filled an online version of the questionnaire, during the first half of 2018. As there were no differences between the dependent variables as a function of questionnaire form (U-Mann-Whitney's Test; $Z=.441$; $.500$; $.618$; $p>.1$ in all cases) both samples were merged and analysed together. The sociodemographics of the sample depending on their place of work are presented in Table 1.

Table 1: Sociodemographic data of the research sample

	Urban	Rural
<i>N</i>	254	184
% women	65%	64%
% higher education	63%	44%
Mean Age (SD)	37.0 (11.1)	33.2 (9.7)
Mean Tenure (SD)	14.3 (11.2)	10.3 (9.4)

2.3. Measurement tools

All study participants filled the same set of measurement tools, either in the print version or on the google docs' platform. Besides sociodemographic indicators, all participants filled three questionnaires: The Core-Self Evaluations scale (Judge et al., 2003) in the polish version by Walczak & Derbis (2017), the Utrecht Work Engagement Scale – the 9 item version (Schaufeli & Bakker, 2004a) and the 5-item Work Satisfaction Scale (Zalewska, 2003). All scales are reliable and internally consistent, both in numerous previous studies, as well in the current research (Cronbach's alpha for the current sample=.763; .928; .856, respectively for each of the three scales)

3. Results

As a first step, a correlation matrix of the dependent variables was analysed in both subsamples. As the assumption about the normal distribution of the variables was met for neither variable, the Spearman's rank correlation was used in place of Pearson's correlations. The results are presented in Table 2.

Table 2 – Spearman’s Rank correlations between dependent variables, in the Rural/Urban subsamples. All correlations are significant at $p<.001$ level.

	(1) Work satisfaction	(2) CSE	(3) UWES
(1)		.489/.422	.626/.585
(2)	.489/.422		.435/.390
(3)	.626/.585	.435/.390	

The correlations depicted in the table confirm the positive relation between Core Self-Evaluations and Work-Satisfaction, as was assumed in Hypothesis 1.

In the next step, the mediating role of work engagement between core self-evaluations and work satisfaction, as described in hypothesis 2, was evaluated, with the help of the Process Macro for SPSS (Hayes, 2012).

The relationship between Core Self-Evaluations and Work Satisfaction was partially mediated by Work Engagement. As shown in Figure 2, both the direct effect between CSE and Work Engagement (a), as well as the direct effect between Work Engagement and Job Satisfaction (b) were significant, at the level $p<.001$. The indirect effect (c') was tested with 5000 bootstrapped samples, with the unstandardized indirect effect ranging from .259 to .451, with a 95% confidence interval. This effect is therefore statistically significant, which confirms H2.

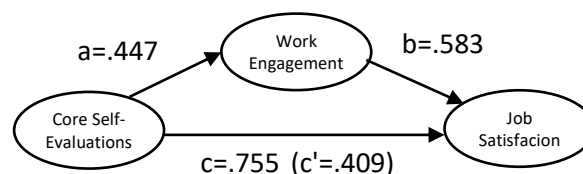


Figure 2. Regression coefficients for the relationship between Core Self-Evaluations and Job Satisfaction as mediated by Work Engagement. All effects are significant at $p<.001$

The last step concerned the comparison of Work Engagement between rural and urban workers. Because the Work Engagement variable was not normally distributed, a Mann-Whitney’s U test was conducted to compare the groups. The results, $U=20542$; $Z=2.162$; $p=.031$; $g_{Hedges}=.154$ indicate a small, but significant difference between urban ($M=3.924$, $SD=1.487$) and rural ($M=3.704$, $SD=1.353$) workers’ engagement. This confirms the H3, with rural workers engaging less in their work as compared with urbanites.

4. Discussion and Conclusion

Study results confirmed the assumptions. Work Engagement has an important role in the core self-evaluations – job satisfaction relation. Specifically, the internal dispositions represented by CSE impact significantly the strength with which people engage in their work. The better we think about ourselves, the greater our inner strength, the more we will engage in our work, regardless if it is a work in the city or the countryside. This impact of CSE on work engagement allows for a better understanding of the satisfaction derived from the work. In practical terms, it is not enough to select the personnel with the highest levels of core self-evaluations. It is also necessary to give them the space to engage in their work, possibly by including elements of work enrichment (Hackman & Oldham, 1980; Walczak, 2013). Only then the most valuable employees will be able to truly feel

happy in their work, and thus reach their full effectiveness potential (Wright & Cropanzano, 2007). The second important finding concerns the differences in work engagement between rural and urban workers. Although those differences (already observed before: Hakanen et al., 2019) were not big, they confirm that the work engagement process is different in and out of the city. Because of the role played by work engagement in the self-evaluations and work satisfaction relation found in this study, we might glimpse why the work out of the city could be less satisfying. Such an assumption would need to be verified in further studies.

4.1. Limitations

Finally, some limitations of the present study need to be noted. The data gathered is of a self-descriptive, single-source nature. Participants in both samples were volunteers and received no compensation for study participation. All the measures were filled at once, in a similar form, which could be a source of common method bias. Additionally, there was no time delay between the measurements of the dependent variables, which could hide the role of tertiary variables impacting all measured constructs.

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Impacts of the COVID pandemic on the business of small and medium-sized companies and the influence of these impacts on the situation in their immediate vicinity (place of business)

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Abstract: The COVID pandemic has changed the conditions and rules for the business of most companies. Companies based in smaller towns or villages tend to be important local supporters of sports, culture or education in the place. Of course, they are also a major employer on a local scale. The COVID pandemic affected the business of most companies not only from a purely economic point of view (decline in orders, sales, profit), it also affected their ability and willingness to participate in what is happening at their place of business, to support local activities and associations. The article seeks to answer the question of whether there is a clear correlation between the decline in the company's performance in connection with the pandemic and its willingness to continue to participate in non-profit activities outside the company. Hard economic data will be used for the analysis, and structured interviews with managers of selected local companies will be used to illustrate the situation.

Keywords: small companies, impact, COVID pandemic, influence

JEL classification: M21

1. Introduction

The COVID-19 pandemic, an unprecedented event since the Spanish flu, has had a significant impact on the lives of each of us. The event can be viewed from many angles. The aim of this article is to try to describe the effects of the COVID pandemic on the business of small and medium-sized enterprises and the impact of these effects on the situation in their immediate vicinity. The article focuses on companies based in smaller towns or villages. This is because the problem of one local and insignificant company from the point of view of economy of the whole country can have a significant impact on the place and community where this company is located.

It is common in Czech conditions that every major employer in small settlements is a source of livelihood for many local families and very often is also a major supporter of local associations, sports organizations, cultural events and schools. An example for many connected with this article is Fotball Club in Jílové u Prahy – their activities depend on donations from supporters.

The first part of the article evaluates the impacts of COVID-19 on the economy of the Czech Republic. Data are drawn on the one hand from the published information of the Czech Statistical Office, part of the data was also obtained from the Chamber of Commerce of the Czech Republic and from the Labor Office of the Czech Republic. The article used information and data from the macroeconomic forecast

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of the Czech Banking Association. In most cases, these were data available as of 30th June 2020. If this is not the case, this fact is explicitly pointed out in the article.

2. Published macroeconomic data - comparison as of 30. 6. 2020

The first data that we will analyze in the article, as can be seen in Figure 1, is the development of industrial production in indexation to the same period last year. The graph was published by the Czech Statistical Office on 6. 8. 2020.

year-on-year growth / decline, working days adjusted, in%, June 2020: -11.9

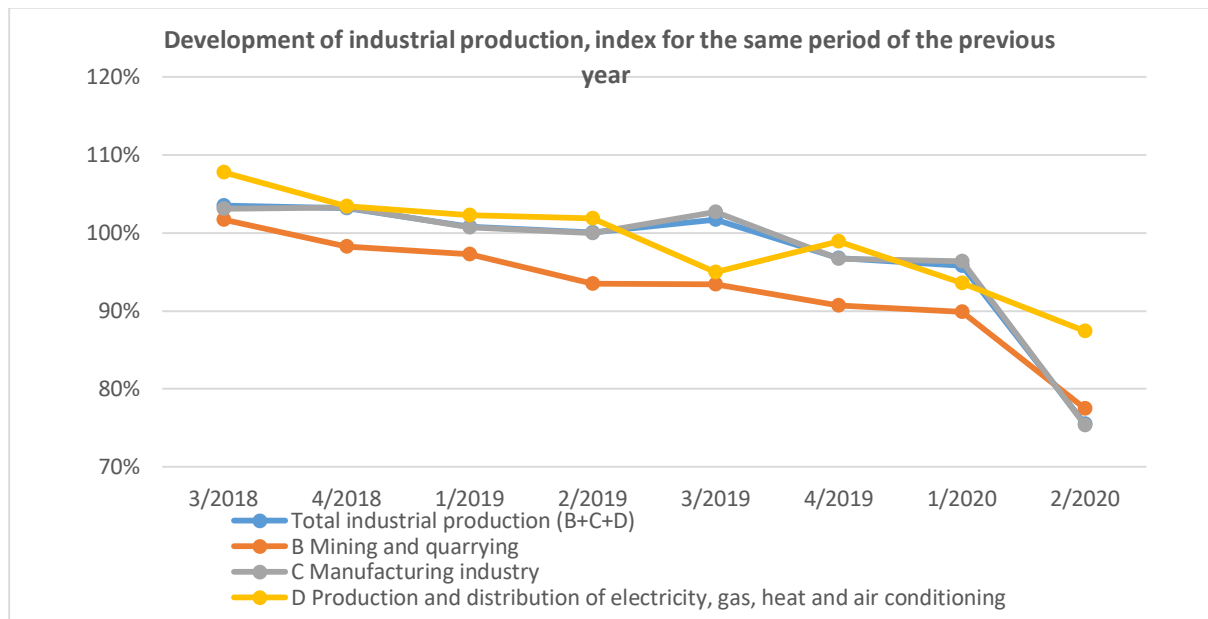


Figure 1: Development of industrial production

The overall decline is clear from the graph. According to the Czech Statistical Office, the year-on-year decline in total industrial production in June 2020 compared to June 2019 was 11.9%.

It is also clear that the largest decline in industry was recorded in manufacturing. On the contrary, the smallest declines were in the electricity, heat, gas and air conditioning sectors. A declining trend has been recorded, but not nearly as sharp as in the manufacturing industry. At the time of writing, it is difficult to predict developments in the coming quarter and in the longer term. Some economists predict that the decline reached its bottom in the second quarter. Their opponents argue with a vision of the crisis, which is referred to as W. They therefore expect a recovery and then another sharp decline.

I would rather be inclined to express the crisis period with the letter U - that is, as such, when the economy will be reflected very painfully from the imaginary bottom and by the end of the calendar year it will more or less fail. This is supported by forecasts of future unemployment, and further growth of the country's unemployed working-age population is expected. Figures on rising household deposits and the postponement of more investment and spending in the future would also speak in favor of this expectation. At the time of the presentation of the article, data for the third quarter of 2020 will already be available. It will then be possible to confirm or refute this hypothesis.

Other data that we have available are data published on 5th August 2020 by the Labor Office of the Czech Republic. These data are not given as of 30th June 2020, but for July 2020. The reason is that it was already available as the only macroeconomic indicator at the time of writing. The Labor Office states that unemployment rose to 3.8% in July. If we want to know the figure for June 2020, then it is 3.7% of the unemployed. This is an increase compared to the previous period, but so far only slight.

As of 31st July 2020, the Labor Office of the Czech Republic registered a total of 279,673 job seekers. That is 10,036 more than in June and 74,553 more than a year ago. This is the highest value since February 2018, when a total of 280,899 people was out of work. Of the total number of unemployed, 261,685 were available jobseekers last month. The share of unemployed people increased to 3.8% (June 2020 - 3.7%, July 2019 - 2.7%). In July, employers offered 334,283 vacancies through the Labor Office of the Czech Republic, of which 11,671 under agreements outside the employment relations.

The relatively modest increase in unemployment can be attributed to government policy during the coronavirus pandemic. Programs announced to support employment played a significant role in the second quarter of 2020. It was the payment of nursing allowance to the parents of children from the beginning of the closure of schools on 11 March 2020 to the end of the school year (with certain conditions). It was also the support of employers within the Antivirus programs, where it was possible to retrospectively draw paid wages even in situations where, for example, the company could not conduct its business due to the closure of a shopping center. Social security relief for employers also played a role. However, some of these programs were terminated at the end of the second quarter, some of which are still in use in the third quarter, but employers are aware that it will not be possible to draw these funds indefinitely. That is why many of them are already working on austerity measures, which of course also include redundancies.

Data published by the Czech Statistical Office are also available, which testify to imports and exports. Foreign trade in goods testifies to the export and import performance of the Czech economy, ie also to the trade balance of the Czech economy's foreign trade. It monitors the actual trade in goods between Czech and foreign entities, ie the change of ownership between residents and non-residents.

Foreign trade in goods

year-on-year growth / decline, in%, June 2020 • **export: -0.4**, • **import: -6.6** (publication date: 06.08.2020)

Surprisingly, by the end of the second quarter of 2020, foreign trade had seen virtually no serious effects of the crisis. This can be interpreted as meaning that foreign contracts were contracted for a long time in advance and therefore so-called expired even in the months that were most affected by the economic downturn. Again, it will be interesting to compare subsequent data for the third quarter of the year. The Czech Banking Association, which has published updated forecasts on the impact of the COVID pandemic, also comments on the issue. An excerpt from them is available in the following paragraphs:

Half a year ago, there was a consensus in the economic-analytical community that the Czech gross domestic product (GDP) would grow by 2% during this year (CBA Macroeconomic Forecast of January 2020). However, during the first quarter of 2020, with the influx of increasingly worrying news from the capital of the Chinese province of Hubei, the outlook for the balance of external risks, which until then had been dominated by Brexit and trade wars, began to change dramatically. By March, it was

clear that the world economy had been hit by a shock of unprecedented proportions in the form of a coronavirus pandemic.

Governments have begun to respond to the growing health threats in an uncoordinated manner by closing their economies, which has hampered international trade, an unprecedented decline in economic growth and pressures to rise in unemployment. To mitigate the economic impact, states have taken several support measures. It was the construction and speed of state measures in the area of economic policy that the main economists of the banks described in the CBA forecast panel in the April "forecast" as the main factor determining the future development of the Czech economy (CBA macroeconomic "forecast"). However, their effectiveness will be possible to evaluate and compare only during the second half of this year, and especially next year and possibly the next year. It now seems that we have already touched the imaginary bottom of the economic downturn. Now, the start-up and future development of the economy depend mainly on the development of foreign demand and the restart of confidence in the economy. The bank's chief economists generally expect the Czech economy to recover from the third quarter of this year, but differ in their outlook for the pace and strength of the recovery, which is reflected in the forecast depth of this year's economic downturn. The resulting consensus is that the Czech GDP will fall by 7.5% in 2020, which is the median among all estimates by banking experts, which ranged from -6.8% to -10.3%.

3. Data of selected surveyed companies as of 30th June 2020, their comparison with the previous period

Company A., focused on foreign trade, imports outside the EU (China), commodities: furniture, decoration. Customers: mostly large companies focused on furniture and decorative items (Sconto, XXX Lutz etc.). The company is located in a small village. From the interview with the company's management and from the published documents can we see that the company evaluated the effects of the pandemic very quickly and took many steps to avert unfavorable developments. According to the published annual report, the company expects a global economic downturn and adjusts expenses in the area of costs. In the first half of 2020, it decided to suspend the purchase of new goods and also the hiring of new employees (which was originally planned). Expenditures to support non-profit activities (support of local associations) will also be carefully considered, according to the company's management, and in some cases the payment of funds may be suspended. According to (unpublished) results for the first half of 2020, there is a noticeable decrease in sales of goods - 46.05% of volume compared to 2019, but this goes hand in hand with a reduction in the volume of labor costs to 47.06% compared to last year and a decrease in power consumption to 45.72% of last year's volume. From these numbers so far, it seems that the company has responded to the effects of the pandemic correctly, although its assumption of reduced support for local associations has already been declared. However, there has certainly not been any dismissal of employees so far (again, as of 30th June 2020), and the decline in sales is offset by a decline in output consumption in almost the same percentage.

Company B., focused on sales of new cars, sales of used cars, rental, warranty and post-warranty service, installation of additional equipment. These are IVECO trucks, mostly. The cars are imported from EU countries. Customers: transport and construction companies, city authorities, integrated rescue system. The company is based in a smaller town. From the interview with the company's management and from the published documents, it is clear that the company tried to address the effects of the pandemic, however, the situation in the field is complex and the company is forced to

take some, sometimes painful and unpopular measures. This applies, for example, to the freezing of wage growth. According to the annual report, the company expects problems with the delivery of vehicles from Italy and also with the fluctuating exchange rate of the euro. The delivered (unpublished) results for the first half of 2020 show a decrease in sales of goods, in the first half of 2020 sales reached only 33.46% of the volume in 2019. Wage costs also decreased; they are at the level of 45.58% of the volume of wages last year. Expenditures for materials and energy reach 36.99% of the volume in 2019. In this situation, the company does not consider supporting local associations or other extra-corporate activities, but rather thinks about reducing the number of employees.

Company C., focused on production of cranes and steel structures, rental of property – production halls and storage facilities. In most cases, these are leases of business premises and parts of industrial areas. Customers: mostly engineering companies in the Czech Republic. The company is located in a larger village. The company declares in its annual report compiled on 20th May 2020 in a paragraph describing future developments a slight optimism regarding its development in 2020. According to (unpublished) results, the decline in rental sales is not apparent, the company is at 49.7% volume of last year. The problem that the company's management is aware of may be the deterioration of tenants' payment morale in the future. The total revenues decreased and reached only 43.46% of the volume in 2019. The reduced volume of wage funds to the level of 43.9% of the volume of the previous period is evident, but this is not related to the dismissal of employees, but to the drawing of compensation from the state (especially nursing). The interview with the company's management does not reveal any thoughts about reducing the number of employees in the following period.

Company D., group of people focused on business in real estate services. This is a category of entrepreneurs who are not obliged to publish their annual results, however, internal data are available. In 2019, they were also important contributors and supporters of the association's activities in the village where they live. As these are smaller entities that engage in completely identical activities under the same conditions and in the same place, their data are published as aggregate. For completeness, it can be stated that it is a group of four people. The internal documents show a significant decline in the group's sales. Revenues from real estate services in the first half of 2020 reached the level of 27.38% of revenues from the previous year. However, the interview with the entities above shows that they are still willing to support what is happening in their community despite the changed conditions for their business. This can be explained by their strong relationship to the place where they live, their sense of co-responsibility for what is happening in the immediate area.

Revenues by companies, comparison of 2019 and the first half of 2020 can be seen in Figure 2.

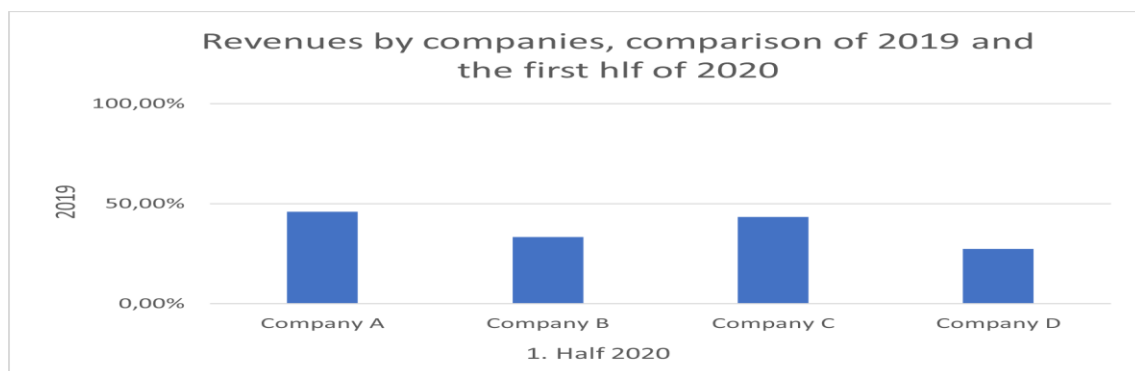


Figure 2: Revenues by companies, comparison

4. Evaluation of structured interviews with company managers

The structured questionnaire was used in controlled interviews with managers of the described companies and consisted of five basic questions. The questions mapped concerns about future developments (the respondent was reminded that this was his prediction to the end of 2020) and the respondents' plans for restructuring the portfolio of products, goods sold or services offered, redundancy plans and reduction of external activities (support local associations and societies). Again, responses with a view to the end of 2020 were required. The survey took place in July 2020. The scaling method was used, the answers of the respondents were recorded on a scale ranging from 1 to 7.

Question 1 Concerns about further developments (from 1 - no, none at all to 7 - yes, very large)
Question 2 Concerns about declining sales by the end of 2020 (from 1 - no, none at all to 7 - yes, very large)
Question 3 Plans to reduce employees by the end of 2020 (from 1 - no, by no means to 7 - yes, for sure)
Question 4 Plans for restructuring the portfolio of goods, products or services (from 1 - no, by no means to 7 - yes, for sure)
Question 5 Plans to reduce support for external activities in 2020 (from 1 - no, by no means to 7 - yes, for sure)

The interview was conducted individually with the representatives of the described companies A, B, C and D. Their answers, as can be seen in Figure 3, were recorded and subsequently processed.

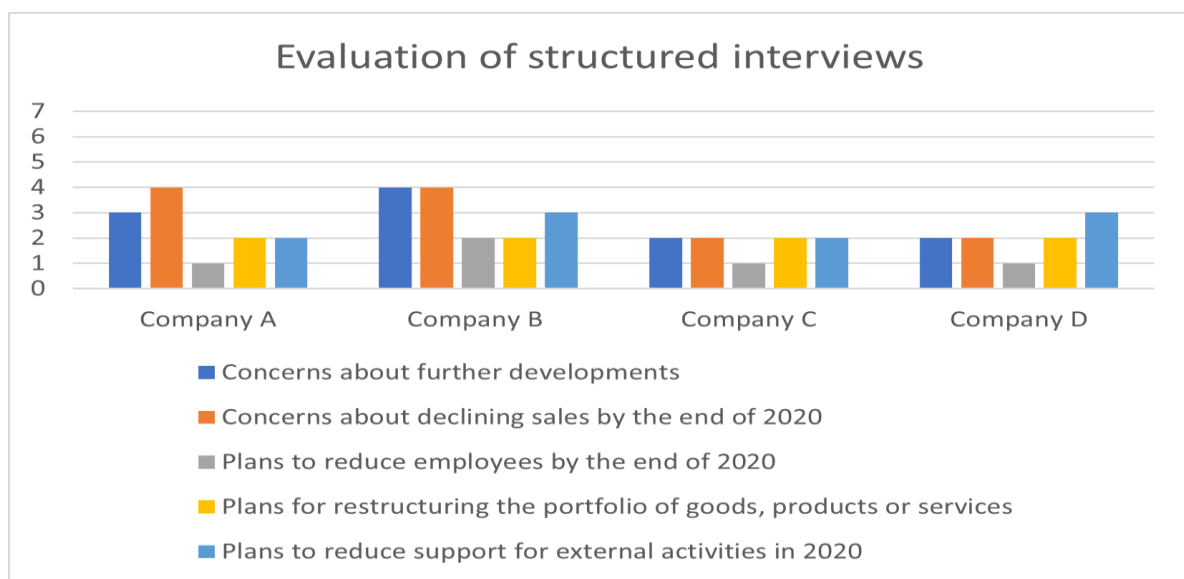


Figure 3: Evaluation of structured interviews

Interviews with the managers of the analyzed companies primarily show a great effort to deal with the effects of the pandemic and the decline in economic activities of companies. All the analyzed companies, without exception, agreed that they try to minimize the dismissal of their employees. None of the companies sees the effects of the pandemic as fatal, no one assessed the situation as a liquidation for the company. There is a clear effort to reduce costs, in all directions. Companies that showed significantly worse economic results in the first half of the year than in the comparable period of the previous year, declared less willingness to participate in extra-corporate activities in their municipality or city.

5. Conclusion

As already mentioned in the introduction, the article deals with the issue of companies based in smaller towns or villages and views them both as important local employers and as important local supporters of sports, culture or education in the place. In the context of published macroeconomic data mapping, among other things, the decline in industrial production and rising unemployment, the article seeks to answer the question of whether there is a clear correlation between the decline in company performance in connection with the pandemic and the company's willingness to continue participating in non-profit activities. Economic data from selected companies were used for the analysis, and structured interviews with managers were used to illustrate the situation. If there are results of 2019, they are partly published by the individual companies on the portal www.justice.cz, and partly are available in internal audit (non-public) documents. They were largely drawn from them. Structured interviews were conducted with individual managers, which focused on assessing the impact of the pandemic on the company's future. The questions that were asked concerned the facts described, ie the willingness of companies to continue to participate in what is happening in their immediate surroundings. The interviewer also asked about redundancy plans. It should be emphasized that this was not research in the given area, for this there is not a sufficient number of analyzed subjects or their distribution in terms of business fields and regions.

However, the available sources show that there is a certain dependence between the company's performance and its willingness to participate in the financing of local activities such as support for education, culture and sports. The only exception was the group of entrepreneurs described as the last in paragraph 3. There, despite the poor results for the first half of 2020, the willingness to participate in events in their municipality did not disappear. To the author of the article, the justification by local patriotism seems probable. It should also be emphasized that the data for the first half of the year, for example in terms of unemployment, appear to be relatively optimistic, but an increase in the number of unemployed is likely in the period ahead. In my opinion, the economy is still at the beginning of a protracted crisis, and its effects are yet to be felt in many areas. Data from the first half of the year in this direction only indicate future developments.

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