



Proceedings of the  
14<sup>th</sup> International Scientific Conference:

# European Forum of Entrepreneurship **2021**

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“Viroeconomies —  
collapse or new business opportunities?”

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**Proceedings of the 14<sup>th</sup> International Scientific Conference  
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# Global inequalities and the quality of life of households

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## \* 1. Introduction

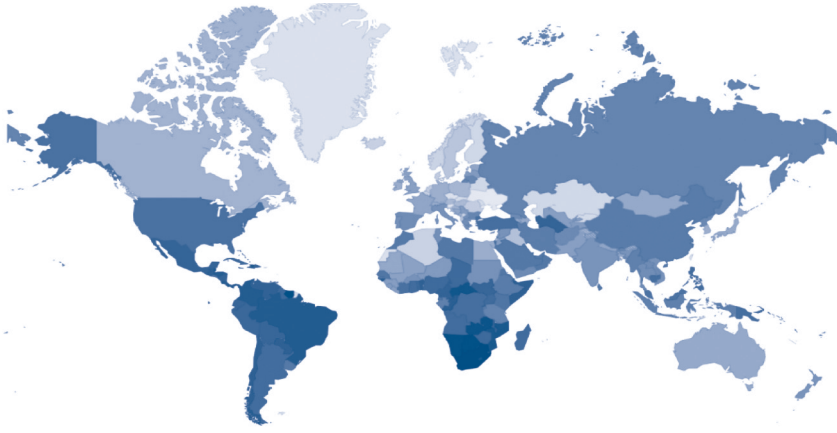
The role of households is very important in any economy, their expenditures support economic growth, while it depends not only on the growth rate of household consumption, but also on the large share of income in which household expenditures represent. Small changes in household income and expenditure can cause much larger changes in investment. This is because companies often expect new sales and orders to be maintained over the long term and households to buy larger quantities of capital goods than they need in a short time. The change in the behaviour of households as consumers of goods and services, households as labour market entities and as a creator of savings for financing investments in fixed assets, has an impact on economic growth and, of course, on meeting the needs of households themselves. The household is the basic unit of society. It can be made up of one or more people, it is the consumer unit in which the most decisions are concentrated. The household can then make group decisions based on some compromise between the needs of individual household members or based on a paternalistic or other approach. Thus, the household consumer is an important part of the market mechanism that comes to the market to procure consumer goods and services to meet his

needs. It acts as a buyer in the market for consumer goods and services, thus creating demand for these goods. On the other hand, the consumer is also a seller, in the factor market, where he offers and sells the factors of production of which he is the owner.

Significant changes in a globalized world bring many advantages, but also negatives, the most outbreaks of which are global inequalities. Inequalities are a topic that examines the causes of uneven development in the world and are perceived primarily as a lack of various essential goods, financial resources to provide for living needs, various services, freedom, jobs, education, health care, drinking water. All these inequalities reduce the quality of life and affect the overall economic development, the growth of crime, the emergence of social unrest, the increase in poverty in regions with higher inequalities. Different types of inequalities have long been the subject of research by several authors. Adam Smith took inequality for granted. In his work *The Wealth of Nations* (2007; originally 1776) he developed the idea of a free market of goods and labour, which leads to a growing division of labour and thus to economic growth. However, the product is distributed not evenly but proportionally. Contributing to the study of inequality was Kuznets (1955), who examined income inequality and argued based on

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Figure 1 » Gini coefficient 2020



25 63

Gini shows income inequality in a society. A higher number means more inequality.

Source: [https://www.reddit.com/r/dataisbeautiful/comments/f8f938/oc\\_gini\\_coefficient\\_by\\_country\\_2020\\_year/](https://www.reddit.com/r/dataisbeautiful/comments/f8f938/oc_gini_coefficient_by_country_2020_year/)

empirical evidence that income inequality arises because of economic development, rises in the early stages of economic development due to industrialization, then declines in later stages. He illustrated income inequality on an inverted U-shaped curve, which illustrates the hypothesis that there is inequality in population income and economic growth. Kuznets' hypothesis has been questioned, Fields (Fields 2011) states that it is not the growth entity that leads to economic inequality, but the nature of economic growth that determines the development of inequality, meaning that according to Fields the effect of growth inequality depends on the structure of production, degree economic dualism, employment patterns, land distribution, the opening of capital markets and the overall level of human capital. According to Stiglitz, economic inequality affects the pace and nature of economic growth, not the other way around. (Stiglitz 2012). Cowell (2009) associates inequalities with social and economic problems, considering them as a sign of deviation from the ideal state. In his work, McKay (2002) describes inequality as the access of different people to different degrees of dis-

tributed phenomena, often in terms of income, consumption, or other dimensions of living standards (level of education, health status). According to several authors, the causes of inequality are also based on the level of education, which is influenced by access to education, because people with a low level of education have more difficult access to job opportunities. (Berger, 2008).

## 2. Income inequality and poverty

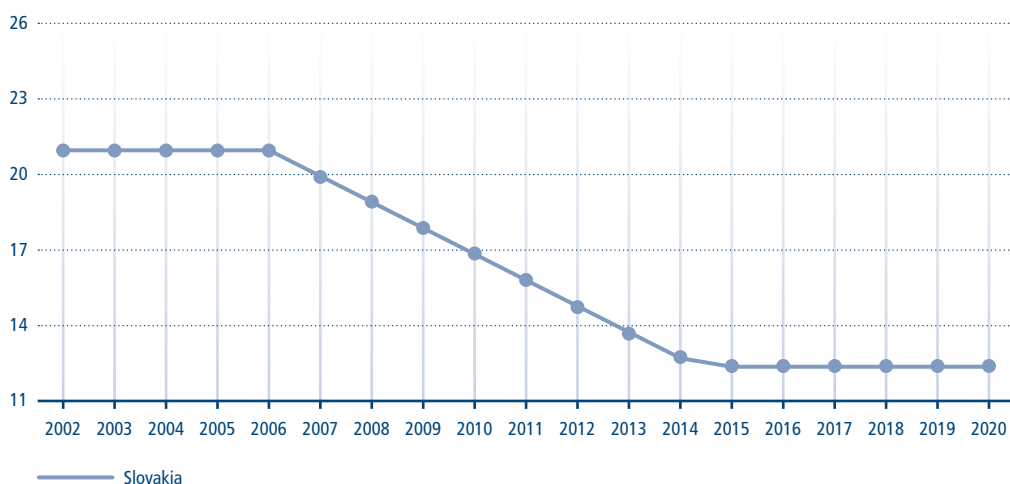
Inequality is a complex and multidimensional phenomenon; each approach specifies a possible factor of inequality without excluding the relevance of other approaches. One of them is the amount of income. Income inequality is currently growing significantly, due to rapid technological development and globalization, as a society of low-income people is being created, with only a small number of people, and at the same time the number of people working for lower wages is increasing. According to the Gini coefficient 2020, the largest income inequalities are in the USA, in the countries of South America, Africa.

Income inequalities are the cause of many social problems, especially the increase in poverty, which is highest in countries with greater income inequalities. Poverty and social exclusion take broad, complex, and multidimensional forms, mainly related to factors such as income and standard of living, educational and decent work opportunities, social protection, housing, access to health care, etc. The measurement of poverty and social exclusion is carried out mainly based on the harmonized EU SILC (European Union – Survey of Income and Living Condition) statistical survey on income and living conditions. It is the main source based on which not only income indicators, such as the at-risk-of-poverty rate, but also indicators for a more comprehensive assessment of poverty and social exclusion, are calculated, namely material deprivation or grouping of indicators to measure at-risk-of-poverty or social exclusion. According to an analysis of the countries with the largest reductions in absolute poverty between 2012 and 2017, Chile, El Salvador and the Dominican Republic showed that low-income household income growth contributed the most to this reduction,

while in Costa Rica, Panama and Uruguay transfers of poor households. In 2017, 42.3% of the population of sub-Saharan Africa lived in absolute poverty, resp. below the international dollar. Around 27.4% of the population in Africa in 2016 suffered from high food insecurity due to low incomes. The level of serious food insecurity relates to 333.3 mil. population. As for Europe, in 2017 there were 113 million, respectively. 22.4% of Europeans at risk of poverty and social exclusion. This is due to low incomes (85.3 million, 16.9% of the EU population), serious material shortages (33.1 million – 6.6%) or low work intensity (short-term jobs) (35.3 million, 5%). Women’s poverty in Europe is higher, reaching 23.3% in 2017. The poverty of men was 21.6% and the poverty of young people under the age of 18 was up to 24.9% and the age of 18 to 24 was 29.2%.

Based on the EU SILC 2017 survey, 856.2 thousand people were at risk of poverty or social exclusion in Slovakia. people, which represented 16.3% of the total population. In comparison with the results for EU SILC 2008, up to 255 thousand people at risk of poverty or social exclusion. The at-risk-

**Figure 2 » Population below the poverty line in the Slovak Republic (%)**



Source: [www.indexmundi.com](http://www.indexmundi.com)

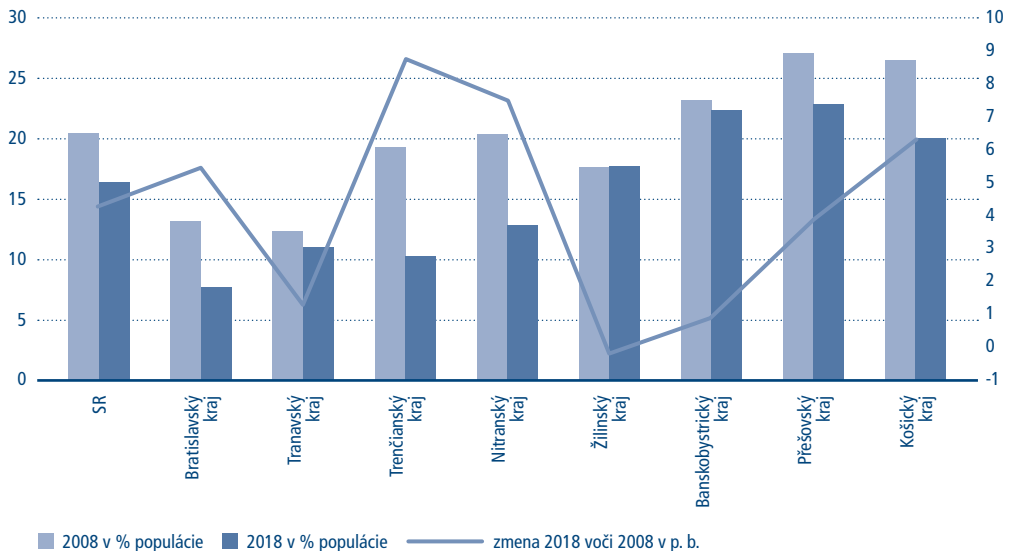
of-poverty rate was 12.4% (men 12.4%, women 12.3%), which is below the EU28 average (16.9%). Compared to individual EU28 countries, the Slovak Republic is one of the countries with the lowest at-risk-of-poverty rate, which is affected by low-income inequality. Figure 2 shows the development of the share of the population living in poverty from 2002 to 2020.

According to EU SILC 2017, the most at risk of poverty or social exclusion according to EU SILC 2017 were single-parent families with children – 45%, multiple families with more than three children – 35.4%, individuals under 65 years – 30.7% and finally individuals – 23,5%. In terms of age distribution, the most at risk group are children aged 0–7 years (22.5%), resp. children aged 0–15 years (22.1%). Based on regional analysis, poverty and social exclusion threaten Slovaks differently in the regions. Four of the eight regions have the highest risk of poverty or social exclusion, exceeding the national average (16.3%). The largest share at risk of poverty and social exclusion, with a sig-

nificantly higher number than the Slovak average, is in the Prešov Region (23.1%) and the Banská Bystrica Region (22.3%). The situation is worse (above-average number of endangered) in the Košice Region (20.3%) or in the Žilina Region (17.9%). From the point of view of the regions, people in the Bratislava region are the least endangered (7.9%). Below the national average are the regions of the Nitra Region (13.1%), the Trnava Region (11.2%) and the Trenčín Region (10.6%). (Figure 3)

If the level of risk of poverty and very low labour intensity of households in Slovakia is below the average of the EU15 countries, the share of the population living in conditions of severe material deprivation is also above average in comparison with the V3 countries. Serious material deprivation expresses the inability to afford to buy more things that are generally perceived as necessary for a full life. Unlike income poverty, it describes the degree of absolute, not relative, need in society.

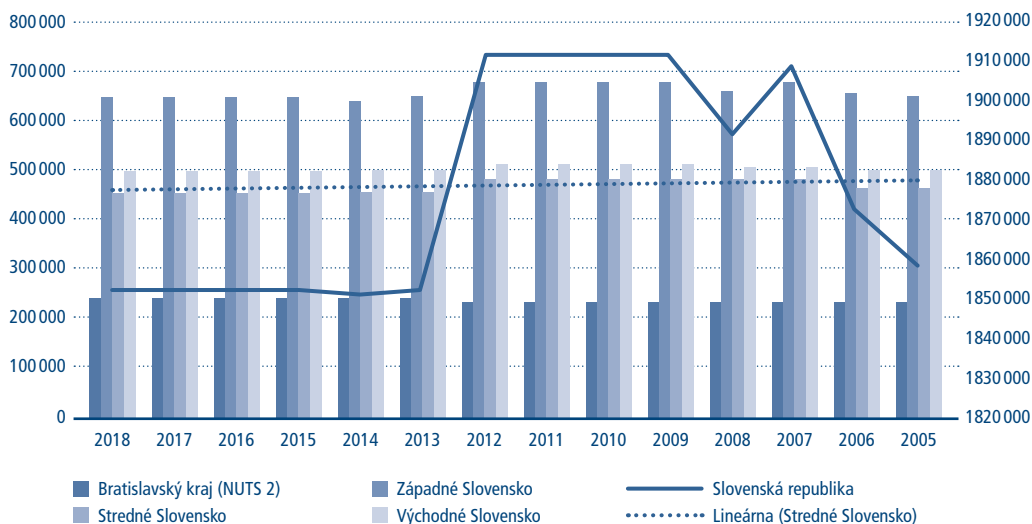
**Figure 3 » At-risk-of-poverty rate or social exclusion (%) — regional analysis**



Source: Eurostat



Figure 4 » Number of households in the SR (NUTS 2)



Source: processed based on Statistic datacube data.

### 3. Households and their socio – economic situation in the Slovak Republic

Economists are examining the ability of households to earn an income to meet their needs, to manage with the goal of maintaining the required quality of life, which depends on the amount of their income. Income comes from economic activity during active working life. In the families of pensioners, these are savings, but above all old-age pensions. The low level of pension benefits is subsidized by the Government of the Slovak Republic mainly from the means of general taxation in the form of a Christmas contribution to pensions, which increases the costs of the pension system.

There are several types of households, residential households, economic households, and census households. Residential households are persons who permanently inhabit an apartment. Economic households consist of several persons who live in one housing unit and together share the costs associated with housing, food costs, etc. Census households are made up of people who live in one apart-

ment and are connected by family relationships. These are complete family households, incomplete family households, multi-family households and individual households. The census household is the basis of a statistical survey that examines the economy of households, their income and expenditure, the size of households, household equipment, the availability of households for drinking water, connection to energy (Vidová, 2008). If the census household has a family basis, it is referred to as family households, for other types of the term non-family household is used. Family households' Slovak statistics is divided into so-called complete families (married couple or de facto marriage of a partner and children without children or with children, regardless of their age, if adult children do not form a separate household) and the so-called single-parent families (one parent with at least one child, regardless of age, if the adult child / children do not form a separate household). Non-family households are divided into multi-member non-family households (two or more individual persons, related and unrelated, who farm together but

are not a family household) and an individual's household (one natural person living alone or as a subtenant, or living together with another census household, but manages independently). In 2018, there were a total of 1.852 mil. households (Figure 4).

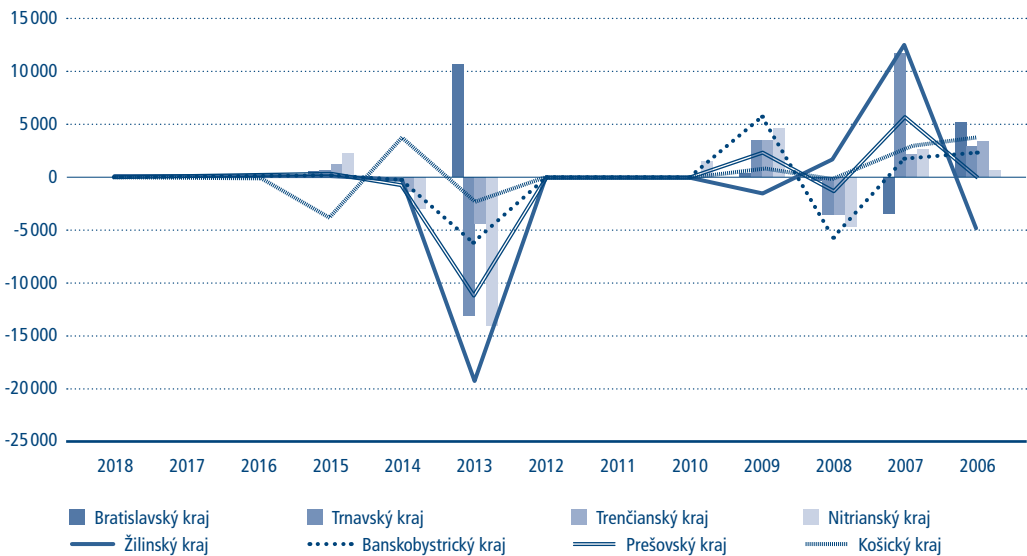
When comparing households in the Slovak Republic according to the number of economically active inhabitants, households with one economically active member predominated (31.1% in the Slovak Republic, 38.2% in the Bratislava Region). In more than a quarter of the total number of households, two were economically active members (27.1% in the Slovak Republic, 28.8% in the Prešov Region). According to the results of SODB 2011, the Slovak Republic had more than 27% of households of which one pensioner was a member (29.1% in the Nitra Region) and more than 13% of households in which two members had pensioner status (15.1% in the Trenčín Region) 15.0% in the Prešov Region).

### 3.1 Households in the Slovak Republic and their management

Based on some compromise between the needs of individual household members or on a paternalistic approach, households make group decisions. Income is a basic prerequisite for meeting the needs of household members. Income comes from economic activity during active working life. In economically active households, these are incomes in the form of wages, and other forms of income, in economically inactive households' various types of social and other benefits, in pensioner households they are old-age pensions, but mainly savings from the economically active period.

Households are becoming participants in several markets. In the market of consumer goods and services, they act mainly as buyers (they buy consumer goods and services) and as sellers, because they sell production factors (e.g. labour) or their goods (e.g., grown vegetables and fruits). They are the most important entity in the market of factors

**Figure 5 » Year-on-year change in the number of households: by region**



Source: processed based on Statistic datacube data.

of production, where they offer and sell the factors of production, which it owns. They are sellers in the labour market. The demand for work is determined by companies, enterprises, and other manufacturers. It depends on the size of the capital and the technology used. The demand for work is a derived demand, that it depends on the demand for the results of this work. Thus, the labour supply represents the number of the working population, which consists of all people who work actively, but also the unemployed. The size of the labour supply is primarily related to the marginal costs of the household in spending the work and the remuneration for the work performed. The household is in balance if the effort at work is equal to the effect that the work brings. For a wage, a household can satisfy the needs of its members, procure food, clothing, invest in education, culture, sports, but can also opt for many other things. The size of the monetary need depends on the number of members, age, education, interests, and tradition. Needs are known people's shortcomings. Our needs are endless, but they are limited by income. We divide needs: according to the material nature (tangible, intangible), according to the urgency of satisfaction (vital – the need to eat, drink, sleep, cultural and luxurious), according to the number of needs bearers (individual needs, collective needs, social needs). Consumption consists of household expenditure on final consumption goods of short – and long – term use and expenditure on services purchased to meet needs.

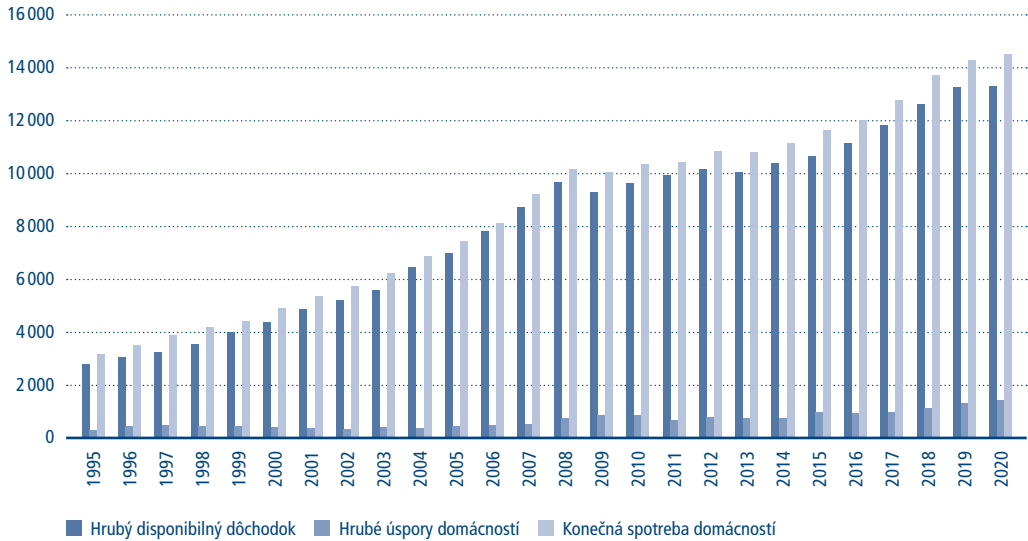
Statistical data are needed to examine the behaviour of households. Living conditions statistics include household income and expenditure statistics (Family Accounts), household income and living conditions statistics (EU SILC) and food consumption statistics. The survey of family accounts provides information for analyses of the standard of living and social situation of private households, in particular information on the development and structure of their expenditures and incomes.

In determining consumer expenditure, the international classification of individual consump-

tion by purpose of use recommended for Eurostat's family accounts statistics (COICOP – Classification of individual consumption by purpose) is applied. The survey of household income was based on Regulation (EC) No Regulation (EC) No 1177/2003 of the European Parliament and of the Council concerning Community statistics on income and living conditions (EU SILC). The EU SILC survey is carried out in the Slovak Republic as the first European harmonized survey of households within the project of European statistical surveys. It shall be carried out in accordance with Regulation (EC) No Regulation (EC) No 1177/2003 of the European Parliament and of the Council concerning Community statistics on income and living conditions and Regulation No. Regulation (EC) No 1553/2005 of the European Parliament and of the Council supplementing the previous Regulation. In the Slovak Republic, it has been carried out since 2005 by surveying households through paper questionnaires. The purpose of this survey is to collect representative and comparable data on the level and distribution of income, the level and composition of poverty and social exclusion. The result is databases of data on income, health, education, employment, individual and household housing, including some demographic data. The information obtained will make it possible to objectively evaluate, internationally compare and analyse the quality of life of the population in the regions and individual EU countries.

In national accounts, a distinction is made between final consumption expenditure and actual final consumption. For the economy these two values are identical, but for individual sectors there is a difference between them, namely that household final consumption expenditure = actual household final consumption – social transfers in kind and government final consumption expenditure = actual government final consumption + social transfers. Division into household and government consumption. In current national accounts, consumption can be divided into individual (final) consumption and collective (final) consumption. →

**Figure 6 » Development of final consumption, gross disposable income and gross household savings in the Slovak Republic (mil. €)**



Source: processed based on data from the Statistical Office of the Slovak Republic

At the level of the whole economy, it does not matter whether we use an approach based on consumption expenditure or an approach based on actual consumption, because the individual consumption of the whole economy is the same in both approaches and the collective consumption of the whole economy is also the same in both approaches. The individual consumption of the whole economy is specifically the consumption of households plus the individualizable part of general government consumption and collective consumption (non-individualizable part of general government consumption). At sectoral level, there is no longer a match between the consumption expenditure approach and the actual consumption approach.

Analysis of data from the Slovak Statistical Office of the Slovak Republic confirms the cumulative increase in final consumption of households in the Slovak Republic from 1995 to 2019. Its growth was on the one hand due to economic growth, but it was mainly a change in the price level of some

products. increasing household incomes. Year-on-year, household final consumption expenditure has changed since 1995. In 2010, final consumption of households decreased – 1.99%, in 2007 there was an increase of 7.44%, in 2019 there was an increase of 2%. The development of final consumption was mainly influenced by the economic situation. Developments in the labour market were reflected in growth, resp. decline in household disposable income. Its increase was supported by a significant increase in employee remuneration. The development of disposable income would also allow for higher consumption, but households continue to prefer to make savings over higher consumption. The savings rate has risen again. Movements in the savings rate over time are an important indicator predicting consumer behaviour. The rate of gross savings changes over time.

If we look at the development of gross savings, gross income, or final household consumption since 1995, we can state that economic growth has had an impact on the development of the exam-

ined indicators. The gross disposable income of households increased between 1995 and 2019, and the development of household final consumption copied this development, except for 2009, when both indicators declined due to the economic crisis. Since 1995, gross household savings have also gradually increased. In 2020, there will be a decline in consumption due to the economic crisis. In Slovakia, 54% of households in March 2020 started to reduce their expenditures in a targeted manner, and in mid-April it was as high as 64%, which increases the savings rate. This is a typical phenomenon in times of pandemics, when households are starting to save, because on the one hand they have nowhere to spend, on the other hand they are afraid to spend their income due to uncertainty and fears about the future.

Concerns about the future are also caused by the fact that at present every third adult citizen of the Slovak Republic is in debt, in contrast to the financial crisis in 2008–2009, when debt did not play such a big role in favour of savings, because household indebtedness was still low. Indebtedness in relation to income has almost doubled. If in 2010 the household indebtedness was around 32 billion €, in 2019 it was about 51 billion €, with 70% of total household debt being mortgage debt. Many have called for deferred payments due to loss of income, and consequently households working in sectors affected or affected by the economic crisis will consider whether they will consume or tend to make savings.

#### 4. Conclusion

The standard of living is one of the determinants of quality of life. An important component of quality of life is consumption, which significantly contrib-

utes to the fulfilment of the individual's desires and ideas about one's own life. Households allocate their income to consumption, which indicates the degree of saturation of needs. With its structure and level, it plays a significant role in shaping the quality of life. There is a very important, interdependent relationship between consumption and quality of life. From the point of view of increasing the quality of life and achieving its effective forms, the relationship between consumption and quality of life should be a balanced relationship. The household behaves like a rational consumer and tries to maximize its benefits. In the position of the investor, he prefers housing that achieves the highest net present value of future returns in investment calculations. Net present value becomes an important factor in the process of maximizing the overall benefit of a given household, which may then address the issue of whether to invest in higher consumer standards in terms of their specific preferences or housing with higher future income but associated with lower household benefits. its consumption. Decisions on the standard of housing depend on the amount of income. Housing significantly affects the quality of life of households. Housing financing, whether own or rented, is a big problem for many households and is the main determinant of Slovak household indebtedness. Given the current COVID-19 pandemic, it is expected that the financial situation of households will deteriorate as the unemployment rate begins to rise.

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- [13] <[https://www.reddit.com/r/dataisbeautiful/comments/f8f938/oc\\_gini\\_coefficient\\_by\\_](https://www.reddit.com/r/dataisbeautiful/comments/f8f938/oc_gini_coefficient_by_)>.

**Global inequalities and the quality of life of households**

**ABSTRACT**

*Significant changes in a globalized world bring many benefits, but they are also various negative phenomena, the most out of which are global inequalities. Inequalities are a topic that examines the causes of uneven development in the world and are perceived primarily as a lack of various necessary goods, financial resources to provide for living needs, various services, freedom, jobs, education, health care. All these inequalities lower living standards. The standard of living is one of the determinants of quality of life, the level of which depends on many factors. From the point of view of increasing the quality of life and achieving its effective forms, the relationship between consumption and quality of life should be balanced. Consumption depends on the amount of income. The current pandemic will significantly affect the income situation and contribute to income inequality. In this paper, we focus on income inequality in the global context and the socio-economic situation of Slovak households.*

**KEYWORDS**

*Globalization; households; quality of life; income inequalities*

**JEL CLASSIFICATION**

*F60; F65; G50; G59; E63; I39; R31*



# Upcoming trends in the focus of CSR programs of companies in the Czech Republic

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## \* 1. Introduction

Social responsibility and sustainability aren't the new words in the management lexicon. In several last years we have lived in a world focused on these issues. For this reason is necessary for the companies to involve themselves in social development activities (Sharma et al., 2018).

CSR activities can take various forms, such as recycling programs, diversity initiatives, green materials, support of community donations (Sen, Bhattacharya, 2001), employees' benefits and educations, innovations in the production process, etc. In the last years it was paid attention to the environmental dimensions, but also to the social and economic dimensions of corporate social responsibility and sustainability (McKinsey, 2010; Chabowski et al., 201). Czech companies and abroad companies provided in the Czech Republic were focused on environmental, HR and volunteer days. For example, in the US corporate philanthropy and donation main stream in the CSR activities/programs (Henderson and Arora, 2010).

The aim of this article is to analyze the change in the approach to socially responsible activities during the covid-19 pandemic. For this purpose, Content Analysis was used. CA shows what the media report on, because the media reflects what is happening in the market and influences the pub-

lic to a certain behavior. This can lead to certain changes in the company, which retroactively affects companies through the customer's demand. Furthermore, a questionnaire survey among companies was used which ascertained the current situation directly at companies.

## 2. CSR activities and consumer response to purchasing

Corporate Social Responsibility can be defined as a company's commitment to minimizing of laminating any harmful effects and maximizing its long-term beneficial impact on society (Mohr, Webb, Harris, 2001; Becker-Olsen et al., 2006). It could be declared that business is a part of society and companies could add to societal and/or ecological benefits (e.g., Ho et al, 2016; Kang and Kozar, 2016). Many companies declared that this involvement in the CSR activities may help enhance the trust of customers. Thankful, this fact could be increasing the market share for companies (Chen et al, 2015; Roitto, 2013; Quaseim et al., 2017; Gupta, 2012). For this reason is it possible to strongly recommend the implementation of CSR programmes in business, because it can bring many positive eventual outcomes (Balcerowicz, 2015), for example:

- Cost reduction
- Branding



- Profitmaking
- Customer loyalty
- Employee engagement,
- Avoiding legal action,
- Attracting and retaining customers and
- Promoting individual philanthropy

In a relationship, it is common for one of them to benefit from the other on the basis of need (Clark, 1984; Bolton and Mattila, 2015) and one of them reflects on the other. Therefore, companies can “teach the public” to behave responsibly, but it can also be individuals in society who can teach companies to behave responsibly. In response to issues such as climate change, consumers are increasingly concerned with social and environmental issues. While at the same time having a great expectation for a company to be socially responsible (Frederick, 2006). This obcomual expectation is described in the model of consumer-driven corporate responsibility. It demonstrates that, to remain profitable, consumer demand for CSR must be met. The corporation not only remains profit, but it engages in socially and environmentally responsible behavior, obtains also reputation and esteem in the public sphere due to the adoption of CSR. Which attracts more customers making them more profitable and so on (Claydon, 2011). In addition, it is clear that consumer response to CSR as a signal of warmth may depend upon the type of buyer-seller relationship (Scott, Mende, Bolton, 2013) and warmth mediates the positive effects of CSR on satisfaction and loyalty intension (Bolton and Mattila, 2015).

### *3. The role of media in informing the public about sustainability and social responsibility*

The media play an important role in informing and educating the public. Over the last few years, the global attention to issues such as social responsibility and sustainability has been increasing (Caban et al., 2015). The communications of CSR activities are important for perception about firms

sustainability by the society. In short, there are two key attributes for CSR communication: message and media (Mercadé-Melé et al, 2017). The consumer may react one way or another depending on how CSR practices are communicated (Maignan and Ferrell, 2004). Korschun and Du (2013) distinguish between two different types of media: traditional (television, radio and print (newspapers), posters, and brochures) and virtual media (social networks, blogs, etc.).

Several studies have been conducted in the past to analyze the impact of media on the perception of CSR (Korschun and Du, 2013). The results of a study by Mercadé-Melé et al (2017) show that while social media allows two-way (interactive) communication, traditional media have a greater influence on positive perceptions. It is also clear from the literature that corporate CSR, which is communicated on the media, also affects changing consumer behavior (Bhattacharya Sen, 2003). Even in this case, the change depends on the type of media used (Maignan and Ferrell, 2004; Wang et al., 2016).

If the CSR is communicated in traditional media, the relationship between CSR and congruence is both indirect and direct (through corporate credibility. Conversely, communication through virtual media is only indirect. Press is also crucial in this topic. For this reason, this paper focused on the research of traditional, this means printed media. For many readers, print media are educational and one of the types of formal opinion leaders.

It is obvious that the media do not only deal with the social responsibility and the sustainability of companies, but also turn their attention to the behaviour of individuals and households. They deal with the sustainable attitudes of opinion leaders and influencers, inform about news at the governmental or European (or global) level and others.

Long-term studies show that the public cares about how companies behave (Cone Communications/Echo, 2013) and that they are influenced by this behaviour. This means that they themselves follow the example of the company. For instance,



Epstein-Reeves (Epstein-Reeves, 2010) states that 88% of consumers assume that companies want and at the same time should achieve company goals regarding improving the social environment and regarding environmental protection. The results of this research are to a greater extent transferable to all developed countries. From the above statement, it can be concluded that the media may be interested in reporting on good Corporate Social Responsibility programmes (Mullainathan and Shleifer, 2005).

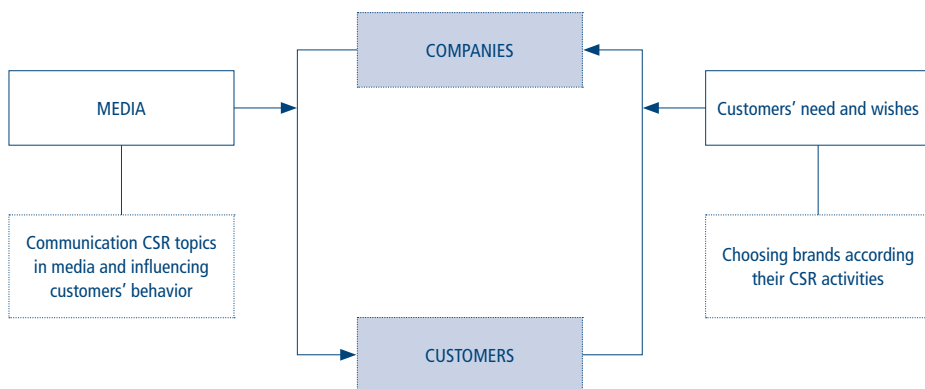
An important moment in this process occurs when the customer and other stakeholder groups are influenced by corporate communication and corporate behaviour. Many brands gain great admiration and a large number of loyal customers and supporters who are proud of their brand and buy products mainly or only from it (Annunziata et al, 2019).

Based on the findings above, a relationship can be derived between companies and customers, which is influenced by the media on the one hand and the needs and wishes of customers on the other. Due to the fact that companies focus on CSR and inform about it through the media, customer behavior is influenced. Customers become more responsible towards their surroundings (commu-

nity and nature). Based on their behavior and perceived customers, they formulate their wishes and needs, which indirectly affect companies. If companies meet the needs and wishes of the customer, there is a high probability that the customer will choose it as their brand or even “love brand”. If they do not meet them (they do not take them into account), then customers do not buy this brand and the company loses the possible income.

As mentioned above, we cannot exclude social media (as a part of virtual communication) from communication, because they play an important role in establishing a relationship between companies and individuals (Crisan and Zbucea, 2015). The main reason is offering a space for discussion and sharing good practice. The main advance of social media is the creation of a social network, thus the connection between two points (Castells, 2010). Some authors even recommend companies to discuss their strategic intentions, which include concepts of their social responsibility on social networks or websites (Grayson, 2009; Moreno Caproitti, 2009). The public discussion is also pleasant for many customers, because they can share their opinions and experiences with sustainable behavior with the company and other customers.

**Figure 1 » The relationship between company and customers**



Source: author



→ **4. Methodology**

The research problem is there is the way how the Czech daily print media informs about the existence and function of social enterprises. Therefore, we used combination of quantitative analysis and questionnaire. The chosen methodology allows us to assess current approach to the Corporate social responsibility in companies and change in media image of corporate social responsibility.

To return to the major part of the inquiry, quantitative content analysis of media, its inseparable part was the coding – “uncovering of data towards their interpretation, conceptualization, and new integration” (Berelson, 1971; Fajkus, 2005).

Quantitative content analysis is the most suitable method for processing large amounts of data. In addition, it is a method known for its systematic nature and objective description of the apparent content of the report since the 1950s<sup>1</sup>, and it was chosen for this research.

There were made eight levels of categories when inquiring the media content: 1. The main topic (economy/ecology/HR/philanthropy/society/legislation) 2. The journalistic genre is interview/newscast/commentary/commercial information/report or story 3. The text encourages to protection (yes/no), 4. The journalistic/illustrative photo is included or not, 5. The media image of CSR is positive, neutral, or negative 6. The page number, 7. What is the length of the content (number of characters with spaces), 8. Is the text suggestive?

There were all articles with the key words “sustainability, corporate social responsibility, climate change, philanthropy, philanthropy + COVID 19”. The keywords were searched in *Hospodářské noviny*, *Lidové noviny*, *Blesk*, and *MF Dnes*). According to the determination of those codes through the “macro-perspective” empiric observation, and their interpretation, it was able to verify

and falsify the hypotheses and find answers to the scientific questions.

A structured questionnaire was used to determine the situation in companies. 150 companies interested in sustainability and social responsibility were contacted. The return was 102 questionnaires. 2 have been discarded for incompleteness. The aim of this part of the research was to find out whether companies began to focus more on helping people and local community than on environmental protection, which was the focus of attention of companies and the media before 2020.

For the research were stated following hypothesis:

- H1: Since March 2020, the media has published fewer articles on climate change than in the first two months of the same year
- H2: Articles in *Blesk* are written to intimidate readers
- H3: Companies have changed the focus of their CSR programs from an ecological pillar to a social pillar
- H4: Companies have started helping the health-care sector and the public with the onset of the covid-19 pandemic
- H5: Companies have started helping the public with the onset of the covid-19 pandemic

**5. Results of the research**

This section presents the results of individual parts of the research.

**5.1 Media analysis using Content Analysis**

**Hospodářské noviny**

In 2020, 125 articles were published corresponding to keywords. Of these, 14 were focused on the ecological area, 58 on the economic area of sustainability, 15 on legislation, and 38 on society and philanthropy. The intimidating text was found in

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<sup>1</sup> Berelson, B. *Content Analysis in Communication Research*. New York: Free Press. 1952

only two examples and in 10 it encouraged the protection and care of nature. Most of the articles were written by authors not from the Czech Print Office (113 articles), only 2 were taken from the Czech Press Office (CTK). Furthermore, the research focused on individual special topics. The phrases were monitored in the individual months of 2020 to capture a possible change in the frequency of published.

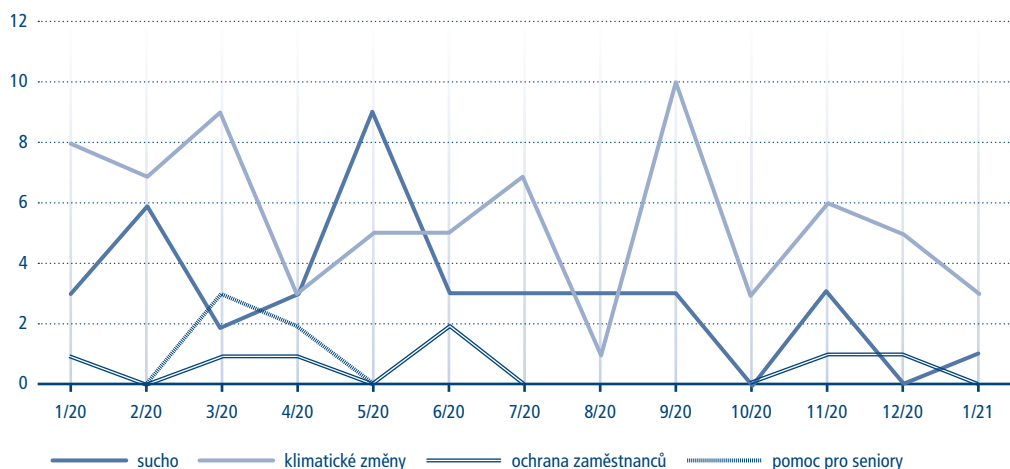
Hospodářské noviny most often commented on the protection of employees at the beginning of the pandemic in the Czech Republic (March and April 2020). An increase in this topic is also seen in June (on closer examination, we find that these articles were also associated with a discussion of the risks that may arise when the measures are relaxed). However, it is still a low number, because the number of cells of this type oscillates around 2 cells per month. The topic of climate change, which is clearly not affected by the pandemic situation, is also interesting, similar to the topic: drought. Help for seniors is only talked about in the spring of 2020, when this topic was really actively discussed in society as well. On the contrary, in autumn, when we could also expect an increased interest in this top-

ic, Hospodářské noviny does not comment on it. It can be said that although they reacted to the change in the situation, they still focused on their main topics.

### Lidové noviny

In 2020, 120 relevant articles were published, of which 29 were devoted to environmental issues and 17 to economic ones. 16 dealt with legislation and the rest focused on society and helping people (58). This time, 15 articles were taken over from ČTK. The text had an intimidating effect in 3 cases and in 40 articles encouraged the protection of nature or society. The following graph shows the development of key topics in the individual months of 2020. Compared to economic newspapers, the topic of drought here until September 2020, only on October comes a sharp decline. On the contrary, they reacted to the situation associated with Covid-19 LN earlier than with his arrival in the Czech Republic. They started discussing topics in February and employee protection as early as January 2020.

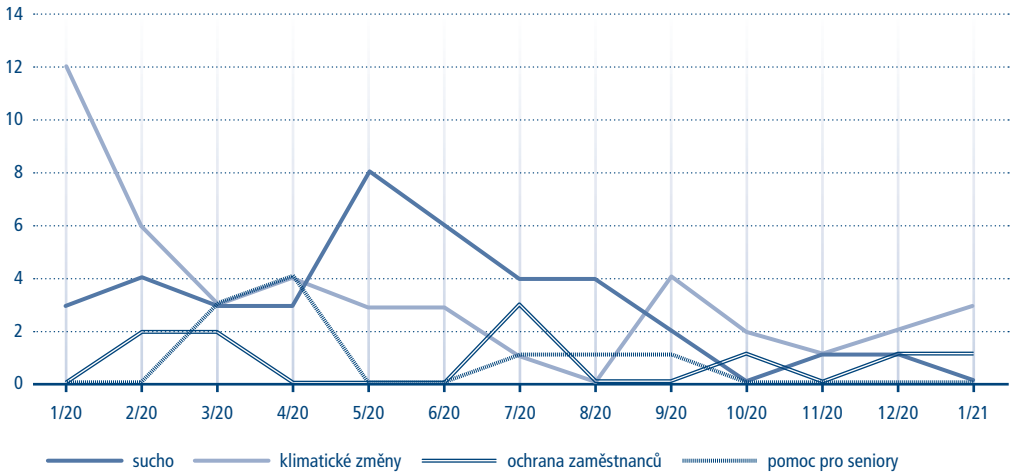
Figure 2 » *Hospodářské noviny*



Source: Author

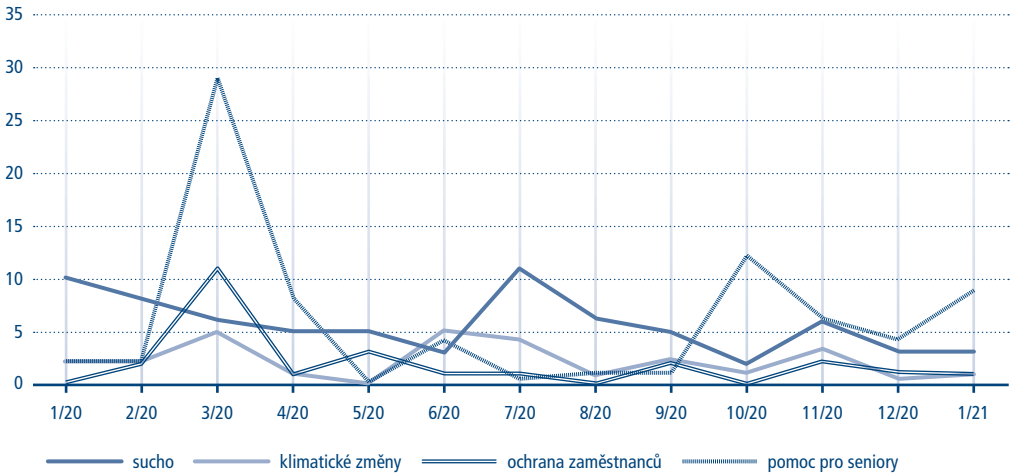


→ **Figure 3 » Lidové noviny**



Source: Author

**Figure 4 » Mladá Fronta Dnes (MF Dnes)**



Source: Author

**MF Dnes**

This medium brought only 49 contributions to the researched topic and 16 articles were taken from the Czech News Agency. Thematically, they focused on ecology (17) and economics (15), fol-

lowed by society and philanthropy (11), and legislation on sustainability and social responsibility the least (6). In 4 cases, it encourages the protection of nature – it was always the author’s text, as in previous cases.

It is evident from the above graph that in March 2020 (occurrence of the Covid-19 virus in the Czech Republic) there was an increase in the attention of care for the elderly and there was also more discussion about consumer protection. On the contrary, the drought is delayed. It penetrates the media again in July 2020 (relaxation of measures, attention is focused on other topics than those related to Covid-19). A significant decline in this popular topic can be seen in October 2020, when attention is growing again to topics related to Covid, because the situation in the Czech Republic is deteriorating again.

### **Blesk**

In 2020, Blesk published only 11 articles related to the researched topic. It was always an author's text and only 3 articles encouraged the protection of nature. Interestingly, these articles are included in the category of PR articles, which means that the behavior of readers was appealed by companies, not newspaper editors. Readers were never intimidated and in 10 cases the text was accompanied by a photograph.

Unfortunately, there is no trend in Blesk, because in this medium, the topic of sustainability and social responsibility is a marginal issue.

#### **5.1.1 Summary of results**

*H1: Since March 2020, the media has published fewer articles on climate change than in the first two months of the same year*

The graphs above do not show that there will be a general reduction in articles to climate change and drought. The decline is recognizable until the end of 2020, but this may be due to a different time of year. **Hypothesis H1 is rejected.**

*H2: Articles in Blesk are written to intimidate readers*

Hypothesis **H2 is also rejected.** The issue of sustainability and responsibility, as well as philanthropy, is a marginal issue for them.

## **5.2. Results from questionnaire research**

Quota sampling was used to determine the sample.

Individual quotas were:

- more than 10 employees,
- CSR program for at least 3 years,
- a company operating on the Czech market,
- a company with a sector other than hospitality, transport and accommodation services.

There were 100 relevant questionnaires (every questionnaire had 15 questions) and the following table (no. 1) shows the most interesting results from the research which are important for this article.

As can be seen from the table, many of the companies started with helping society and hospitals (health professionals). Some of them also focused their attention on supporting the local community. An interesting effect is then seen in the areas of waste packaging and ecological materials and packaging. Some companies felt the opportunity or felt problem of the market here and began to focus their forces on these areas.

In addition to the focus, it is possible to mention some specific cases of how companies reformatted CSR programs in crisis. Nestlé is making a call center for tracing positively tested people and increasing the food bank. Pilsner Urquell supports pubs and hospitals and other activities go to employees – to be active at all. The closed Fashion Arena is at least remodeling the building to make it as environmentally friendly as possible.

#### **5.2.1 Summary of results**

*H3: Companies have changed the focus of their CSR programs from an ecological pillar to a social pillar*

The research showed that many companies turned away from solving ecological issues (ecological pillars: drought, ecological material, and packaging) on the other hand, there are very companies where they launched their CSR programs focused on ecological pillars (drought, waste packaging and ecological material and packaging). Hypothesis **H3 is not confirmed or rejected.**



**Table 1 » Overview of basic information from the questionnaire survey**

	We have not addressed this area since the beginning of the COVID 19 pandemic	We have never addressed this area	We have been dedicated to this area for a long time	We started to address this area because of COVID 19
HR	0	0	94	6
Drought and climate changes	21	15	63	1
Ecological materials and packaging	2	4	76	16
Waste packaging	0	24	57	19
Local community support	8	0	70	22
Do you help hospitals solve the crisis?	0	67	0	33
Do you help society solve the crisis?	0	36	0	64

Source: Author

Addition, there is a large increase in programs aimed at helping the local communities and health care

*H4: Companies have started helping the healthcare sector and the public with the onset of the covid-19 pandemic*

*H5: Companies have started helping the public with the onset of the covid-19 pandemic*

The questionnaire survey shows that with the Covid-19 pandemic in the Czech Republic, the company began to help health care with solving the crisis as well as to help society with solving their problems related with crisis. **Hypotheses H4 and H5 were confirmed.**

## 6. Conclusion

The importance of social responsibility and sustainability is mentioned in this article in the first

part. The research that has occurred between companies and in the media space demonstrates this importance. The year 2020 was crucial for both the economic economy and society as a whole. Thankful, the current situation is clear that companies play an important role in caring for the nature (ecological pillars) as well as the local community and supporting the non-profit sector. This trend is not evident from the results of research only, but it also is seen around us. The good news is that companies have been able to more or less keep their attention in solving environmental problems, and they have recently started to help companies and especially the healthcare sector.

However, it is already clear that in the coming years it will be essential to become sustainable

However, it is already clear that in the coming years it will be essential for other companies to be involved in a sustainable approach and / or socially responsible behavior, if the situation allows.

And not only them, but, when the pandemic situation allows, also the citizens. Additionally media could be very helpful in this situation (figure 1).

Ursula von del Leys at UP! The forum also tried to support the involvement of companies in environmental protection. The Forum occurred on March 4th, 2021 in Prague and with her words, this

article can be concluded: “If nature is not protected, more pandemics await us. To those who prefer to focus on business and entrepreneurial numbers, I want to say that a large part of GDP depends on biodiversity and natural resources” (Ursula von der Leyen, 2021).

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## Upcoming trends in the focus of CSR programs of companies in the Czech Republic.

### ABSTRACT

Nowadays, the world is undergoing significant changes that are not only economic, but also social and environmental. Environmental change is not paid as much attention as in previous years. At least not in the media. This fact has a direct impact on the behavior of the public as consumers and on the behavior of companies. In the several last years the research has shown the direct influence of companies on the responsible behavior of their customers. At the same time, we were able to trace the influence of firms' socially responsible behavior on their corporate image and customer favor. These relationships are formed through the me-



dia, both new and traditional. The aim of the paper is to analyse how traditional media informed about changes in programmes of corporate social responsibility. For the research was used 1) content analysis of selected Czech media (by using the Newton Media database), 2) questionnaire survey in 100 Czech companies that deal with CSR. The purpose is to show what topics and how intensively inform the Czech media. Based on the results, it is possible to estimate the development of the behavior of companies and their customers in the near future.

**KEYWORDS**

CSR; traditional media; changes in CSR programme; sustainability; Covid-19

**JEL CLASSIFICATION**

M14; M20

x

# Social Responsibility to Symbols of Public Institutions

## Example of Identity Management in Czech Republic

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*In our age of inundation by optical stimuli, there is a great danger, that man's own capacity, for pictorial thought will continue to languish. Working with symbols can help us find means and ways to see behind things and to tie together visual and verbal manifestation of world.*

BECKER, U., *Continuum Encyclopedia of Symbols*, Continuum, 2000, p. 6.

### \* *Introduction*

Author analyzes how is it preserved the official symbols of public organizations in the Czech Republic. There are examined public institutions as the organizational units of the state, regional self-governing institutions, as well as municipalities and organizations established by them. Public administration is presented by using symbols such as emblems, coat of arms, flags but also logos (brands). Author follows the origin of symbols and researches the current state of patent law in the approach to trademark protection at the Industrial Property Office. Based on this qualitative analysis of resources, it comes to the solution that greater social responsibility of public institutions requires greater activities of organizations. The current situation is only a passive approach, dependent on legal measures, which are not even fully used. As a solution to the current situation, the author proposes the Database of Symbols, a unified web ap-

plication that includes all the symbolism of public institutions. In this it is possible to establish and connect already existing Czech official applications that manage symbols. This connection will create a background for the active approach of public administration to the protection of its symbols. This approach can be described as a part of social responsibility of institution in framework of Identity Management.

### *1. Symbolic Representation*

Social Responsibility is a widely discussed topic today (Nesiba, 2019; Nesiba, Kolečák 2020). Topic can be extended to the area of responsibility for public symbols. A typical example of a public institution that must protect its public symbols in the context of social responsibility is the Army. Symbols of state Army are unmistakable (Mikulka et al., 2020). Public institutions and organisations are using many state, regional, municipal symbols,

which deserve attention. Social responsibility is also the initiative with active protection of public symbols.

The etymological explanation says that “*symbolone*” (Greek *sym-ballein*, do-accumulate) meant “signature” in antiquity. After concluding the contract, the signatories broke a specific clay object into two parts, and each took one part as a confirmation of cooperation. Whenever the two parts came together, the validity of the contract (analogy) was confirmed. Later it was replaced by a “seal” (Latin *sigillum*). In ancient Greece and Rome, various badges and symbols were used as symbols, which, for example, meant a military rank, allowed entry into the assembly, and gave a certain authorization. Based on the etymology, we can realize that a symbol is something that is composed of parts. Only when *the parts are assembled together is it a symbol and this symbol becomes a symbol of something... a symbol and what it represents are internally related to each other, they cannot be separated from each other* (Kast, 2014, p. 23).

Philosopher Charles Sanders Peirce’s approach is now generally accepted as a basic characteristic of “symbol” in relation to “icon” and “index”:

A visual symbol is a way of representing reality that has multiple levels of interpretation, but can be understood as a *metaphor*. Symbolic thinking is multipurpose, where *reality manifests itself in the opposite way and, as a result, it cannot be ex-*

*pressed in terms* (Eliade, 2004, p. 13), but at the same time it has a real identifying role where the real ordinary communication meaning works. The symbol represents its owner and communicates information with an “*abbreviation*”. We can observe mostly in international environment (Čuhlová, 2018).

Symbolic thinking represents a gnoseological category, where visual symbols represent an abbreviation in the representation of perception. In this way, symbolic thinking is analyzed in a number of philosophical or psychological directions. In general, man can be defined as *homo symbolicus* (cf. Durand, 2012). The whole science, religion can only be understood as a symbolic notation of a world that has its *grammatical rules of symbolic function* (Cassirer, 1996, p. 29).

*The effort to integrate symbolism into contemporary science is gaining in importance, the very understanding of the meaning of human life without a symbolic level is not possible* (Durand 2013, p. 11). Analytical psychology agrees that the “*unconscious*” itself creates natural symbols from the simplest such as a circle to more complex geometric shapes, which receive life (eg in dreams) and communicate a new level of knowledge (Jung, 2006, pp. 87–145). *The symbol is related to experience, feeling, empathy, emotions, in general the symbols bring us closer to unconsciousness* (Jung, 2018, p. 89). The symbol synthesizes (connects) several levels of knowledge.

**Tab 1 » Types of signs — icon, index, symbol according to Peirce**

Type of Signs	Definition	Principle
Icon	The sign resembles the one being marked (pictogram, traffic sign). On the map, green equals forest and blue water.	Extrapolation
Index	The sign is part of the signified (smoke is the index of fire, thunder is the index of lightning).	Analogy
Symbol	The sign is a socially created form that has multiple interpretation of knowledge (religious symbol).	Association

Source: Peirce, 1991



Immanuel Kant speaks of a synthetic mode of cognition leading to transcendental philosophy, by *synthesis in the most general sense we mean the activity of adding different ideas to each other and conceiving their diversity in one knowledge... synthesis is therefore the first thing we must notice if we want to judge the first beginning of our knowledge* (Kant, 2020, A 77 / B 103, p. 99). The symbol reveals new perspectives on reality, which is why phenomenological philosophy has contributed to the understanding of visual symbols by methodological stimuli. The symbol represents various layers of cultural phenomena, under which the hidden immanent idea lies. The founder of phenomenology, Edmund Husserl, therefore demanded *immersion in the meaning of experience itself* in order to understand the idea (Husserl, 2013, p. 28). The symbol reflects the interpretation of man, his relation to the symbol, as existentialist philosophy demanded *a combination of artistic and rational as a way to true thinking* (Heidegger, 2014, p. 16). Understanding the visual symbolic forms of representation unites man with his culture, but at the same time identifies him with his spiritual anchorage. It is *a unifying function, a symbol no matter where it occurs, it always reveals the fundamental unity of several areas of experience* (Eliade, 2020, p. 387). The symbol can thus help to understand the ontologically differently shaped reality, the

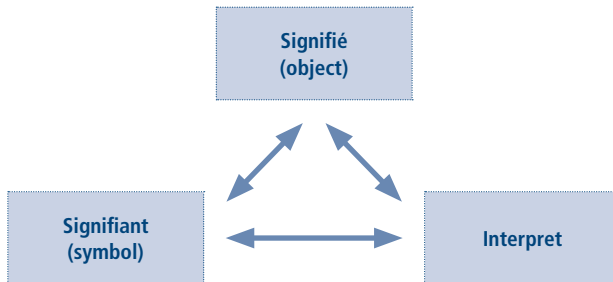
connection with art, unification, identification can reveal a different perspective of the world. Therefore, symbols are so often associated with religion and sacred tradition as with everyday rituals, *each symbol has two faces* (Burckhardt, 2018, p. 106).

That is why symbolism appeals to so much modern esoterics. Because symbolism works with association and analogy, and these can occur in many degrees from “chaotic” dissimilarity to absolute equality, the *conceivable clings as close to the unthinkable as the audible to the inaudible and the visible to the invisible* (Alleau, 2014, p. 77). According to these spiritual interpretations, symbolic thinking therefore *represents the development of an idea* (Lubicz de, 2019, p. 65).

Linguistics provides fundamental impulses for understanding symbolic thinking. The symbol as a visual sign has “logically” decipherable meanings, which can be explained in various ways by association, which leads to the individual and social identification with symbol. Meanings can have more conflicting interpretations, signs can complement or refute each other, but a person identifies with a visual sign. It is the level of identification with the sign that is the subject of interest in this article.

On this basis, a special science of semiotics (Latin *semion* – sign) was created, which is the sci-

**Tab 2 » Semiotic triangle**



Source: Saussure, 2007, own processing

ence of signs (symbols), which in the 20th century was connected with literary structuralism. Each symbol must be explained according to the relationship of the three categories. Therefore, any symbol (sign) must be analyzed according to it, the so-called semiotic triangles, when the interpreter enters into the relationship between the *signifié* (object) and the *signifiant* (symbol). Semiotics claims that there is no direct relationship between a sign (symbol) and a sign (thing), it is necessary to determine the role of the interpreter.

The popular semiotician Umberto Eco spoke of *an epistemological metaphor* (Eco, 2015, p. 168, 175). It divides symbols according to the importance of the degree of complexity of information, on the one hand it is a focus on meaning and order (eg traffic signs), on the other hand an unreduced number of meanings (eg art painting). The visual symbol connects the two planes. It combines both rational literal meaning (*denotation*) with subjective emotional interpretation (*connotation*). From the point of view of semiotics in Eco's interpretation, we speak of "*unlimited semiosis*", where there are *no facts, only interpretations* (Eco, 1986). The *imaginary mind*, according to Eco, *creates symbols as equivalent ontological entities* (Eco, 2012, p. 585; Eco, 1999). Therefore, it depends on the context where the symbols are located and how it influences integral perception (Ulrich et al., 2017). According to contemporary hermeneutic philosophy, symbols perform a function only insofar as we know where *the artistic representation of representation belongs and where it does not belong* (Gadamer, 2019, p. 150).

At present, most public institutions are promoted using various logos, signs, flags. From a semiotic point of view, the institution should have a clear link between the "signifié" and the "signifiant", so that the interpreter can register that it is a public institution. National emblems and flags that a private institution would appropriate can confuse the "interpreter" and present unethical marketing. The performer should be able to clearly distinguish between the logos (brands) of private and public in-

stitutions. The symbol of a public organization could clearly state that it represents state, regional or municipal power. Where did the current symbolism of public institutions come from? *The symbol is multifaceted, almost always based on some analogous relationship since the Middle Ages, in other words on greater or lesser similarities, on the correspondence of a certain idea and thing. More precisely, medieval thought sought to combine something obvious and hidden. Therefore, a word, a shape, a color, a substance, a number, a gesture, an animal, a plant, or even a person can acquire symbolic functions, and represent something other than what they impersonate or show* (Pastoureau, 2018, pp. 20-21). Therefore, we must begin in the *imaginative mysterious Middle Ages*, where biblical exegesis itself is an original symbolic expression (cf. Le Goff, 1998).

## 2. Historical Signs and Flags

To understand today's symbols of public administration, we must explain the history of the emergence of current national, state, but also regional symbols. Contemporary European national as well as regional symbolism originated in the Middle Ages. And with the emergence of heraldry and coats of arms. This created heraldic rules and established rules of use as the *Law of Coat Arms* (germ. "*Das Wappenrecht*", fr. "*Héraut d'armes*"). The term *herald* comes from French (*l'herout* – the one who determines the rules of wearing the emblem).

In a number of western European countries (eg Germany, Austria, Switzerland, Great Britain, Italy, Spain, the Netherlands, Belgium, Denmark, Sweden) there are therefore professional associations which, in cooperation with the public administration, form the symbolic form of logos and emblems. Not only in the area of these large state symbols, but also in lower public self-government – in the area of logos of regions, cities and municipalities, or in public institutions that represent self-governing public power.

It must be said at the outset that heraldic emblems have undergone development since their inception and no emblem is a permanent and stable designation of a person or territory. It is the dynamics of change and development that requires the existence of heraldic law. In general, the Middle Ages were full of symbols, and the 19th century combined this symbolism with the nation-state in a romantic sense. The description of heraldic figures is called *blasonation* (from fr. *le blason* – shield). Blasonization is still a very precise definition and descriptive method with practical implementation in municipal and regional, state symbolism.

Until the First World War, heraldry and the interpretation of blasonation were governed by a rule popularized by the French writer Gérard de Nerval (1808–1855), who argued that *blasonation was the key to history* (Pastoreau, p. 279). Medieval thinking is reflected in the effort to understand various biblical metaphors, allegories and symbols. The Bible has thus become a “*double mirror*” of understanding the world (Frye, 2000). The ability of the imagination made it possible to create heraldic features into complex interpretive aspects. The ability of symbolic thinking was formed from Dante to Goethe, when the Latin principle of “*aliud dicitur, aliud demonstratur*”, ie *some are said, others are shown*, was applied.

The Middle Ages followed the symbolism of both the Old Testament (eg Numbers 12: 6–8) and the New Testament, such as St. Paul in his First Epistle to the Corinthians (1 Corinthians 13:12). The greatest authorities were St. Augustine, who further defined that “*signum est enim res praeter speciem, quam ingerit sensibus, aliud aliquid ex se faciens in cogitationem venire*”, ie “*a sign is any thing that evokes in our thinking something more than the impression it has on our senses*” (Augustinus Aurelius, 2005, II, I, I).

In the High Middle Ages, the authority was Thomas Aquinas, who pointed out the Aristotelian meaning of symbolism. Human intellect has the ability to hide and discover the meaning of the

symbol. We can create symbols ourselves, not just interpret revealed biblical truths. In his Discourses, Aquinas claimed that “*sensus spiritualis... accipitur vel consistit in hoc quod quaedam res per figuram aliarum rerum exprimuntur*”, ie “*spiritual meaning*” is understood or consists in the fact that *some things are expressed in the image of other things*” (Aquinas T., VII, 6, 15, 2019). Aquinas represents a shift in the understanding of things, these “other” factual things are already created things of everyday life, here the symbolism is factual (*in factis*), not mystical or verbal (*in verbis*) (cf. Eco, 2002, p. 279–316). Already in the medieval ability of imagination, the possibility opens up for creative work with symbolism that transcends the boundaries of the Middle Ages to this day (cf. Eco, 2002, pp. 279–316). Medieval symbolism, which created heraldic figures, resulted from spiritual ideas (cf. Davy, 2014), but at the same time shaped a scientific view of the world. E.g. Renaissance doctrine of signatures led to the development of sciences based on a system of analogies and correspondences, as suggested by Plato in his dialogue Timaios (Timaios 45 bc), which since the 15th century were adopted by the then philosophers as a “*lesson world*” (cosmos) and “*small world*” (man) – *two worlds that are in their image* (Hlaváček – Žemla, 2020, p. 16).

Medieval culture was full of imagination and symbolic representation. *The symbol of thinking and perception is so natural for medieval authors that they do not feel the need to inform their readers in advance of their intentions* (Le Goff – Schmitt, 2002, p. 777). Today’s meaning of the word “*emblem*” for medieval thinking would be represented by the architectural term “*emblem*” (ie architectural ornament). Today does not understand all the meanings of medieval characters (eg Czech lion, Moravian eagle), although, as we will see below, symbolic thinking has metamorphosed into other contemporary forms. Heraldic emblems are related to identity and originated at the same time as names, surnames, seals and even fashion in the 12th to 13th centuries. The *symbol represents the*

owner, it is always stronger and truer than the real person or thing he is supposed to represent (Pastoureaux, 2018, p. 25). Heraldry was directly linked to symbology, and heraldic law created symbols that are mostly features of contemporary states and public institutions.

Heraldic law in the Czech Republic ceased to exist with the establishment of Czechoslovakia in 1918. With the exception of state emblems, other aristocratic markings and state symbolism were prohibited. Noble titles, orders and symbols were abolished by the National Assembly among the first norms of the state in December 1918 as Act. No 61/1918. The use of state as well as aristocratic symbols for private purposes was fined. This law is still the valid norm. In the emergence of the symbolism of independent Czechoslovakia, the complexity of determining national symbols became apparent, for example, in determining the Czechoslovak flag, where different views of the Hussite, Catholic, Czechoslovak or multinational traditions clashed. It was not until the final form of the Czechoslovak constitution in 1920 that the current Czech flag was determined.

Heraldry can be divided into regional (state) heraldry. National symbols have evolved since the 14th century, when royal coats of arms gradually began to be associated with the ideas of the emblems of the countries in which these rulers ruled. If the original ruling family became extinct, the new dynasty usually adopted their coat of arms as part of its own, creating the state coat of arms as a symbol of the country. Gradually, the symbols became “only” emblems, where the exact heraldic rules disappear (this is reflected in the national flags).

The most important for state heraldry is “*aristocratic heraldry*” (cf. eg Schwarzenberg, 2007, Mašek, 2010). This is the best-known symbolic designation of aristocratic law, which results from the symbols on the armor (shield) with which the bearer was identified, but also the territory to which he thus belonged. For this reason, the so-called Heraldic Office was established at the end of

the thirteenth century. The Herlod’s office had many diplomatic functions, both at home and abroad. It is from this time that an important term comes: *blasonization*. Blasonization is a system of rules established by the Heraldic Office, according to which a sign is verbally described in technical terminology. Concise and clarity are important in such a description. If the blason is done correctly, the herald should be able to draw any character without his prior knowledge (cf. section 4).

In addition to the above mentioned heraldry, there is also “*church heraldry*” (cf. eg Hanáček, 2016). Unlike the nobility, ecclesiastical dignitaries acquired the right to the emblem either by belonging to the community, by acquiring a church rank and choosing the emblem associated with it, or by granting the emblem to the pope himself. This is one of the most difficult branches of heraldry, as the right of inheritance does not apply here (certain features may be different). Church heraldry is also reflected in regional or municipal symbols.

In addition to these mentioned church and aristocratic sources, there is also “*municipal heraldry*” (cf. Louda 1975, Čarek 1985, Houzar, 2016). It has its roots in the period of early heraldry, these are the emblems of towns and villages, or their parts. The origin of the city emblems was probably the city seals used as a tool for legal verification of official documents issued by the city. Urban heraldry first began to spread in the so-called “royal cities”, ie in those that were directly subordinate to the monarch, because the monarch founded them.

For institutional symbols of public organisations it is also necessary to mention “*guild heraldry*” (eg Hrdlička, 1993). The most modest place among the heraldic tradition is occupied by this guild heraldry. The reason is mainly its relatively short “functional” period. The beginnings of guilds usually date back to the thirteenth century, with the greatest expansion experiencing two centuries later. Guild heraldry has remained the most popular part of the heraldic tradition to this day.

Introducing the context of state, aristocratic, church, guild and guild heraldry, we have shown →

the basic outlines of heraldry. However, heraldry still remains an unprocessed field of the Czech legal order on several levels as an area of specific intellectual property. Gradually, legal awareness begins to form here, the expression of which is the creation of a database of municipal symbolism – both for emblems (emblems, shields) and for flags.

In this context, it is necessary to briefly mention the issue of flag symbolism. The science that deals with this symbolic representation is called vexillology (from the Latin *vexillum*, ie sail). The vexillological rules for granting the symbol of the territory are of a more recent date, the very designation “vexillology” dates back to the 1950s. Modern national flags have different rules of symbolic notation. They do not have such rules as coats of arms and heraldic symbols. For centuries, the heraldic coat of arms was the same on the insignia as well as on the flags. Today national flags originated from different modern revolutionary (military) inspiration. Therefore, so far this area is less academically surveyed. At least modern flags follow the colors and historical symbols that are in the coats of arms (Heimer-Kaye 2017). This is largely the case with municipal or regional symbols in the Czech Republic. This situation is typical for all regions of the Czech Republic, but also most municipalities.

From heraldic emblems, from flags today the villages form their logos-brands (shape, color, form). Many of the historical symbols gradually became the logos of public institutions and public administration (municipal, regional). They somehow refer to the history of the place. Therefore, in the case of municipal symbols, which have such a long tradition, it is necessary to understand the original symbolism as a kind of “intangible heritage” of history, which manifests itself in the institution that uses the symbol. In order to avoid confusion between public and private institutions, or between public institutions themselves.

The most important are the symbolism of national coat of arms (greater and lesser) and flags. In the Czech Republic, in addition to the anthem,

presidential standards, the flag of the Czech Republic, the Czech seal, the Large and Small Coat of Arms of the Czech Republic were also approved as state symbols. All this by the Act of the Czech National Council on *State Symbols of the Czech Republic* (Act No. 3/1993 Coll.). However, despite these highest state and national symbols and the existence of a law for their protection, their use has been ambiguously defined. Therefore, a new Act was created in 2001, the *Act on the Use of State Symbols of the Czech Republic*, which defines the conditions under which these state symbols may be used (Act No. 352/2001 Coll.). It is clear from the interpretation of the law who can use these symbols. The meaning of state symbolism creates one of the main ideas of the common value of the inhabitants living in a certain area (historical development). The dispute over state symbols is an expression of the dispute over the interpretation of history and the power of position in international politics. All examples include a dispute over symbolism between the Slovak Republic and Hungary over the right to have *the trimount* (the Tatra Mountains, Fatra, Matra mountains) or disputes over the Spanish symbolism (the relationship between Castile, Catalonia and the Basque Country).

In this area, there is a certain helplessness of public institutions to protect the symbols so that, in the eyes of the public, they are connected only with the public authorities. Legal protection leads to the passivity of institutions. As we will show below, public institutions should act actively, not reactively, within the identity of design. There was a benevolence in the use of state visual symbols, when various private organizations could use state symbols. At present, the unification of the state administration is proving to be counterproductive. On the basis of the symbol, people unite some institutions as private, even though they are public, and vice versa. Thanks to the creation of the register of symbols (REKOS) since 2006, regulation is gradually beginning to show. An example of strictness is given in the time of Czechoslovakia, when the use of state symbols was strictly prosecuted,



and even important personalities could not use the national emblems of Czechoslovakia, eg athlete Gustav Frištenský (1879–1957) wanted to use the national emblem of Czechoslovakia for his performance, but the Czechoslovak Ministry of the Interior this form was directly banned on May 2, 1936 (Sedláček, 2002, p. 136).

Today, state symbols are addressed by legal regulations, which in the past allowed a high degree of tolerance in the case of marketing use, but on the other hand indecent treatment of state symbols by private companies. On the other hand, private companies, associations, political parties use the Czech state national symbol (emblem, flag) for their marketing, in order to create greater credibility with their clients. This can be interpreted as a possible conflict with Act No. 352/2001 Coll. But in the current long protracted litigation, there is not much willingness to enforce the change in court. This gives the impression that it is an industrial design that has a close relationship with the state. In justifying and rejecting the symbol, which copies the state emblem, the Industrial Property Office should argue on the basis of § 8 of Act 207/2000 Sb. About the protection of industrial designs by not registering a design that is contrary to the principles of public order and good morals.

The use of the Czech flag is more complicated for private organizations. The flag is visually a strong symbol that is unambiguous. In addition, the Czech flag, with its original form (the flag with a wedge in the middle has only seven states, in contrast to the red-blue-white tricolor, which is very widespread) is easily identifiable with state power. Therefore, the trademark has not yet been authorized for a private company that could use it for marketing. Companies cannot register a logo with the Czech flag under a trademark at the Industrial Property Office of the Czech Republic. Therefore, some private organizations changed the form of promotion and replaced the unilateral use of state symbols with less-contraversial processing.

Examples of current good practice include the initiative of state public authorities, which are try-

ing to grasp the symbol of the Czech Republic with dignity and create a corresponding logo for the institution. So that the requirement for a simple and direct reference to the Czech coat of arms is met, but at the same time that the quality and dignity of national symbols is not reduced. It is a trend of European state administration that the state should be easily identified on the basis of its own heraldic symbolism at various stages of its management and that state (public) administration can be clearly distinguished from the private sphere (Unie grafického designu, 2019).

So far, however, there has been no more active work on the part of state authorities in this area. In the future, therefore, it turns out that it is necessary to further work on the issue of intellectual property law in symbols of state power. The initiative after the unification of the highest state institutions under a unified design is proof of that. However, the whole set of this issue is broader, it does not have to concern only the constitutional symbols of a given state, but also leads to the symbolism of regions, counties, cities and municipalities. It is in this area that the Czech Republic is at the beginning of the formation of a dignified distinction between private and state identity. Here it is possible to find a way to responsible symbols of public institutions.

### 3. Trade marks in Czech republic

If we are to follow the history of intellectual heritage protection and patent law, the concept of patent needs to be clarified. The term comes from the Latin *patere* (left open, ie accessible to the public). Therefore, the patent was formed as a kind of exclusive copyright, which the public should respect, which includes the term “trademark” (Jakl, 2017). There are a number of international treaties that allow trademarks for symbolism. The Lisbon Agreement on the Protection of Origin and its International Registration was signed in 1958 (revised in Stockholm in 1975), or the Patent Cooperation Treaty was concluded in 1970. In the former

→ Czechoslovakia, trademarks and patents were not registered with the argument of wasting money, such as a waste of foreign exchange. The result has in many cases been irreversible losses and economic damage (Jansa, 2020).

After 1989, the situation in Czechoslovakia and the Czech Republic changed fundamentally. The Industrial Property Office was established, which is a state administration body of the Czech Republic, which is responsible for the protection of industrial property. It performs the function of a patent and trademark office. The Office was established on 1 January 1993 by Act No. 21/1993 Coll. within the division of Czechoslovakia (Úřad průmyslového vlastnictví, 2020). Later, the Czech legal system was connected with the requirements for harmonization of standards with EU countries, but also within the UN, laws were replaced by new regulations, such as the Act on Inventions and Improvement Proposals (116/2000 Coll.) or the Act on the Enforcement of Industrial Property Rights and on the Amendment of Acts on the Protection of Industrial Property (221/2006 Coll.). Within the international character the Czech Republic is a party to the Agreement on the Visegrad Patent Institute (VPI). In 2015, the Agreement on the Establishment of the Visegrad Patent Institute was signed in Bratislava by representatives of the Czech Republic, Hungary, Poland and Slovakia. Until 1 July 2019, the Visegrad Patent Institute performs the function of the International Searching Authority (ISA) and the International Preliminary Examining Authority (IPEA) pursuant to Articles 16 and 32 of the Patent Cooperation Treaty (Slováková, 2003).

Furthermore, the Czech Republic is a member of the World Intellectual Property Organization (WIPO), which is a major international organization in the field of intellectual property protection, and a party to a number of multilateral international agreements for the protection of industrial property administered by this organization. The Czech Republic is also a member of the European Patent Organization (EPO) and a party to the Convention

on the Grant of European Patents, which is administered by the EPO. It is also a party to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), administered by the World Trade Organization (WTO). Among others, specific types of classification are used, eg MPT (International Patent Classification), Locarno (International Classification of Industrial Samples), Nice (International Classification of Goods and Services for the Purposes of the Registration of Marks), Vienna (International Classification of Figurative Elements of Trademarks). They classify inventions in a specific way based on international agreement, namely patents, European patents, utility models and trademarks.

A trade mark is any sign consisting, in particular, of words, including personal names, of color, drawing, letters, numbers or shape of a product or its packaging or sounds, provided that it is capable of distinguishing one person's goods or services from another's goods or services (Jakl, 2004; Jakl, 2010).

A trademark is one way to protect intellectual property. A trademark can be registered if there is a verbal description of it. It is not just a visual image, but the content of the visual image is described in detail. A number of new logos or symbols of institutions that do not have their own patented symbols do not meet this professional aspect. The current situation of patenting your emblems and logos thus has three main problems:

#### **i. Financial and organizational complexity**

Fees are paid for a trademark in the case of registration in the register of the Industrial Property Office, this access may not be accessible to all institutions. Especially for small municipalities or organizations established by municipalities (cultural or educational) it can be difficult to protect their logos with a patent using a trademark. However, in the case of public benefit institutions (theaters, hospitals) with a centuries-old history and public service, it is socially responsible to protect their brand, logo. This is a matter for larger

and more budget-wise institutions (entire statutory cities protect their logos and emblems, as well as large public universities), but it is a problem for smaller organizations.

### ii. Abuse of public symbols

However, before the emergence of stricter legislation, patent protection applies to private companies that have registered a protection symbol with a Czech national symbol (lion, eagle). A number of private company symbols have registered their logos and present themselves as state, national, public institutions (eg professional associations).

### iii. Missing overview

Control is made only from the point of view of legal standards. The broader view of social responsibility towards state symbols, but also regional or municipal ones, is not taken into account. These logos (coats of arms, flags) and in the media often confuse whether it is a private or public institution.

The solution is to create a unified database of all symbols of public institutions in the Czech Republic, including emblems, flags or logos.

## 4. Database of Symbols as Social Responsible Attitude

Visual identity with a symbol is not just any “picture”. Appropriate and dignified use of the logo is associated with the features of public institutions and organizations, so as to guarantee clear identification with the institution. It is precisely in institutions that stand on the border of the public and private sectors that this issue is most pressing (universities, local governments, public-benefit organisation, etc.). The use of logos in this area opens up new problems for intellectual property and the identification of the institution. Therefore, in this work, the author proposes a solution to prevent misunderstandings with the use of the emblem as a heraldic coat of arms or logo.

In European countries, the transition to a uniform visual style of state organizations that have a

trademark for such a representation. The degree of use of a unified database of characters is related to the culture and tradition of a given country as one of the functional identities (Callahan, Ledgerwood, 2016). An example of maximalist use can be the Federal Republic of Germany (Unie graphického designu, 2019). Unite the offices under one graphic design, which are so easily distinguishable from the private sector.

The proposal of the solution how to protect public emblems (logos, coats of arms, stamps, flags) is in the creation of a database within the Czech Republic, where this database will contain all graphic, heraldic and design identities for each institution. It is based on the experience of the public sector – municipalities. We can call this database the “Database of Public Sector Symbols”. At present, both heraldic symbols and flags, as well as the visual logos of institutions, are divided into different databases, if any at all – from patent to heraldic and vexillological. An example is the relationship between municipal emblems and coats of arms. Currently, most of the characters are in the Czech nationwide database “Register of Municipal Symbols” (REKOS), which is administered by the relevant commission within the Parliament of the Czech Republic. Here, all municipalities send their municipal (city) emblems as well as flags for approval. This system thus records most of the approved symbols of municipalities. But despite extensive decades of work, this register does not yet cover all municipalities in the Czech Republic. The reason is the fact that not yet all municipalities and cities have approved their municipal symbols.

An indisputable advantage is the fact that in the REKOS system there is a possibility of clear research according to keywords. It is the verbal description of the symbol that is the basic element of heraldry. This description used to precede the image itself and was more important than the current visual image. This term is called “*blasonation*” (fr. *le blason*, shield). Blasoning (German *Wappenbeschreibung*) is a *verbal description of a coat of arms* →

→ according to heraldic rules and professional nomenclature (Buben, 2012, p. 71). It follows the centuries-old traditions (eg from the point of view of the shield bearings of the right and left side, the beginning of the description according to the geometric layout of the shield, different description of metals and colors, transcription of symbols, both in color and black and white resolution... etc.). Therefore to the main principles of blason processing include conciseness, accuracy, brevity and clarity given by the established procedure and professional terminology. You can blasonize only in certain languages that have the appropriate professional terminology built into this. Czech is one of these languages (Pohanka, 2013, p. 46).

The original heraldic emblems of cities (coats of arms) or city symbols in general used to be precisely described according to the tradition of blasonization. It was the description itself in the Middle Ages, when there was no possibility of quick and easy reproduction of individual symbols, that served as the key, the very specific performance in how a particular artist depicted it. The possibility of precisely defining what is in the picture thus created the rules for describing coats of arms. Today, this method makes it easier to search for individual general or special heraldic figures in Internet applications. It is through keywords that the current

forms of recorded characters in the REKOS search system can be compared. A vexillological system works to search for flag symbols. The Czech Vexillological Society operates the *vexi.info* system, where the relevant flags can be traced according to location or keyword. The existence of established rules makes it possible to trace, compare or compare registered and registered flags.

The REKOS system, or *vexi.info*, can trace most symbols of municipalities, cities, city districts, statutory cities or regions. These systems are not paired and focus on coats of arms and municipal flags. Apart from coats of arms and flags of self-government, there are also organizations established by municipalities (Public-Benefit Organisation) with a long tradition with their own brand (logo). Mostly schools, theaters, cultural facilities, but also hospitals, medical facilities, city organizational units. For all these organizations, there is a certain culture of design identity to the founder. However, these tags are no longer in the database, although they are public organizations. Similarly, state organizations such as ministries or organizations established by the state have traditional features that distinguish them from other organizations (an example is the effort for a unified design culture in Czech government organizations such as the Government Office, Ministry of Foreign Af-

**Tab 3 » Proposal for the structure of the “Database of Symbols” of public institutions**

	Small district, town	Organizations established by small district	Municipality	Organizations established by municipality	Region	Organizations established by region	Organizational units of the state
Coat of Arm							
Flag							
Logo							
Design identity							

Source: Own processing.

**Tab 4 » Benefits Database of symbols**

<b>1. Clarification</b>	Clarification and unification of the system of continuously ongoing changes in symbolism in all public institutions, no interchangeable features based on the lack of information and ambiguity of this area (prevention).
<b>2. Prevention</b>	Avoidence of duplication — new emblems, coats of arms, logos, it would be based on the already existing state and preventive symbols could not be duplicated.
<b>3. Savings</b>	No direct fees at the Industrial Property Office. Agenda kept with the administration of the trademark would be dropped by entry in the Database of Symbols. Reduction of the total cumulative costs of marketing logos and design of public institutions. Not have to promote each special area separately, but would be based on the hierarchical structure of the superior administrator to the specific institution from a unified functional design.
<b>4. Interconnection</b>	The public administration would network the functional identities of the REKOS or vxiinfo.cz and others.
<b>5. Inspiration</b>	The databank will enable an overview of current signs, logos, ergs and marks. It also becomes an inspiration for the functional connection of the design of public institutions.

Source: Own processing.

fairs, Ministry of Environment). The logos of these organizations are not included in the REKOS system or other overview search systems of the Industrial Property Office. It is entirely up to the voluntary nature of the individual institutions which logo, identifying the design or symbol they choose.

The database of symbols would contain not only historical emblems (coats of arms, heraldic signs) or emblems, flags and vexillological identities, but also logos or other design identities. All this not only for municipalities, but also their contributory organizations, as well as state-established organizations.

A functional database of signs, flags, logos of public institutions would create a significant overview platform in working with trademarks in the field of intellectual property. On the one hand, this creation of a database of information would fulfill several functions in the field of intellectual property ambiguity.

The system set up in this way will enable more efficient work in the future with the creation of signs and logos of all public institutions. Very often, thanks to historical development, the historical emblem as well as the modern contemporary logo can be confused.

### 5. Resume

In the presented work, the author deals with a specific view of the protection of intellectual property in the Czech Republic from the perspective of social responsibility of public institutions towards their identifying symbols (brands, coat of arms, flags, emblems). The work shows the current situation in this area as confusing, where there is room for inefficient use of symbols, which may reduce the functionality of public institutions themselves (eg marketing abuse of state symbolism for private purposes). Therefore, the relationship to brand protection can be understood not only as a legal issue, but also as an issue of social responsibility of public institutions in terms of Identity Management.

A trademark is one way to protect intellectual property. A trademark can be registered if, however, there is also a so-called “verbal description” (ie, terminologically, this approach was previously called “*blasoning*” in the case of heraldic symbols and had established rules). It is not just a reception of the visual image of the logo, but the content of the visual image should also be described in detail. However, this aspect is not currently applied to a number of logos and visual functional identities of



public administration. Therefore, logos cannot be clearly systematized. Fees are paid for a trademark in the case of registration in the register of the Industrial Property Office, access may not be accessible for all smaller institutions (with a minimum budget).

Based on previous research, it was presented, there is a situation in the Czech Republic that does not have a clear definition of the definition of social responsibility for these features. On the one hand, the law provides for the protection of state symbols or logos under trademarks, on the other hand, it is voluntary whether public institutions choose protection.

The article shows how these characters and logos can be linked to existing search databases (eg REKOS or search databases of the Industrial Property Office). This transfers the work to the design

part. Author proposes the creation of a “*Database of Symbols*” of public institutions in the Czech Republic. It would include not only municipalities, but also contributory organizations, municipalities at all levels (municipalities, towns, cities, statutory cities), organizations established by local authority (municipal, regional) and organizational units of the state. At the same time not only heraldic and vexillological symbols, but also logos and the design identity of public institutions. According to author, this system will bring at least five positive effects for public administration. In total, there are now about ten thousand organizations in the Czech Republic. A database of symbols set up in this way would create the first step towards greater social responsibility of public institutions towards their identifying symbols.

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## Social Responsibility to Symbols of Public Institutions. Example of Identity Management in Czech Republic.

### ABSTRACT

Author examines symbols of public institutions in the Czech Republic. Using qualitative methods, it is analyzed the current situation of official symbols in state, regional, municipal and established public benefit organizations. Public symbols are based on historical contexts and shape the identity of the inhabitants and the relationship to the bearer of the symbol. Responsible work with public symbols forms management framework of organizations that shapes social responsibility. Author applies this social responsibility to the connectivity of identity management. The article deals with the functional identity of the symbols, their function, as well as the Czech legal framework enabling protection through trademarks. Based on the information from the research, author suggests a specific way to strengthen responsibility for public symbols. It proposes the creation of a Database of Symbols of Czech Public Institutions, where not only coat of arms, flags, but also brands will be represented. This will make public administration more efficient in this area and increase social responsibility.



**KEYWORDS**

*Functional identity; identity management; public symbols; trademark*

**JEL CLASSIFICATION**

*H41; M31; Z18*

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# Coronacrisis — a break or acceleration of current trends in the world economy and politics?

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## \* Introduction

For a whole year now, the Czech Republic, Europe and the world have been exposed to the effects of one of the world's biggest epidemics, and the term corona crisis has entered the global vocabulary — from healthcare and media to politics, sociology to economics. World governments have still failed to address a vital issue, whether there are worse health or economic consequences for a country, whether to loosen the economy more, at the cost of increasing the number of people infected and dying, or the opposite approach, resulting in further deepening the overall economic debt, which will be “damn” expensive.<sup>1</sup> Thus, the whole world is clinging to its hopes on vaccination as quickly as possible, which — perhaps — is the only truly effective weapon that will definitively rid humanity of this threat.<sup>2</sup>

At first glance, the current enormous economic, political and social consequences of this pandemic seem to be mere work of it, and once the malignant virus can be removed or at least radical-

ly eliminated, these problems will also disappear, the world will return to “normal”. This study and its author disagree with similar conclusions and, on the contrary, try to show that most of the problems that the corona crisis “brought” is, in fact, only manifestations of longer-term trends in the world economy and politics. The coronacrisis “only” deepened them significantly and, in the spirit of Hans Christian Andersen's famous fairy tale, showing the actual state of affairs in their “nudity”.

Thus, the corona crisis will not have its traditional winners and losers in the world power and economic struggle, although we could easily apply this view as well. The coronacrisis only accelerated the tendencies that existed long before. At the same time, it hastened the departure of the great powers declining for a long time and the emergence of new ones that had been claiming their place in the sun for several long years. Moreover, like any crisis, it is a festival of opportunities to change the current routine and start new paths to growth — today more than ever with the help of

<sup>1</sup> For the latest on the current pandemic and its socio-economic consequences, see “Pandemie covid-19: Konec neoliberální globalizace?” (Sušová-Salminen, Švihlíková, 2020).

<sup>2</sup> Among the critical voices in the Czech academic community, let us mention the statement of molecular biologist Omar Šerý for DTV television on January 20, 2021: “The more we establish herd immunity, the more mutations of the virus there will be, we need to get rid of the virus. Vaccination will help, but it will not be enough. It can be a big disappointment after finding out that most have been vaccinated, but we still have the virus in the population.” (Šerý, 2021).

state-of-the-art technology and a different view of the world. Here, too, we can see the winners – the countries that have seized and are taking advantage of this opportunity, and the countries that will stick with their nails and keep the old order, but which in the new, post-chronic era will count the losses of the defeated ones.

### *Globalisation a deglobalisation*

One of the phenomena that were hit hard by the epidemic was globalisation itself, in a way that nicely illustrates our thesis. Global markets, transportation, long production chains cruising the planet all got a heavy hit right initially when the first outbreak was closed – the Chinese city of Wuhan (then the whole province and many more others). Factories were closed in places a thousand kilometres away, and with them, operations in Europe, Southeast Asia and the USA, which were directly dependent on their production, fell silent or significantly reduced. From day to day, production ceased at the other end of the world, the volume of the sea and air traffic fell sharply, and mountains of empty shipping containers piled up in the world. The global labour market, goods and people (as a result of state closures and travel bans between them) have received a severe blow from which they have not recovered to this day. On the other hand, these negatives also had their global brightness, especially in the field of environmental protection – there was a sharp decrease in emissions, including the much-discussed Carbon Dioxide, air quality improved, more precipitation fell on the ground, etc.<sup>3</sup>

Production was significantly affected, dependent on just-in-time deliveries, which provide the precise delivery of goods or components on time and therefore do not have sufficient stocks. Thus, one of the lessons from this crisis will be that these long supply chains, often from several countries, will have to be shortened, ideally, as close as possi-

ble to the final production plant. However, this goes against the very principle of globalisation, which allows for production at the cheapest locations.

However, severe is another fact – it would seem that this is only a short-term consequence of the crisis. Once the crisis subsides – as before – we will be able to return to “normal”. Nevertheless, this will not be possible not only in this case. The reduction of the hitherto dominant globalisation tendencies was visible in the world economy long before COVID-19 appeared on the scene. Specifically, shortening supply chains and moving production as close as possible to the end customer is a direct consequence of the fourth industrial revolution’s onset – abbreviated as Revolution 4.0.

The Czech economist Jiří Malý published an economic analysis in 2017, long before the coronavirus pandemic, where he correctly stated the following: *“The world is on the threshold of fundamental economic and social changes. It is entering a period of extensive technological change called Industry 4.0 or the fourth industrial revolution. It is expected to develop artificial intelligence and intelligent production systems, robotise labour-intensive production and logistics, create so-called smart factories, massively expand 3D printing, the Internet of Things, autonomous cars and other innovations. According to previous studies and analyses, the fourth industrial revolution will cause significant shifts like production costs and the labour market. It will lead to a shortening of production and supply chains both from the organisational and geographical perspectives. It will no longer be necessary to produce different product components in different countries, depending on where their production is cheapest, then transport them worldwide, cheaply assemble final products in another country, unsightly called assembly, and then export these cheap products to the rest of the world. Robots make products and their components cheaper than the lowest paid person, anywhere in the*

<sup>3</sup> See, e.g. Mejstřík, 2020.

world and without people. The fourth industrial revolution will, therefore, reduce the share of labour costs in total production costs. Simultaneously, the importance of transport costs will increase because they will no longer be negligible than the super-cheap ‘workforce’ of robots. Production will therefore move closer to consumers, i.e. it will be localised.” (Malý, 2017).

However, it is not just about technological change – although they are the most visible and fastest. Among the processes that contradict the current logic of globalisation and, on the contrary, record the mentioned localisation, including the renewal of the power of nation-states and national identities, we can include the American-Chinese (but also American-European) trade war or the withdrawal of Great Britain from the European Union – so-called Brexit.

It is significant that these two countries – the USA and Britain – broke away from globalisation and stood at its birth (even at the birth of several of its waves) and drew its benefits for decades (see, e.g. Kennedy, 2017). They paved the way for the most liberalised world trade without customs tariffs and barriers, resulting in their companies becoming significantly richer. Only the approaching end of the U.S. as the world’s only superpower and its imminent (and pandemic-accelerated) replacement by China as the (yet) economic leader in the world’s largest economies, together with the adverse effects of globalisation on U.K. citizens (the same applies to the U.S.) made both states and their people drastically change the current strategy.

The onset of globalisation has led to a significant deterioration in the socio-economic conditions of the middle and lower social classes in the West. We wrote about how this happened two years ago in the proceedings of our conference: *“From the second half of the 1970s at the latest, the current growth model of Western economies – the so-called welfare state – began to stagnate. This was reflected in both lower GDP growth and higher government indebtedness and, last but not least, lower corporate profitability. This was to change*

*the new wave of globalisation radically. It was opened up to it mainly by a radical change in China’s economic policy, which opened up to the world, capitalism and foreign investment at the turn of the 1970s and 1980s. American and European companies then began moving their production plants to Asia (also to Indonesia, Bangladesh, etc.), producing at a fraction of the current labour costs and without considering any harmful externalities – such as environmental costs. The next wave of globalisation is the fall of the Iron Curtain and the entry of about 600 million more people into the global labour market. This has enabled a substantial increase in Western companies’ profits and the sales of goods at relatively low prices, produced in the ‘cheap East’ in wealthier Western markets. Thus, western employees were partially compensated because their wages stagnated and fell in real terms from the second half of the 1990s at the latest. Even though unemployment in the West began to rise sharply – partly due to the West’s mass job overflow to the East.*

*Another related problem was that private companies’ share in state tax revenues has fallen by a full two-thirds since the late 1980s. This tax shortfall was replaced by ‘tax bearers’ from the middle class.”* (Valeš, 2019: 156), which further contributed to the deterioration of their economic position and social status. In other words, while one per cent of the wealthiest made huge profits and increased their wealth, the lower and middle classes went in precisely the opposite direction – their tax burden increased, their real wages stagnated or fell, while spending rose sharply – especially in health care, housing or the cost of education, i.e. basic life necessities.

These growing problems, coupled with cuts in state revenues and the provision of tax breaks to the wealthiest (often with rising armaments spending), have led to massive indebtedness for states and households, which have begun to live on debt because their real incomes have been insufficient. State deficits reduced social spending and transfers, thus further social decline, especially for low-

er social groups. Therefore, among other things, the problem of racism returns to the game — it is ethnic minorities that are often — especially in the U.S.A. — represented much more significantly in the lower social levels. Therefore these adverse socio-economic problems have hit them the hardest. Right now — and not in the days of Christopher Columbus or the American Civil War — that we can see the racial issues' fundamental problem growing importance.

Moreover, these conflicts of the American society eventually led to Donald Trump's election as president of the United States in 2016 and, without covid, could lead to his re-election in 2020. Hence his motto America first, an attempt to move lost jobs back to the States, an open — so far trading — struggle with China and those who, according to him, profited from the American economy's excessive "openness", i.e. on its deep integration into global supranational structures (including the trade war with America's European allies). For the most part, Trump was elected by people who felt they were victims of globalisation and the associated manifestations of liberalism and multiculturalism — with his preference for foreign cultures, migration or XY number of different sexes. His typical voter was a white middle-aged or pre-senior American who did not have a college degree but often worked well as a worker in America's large factories, often in American industry's heart under Canadian lakes. This area — the industrial heart of America, a large region from Pennsylvania and New York State through Ohio, Indiana and Michigan to Chicago — was severely affected by the disruption of factories and the relocation of jobs to Asia and Mexico. Today, it is aptly called the Rusty Belt: *"The steel heart of America, Pennsylvania, was for Democrats. The furnaces have gone out.*

*Now they are in China. The cities have become impoverished, the locals are deceived and have defected to Donald Trump, who has promised to set the furnaces on fire again. Reading is one of the poorest cities in America, every year scoring the highest positions in the poverty scale, in 2011, even reaching the top. Forty-one per cent of the population lived below the poverty line. The steel mills that fed the city are extinct. Steel is now being produced in China. Weaving mills — used to be the largest in America in Reading, are already in Mexico. Of the twenty-five thousand people, about seven thousand remained. The blast furnaces that made Monessen a prosperous steel town are now burning in China and India, and City Hall has no money to pay for the demolition of abandoned buildings in the centre. Moreover, in Lorain, Ohio, firefighters were made redundant, and traffic lights are turned off to save money.*

*Thirty per cent of the population is below the poverty line. Ford closed the assembly plant, and the shipyard and Johnson's ironworks ended. Thus, the Rusty Belt became Trumpland, Trump's country. The former zone of work, albeit challenging, and prosperity became a zone of resignation and anger. 'You are the forgotten people of our country,' Donald Trump said here. That is exactly what the locals think. They feel reflected in a mirror in his remarks that politicians in Washington did not care in the slightest that their jobs were disappearing in China or Mexico because of 'the biggest robbery in history,' and even announced it as a great thing, Trump puts it. For America, China was a place of cheap labour at the turn of the 1980s and 1990s, so commodity prices went down. It looked unique, a wonderful new world. However, as production moved overseas, factories closed. It was not possible to compete.<sup>4</sup>*

<sup>4</sup> *"China, for example, liquidated American aluminium plants: in 2000, America was the largest producer of aluminium, but by 2015, China had increased production by 1,200 per cent, and prices had fallen so that production in the United States would no longer pay off. Around Hannibal town in Ohio, where there were aluminium smelters, former workers now remember how they went on vacation, buying off-road vehicles and motorboats. Now they are happy to make money by mowing the grass. People take bankruptcy as an injustice. A rusty belt full of smelters, mines and ironworks made America a superpower: it produced steel for American skyscrapers, bridges — in Monessen, it was smelted for the Golden Gate Bridge in San Francisco, road cruisers and real cruisers that helped win World War II and the Cold War."*

Moreover, the Rusty Belt is now seen at the mercy of trends he did not cause, but politicians vigorously supported. In the new free international trade era, everyone would be a winner, but the locals feel like victims. 'It was the biggest robbery of the century,' says Trump, and people think so either.'<sup>5</sup> (Vodička, 2016)

Add another essential thing. This wave of resistance and disagreement with the current economic and political system generates a handful of unequivocal winners and a large proportion of absolute losers. People cannot participate because their real decisions occur outside democratic elections, which are fundamentally influenced by those in power. Moreover, in particular, capital and money have led to the enormous anger of American society and its deep division, as well as to no less healthy distrust of the very foundations on which the American, and thus the Western, political and economic system in general, stands. This wave, or the shore break, brought Donald Trump to the White House. Despite all the controversial measures and statements, U.S. President Trump himself did not divide America. On the contrary, America was heavily divided long before he took office. As we saw above, his election was an expression of this enormous popular dissent and a manifestation of the deep — primarily socioeconomic, but secondarily racial and value division of the United States.

Sociological data indicate this. According to opinion polls for NBC and the Wall Street Journal in 2015, full 69% of Americans agreed with the statement: "I feel upset because our political system seems to work only for insiders with money and power. (42 % fully, 37% rather yes). The survey was conducted in October 2015 during the reign of 'consensual' President Barack Obama. The same re-

search was completed four years later. In August 2019 — already for the 'society dividing' President Trump — only one percentage point more Americans answered positively — a total of 70% (43% fully, 37% rather yes). It is clear, then, that President Trump's militant rhetoric has played an almost negligible role. Researcher Jeff Horwitt of Hart Research Associates adds: Four years ago, we uncovered deep and fierce anger across the country that engulfed our political system. Four years later, with a very different political leader, this anger remains at the same level." (Dann, 2019)

So Trump is not the real cause of it. On the other hand, he did nothing significant to change this unsatisfactory structure and system. However, nothing similar can be expected from the incoming President Joe Biden, who is also an integral part of the current establishment, against which the 70% mentioned above of Americans have long been opposed. Also, Biden was Vice President of Democrat Barack Obama for eight years. Neither he nor Obama has changed anything in their role in the American political and economic system's abnormal functioning, favouring only one small group of American society.

On the contrary, it was the Democratic presidential candidate and Obama's Secretary of State, Hillary Clinton. She lost the presidential election because she was seen as an integral part and supporter of the current ruling political-economic power. At the same time, Trump presented himself as just the one that would stir up "stagnant and smelly" waters in Washington, favouring all Americans.

The essence of the division of American society, then, lies in its profound and real differences. Also, they increase with the advent of a new American generation, the so-called Generation Z (which

<sup>5</sup> Education issues also played a vital role. Jobs in heavy industry were very well paid but required virtually no specialised education — a primary school was enough. These people spent decades in these professions — often as members of the Xth generation at the same company — who were practically "unusable" for the modern labour market after firing and adapted to it much harder. This only deepened their frustration and a sense of profound injustice: "It was advantageous to go to work in the smelters right after finishing school and be paid four thousand dollars. Studying seemed like a waste of time, but now there aren't many who fit into the 21st century. As one man from Flint said, you could drop out of high school and earn seventy thousand a year. After ten years of work, you could buy a house next to the doctor. But that is the past." (Vodička, 2016).

includes young Americans aged 18 to 38), which shows significant value differences – especially in categories that have always belonged to the value base of the American nation. For all, let us mention, for example, the value of patriotism, which is considered necessary by full members of the older American generation (from the age of 55). For example, patriotism, which 79% of older Americans think a significant value, has fallen to 42% for the younger generation. Similarly, religion, which was marked as very important by 67% of the older generation, on the contrary, only 30% of the young American age perceive it in the same way. Furthermore, parenthood has also fallen sharply in the list of fundamental values, with only 32% of young Americans feeling essential to have children, while over 54% of their fellow senior citizens. (Dann, 2019)

The obvious manifestations of this profound division became fully apparent with the corona crisis's advent, but as we have already noted, it did not cause them. Its economic consequence was, among other things, a high unemployment rate. While it was still negligible at 3.5% in January 2020, and ethnic minorities, including African Americans, unemployment hit almost 15% in the second quarter. On the contrary, ethnic minorities were also the most affected due to their long-term position on the labour market (lower-paid jobs with lower qualifications, lower education level, more insufficient knowledge of English among Hispanics, etc.). So a spark in the form of the death of the African-American George Floyd was enough, and a fire in the form of large-scale street demonstrations, looting and killing was born. The subsequent Black Lives Matter movement was not only primarily racial but perhaps above all social. The recent attack (January 6, 2021) by hundreds of disgruntled Donald Trump supporters on the Capitol was only a logical continuation of these long-standing and, unfortunately, unresolved contradictions of American society – this time “on the other side”.

Very aptly, economist Ilona Švihlíková: “*The uprising around the U.S. Congress, but also the ra-*

*cial riots and activities of the ‘Black Lives Matter’ movement, as well as the departure of President Donald Trump, necessarily raise the question: what happened to the United States? The United States differed from continental European countries in several social aspects. It was the absence of a public health insurance system (by which the U.S. deviates from developed countries), high levels of inequality (tolerated to a much greater extent than in continental Europe), fragile social network, weak unions, working poverty, massive inequality (closer to developing countries), etc. None of these is new features of the U.S. economy. However, the political system works with a delay. It takes longer for socio-economic problems to articulate and to find an actor. Trump’s victory indicated that the division in American society was a profound, long-term phenomenon. In Trump, part of American society found someone who expressed this division (‘we will dry the swamp’). The fact that Trump did not meet expectations in terms of several indicators is another topic – it indicates how difficult it will be to stabilise American society socially.” (Švihlíková, 2021)*

In this context, many media spoke directly about the threat of civil war – both due to the massive division of American society and Black Lives Matter movement’s very violent acts and related anti-demonstrations, looting, and the use of firearms took place. Characteristic was the headline of the French daily *Le Monde*, which spoke of “*The Disunited American states persecuted by the civil war*” (in the French original *les Etats désunis d’Amérique, hantés par la guerre civile*). In the following article, *Le Monde* wrote: “*Americans have never been so divided since the Civil War, not only because of Donald Trump but also because they conceived of the nation, its values and fundamental myths with conflicting views of the past and future.*” (Faure, 2020) Violent and illegal attack on the Capitol on January 6, 2021, just confirmed these words. Martin Řezníček, a Czech journalist and a long-time correspondent of Czech Television in the USA, also called his book “*The Disunited* →

States.” The book was published before the racial riots in the spring and summer of 2020. (Rezníček 2020)

Unfortunately, it was not just stormy speeches. The real face of America has been uncovered by the Covid pandemic, which has hit the United States enormously and as yet unexpectedly. Social inequality has taken a severe toll in the form of the significant number of Americans infected and, above all, dead due to the coronavirus epidemic. As a result, more Americans died than the losses of the U.S. military during World War II. The French daily *Le Monde* cites the bleak prospects of the new U.S. president Joe Biden in this context: “*Joe Biden took over the reins of America scarred by Covid-19 this week, which has more than 400,000 dead to date – probably 500,000 in February, the president said, forecasting the forthcoming hard battle. In almost a day, exactly one year after the announcement of the first Covid-19 case in the United States, the virus has now spread to all 3,000 U.S. regions and infected more than 24 million people.*” (*Le Monde* 2021)

The withdrawal of Great Britain from the European Union was also a revolt against globalisation, its socio-economic effects and an expression of opposition to its institutions. Brexit’s primary motto, “*Take Back Control!*” speaks for itself. As well as significant regional differences between supporters and opponents of this process. While the well-educated and well-off inhabitants of England’s major cities – often ports – wanted to stay in the European Union, the citizens of inner England north of London, the people of the countryside or the declining cities from which their original industrial companies had long since left, chose the opposite. Winners versus losers of globalisation.

However, Brexit itself is only icing on the cake in the pan-European and, in fact, the pan-Western process of deep systemic crisis. While the West, still dominant, is weakening politically and economically and is gradually leaving the world stage – although mostly in the U.S.A. – is coming to the forefront of Asia, led by communist China. Together

with the entire region of Southeast Asia, it is also the winner of the corona crisis. China, Vietnam, Taiwan and South Korea have dealt infinitely better with their insidious influence and economic and political consequences, and their losses are negligible compared to Western democracies. While the West is experiencing the worst decline of its economies since the Great Depression in the 1930s, China – as the only one of the major economies – has reported GDP growth of 2.3% (CT24, 2021a).

Hospodářské noviny reported on this fact with an article whose headline accurately describes the situation: “*The pandemic brought the West to its knees, China just stumbled. Beijing reports economic growth despite coronavirus.*” (Bench, 2021)

At the same time, China succeeded as the best in several other economic parameters – for example, just in the coronavirus year, it has beaten the United States in foreign direct investment in the Chinese economy: “*Foreign direct investment inflows into China rose by four per cent to \$ 163 billion last year. On the contrary, the United States saw a 49 per cent drop to \$ 134 billion. In the European Union, the inflow of foreign direct investment has decreased by 71 per cent to \$ 110 billion.*” (ČT24, 2021b).

Even here – following our thesis – it is not just a sudden fluctuation caused by the coronacrisis and the fact that China got out of it much better and much faster. In 2019, the People’s Republic of China overtook the United States in another significant indicator that indicates the level of technological progress of a country – applications for new patents. “*The United States has been at the top of the patent application table for forty years. With more than 58,000 new international patents, China overtook them last year (2019).*” (IDNES 2020).

It is not surprising that the media-famous Chinese company HUAWEI filed the most company patents – 4,411 when it spent over 14 billion US dollars on its technological research. On the contrary, what is surprising is the speed with which China got to the first place. Back in 1999–22 years ago, it submitted only 276 applications! The sad



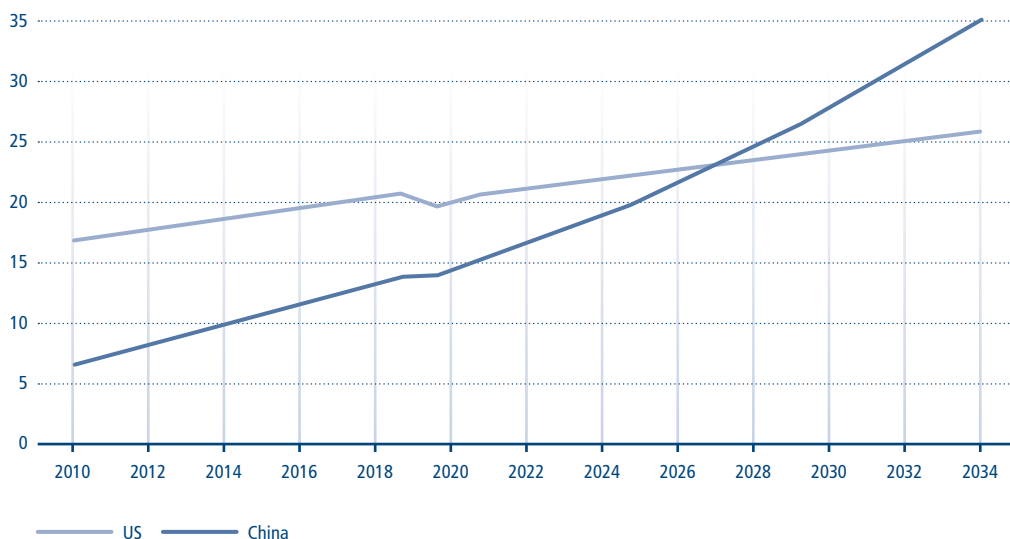
fact is that even here, the East wins, and the West falls. According to the number of applications, which indicate the innovativeness of economies and their global competitiveness, three Asian countries were placed in the first five places, followed by the U.S.A. and only Germany from the EU countries. Also, it filed fewer patents than in the previous year: 1st = China 58,990 (plus 10.6% compared to 2018), 2nd = US 57,840 (plus 2.8%), 3rd = Japan 52,660 (plus 5.9% ), 4th = Germany 19,353 (-2%), 5th = South Korea 19,085 (plus 12.8%).

So it was not the corona crisis that decided China's victory. Still, its solution significantly helped China overtake its biggest rival and the world's current largest economy, the United States. While previous forecasts did not speak until 2033, the latest research from the British Center for Economic and Business Research (CEBR) has shown that China will become the world's largest economy much sooner – as early as 2028. (BBC 2020). Fur-

ther on, China will pull ahead of the U.S. economy, which will grow at a much slower pace: “The report says that after ‘a strong post-pandemic rebound in 2021’, the U.S. economy will grow by about 1.9% a year from 2022–24 and then slow down to 1.6% in the years after that. By contrast, the Chinese economy is tipped to grow by 5.7% each year until 2025 and 4.5% yearly from 2026–2030. China’s share of the world economy has risen from just 3.6% in 2000 to 17.8% nowadays, and the country will become a ‘high-income economy’ by 2023,” the report says.

The Chinese economy benefits from controlling Covid-19 early, and aggressive policymaking targeting industries like advanced manufacturing, said CEBR deputy chairman Douglas McWilliams. “They seem to be trying to have centralised control at one level, but quite a free market economy in other areas,” he told the BBC. “And it’s the free market bit that’s helping them move forward particularly in areas like tech.” (BBC, 2020)

**Figure 1 » US and Chinese economies 2010–2035. Gross domestic product in \$US trillions (constant prices)**



Source: CEBR World Economic League Table 2021



## → Conclusion

The coronavirus pandemic will undoubtedly be one of the significant moments in the economy's history that has fundamentally influenced its development. On the other hand – as we have indicated – in terms of long-term growth and especially the competition between West and East – this is by no means an unexpected change, but a logical continuation of long-term trends that began long before coronavirus. The coronary crisis only accel-

erated and deepened these processes. Its economic and political winner is clear – it is China and other Southeast Asia countries. It is now perhaps the last chance for the states of the West and their economic leaders to thoroughly analyse why this happened and why the West, which seemed destined to rule the world after 1989 and which determined its economic and political rules for thirty years, found himself on the “second track”. It is this crisis and its consequences that are the ideal opportunities for such reflection.

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## Coronacrisis — a break or acceleration of current trends in the world economy and politics?

### ABSTRACT

*Abstract The study not only deals with the issue of the current global pandemic COVID-19 and its manifestations in world politics and economics, but above all tries to show that the trends that are often associated with this pandemic are in fact long-term. The current pandemic has only accelerated them and shown the true state of affairs better. One of the main subjects of interest is the state of American society, economy and state. While the world's strongest economy and the most democratic state to date is plagued by a deep and long-lasting crisis, accelerated by the pandemic, its biggest rival and challenger in the battle for world economic and power leader China is even strengthened by the crisis, despite the fact that the mentioned epidemic originated there. The coronavirus crisis has thus significantly shown which countries have a future and which will continue to decline in a downward trajectory.*

### KEYWORDS

Coronacrisis; US; China; EU; globalisation; GDP

### JEL CLASSIFICATION

F15; G18; H7; H83; L88



# Leadership development as a key value for the company in the south Moravian region

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## \* 1. Introduction

The development of leaders can be characterized as the improvement of individual competencies, which contribute to managing the role of a leader and require a combination of diverse procedures of activities and learning opportunities (Bolden and Gosling, 2006; Kennedy et al., 2013; Cumberland et al., 2016).

When it comes to methods of developing team-oriented competencies the important place has training programs. This could consist of team-building exercises and team games (Keller, 2007), or various trainings focused to the development of teamwork, understanding the role and value of team leadership, strengthening commitment to teamwork (Watkins et al., 2011) and conflict prevention and resolution (Andreadis, 2002). Important role plays also multi-source feedback from followers supplemented by the leader's own self-reflection (Watkins et al., 2011; Antes and Schuelke, 2011; Stead, 2014).

As a possible methods of professional knowledge development could be mentioned lectures,

practical demonstration of work procedures, case studies, workshops, simulations (Sakslová and Šimková, 2013; Turner et al., 2018).

During development are also very important coaching and mentoring partnerships. The result of coaching is an increase in the self-confidence of the leader, which allows him to behave in a way that is desirable in a given environment and thus apply the desired style of leadership (Tooth et al., 2013; Anthony, 2017). Mentoring supports the effectiveness and speed of adaptation in learning and training programs (Norzailan, 2016). This support is achieved thanks to assignment techniques (Beltran-Martin et al., 2008) and action learning (Hanson, 2013).

## 2. Materials and methods

A research approach in the form of an exploratory semi-structured personal interview was chosen for the research survey. The topic and partial problem areas were firmly established in the interview. The whole course of the interview, including the formulation of questions, encouraged the activity of

the respondents. The focus of the conversation was mainly in open questions.

The goal was to find answers to two research questions which are focused on Leadership development as a key value for the company in the south Moravian region.

RQ1: How do HR managers recognize the competencies of leaders?

RQ2: How do HR managers develop the competencies of leaders

### 2.1 Data processing method

In order to be information optimally fixed, adjusted and displayed, the following methods of content analysis are used:

- reduction in the form of a summary protocol,
- text segmentation and determination of the meaning unit,
- text categorization in the form of coding.

Text segmentation involves dividing data into analytical units and examining how these units differ from each other. The meaning unit can be a word, sentence or an entire paragraph reflecting the perception of the respondent's reality within the question asked.

By encoding text, the data is described within a given section marked by a symbol that categorizes

it. The codes are relevant to research topics. In the first level of coding, codes are assigned to sections of text, in the second level codes from first level are clustered into meaningful groups according to topics.

## 3. Results and discussion

### 3.1 Description of the research sample

In the examined group, 68% of respondents worked in a large company with more than 250 employees and 32% of respondents were from medium-sized companies with a number of employees between 50–250, see Table 1.

Among the respondents in the personnel position, women predominated with 86%, while men were represented by only 14%, see Table 2.

Through a semi-structured interview, respondents were asked 3 open questions, in which they reflected their approach to the selection and development of leaders. These questions led to a deeper understanding of the researched issues.

The findings were formulated into simple questions and were coded to facilitate subsequent interpretation and comprehensibility: see Table 3.

Interviews conducted with HR managers were subjected to analysis and synthesis. The final inter-

**Table 1 » Distribution of the research sample**

Company size	Number of respondents	Percentage representation
Medium-sized companies	7	32%
Large companies	15	68%

Source: Authors' own study

**Table 2 » Distribution of the research sample by gender**

Gender of respondents	Number of respondents	Percentage representation
Men	3	14%
Women	19	86%

Source: Authors' own study

**Table 3 » Findings and content coding**

Codes	Findings
A	Do HR managers use competency approaches?
B	How do HR managers approach the selection of leaders? What methods and tools do they use?
C	Are HR managers interested in making managers also good leaders? How is he trying to achieve this?

Source: Authors' own study

**Table 4 » Outputs of content analysis**

Findings	Outputs
A	<ul style="list-style-type: none"> <li>• A total of 59% of respondents said YES and 41% said NO.</li> <li>• If the HR manager stated that YES, the answer was often supplemented, that it depends on the position being filled and the appropriate variant of the competency model is selected on the basis of the position</li> </ul>
B	<ul style="list-style-type: none"> <li>• A total of 12 respondents out of 22 expressed a clear preference for internal growth of their employees.</li> <li>• 7 respondents out of 22 are in favor of internal growth, however, they also mention external pre-selection as a possible option for recruiting leaders.</li> <li>• With regard to specific methods and tools, respondents mostly agree on the use of interviews (8 out of 22), psychodiagnostic methods (8 out of 22) and model situations and assessment centers (5 out of 22).</li> <li>• A simplified approach to the selection of managers by medium-sized companies can be observed. These companies primarily mention the interview method, often as the only method used in the selection. Subsequent use of Performia psychodiagnostic tools (productivity, motivation, duplication and personality test)</li> <li>• Large companies present a number of very sophisticated approaches and methods. Assessment centers, model situations and several round interviews are among the most frequently mentioned.</li> <li>• All addressed HR managers confirmed they are interested in the fact that their managers should be also good leaders.</li> </ul>
C	<ul style="list-style-type: none"> <li>• The vast majority of respondents 19 out of 22 stated that they are trying to achieve this through training and education.</li> <li>• Respondents of large companies present their own sophisticated programs focused on the development of leadership in the field of soft and hard skills. The use of coaching, mentoring, or external training methods is also very common.</li> <li>• Respondents from medium-sized companies mention the key benefits of the training and focus primarily on seminars and workshops focused on the development of communication skills, stress management, time management and conflict resolution.</li> </ul>

Source: Authors' own study

pretation is shown in the form of the following Table 4.

### 3.2 Summary of research results

Through the realization of the pilot survey and the interpretation of the HR managers' answers in the form of content analysis, the research goals were fulfilled by answering both research questions.

**Research question 1** – How do HR managers recognize the competencies of leaders?

- With regard to specific methods and tools, respondents mostly agree on the use of interviews 8 out of 22, psychodiagnostic methods 8 out of 22 and model situations and assessment centers 5 out of 22.
- A simplified approach to the selection of managers by medium-sized companies can be ob-

served. These companies primarily mention the interview method, often as the only method used in the selection. Subsequent use of Perforia psychodiagnostic tools (productivity, motivation, duplication and personality test).

- Respondents of large companies present a number of very sophisticated approaches and methods. Assessment centers, model situations and several round interviews are among the most frequently mentioned.

**Research question 2** – How do HR managers develop the competencies of leaders?

- The vast majority of respondents 19 out of 22 stated that they are trying to achieve this through training and education.
- Respondents of large companies present their own sophisticated programs focused on the development of leadership in the field of soft and

hard skills. The use of coaching, mentoring, or external training methods is also very common.

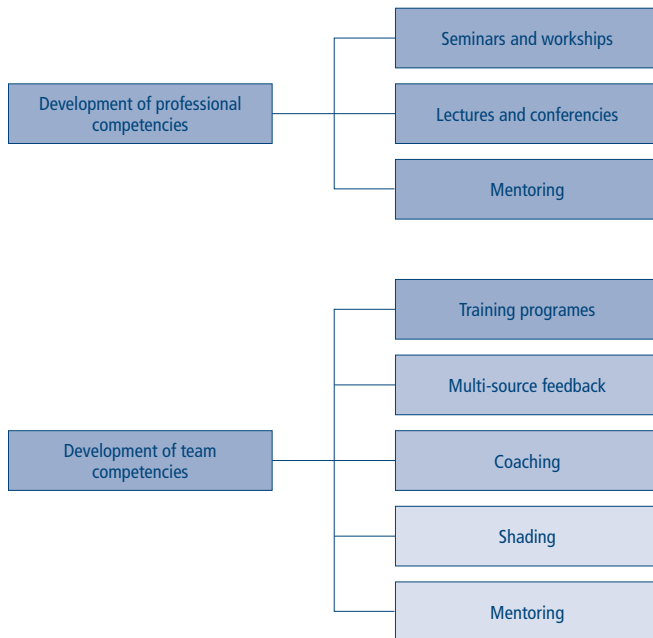
- Respondents from medium-sized companies mention the key benefits of the training and focus primarily on seminars and workshops focused on the development of communication skills, stress management, time management and conflict resolution.

#### 4. Conclusion

Respondents from large companies report very sophisticated approaches to the recognition and development of leaders.

Medium-sized companies approach leadership more intuitively and at the same time do not have very sophisticated leader development programs, or these approaches are completely missing. Re-

**Figure 1** » *Diagram of currently applied leadership development methods*



Source: Author's research study



spondents of medium-sized companies also mention the key benefits of the training and focus mainly on seminars and workshops focused on the development of communication skills, stress management, time management and conflict resolution. More than half of the respondents of medium-sized companies state that they do not use competency approaches in personnel work. At the same time, respondents from medium-sized companies state that they want to work with the results obtained and develop their leaders in areas of identified potential, which predicts a significant practical impact and benefit of the research study.

The output of the research study is a clear diagram of important competencies of leaders and

methods of their development. The competencies of the leaders were divided on the basis of the respondents' answers into two main groups for team and professional competencies.

These are especially for team competencies:

- training programs – Leadership academy, corporate leadership program, outdoor training,
- multi-source feedback including 360° variant – mainly from the team and from the leader,
- shading coaching and mentoring.

For the development of professional competencies, in particular was mentioned the use of

- training and education – seminars and workshops, lectures and conferences supported by mentoring.

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## Leadership development as a key value for the company in the south Moravian region

### ABSTRACT

*The aim of the presented study is to identify and describe how HR managers recognize and develop the competencies of leaders in the work team. To answer the research question, the method of exploration was chosen in the form of semi-structured personal interview between HR managers of medium and large industrial enterprises established in the South Moravian region. In total 22 HR managers participated in the research, with whom a personal interview was conducted in the period from 16th to 20th April 2018. The interview was based on four open questions and lasted approximately 20 minutes with each respondent. It was found that 59% of respondents use competence approaches and assess competencies using psychodiagnostic tools, assessment centers, model situations and interviews. Based on the results of the research, a diagram of leaders' important competencies was designed. These competencies were described as team competencies and professional competencies. At the same time, appropriate methods of their development were proposed, primarily through training, feedback, seminars, workshops, coaching and mentoring.*

### KEYWORDS

*Leadership; competences; development methods*

### JEL CLASSIFICATION

*M12; M14; M5*

x

# Diagnostics of Metacognitive Abilities of University Students II.: The Goals Inventory Method

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## \* 1. Introduction

Hartl, Hartlová (2010) define metacognition as knowing how a person knows (so-called cognition to another) and the ability of a person to think and think about their own thought processes in order to improve their cognitive abilities. Sternberg, Gardner, Perkins (in Krykorková, 2008) consider it an important component of intelligent behavior. According to Sternberg (2002), intelligence expresses the ability to learn from experience, adapt to the environment and use metacognitive processes.

The first classification of metacognition, thinking, the subject of which is thought operations, was introduced by Flavell in 1979. He named four metacognitive categories: metacognitive knowledge, metacognitive experiences, tasks, and strategies (Flavell, 1979). Kluwe (1982) focused on metacognitive knowledge in more detail and divided it into declarative (knowledge of one's own thinking and the thinking of others) and procedural (management, monitoring and control of one's own thinking). Schraw and Moshman (1995) talk about metacognitive skills, which can be understood as metacognitive activities that help a person to con-

trol their own thinking or learning (eg planning, monitoring, evaluation). The form of the concepts is theoretically constantly deepening, and their field of application is expanding.

### 1.1 Development of metacognition

In ontogenetic development, the beginning of metacognitive development is associated with the Theory of mind. Between the ages of 5 and 7, signs of metacognitive abilities such as orientation, planning and reflection appear and further improve. The ability to monitor and evaluate appears later. They appear to be content-dependent and later become widely used (Veenman, Van Hout-Wolters, Afflerbach, 2006). Piaget described second-order cognition – thinking about thinking – as a rapidly evolving aspect of knowledge in early adolescence. Other studies confirm that the second decade of life is a period of significant progress in monitoring and developing mind management skills (Kuhn, 2008).

Van der Stel and Veenman (2014) focused on the development of metacognitive abilities in a longitudinal study. The conclusions showed that metacognitive abilities in adolescents increase

qualitatively and quantitatively and appear to be mostly general, area-independent. They contribute to learning performance partly independent of cognitive abilities. In relation to academic performance, according to the results of Montague (1991) and Shraw (1998), partial deficiencies in general intelligence can be compensated by developed metacognition. Veenman, Van Hout-Wolters, Afflerbach (2006) confirm that metacognitive skills, although slightly correlated with intelligence, contribute to learning performance beyond intellectual ability.

### *1.2 Metacognition and Learning Performance*

The correlation between learning and metacognition has already been described by Flavell (1979). Other series of studies even consider metacognition to be the strongest predictor of learning (Wang, Haertel and Walberg, 1990), and Hrbáčková (2009) considers its absence to be the cause of school failure. In pedagogical practice, across all levels of study, the connection between metacognition and the ability to self-regulate one's own learning is monitored. Foltýnová (2009) also works with these concepts in the field of pedagogy. Foltýnová (2009) and Lokajíčková (2014) focus on the influence of metacognitive strategies on the development of self-regulatory skills. It is based on the premise that learning is effective if it is conscious. Krykorková (2008) states that the development of these processes has a positive effect on school success and emphasizes the overlap into adulthood – “A high level of their development is then one of the essential features of personality in adulthood” (Helus in Krykorková, 2008, p. 145). Students are placed more demands in planning and responsibility for their own learning (Hnilica, 1992, Foltýnová, 2009, van der Stel and Veenman, 2014, Vukman 2012), the task of teachers is their targeted support in metacognitive development.

Romainville (1994) focuses on cognitive strategies and metacognition. There was a relationship

between metacognition and performance in the sample of students studied. Through the outputs, he considers the enrichment of the concept of teaching at the university. Similar partial outputs occur Case, Gunstone (2006). In tertiary education, self-regulation is assumed, and it is appropriate to direct students to metacognition. If we deal with metacognitive practice in the academic environment, it is possible to focus on two areas: internal (personality and cognitive) assumptions of the individual and external circumstances (teacher's personality, concepts, methods and context of teaching) (Pabian, 2012). It turns out that, in terms of efficiency, metacognition needs to be integrated with content knowledge and repeated by the practice of using content knowledge to solve specific types of problems. One reason is that problems with any content have surface structures and deep structures. The surface structure consists of data that would be obvious to most people, regardless of the knowledge related to the area. The deep structure consists of hidden dimensions, for their knowledge is necessary knowledge of the content and experience in solving these types of problems (Lunney, 2008).

### *1.3 Introduction to the Research*

The dataset described below was compiled and translated within the project “Metacognitive abilities of university students and possibilities of their development”. Metacognitive abilities are a decisive element in the development of competencies and overall personality development.

The aim of the research was to find out the level of metacognitive abilities of university students of various years of study and to find the connection of metacognitive abilities with selected personality characteristics indicating personality growth and learning (self-efficacy, optimism, time orientation to the future). Furthermore, based on the findings to consider the targeted development of metacognition.

The presented text presents the results of the →

second part of the dataset. The Goals Inventory Method monitoring person's goal orientation and behavioural response in learning process.

SPSS Statistics was used for data analysis.

## 2. The Goals Inventory Method

### 2.1 Background

Goal orientation is used as a useful construct for understanding how people purposefully develop and achieve competence in learning and performance.

The Goals Inventory measure learning and performance orientations. The questionnaire consists of 25 items. This instrument was based on an earlier 48-item questionnaire (Schraw and Roedel, 1993). The items reflect behaviors and attitudes related to learning and performance. Individual statements are evaluated by the respondent on a 5-point Likert scale.

Roedel, Schraw and Plake (1994) discussed the validation of this tool with the following outputs. Test-retest reliability for learning and goal subscales were  $r=0,73$  and  $r=0,76$ . Internal consistency were  $0,80$  and  $0,75$  (Cronbach's alpha).

### 2.2 Data and Applications

Students from NEWTON College were involved in all parts of the research. Participation in the research was voluntary and included 115 undergraduate students, the Economics and Management degree program. There were 85 students from the first year, 14 students from the second year and 16 students from the third year, 75 women and 40 men.

The dataset is based on questionnaire and scaling methods to determine the level of development of partial metacognitive abilities and strategies for NEWTON College students.

As the research of metacognitive abilities in early adulthood is not systematically developed in the Czech Republic, it was necessary to identify re-

search methods from foreign professional (scientific) literature. The obtained test files were translated into Czech. Subsequently, they were evaluated and selected to form a compact whole.

Methods were administered by group, in the form of pencil – paper during the lessons.

The final dataset includes 5 parts:

1. AILI, Awareness of Independent Learning Inventory – independent learning (45 items);
2. Goals Inventory – Learning and Performance Goal Orientations (25 items);
3. MCQ-30, Metacognition Questionnaire 30 – metacognition in relation to personality (30 items);
4. MMG, Multi-Motiv Grid – semi-projective method (total 14 items, in this research 8 items selected);
5. Ryff Scales of Psychological Well-Being (36 items).

A previous study (Pánková, Benetti, 2020) was devoted to the results of the AILI questionnaire focused on independent learning which was driven by metacognition.

The presented text reflects the outputs of The Goals Inventory Method.

In the Goals Inventory Method are 25 items scored on Likert's 5-point scale presenting the level of agreement:

- learning subscale – 12 items;
- performance subscale – 5 items;
- filler items – 8.

SPSS Statistics was used for data analysis.

## 3. Results of the Research

First, Table 1 represent the case processing summary. Of the total number of 115 respondents, 106 respondents responded within the Learning orientation component, 9 respondents lacked answers, which accounted for 7.8% of the total number of respondents. Within the Performance orientation component of the total of 115 respondents, a total of 113 respondents answered, 2 respondents did not respond.

**Table 1 » Case Processing Summary**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Learning orientation	106	92.2	9	7.8	115	100.0
Performance orientation	113	98.3	2	1.7	115	100.0

Source: own elaboration

**Table 2 » Test of Normality**

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Learning orientation	0.056	106	0.200	0.991	106	0.724
Performance orientation	0.088	113	0.030	0.976	113	0.042

Source: own elaboration

**Table 3 » Correlations**

		Learning orientation	Performance orientation
Learning orientation	Pearson Correlation	1	0.303
	N	106	105
Performance orientation	Pearson Correlation	0.303	1
	N	105	113

Source: own elaboration

To analyse the dependence of variables, it was first necessary to assess the normality of the data. An assessment of the normality of data is a prerequisite for many statistical tests because normal data is an underlying assumption in parametric testing. There are two main methods of assessing normality: graphically and numerically. SPSS Statistics was used for data analysis. The results of the numerical assessment of normality are summarized in Table 2.

According to the results of elementary statistical analyses, all components have approximately normal distribution. Thanks to these results, it was possible to calculate the sample correlation coefficient – we chose Pearson correlation coefficient

(1.1) for our needs. The results are shown in Table 3.

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}} = \frac{\sum_{i=1}^n x_i y_i - n\bar{x}\bar{y}}{(n-1)s_x s_y} \quad (1.1)$$

where:

$\bar{x}$  and  $\bar{y}$  are sample averages and  $s_x$  and  $s_y$  are the sample standard deviations.

All components correlate very weak ( $P$  value < 0.001) – learning orientation ( $r = 0.303$ ) and performance orientation ( $r = 0.303$ ). No item in the an-

alyzed components significantly reduces their internal consistency or correlates significantly with other items.

#### 4. Discussion

The analysis of independence can be modelled using various statistical modelling tools. The correlation method was chosen according to the character of the examined data, namely Pearson correlation coefficient. Pearson's correlation coefficient is a statistical indicator of the strength of a linear relationship between paired data. It is a sample correlation coefficient. Positive values of  $r$  mean a positive linear correlation between the investigated quantities. The results of the analysis showed that there is a weak dependence between the variables examined. In addition, there are other statistical tools to reflect the dependence between the variables examined. Further research could also focus on comparing the results using other statistical methods that can be used to investigate dependence between variables.

#### 5. Conclusion

The aim of the research, which was attended by 115 bachelor's students of the Economics and

Management study program, was to determine the level of their metacognitive abilities and to demonstrate whether there is a dependence between learning orientation and performance orientation. The article focused only on the results of the second part of the dataset – The goals inventory method. The Goals Inventory measure learning and performance orientations. In the Goals Inventory Method are 25 items scored on Likert's 5-point scale presenting the level of agreement.

The results show that there was dependence between learning and performance orientation. There was a weak dependence between the individual components.

Overall, further research could focus on re-testing students, comparing the results with the results of this research, and if the dataset included a sufficient number of students, the results could be compared separately between years of study.

#### Acknowledgement

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## Diagnostics of Metacognitive Abilities of University Students: The Goals Inventory

### ABSTRACT

The current global situation limiting full-time form of study in schools of all levels places new demands not only on the education system, but also on the learning practices of pupils and students. Schools are in a situation where it is necessary to reconsider existing cognitive strategies regarding distance learning, its form, and tools. Students' metacognitive skills affect their ability to change cognitive strategies with respect to any changes in the teaching process and often determine their success in new conditions. The present study →

→ builds on the previous “Diagnostics of Metacognitive Abilities of University Students: Awareness of the Independent Learning Inventory Method” and complements it with outputs from another method, this time examining the relationship between learning and focusing on performance. The overall goal of the test battery is to determine the level of metacognitive abilities of students and their connection with other personality characteristics and styles of their learning. The study focuses on the results of the questionnaire The Goal Inventory focusing on the relationship between the respondents’ target orientation in the field of learning and performance. The questionnaire survey was aimed at students in the 1st to 3rd year of the Economics and Management study program at NEWTON College. The results of the overall diagnosis of metacognitive abilities of university students lead to two goals. First, naming possible areas of development so that students use metacognition consciously, which will allow them to respond flexibly to changing teaching conditions. From the second point of view, by knowing the structure of students’ metacognitive abilities, universities can adapt their teaching methods so that they maintain their effectiveness even in the distance form of study.

#### **KEYWORDS**

*Metacognition; metacognitive skills; learning; performance; self-regulated learning; the goal inventory method*

#### **JEL CLASSIFICATION**

*A22; I20; I21; I23; M12*

×



# Telemedicine as a way to improve care and functioning of the institution

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## \* 1. Introduction

There are situations where the patient does not necessarily have to visit your doctor's office. For example, in case of sending various medical certification, consultations, aftercare or during a pandemic, when it is recommended to limit direct contact with people in the front line. And here is the opportunity for eHealth and Telemedicine. These are not new concepts brought about by the COVID-19 pandemic, but concepts that healthcare has been trying to deal with in an appropriate way for several years. However, thanks to the COVID-19 pandemic, the pressure to develop eHealth and telemedicine is enormous.

What is the most common idea of telemedicine among the professional and lay public? The patient sends a request to a doctor through his application, where the doctor clearly sees what the patient needs advice on. Whether it is a consultation, issuance of an medical order or certificate, or just a dispensation. Doctors determine in what order the requirements are dealt with. After resolving the case, the patient receives notification to his computer or mobile phone.

Ideas for providing remote patient care vary, depending on specific solutions.

Why focus on the development of eHealth and telemedicine? Demographic prospects are not rosy

for healthcare. Over the next decade, there will be more people in the older age groups, which are often polymorbid patients requiring a higher pension of health care. This also takes into account the capitation index, which assumes that a person aged 70–74 needs twice as much time with a doctor as a person 40 years younger, and people over the age of 85 need 3.4 times more. If we recalculate the demographic development in this way, the practices in 2025 are expected to be four percent higher than in 2019 and in 2030 almost eight percent more time consuming for patients. According to forecasts, the expected increase in workload per internship will be seven percent in 2025 and 14 percent higher in 2030 than in 2017. (Koubová, 2021). eHealth is a solution not only in terms of capacity, but also in terms of time savings. The researchers reported that the average total visit time for a person seeking care for themselves, a child, or another adult was 121 minutes. That total includes 37 minutes of travel time and 84 minutes in the clinic. Of those 84 minutes, people spent only 20 minutes with physicians; they spent the rest of the time waiting, interacting with nonphysician staff, or completing paperwork or billing. (Harvard News)

After a year with COVID-19, however, it can be stated that the MEDDI application platform has a very positive response not only among healthcare professionals, medical and scientific institutions. →

→ The MEDDI solution was initiated many years (in 2016) before the COVID-19 pandemic, so it can be described as a solution that was created after thorough analyzes of the needs of healthcare professionals and patients, legal and market conditions. Therefore, it will serve as an example of an advanced telemedicine solution.

## 2. eHealth and Telemedicine

eHealth is the use of information and communication technologies (ICT) for health. The eHealth unit works with partners at the global, regional and country level to promote and strengthen the use of ICT in health development, from applications in the field to global governance. The unit is based in the Department of Service Delivery and Safety in the Cluster of Health Systems and Innovation. (WHO)

Eysenbach (2001) e-health is an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies. In a broader sense, the term characterizes not only a technical development, but also a state-of-mind, a way of thinking, an attitude, and a commitment for networked, global thinking, to improve health care locally, regionally, and worldwide by using information and communication technology. The 10 e's in "eHealth", main principles of eHealth are presented in table 1.

eHealth covers (Royal College of Nursing, 2021):

- electronic patient records (including assessment and care planning, electronic nurse prescribing, patient scheduling, online laboratory requests/results, e-pharmacy, clinical communications such as discharge/ transfer letters)
- electronic communication with patients and professionals (includes telephone support/advice lines, email, SMS text messaging)
- telehealth/telecare (e.g. remote monitoring, video consultations, including service re-design, equipment management, etc)

- information management (reusing data recorded for care purposes to improve care, run clinical services, health care research, patient informed decision making, etc)
- information governance (covers confidentiality, system security and data protection, data quality)
- personal health records (a repository of information considered by the individual to be relevant to his or her health, wellness, development and welfare, and for which that individual has primary control over the record's content).

In addition to these 10 essential e's, e-health should also be (Eysenbach, 2001):

- easy-to-use,
- entertaining (no-one will use something that is boring!) and
- exciting

Telemedicine, this term was used in the 1970s and means "healing at a distance" (Strehle, Shabde InWHO 2010), signifies the use of ICT to improve patient outcomes by increasing access to care and medical information. Recognizing that there is no one definitive definition of telemedicine – a 2007 study found 104 peer-reviewed definitions of the word (Sood In WHO, 2010) – the World Health Organization has adopted the following broad description: "The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities" (WHO, 1997).

Remote access has been used for some time, for example in Denmark, for the "emergency" trial of patients, who are then sent directly to a hospital, ambulance or pharmacy with instructions for self-treatment. The Slovak insurance company Dôvera also tried to use a call center with a similar service, but there was interest only during the coronary cri-

**Table 1 » The 10 e's in "eHealth"**

Area	Tasks
Efficiency	one of the promises of e-health is to increase efficiency in health care, thereby decreasing costs. One possible way of decreasing costs would be by avoiding duplicative or unnecessary diagnostic or therapeutic interventions, through enhanced communication possibilities between health care establishments, and through patient involvement.
Enhancing quality of care	increasing efficiency involves not only reducing costs, but at the same time improving quality. E-health may enhance the quality of health care for example by allowing comparisons between different providers, involving consumers as additional power for quality assurance, and directing patient streams to the best quality providers.
Evidence based	e-health interventions should be evidence-based in a sense that their effectiveness and efficiency should not be assumed but proven by rigorous scientific evaluation. Much work still has to be done in this area.
Empowerment of consumers and patients	by making the knowledge bases of medicine and personal electronic records accessible to consumers over the Internet, e-health opens new avenues for patient-centered medicine, and enables evidence-based patient choice.
Encouragement of a new relationship between the patient and health professional	towards a true partnership, where decisions are made in a shared manner.
Education	Education of physicians through online sources (continuing medical education) and consumers (health education, tailored preventive information for consumers)
Enabling information exchange and communication	in a standardized way between health care establishments.
Extending the scope of health care beyond its conventional boundaries.	This is meant in both a geographical sense as well as in a conceptual sense. e-health enables consumers to easily obtain health services online from global providers. These services can range from simple advice to more complex interventions or products such as pharmaceuticals.
Ethics	e-health involves new forms of patient-physician interaction and poses new challenges and threats to ethical issues such as online professional practice, informed consent, privacy and equity issues.
Equity	to make health care more equitable is one of the promises of e-health, but at the same time there is a considerable threat that e-health may deepen the gap between the "haves" and "have-nots". People, who do not have the money, skills, and access to computers and networks, cannot use computers effectively. As a result, these patient populations (which would actually benefit the most from health information) are those who are the least likely to benefit from advances in information technology, unless political measures ensure equitable access for all. The digital divide currently runs between rural vs. urban populations, rich vs. poor, young vs. old, male vs. female people, and between neglected/rare vs. common diseases.

Source: Eysenbach (2001)



**Table 2 » A practical ten for effective video call management in Czech conditions**

Phase	Step
Planning	We will choose a suitable time and space for the video call.
Start a conversation	We will check the technical side on the patient's and doctor's side.
	We will seek the patient's consent to the video call and alert them to possible video call restrictions compared to classical examination.
	We will clarify as soon as possible who we are talking to and what is the purpose of the conversation, what time space can be video call.
Obtaining information	What are the symptoms? What is the previous history known to us?
	We actively ask for specific and "flag" symptoms that are otherwise in the office automatically we see.
Decision if remote access is lege artis	<p>A telephone or video call is sufficient only if:</p> <ul style="list-style-type: none"> <li>• the diagnosis is clear</li> <li>• the duration of the acute disease is short or it is a known and long-term stabilized chronic disease</li> <li>• no warning signs (red flags) are present and the patient appears to be generally compensated</li> <li>• the caller is able and willing to accept recommendations at a distance, resp. respond adequately if progress.</li> </ul>
	We give clear instructions if we leave the patient at home, resp. we recommend further care.
	We control permanent medication.
	We always give the patient clear advice, we explain the symptoms that could represent his deterioration diseases and how to respond to them.
We always end the call by asking if the patient does not yet have one other questions.	

Source: Mucha and Býma (2020)

sis and possibly for a short time during the campaign. (Koubová, 2021).

### 2.1 Communication on eHealth

Communication is a key part of eHealth, so it is crucial to understand the main communication principles and pillars. The communication identifies 3 pillars around which activities will be based (European Commission):

Pillar 1: Secure data access and sharing

To facilitate greater access to cross-border

healthcare, the Commission is building the eHealth Digital Service Infrastructure to allow e-prescriptions and patient summaries to be exchanged between healthcare providers. The first cross-border exchanges started in 2019, with the goal of having all the other EU countries on board by 2025. In the longer term, the Commission is working towards establishing a European electronic health record exchange format that is accessible to all EU citizens.

Pillar 2: Connecting and sharing health data for research, faster diagnosis and improved health

The second pillar of the 2018 Communication intends to tap into the huge potential of health data to support medical research with the aim of improving prevention, diagnosis, treatments, drugs and medical devices.

Pillar 3: Strengthening citizen empowerment and individual care through digital services

Digital services can empower citizens, making it easier for them to take a greater role in the management of their own health from following prevention guidelines and being motivated to lead

healthier lifestyles, to managing chronic conditions and providing feedback to healthcare providers. Health systems will also benefit from innovative care models that use telehealth and mHealth to address the rising demand for healthcare, helping to shift progressively towards integrated and personalised care systems. There is already a methodology for communication between patient and doctor via telemedicine in the Czech Republic, see Table 2.

**Table 3 » Timeline of MEDDI application platform**

Year	Milestones
2016	Main idea — Changing healthcare as we know it
2017	Development the Application — Beginnings of development, monitoring of competition
2018	Legislative conditions — Identifying possible obstacles
	We will clarify as soon as possible who we are talking to and what is the purpose of the conversation, what time space can be video call.
2019	Completion of development — Testing the application with the help of Mladí lékaři — thousands of cases for more than a year
2020	Launching of the Application Sufficient capacity for the Czech Republic and Slovakia at the same time Official partner of Masaryk Memorial Cancer Institute Classes on First Faculty of Medicine Charles University, Faculty of Medicine Masaryk University White label solutions (Veolia, St. Anne’s University Hospital etc.)

Source: MEDDI hub

**Table 4 » Payments from insurance companies**

Issue	Code	Value	Description
Distance health consultation by a general practitioner	01300	176 points	only for specialties 001 and 002 the code is limited by the reporting frequency and location (6 times in 3 months in a registered patient) A — only on an outpatient basis (not possible during hospitalization). off-capacity performance
Distance consultation by an specialist for a patient with a serious chronic disease	09616	234 points	only for specialists, including sections 603 and 604 not intended for 001 and 002 and non-medical specialties

Source: MEDDI hub

## 2.2 The application platform MEDDI

The application platform MEDDI can be described that connects a doctor and a patient via an encrypted call, video call or chat. Simple, safe and fast. These key parameters represent the reasons for successful acceptance by the professional public, institutions and patients.

The telemedicine application platform MEDDI is tool for comfortable, clear, secure and objective care available on all platforms (iOS, Android, web). It represents a 100% Czech investment with a positive response. During the first year on the market, MEDDI hub became an official partner for telemedicine of Masaryk Memorial Cancer Institute. Partner who provides integration of communication channels and data processing from implanted technologies in oncology, palliative medicine, nephrology, treatment of scars etc. A reliable partner thanks to thousands of cases for more than a year. Milestones in the development of the MEDDI platform are described in Table 3.

Main benefits of telemedicine application platform MEDDI:

- More efficient and secure consultation with doctor without waiting, from distance
- Medical care in comfort instead of visiting a doctor based on the facts
- Perfect overview of care, lifestyle and health
- Delivered by encrypted video conferencing, encrypted calls, encrypted chat and data storage
- Instant secure connection with the doctor via video call, audio and chat, all encrypted
- Expert consultation regardless of the distance from a wide range of experts
- Second expert opinion from the doctor on the basis of facts
- Comfortable, clear, secure and objective care
- All confirmations, prescriptions and requests from the doctor filled in automatically and remotely
- Digitization of medical records and online access

- Preventive medical care tool, possibility of monitoring and evaluating convalescence, and other key values

- Overcoming obstacles to work

To better understand the benefits of telemedicine, it is good to see how it works step by step:

1. entering problems into the application
2. displaying a request for assistance to a specific doctor or doctors with the necessary specialization in the area
3. if the request is not accepted by any doctor within two hours, MEDDI telephone support will connect the doctor and the patient
4. followed by a secured consultation, the patient can share existing medical records in medical card file:
  - medical records available to doctors and management
  - transmission of the results of medical examinations from distance
  - OCR documents for exporting full passages of text
  - possibility of comparing development on the timeline
  - Patient-reported Outcome Measures (PROMs)
  - possibility of notification of the use of emergency medication, notifications of non-compliance with the set limits, etc.
  - wide range of questionnaires
5. issuance of a medical report, request, confirmation directly in the application, prescription, sick leave, paid family caregiving, ...
6. doctor reports a telemedicine consultation to the patient or to patient's insurance company

## 2.3 Cooperation with medical facilities and payment for medical care

Cooperation with doctors is possible both in the line of individual doctors, or surgeries, and health care facilities. In all cases, doctors have a free application MEDDI MD. Major healthcare institutions have their own version of the application for managing patient requirements (white label solu-

tion). Significant patient services are paid for by health insurance companies (for example, 176 points above the capitalization payment general practitioners in the Czech Republic, see Table 4). During the beginning of the pandemic, all actions performed remotely were reimbursed in full. Based on the requirements of medical institutions, the possibility of payment gateway for self-payers in the application has been added. There is a program for the recruitment and training of doctors. This program takes the form of cooperation with leading medical faculties in the Czech Republic, where medics have the opportunity to complete specialized subjects on telemedicine in the MEDDI environment.

### 3. Areas of transformation in the introduction of telemedicine

If a hospital-type medical institution decides to enter the world of telemedicine, it faces a challenging task. It is necessary to delve into the details of existing processes and responsibly define the requirements of key areas of care (see Table 5). From the list of areas, it is clear that it is necessary to establish a multidisciplinary team on the part of the

healthcare organization and the selected supplier. Cooperation must be completely open, only then is it possible to come up with a functional solution that will be beneficial for the healthcare organization and for patients. The individual areas are very closely interconnected and it is not possible to determine which one is primary. Insufficient grasping of any of them ultimately leads to a reduction in the quality of patient care and also to a negative attitude towards telemedicine at the level of the healthcare organization. If a general practitioner decides on telemedicine, the whole process is much simpler. Thanks to the proven MEDDI solution, it is possible to start telemedicine in hours without any modifications just by changing the processes and organization of the doctor's work. The organization's code of ethics can also play a role in the implementation of telemedicine, if the defined code of ethics in a public institution essentially serves as a regulatory tool. (Nesiba, Stránský, 2018).

### 4. Discussion

Given the fact that healthcare organizations are motivated to switch to telemedicine not only by the demands of patients, but also by the declining

**Table 5 » Areas of transformation to telemedicine**

Area	Tasks
Law	Legislative conditions, GDPR, licence agreement etc.
IT&C	Registration of staff / patients, API protocols, DATA Exchange, Cooperation with Information system
Care management	Gap in Care, Communication and Administration, Automatization of processes
Promotion	Internal promotion to staff Promotion to patients and public
Education	Education of staff Education of patients
Service	New functions and connectivity Support for new users Technical help line Updates

Source: own work



**Table 6 » Main KPI of telemedicine care by MEDDI**

KPI	Description
Number of MDs	2890 (in Dec 2020)
Average time to connect patient and MD (2020)	12 minutes
Average time to connect patient and MD (Jan and Feb 2021)	6 minutes
Guaranteed connection with the doctor	within two hours of entering the request
Assistance needed during registration	3,6 % (calls to help line during one campaign focused on wide public needed to finish the registration)

Source: MEDDI hub

spare capacity for care, it is logical that they are looking for a strategic partner for this difficult task. Another reason is the need to better organize the work of medical staff. For some organizations, the last reason to decide is the fact that patient care through telemedicine is covered by public health insurance. The MEDDI telemedicine platform represents the most comprehensive offer not only on the Czech market, as it meets three key requirements – it is safe, easy to use and fast (from the point of view of providing care and implementation). This is also proven by MEDDI’s KPIs (see Table 6). The average doctor contact time in 2020, 12 minutes, is unmatched compared to the time reported in a study in the American Journal of Managed Care (In Harvard News), where the time spent traveling to the doctor is 37 minutes and the difference time is 64 minutes spent in health care.

organizations. At the same time, the proportion of application users who require registration assistance (3.6%) demonstrates the fact that the MEDDI platform is user-friendly and intuitive.

### 5. Conclusion

Given the changing demographic curve, high time demands on care, it is clear that health care not only in the Czech Republic faces a number of challenges. A proper grasp of eHealth and telemedicine is a key step that has the potential to reverse adverse developments. Given the KPIs of the MEDDI hub, it is clear that this solution is chosen by many healthcare providers. Experience shows that their strategic decision in choosing a partner was the right one.

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## Telemedicine as a way to improve care and functioning of the institution

### ABSTRACT

*Telemedicine has become more relevant in the last few months than ever before. However, this does not mean that this topic came to life with COVID-19. So what are the limits for using telemedicine? Is telemedicine usable in a doctor's practice and beneficial for patient care? How is telemedicine currently affecting the economics of healthcare facilities? The paper provides a verified view of how to approach the process of introducing telemedicine into practice from the perspective of the management of a medical facility on the example of the telemedicine solution MEDDI.*

### KEYWORDS

*Telemedicine; economics; management; MEDDI; health care*

### JEL CLASSIFICATION

*M15; O32; I19; M30*



# Granger Causality and the Response Function: Macroeconomic Indicators as Determinants of Future Investment Activity

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## \* 1. Introduction

The traditional investor profile has remained virtually unchanged for decades. Investors rise earlier than others to check the newspaper or their phone for developments of their investments and of the factors that influence them. Determining which factors are crucial for assessing and predicting the development of the investment is the key value that the investors have. Frequently, the idea that a specific factor affects the investment development can be mere speculation (which, however, does not preclude success); just as frequently, the idea stems from a creation of a precise model with quantified variables. The investment world, nevertheless, develops rapidly, confirming the image of a turbulent time in which changes occur unexpectedly and generate diverse consequences. Analysis, revision and updates of information about possible causal effects resulting in or from the developments of investments thus present a permanently topical and useful subject for research.

The topic of this paper is investing in investment funds in relation to the effect of the developments of macroeconomic variables. Its aim is to

use the Granger model to identify causalities determining investment in funds with regard to macroeconomic aggregates. The findings obtained provide an overview of causal relationships based on testing the influence of lagged variables with determination of mutual and one-directional causalities, which can then serve to predict the developments of investment activity. Response functions are then used to simulate shocks in macroeconomic indicators to find significant reactions in fund investment.

## 2. On studying the relationship between investment and macroeconomic variables

The relationship between investment and macroeconomic aggregates has long been an important topic, which, in addition, requires frequent updates in the context of the adequate time series. The analysis of time series and the application of econometric tools to create prediction models have been glorified as essential tools to understand key relationships in the context of microeconomic and macroeconomic variables. This paper follows up on this and also on the use of impulse functions in

economic dynamics to provide an explicit economic interpretation of how current shocks change economic time series in the present and future time periods (Hansen 2017, pp. 1774–1782). Claudio Borio (2014, p. 182–198) states, based on the results of his own research, that the rediscovery of the role of the financial cycle in macroeconomy is crucial to understanding business fluctuations. The behaviour of investment managers and the factors influencing their decisions and reflecting macro- and microeconomic conditions play a significant role as well. Using the data from surveys completed by managing directors of financial services, it was proven that the expectations of financial directors about growth in returns explain corporate investment plans and real investments satisfactorily. Similarly, an extrapolation structure of expectations based on reflection of past developments was identified (Gennaioli et al 2015, pp. 379–431).

Investor behaviour has macroeconomic consequences, just like macroeconomic phenomena affect investment. The question then is what determines which variable and how. A researcher encounters uncertainty, which needs to be reshaped into conditions of risk through acquisition of new information. In this regard, Gilchrist and Zakrajšek (2014) found out that “micro and macroeconomic evidence suggests that fluctuations in idiosyncratic uncertainty have a major impact on investment; the impact of uncertainty on investment is mainly due to changes in credit spreads; and credit spread innovation has a significant impact on investment, regardless of the level of uncertainty. These findings raise the question of the economic significance of the traditional effect of uncertainty shocks and await financial distortions as the main mechanism through which uncertainty fluctuations affect macroeconomic performance.”

Studying the relationships between variables connected to investments and macroeconomic aggregates thus brings some valuable insights. For example, Christiano and Fisher (2003) found out

that “stock market prices, a measure of the marginal cost of installed capital, are procyclical. Yet, prices of investment goods, the main input into new installed capital, are countercyclical.” Based on these findings, the driving forces of the business cycle and the nature of capital installation costs in relation to the business cycle of macroeconomic aggregates were identified. Macroeconomic aggregates in relation to investment are often linked to political instability; it was discovered, for example, that pre-election periods are connected with lower economic activity and delays in issuing shares and bonds before the elections. The macroeconomic level presents a possible source of exogenous variability in uncertainty (investment drops by 5–10% before elections) (Jens 2017, pp. 563–579).

Macroeconomic significance is at the same time firmly implemented in the risk assessment of an investment itself. Each investment is assessed primarily from three aspects: profitability, liquidity and risk. All these factors are interconnected. Risk can be understood as uncertainty about acquiring the expected return. The most frequent types of investment risk are the risk of changes in interest rate, inflation, events, insolvency, loss of liquidity, currency, legal, operational and the risk of the features of individual investment tools (Rejnuš 2014). This means that the dominant types of investment risk are those connected with macroeconomy.

Being aware of the relationship between the development of macroeconomic aggregates and investment activity can be vital in investment management. Risk is accompanied especially by volatility (fluctuations in value) of an investment – current market valuation of the investment. Investors can use the risk to their advantage by anticipating future events based on acquired information and taking measures before the events transpire – all this in accordance with the extent of their own risk aversion (Kerzner 2013).



**Table 1** » Overview of the biggest intermediaries providing domestic and foreign funds

Intermediary	Fund mandates
Česká spořitelna, a.s.	128 929 864 975 CZK
ČSOB Asset Management, a.s.	107 524 635 070 CZK
Komerční banka, a.s.	58 098 958 136 CZK
Conseq Investment Management, a.s.	36 264 079 594 CZK
Amundi group	27 847 077 689 CZK
Generali Investments CEE, a.s.	25 777 724 906 CZK
Raiffeisenbank, a.s.	24 302 076 510 CZK
J&T Investiční společnost, a.s.	17 976 523 963 CZK
NN Investment Partners C. R., a.s.	14 350 707 090 CZK
Moneta Money Bank, a.s.	11 345 641 839 CZK
Others	27 413 005 180 CZK
<b>Total</b>	<b>479 830 294 948 CZK</b>

Source: Authors, based on AKAT (2018b, online)

### 3. On studying the relationship between investment and macroeconomic variables

Investments exceeded state budget expenditures in the first half of 2018. Investment in funds reached the highest level in history, with 483.5 billion Czech crowns invested in domestic and foreign funds offered in the Czech Republic (83% owned by individual persons and 17% in legal person ownership, as of March 31, 2018). Czech households approached the standard of Western European countries in their investment activity, aiming to maintain the value of their wealth through investing. (AKAT 2018a, online)

If current data are cleaned of the influence of one-time purchases by large institutional investors, then it emerges that individuals' investments in funds are mildly increasing, with the most popular type being mixed funds. Other types of funds, however, also experience growth. *“The development in the first quarter continues to confirm a gradual increase in the proportion of common fund investment in the total wealth of households, although we could see a certain slowing down of the*

*increase as a consequence of higher volatility of capital markets and worse historical performance. Further increase in the proportion of regular investment in new instruments gives reason for optimism”* (AKAT 2018b, online).

Česká spořitelna, a.s. (128.92 bn CZK), ČSOB Asset Management, a.s., investment company (107.52 bn CZK) and Komerční banka, a.s. (58.09 bn CZK) represent the biggest domestic providers of domestic and foreign common funds as of March 31, 2018. Total volume of wealth managed by asset managers in the Czech Republic or, through them, by asset managers abroad reached 1 365 bn CZK as of March 31, 2018. The volume of wealth invested in Qualified investors funds reached 13 884 bn CZK, thus recording quarterly growth of 6.09 bn CZK (i.e. of 4.58% compared to December 31, 2017) (AKAT 2018b, online).

### 4. Methodology

When investing, it is crucial to be able to predict the development of a specific investment or fund. An investor can imagine a map of various factors

which influence the investment or fund to a certain extent. Macroeconomic indicators have traditionally been seen as the most critical among these factors. The key question, which can be formulated as the research question, is: Which macroeconomic indicators causally influence (help predict) individual investment funds, or are influenced by them (enabling prediction), with a division into domestic funds, foreign funds, and funds overall? This question should be answered through results which clearly show whether chosen macroeconomic indicators help predict the development of specific investment funds or whether the investment funds help predict the development of macroeconomic indicators, including the identification of mutuality of the causal relationships.

To answer the research question, sub-hypotheses linked to relevant variables in the data set are statistically tested through Granger causality. They are H0: “There are no causal relationships between the chosen macroeconomic indicators and investment funds” and H1: “There are causal relationships between the chosen macroeconomic in-

dicators and investment funds”, both tested at significance levels of 0.01; 0.05; 0.10.

To advance the Granger causality results, shocks with regard to macroeconomic indicators are modelled to formulate response functions. These provide information about the extent of possible destabilization of the development of the specific investment fund in relation to long-term equilibrium. Due to the high number of indicators used in the research, only the results with the most significant effect are presented. The data used in the research in the form of a time series (with quarterly frequency) are in a way unique because they capture the whole business cycle from a dramatic downturn (2009) to a dramatic boom (2017).

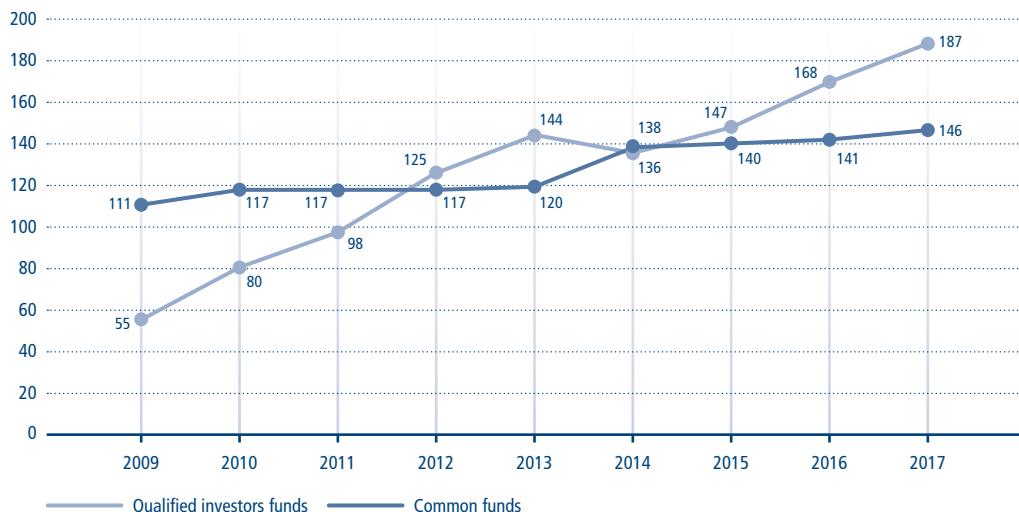
### 5. The Granger model

The three macroeconomic indicators used are:

- GDP growth
- Inflation
- Labour market indicator – unemployment

For a valid Granger causality application, the

**Graph 1 » Development of the number of investment funds in the Czech Republic**



Source: Authors, based on AKAT (2018a, online)



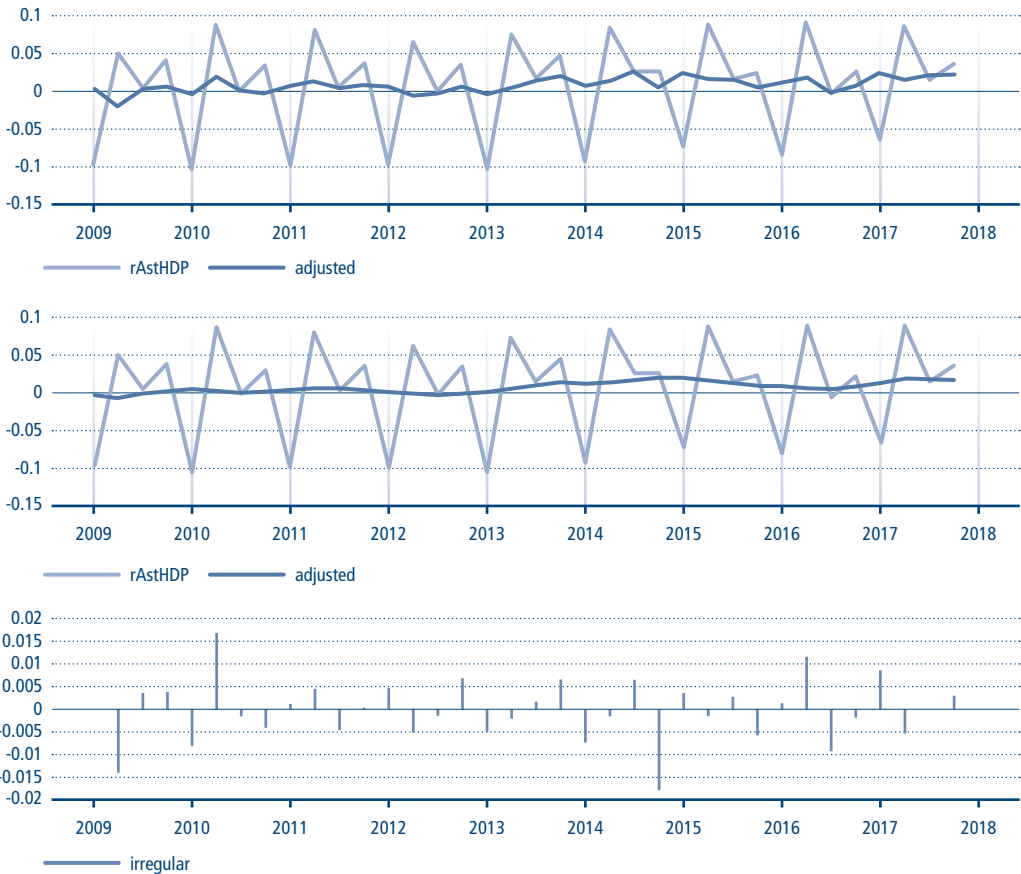
condition that the variables have to be stationary (there cannot be a trend in the variables) needs to be met. However, an influence of a trend can be assumed in the case of the chosen macroeconomic indicators, as evidenced by the results of tests of the influence of seasonality on macroeconomic indicators. The seasonality influence is eliminated using X-12 ARIMA (without logarithmic transformation) with seasonally adjusted series (the process is illustrated on data adjustment of the GDP growth indicator).

However, even after these adjustments, there is

still an evident trend present. That is why an adjustment through “log difference” expressing the growth in the variable (transformation of the variable to growths with an acceptable loss of one observation) has been performed. After all these adjustments, the data are prepared for the VAR model.

A VAR model with 32 degrees of freedom using four endogenous variables (with one lag) with robust standard errors is prepared. The model satisfies the conditions for residuals normality and autocorrelation (not present in the model). All

**Graph 2 » Seasonal adjustment of data (GDP growth indicator)**



Source: Authors

**Table 2 » Interpretation of the position of variables in the model**

Indicator	Macroeconomic indicator	Funds	Macroeconomic indicator
Position	Variable explaining funds		Variable explained by funds

Source: Authors

**Table 3 » Granger causality of overall funds: F-statistics [p-value]**

Funds <sub>(t)</sub>	GDP growth		Inflation		Unemployment	
	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)
...money market	0.1756	0.7564	0.0457**	0.0067***	0.2005	0.1261
...bond	0.1220	0.5195	0.0763*	0.2993	0.0385**	0.9918
...stock_id <sup>1</sup>	0.0759*	0.0960*	0.1412	0.1540	0.9796	0.8679
...mixed_id	0.6485	0.4250	0.7254	0.5105	0.2883	0.8977
...of funds	1.05e-08***	0.1515	0.008***	0.0022***	0.0599*	0.0454**
...structured	0.2137	0.5120	0.0910*	0.3027	0.1114	0.9973
...real estate_id	0.5892	0.5778	1.96e-05***	0.9705	0.3743	0.3748

Source: Authors

**Table 4 » Granger causality for overall funds of funds: F-statistics [p-value]**

	GDP growth <sub>(t-1)</sub>	Inflation <sub>(t-1)</sub>	Unemployment <sub>(t-1)</sub>	Funds of funds <sub>(t-1)</sub>
GDP growth <sub>(t)</sub>	0.2534 [0.6185]	7.7331 [0.0094]	2.3554 [0.1357]	<b>62.283 [0.0000]***</b>
Inflation <sub>(t)</sub>	0.34198 [0.5632]	133.24 [0.0000]	4.3603 [0.0457]	<b>14.038 [0.0008]***</b>
Unemployment <sub>(t)</sub>	2.8256 [0.1035]	1.5993 [0.2161]	16.107 [0.0004]	<b>3.8337 [0.0599]*</b>
Funds of funds <sub>(t)</sub>	2.1703 [0.1515]	<b>11.290 [0.0022]***</b>	<b>4.3722 [0.0454]**</b>	0.17179 [0.6816]

Source: Authors

inverse roots of the VAR model lie inside the unit circle, ensuring model stationarity. The investment funds studied include money market funds, bond funds, stock funds, mixed funds, funds of funds, structured, and real estate funds. The funds are divided into overall, domestic, and foreign funds.

In the given model, the macroeconomic indicators adopt two roles: either a regressor (variable

explaining funds) or a regressand (variable explained by funds) with the interpretation of the result whether the funds in time t are explained by a microeconomic indicator in time t-1 or the macroeconomic indicator is explained by a fund in time t-1 (with regard to the macroeconomic indicator). A statistically formal interpretation of the results is used.

<sup>1</sup> „Gross domestic product (GDP) is defined as the total amount of goods produced and services provided, typically quoted or cited per country, for one year or quarters“ (Callen, 2008)

→ 5.1 Overall investment funds

The results of Granger causality show that four mutual causalities can be identified, along with five cases in which investment funds explain the macroeconomic indicators. Inflation is a crucial variable for money market funds, being significant as both regressand and regressor, with a stronger influence in the position of regressor, explaining the development of money market funds.

Money market funds in time t are explained by inflation in time t-1 (0.0067\*\*\*) and inflation in time t is explained by money market funds in time t-1 (0.0457\*\*). Bond funds in time t-1 explain inflation (0.0763\*) and unemployment (0.0385\*\*). Stock funds in time t are explained by GDP growth

in time t-1 (0.0960\*) and at the same time stock funds in time t-1 explain GDP growth in time t (0.0759\*). Funds of funds in time t are explained by inflation (0.0022\*\*\*) and by unemployment (0.0454\*\*) in time t and at the same time funds of funds in time t-1 explain GDP growth (1.05e-08\*\*\*), inflation (0.008\*\*\*) and unemployment (0.0599\*) in time t. Structured funds in time t-1 explain inflation in time t (0.0910\*). Real estate funds in time t-1 explain inflation in time t (1.96e-05\*\*\*).

Out of all the investment funds, funds of funds are linked with the macroeconomic indicators to the highest degree (see Table 3). They determine GDP growth, inflation and unemployment, and at the same time are determined by inflation and unemployment.

**Table 5 » Granger causality for domestic funds: F-statistics [p-value]**

Funds <sub>(t)</sub>	GDP growth		Inflation		Unemployment	
	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)
...money market	0,1671	0,6776	0,223**	0,0073***	0,2410	0,7392
...bond	0,0809*	0,4763	0,0374**	0,0643*	0,0379**	0,7641
...stock_id <sup>2</sup>	0,4221	0,1948	0,0523*	0,4433	0,6931	0,3113
...mixed_id	0,8170	0,5526	0,2659	0,3316	0,2164	0,9130
...of funds	3,01e-010***	0,1465	0,0010***	0,0022***	0,0315**	0,0424**
...structured	0,1835	0,7624	0,1492	0,7646	0,1966	0,4908
...real estate_id	0,6668	0,7114	8,91e-05***	0,8512	0,4227	0,3294

Source: Authors

**Table 6 » Granger causality for domestic funds of funds: F-statistics [p-value]**

	GDP growth <sub>(t-1)</sub>	Inflation <sub>(t-1)</sub>	Unemployment <sub>(t-1)</sub>	Funds of funds <sub>(t-1)</sub>
GDP growth <sub>(t)</sub>	0.23950 [0.6282]	7.7272 [0.0095]	2.2559 [0.1439]	<b>87.295 [0.0000]***</b>
Inflation <sub>(t)</sub>	0.35321 [0.5569]	133.40 [0.0000]	4.4183 [0.0444]	<b>13.355 [0.0010]***</b>
Unemployment <sub>(t)</sub>	2.8491 [0.1022]	1.6169 [0.2136]	16.013 [0.0004]	<b>5.1099 [0.0315]**</b>
Funds of funds <sub>(t)</sub>	2.2265 [0.1465]	<b>11.244 [0.0022]***</b>	<b>4.5069 [0.0424]**</b>	0.19957 [0.6584]

Source: Authors

<sup>2</sup> To achieve stationarity, log difference had to be used on this variable. The same is true for all other variables marked \_Id.



**Table 7 » Granger causality for foreign funds: F-statistics [p-value]**

Funds <sub>(t)</sub>	GDP growth		Inflation		Unemployment	
	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)
...money market	0,2281	0,8179	0,1964	0,3007	0,1567	0,0003***
...bond	0,2325	0,8397	0,2088	0,4494	0,0477**	0,3953
...stock	0,0443**	0,0891*	0,4870	0,1988	0,0008***	0,7089
...mixed_id <sup>3</sup>	0,3108	0,9519	0,0181**	0,7180	0,9463	0,7564
...of funds	0,8960	0,3609	0,5900	0,5522	0,6471	0,4472
...structured	0,2364	0,1697	0,0843*	0,2848	0,0993*	0,9134
...real estate	0,0904*	0,9035	0,0054***	0,9688	0,2156	0,1979

Source: Authors

### 5.2 Domestic investment funds

For domestic funds, four mutual causalities and five cases in which investment funds explain macroeconomic indicators were found. No case of macroeconomic indicators explaining the development of investment funds one-directionally has emerged from the analysis.

Money market funds in time t are explained by inflation in time t-1 (0.0073\*\*\*) and simultaneously money market funds in time t-1 explain inflation in time t (0.223\*). Bond funds in time t are explained by inflation in time t-1 (0.0643\*) and at the same time bond funds in time t-1 explain GDP growth (0.0809\*), inflation (0.0374\*\*) and unemployment (0.0379\*\*) in time t. Stock funds in time t-1 explain inflation in time t (0.0523\*). Funds of funds in time t are explained by inflation (0.0022) and unemployment (0.0424\*) in time t-1, and simultaneously funds of funds in time t-1 explain GDP growth (3.01e-010\*\*\*), inflation (0.0010\*\*\*) and unemployment (0.0315\*\*) in time t. Real estate funds in time t-1 explain inflation in time t (8.91e-05\*\*\*).

Just like in the case of overall funds, funds of funds are the ones linked with macroeconomic indicators to the highest degree (see Table 5). Funds

of funds predict the development of inflation and unemployment and can themselves be predicted by GDP growth, inflation and unemployment, with these influences being statistically very significant.

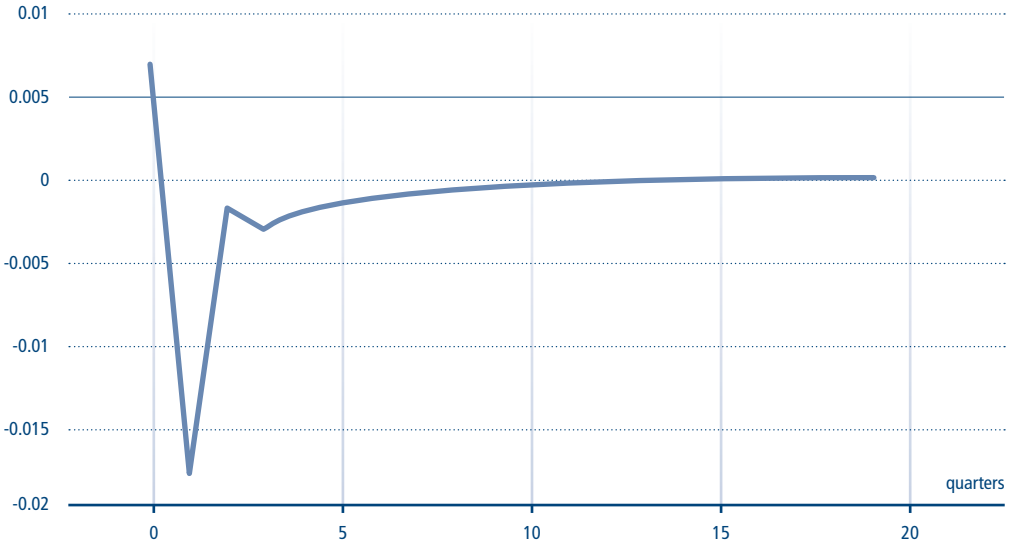
### 5.3 Foreign investment funds

The strong link between funds of funds and macroeconomic indicators, demonstrated in the domestic and overall investment funds analysis, is absent in the case of foreign investment funds. On the whole, foreign funds exhibit markedly different causalities from the domestic funds causalities. A lower number of causal relationships and a change in causal dependences are evident.

For foreign funds, one mutual causality and seven cases of investment funds explaining macroeconomic indicators were found. There is also one case of a macroeconomic indicator explaining an investment fund one-directionally. The development of macroeconomic indicators determines the development of funds in only two cases: money market funds being strongly influenced by unemployment, and stock funds influenced by GDP growth. In the other cases, foreign funds can be used to predict the development of macroeconomic indicators.

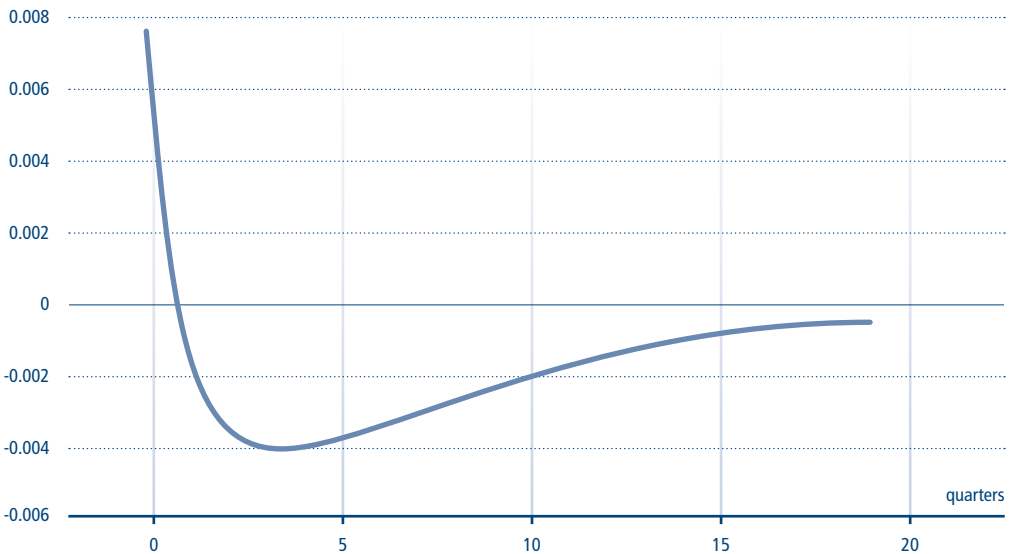
<sup>3</sup> To achieve stationarity, log difference had to be used on this variable. The same is true for all other variables marked \_ld.

→ **Graph 4** » *Response function of overall stock funds to a GDP growth shock*



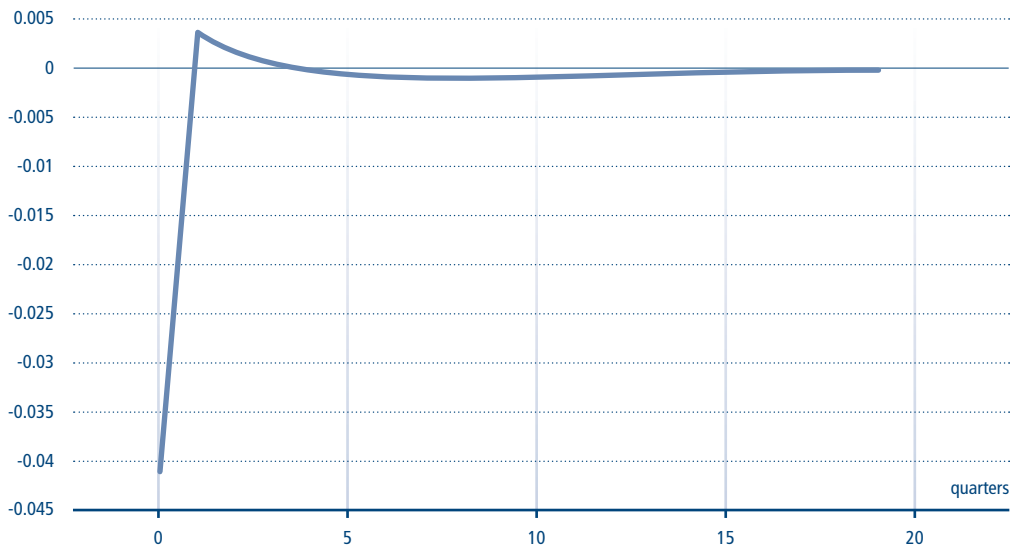
Source: Authors

**Graph 5** » *Response function of domestic stock funds to inflationary shock*



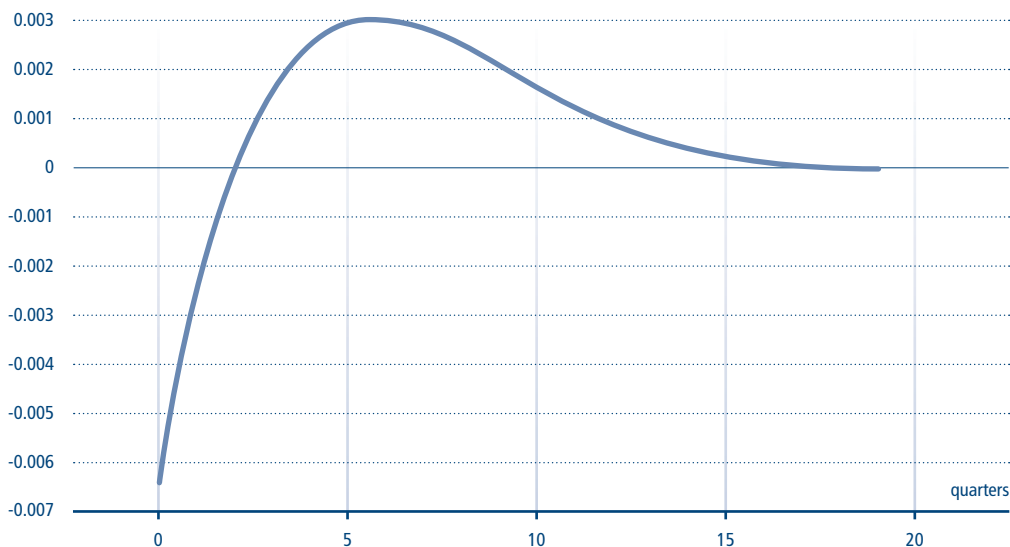
Source: Authors

**Graph 6** » *Response function of overall real estate funds to inflationary shock*



Source: Authors

**Graph 7** » *Response function of foreign mixed funds to inflationary shock*



Source: Authors



Money market funds in time  $t$  are explained by unemployment in time  $t-1$  (0.0003\*\*\*). Bond funds in time  $t-1$  explain unemployment in time  $t$  (0.0477\*\*). Stock funds in time  $t$  are explained by GDP growth in time  $t-1$  (0.0891\*), and at the same time stock funds in time  $t-1$  explain GDP growth (0.0443\*\*) and unemployment (0.0008\*\*\*) in time  $t$ . Mixed funds in time  $t-1$  explain inflation in time  $t$  (0.0181\*\*). Structured funds in time  $t-1$  explain inflation (0.0843) and unemployment (0.0993\*) in time  $t$ . Real estate funds in time  $t-1$  explain GDP growth (0.0904\*) and inflation (0.0054\*\*\*) in time  $t$ .

### 6. The response functions of fund investment to macroeconomic shocks

The causal relationships between fund investment and macroeconomic indicators identified above can be used as a basis for further development and better real-life applicability through response functions. The functions express how fund investment will react (based on the causality) to shocks in the macroeconomic indicator which the development of the fund depends on and thus is predicted by.

From all the response functions studied, those with the most significant movement (according to values on the vertical axis) were selected. If a GDP growth shock occurs, stock funds (the total of domestic and foreign ones), as predicted, first rise (by more than 0.5%) and then fall rapidly by more than 2%, followed by a growth and cyclical return to equilibrium with decreasing intensity of fluctuations in the increases and decreases (see Graph 4).

It is interesting to see the change in response when domestic stock funds become the focus of study. In this case, inflationary shocks have the strongest influence on the development of funds, with a more gradual effect (see Graph 5). If an inflationary shock occurs, stock fund investment first rises by almost 1% and then it plummets, with the fall gradually becoming milder, but continuing until approximately the fourth quarter from the time the change happened. Only after this period

does another gradual growth occur, tending toward the long-term equilibrium, though never reaching it again in the studied period of twenty quarters. This means that the effect is a very significant and long-term one.

Real estate funds react to inflationary shock by short-term deviation (see Graph 6). First there is a decline of more than 4.5%, followed by a rise, which exceeds the long-term equilibrium. After that, a gradual decrease begins, crossing the equilibrium once more, with a subsequent gentle increase until the equilibrium is reached again in the long term.

Foreign mixed funds also exhibit a strong deviation in reaction to inflationary shock, with an immediate fall of almost 0.7% of investments, followed by an increase reaching 1% (see Graph 7). After that mixed funds investments stay above the equilibrium for almost ten quarters and after the fifteenth quarter the equilibrium is reached and there is a significant decrease in the volatility of the cyclical movement.

### 7. Answering the research question and verifying the hypothesis

The verification of sub-hypotheses about the causality between the studied indicators presented above provides the answer to the research question, as it was determined which macroeconomic indicators causally influence (help predict) individual investment funds or are influenced by them (enabling prediction) with division into domestic, foreign and overall funds.

The table shows a summary of the main findings in the form of an overview of a formal output of Granger causality, which says which indicators help predict which ones, including the determination of the direction of causality. It shows the results for which the null hypothesis about insignificance according to the given levels of significance was rejected.

**Table 8 » Granger causality: F-statistics [p-value] — a summary of results**

Mutual causality — macroeconomic indicators help predict the development of investment funds and simultaneously investment funds help predict the development of macroeconomic indicators						
Funds <sub>(t)</sub>	GDP growth		Inflation		Unemployment	
	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)
...money market [V]			0,0457**	0,0067***		
...money market [D]			0,223**	0,0073***		
...bond [D]			0,0374**	0,0643*		
...stock_id [V]	0,0759*	0,0960*				
...stock [Z]	0,0443**	0,0891*				
...of funds [V]			0,008***	0,0022***	0,0599*	0,0454**
...of funds [D]			0,0010***	0,0022***	0,0315**	0,0424**
One-directional causality — macroeconomic indicators help predict the development of investment funds, but investment funds do not help predict the development of macroeconomic indicators						
Funds <sub>(t)</sub>	GDP growth		Inflation		Unemployment	
	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)
...money market [Z]						0,0003***
One-directional causality — investment funds help predict the development of macroeconomic indicators, but macroeconomic indicators do not help predict the development of investment funds						
Funds <sub>(t)</sub>	GDP growth		Inflation		Unemployment	
	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)	regressand (t+1)	regressor (t-1)
...bond [V]			0,0763*		0,0385**	
...bond [D]	0,0809*				0,0379**	
...bond [Z]					0,0477**	
...stock_id [D]			0,0523*			
...stock [Z]					0,0008***	
...mixed_id [Z]			0,0181**			
...of funds [V]	1,05e-08***					
...of funds [D]	3,01e-010***					
...structured [V]			0,0910*			
...structured [Z]			0,0843*		0,0993*	
...real estate_id [V]			1,96e-05***			
...real estate_id [D]			8,91e-05***			
...real estate [Z]	0,0904*		0,0054***			

Source: Authors



## 8. Conclusion

Each research matrix includes 42 elements (there are 126 research elements in total). In the case of overall investment funds, based on Granger causality in the form of F-statistics [p-value], causality at the levels of significance of 0.01, 0.05 and 0.10 was identified for 13 elements. The most significant effect of macroeconomic indicators as determinants of future investment activity (significance level of 0.01) can be seen in the case of money market funds and funds of funds with the impact of inflation as a lagged variable. Unemployment functions as a predictor of the development of funds of funds at the 0.05 level of significance and GDP growth is a predictor of the development of stock funds at the 0.10 level of significance. Thus it can be concluded that stock funds in time  $t$  are explained by GDP growth in time  $t-1$ , money market funds and funds of funds in time  $t$  can be explained by inflation in time  $t-1$ , and funds of funds by unemployment in time  $t-1$  (i.e. the higher the GDP growth, inflation and unemployment, the higher the values of these funds). In the other direction, investment funds in time  $t-1$  explain macroeconomic indicators in time  $t$ , specifically stock funds and funds of funds explain GDP growth; money market funds, bond funds, funds of funds, structured funds and real estate funds explain inflation, and bond funds and funds of funds explain unemployment (i.e. the higher the investment in these funds, the higher the values of the individual macroeconomic indicators).

Domestic investment funds also demonstrate 13 causalities. Macroeconomic indicators as determinants of future investment activity affect, just like in the case of overall funds, most significantly (level of significance 0.01) money market funds and funds of funds with the influence of inflation as a lagged variable. Unemployment predicts the development of funds of funds at the level of significance of 0.05. Thus, money market funds, bond funds and funds of funds in time  $t$  are explained by the growth in inflation in time  $t-1$  and funds of

funds are explained by the development of unemployment in time  $t-1$ . In the other direction, domestic investment funds in time  $t-1$ , specifically bond funds and funds of funds, explain GDP growth in time  $t$ ; money market funds, bond funds, stock funds, funds of funds and real estate funds explain inflation, and bond funds and funds of funds explain unemployment.

Foreign investment funds show 13 causalities, in which macroeconomic indicators as determinants of future investment activity have the most significant effect (level of significance 0.01) on money market funds with unemployment as a lagged variable. GDP growth is a predictor of the development of stock funds at the 0.10 level of significance. Investment funds, specifically stock funds and real estate funds, determine GDP growth; inflation is determined by mixed funds, structured funds and real estate funds, and unemployment is determined by bond, stock, and structured funds.

The presented response functions expand upon the identification of causalities by simulating the influence of shocks in macroeconomic indicators which, according to the results gained from the analysis, affect the development of the given funds. The most significant consequences can be seen in the case of four investment funds. If there is a GDP growth shock, overall stock funds first grow with a subsequent plunge of more than 2%, followed by a cyclical return to equilibrium. Domestic stock funds are the most sensitive, with a fairly long-term effect, to inflationary shock, resulting in a dramatic fall with a very long period of gradual return to equilibrium. Overall real estate funds also react very significantly to inflationary shock, especially by a short-term deviation of more than 4.5%. Foreign mixed funds react to inflationary shock by an initial sudden decrease, followed by cyclical fluctuations of gradually decreasing intensity around the equilibrium.

Based on the verification of sub-hypotheses and on the findings answering the research question, it can be concluded that it is possible to use macroe-

conomic indicators, according to the results of Granger causality, as determinants of future investment activity with regard to the identified causalities of specific relationships between investment funds and the chosen macroeconomic indicators.

The benefit of the presented analysis lies in the identification of causal relationships between investment activity and macroeconomic indicators and the subsequent processing of the findings to create an overview of the possible use of the researched variables as predictors and determinants of investment activity with regard to Granger causality, which determines mutual or one-directional relationships. Response functions identify those investment funds that react most sensitively to the

simulated shocks in macroeconomic indicators which, according to this paper's findings, influence the development of these funds. The presented overview of the most significant causal relations can serve as a basis for follow-up research, in which a predictive regressive model with an expression of a coefficient of determination could be created and extended by further possible determinants of future investment activity.

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#### **Granger Causality and the Response Function: Macroeconomic Indicators as Determinants of Future Investment Activity** →

**ABSTRACT**

*Investment activity has long stood in a position of a crucial economic topic, albeit a difficult one to grasp on account of the manifold factors that determine it. With regard to current dynamics of economic conditions, it is necessary to update findings as frequently as possible, taking into account new influences and using modern tools of statistical analysis. Investor behaviour affects macroeconomics and simultaneously macroeconomic phenomena influence investment, which gains even more significance as in the first half of 2018 investment in investment funds exceeded state budget expenditures in the Czech Republic. Previous literature examining this topic shows that the key question is comprised of what determines which variable and how. This paper concentrates on finding causal relationships between investment activity and macroeconomic indicators. Using Granger causality, nine mutual causalities (macroeconomic indicators helping predict the development of investment funds and at the same time investment funds helping predict the development of macroeconomic indicators) and 18 one-directional causalities were identified. Response functions presented in this paper use the identified causal relationships to simulate the influence of shocks in macroeconomic indicators on fund investment. The most significant effects observed were caused by inflationary shocks, which can cause the funds to deviate considerably from the long-term equilibrium and also cause cyclical effects, destabilizing the development of funds also in the long term.*

**KEYWORDS**

*Investment activity; granger causality; macroeconomic indicators; investment funds*

**JEL CLASSIFICATION**

*E22; E27; G17; M21*





# Impact of the pandemic COVID-19 on the hospitality industry — Evaluation based on financial performance

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## \* 1. Introduction

Tourism is an important part of the national economy in most countries. It is a very popular way how to spend free time (Koudelková, 2019) and get learned nature, culture, and history. Tourism is also important for business because of business trips, traveling for conferences, fairs, and exhibitions or educational trips. Since the COVID-19 is declared as a pandemic by the WHO on March 11, 2020 (WHO, 2020), the virus has caused an unprecedented global crisis with deep impacts on the political, economic (Abu Bakar and Rosbi, 2020), and social system (Carlsson-Szlezak et al. 2020; Fuchs 2020), namely on the tourism sector (Fonseca et al, 2020; Sigala, 2020). In essence, it has affected the daily lives and behaviors (Wahyuningtyas et al., 2020) of most people (Korinth, Ranasinghe, 2020). One can say that COVID-19 is a crisis of the economized societies rooted in the growth-paradigm (Ötsch, 2020). The impact of COVID-19, at least from an economic point of view, has so far been more devastating than any other crisis in recent history (Hall et al. 2017; UNWTO 2020). However, it has been observed throughout history that crises linked to threats to human

health can provoke unscientific “and disproportionate global responses, most of which have been detrimental to the tourism industry (Novellia et al, 2018).

“The cancellation of travel and the closure of borders makes the tourism industry in several countries practically impossible” (Neto, 2020, p. 120). In the space of a few months, the global context of tourism went from over-tourism to non-tourism (Gössling et al., 2020). As such, the crisis has brought forth new questions, how big an impact it has on tourism and which of the three main services is most affected. We include three main areas of services in tourism, namely accommodation, hospitality, and transport. Cancellations of different festivals and sports events, suspension of airline movements, or closure of important tourist attractions and restaurants and accommodation had a negative impact on the global economy (Fernandes, 2020). Hospitality is one of the most affected sectors, resulting in the immediate closure of many restaurants, leading companies to continue to maintain their fixed costs, such as wage rent or variable costs, in addition to optimization (Oliveira et al., 2020). This is also one of the reasons why hospitality was included in this research. →

## 2. The significance of tourism in the national economy

Tourism is an important part of human lives not only because of the social aspect but also because of education and personality development. If negative impacts on the environment are missed, we can highlight its positive impact on the national economies of individual countries.

The following text deals mainly with macroeconomic indicators that are affected by tourism. This also seeks to outline the importance of the tourism industry. Macroeconomic indicators, such as GDP<sup>1</sup> or employment in this sector, speak of the importance of tourism for individual economies. Accord-

ing to data for the genus 2019 global GDP contribution is 10.3% and in this respect, it is the third most important sector worldwide. Only the Retail and Financial Sector precedes it. If the global economy grew by 2.5%, so travel and tourism even 3.5%. The number of employees working in tourism is also significant. Every tenth employee is employed in tourism (World travel & Tourism council, 2020). In Europe, tourism occupies the fifth position in both GDP (9.7% of total GDP) and employment contribution (37 million jobs that are 9.7% of all employment), (World travel & Tourism council – Benchmarking trends 2019). According to this report, Mediterranean countries (eg Spain, Portugal, Italy, Croatia, Turkey, and others) hold a strong po-

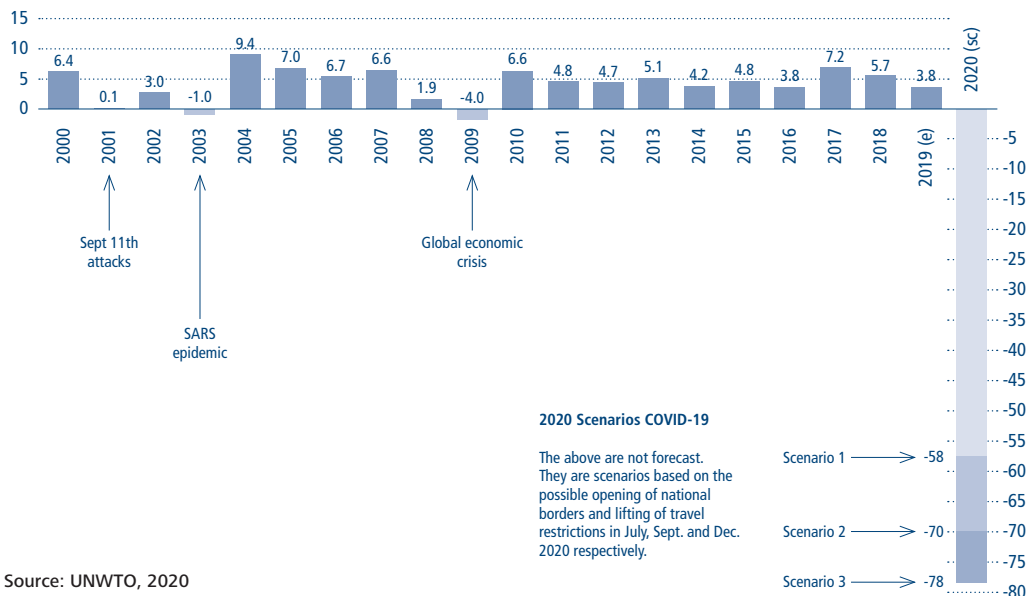
**Table 1 » Economic impact of tourism in selected countries**

	Contribution of travel & tourism to GDP	Contribution of travel & tourism to employment (% of total employment)	International visitor impact
Portugal	16.5 %	18.6 %	21.6 BN EUR
Bulgaria	10.8 %	10.6 %	8,171.3 MN BGN
Belgium	4.3%	4.9%	9.2 BN EUR
Luxembourg	8.9%	11.6%	4,340.1 MN EUR
Norway	8.0%	11.4%	61.0 BN NOK
Sweden	8.2%	9.8%	162.9 BN SEK
Denmark	6.6%	6.9%	61.3 BN DKK
Czech Republic	6.5 %	8 %	178.8 BN EUR
Estonia	11.7%	11.3%	2.0 BN EUR
Finland	7.5%	8.1%	4.5 BN EUR
France	8.5%	9.4%	58.6 BN EUR
United Kingdom	9.0%	11.0%	28.2 BN GBP
Switzerland	7.6%	9.5%	20.0 BN CHF
Ireland	4.3%	5.9%	12.6 BN EUR
Italy	13.0%	14.9%	44.9 BN EUR
Spain	14.3%	14.6%	77.8 BN EUR
Croatia	25.0%	25.1%	80,247.5 MN HRK

Source: Economic Impact Report (Travel & Tourism Economic Impact | World Travel & Tourism Council (WTTC))

<sup>1</sup> "Gross domestic product (GDP) is defined as the total amount of goods produced and services provided, typically quoted or cited per country, for one year or quarters" (Callen, 2008)

**Figure 1 » The Comparison of arrivals from 2000–2019**



Source: UNWTO, 2020

sition. Table 1 shows the main macroeconomic indicators of selected countries. This includes mainly countries with access to the sea, as well as the Czech and Slovak Republics and other tourist-oriented countries.

### 3. The impact of COVID on the tourism industry

The year 2020 brought significant changes in social life, which also includes tourism. Travel restrictions and border shutdowns were introduced in many countries and regions to curb its spread (Al Jazeera, 2020). Monitoring the impact of a pandemic is important in this case, as it directly affects the revenues and financial performance of companies. If we look at the outputs of the UNWTO, we find that some types of restrictions have been introduced in 100% of countries. It affected, that “international tourist arrivals (overnight visitors) plunged by 74% in 2020 over the previous year due to widespread travel restrictions and a massive drop in demand. The collapse in international trav-

el represents an estimated loss of USD 1.3 trillion in export revenues – more than 11 times the loss recorded during the 2009 global economic crisis. The Middle East and Africa both recorded a 75% drop in arrivals. In Europe arrivals declined by 70%, representing over 500 million fewer international tourists, while the Americas saw a drop of 69%” (UNWTO, 2021). One can say that these are extreme declines (Flaxman et al, 2020).

It is possible to find in the professional literature that a return to the state before 2020 will not be easy at all and cannot be expected before 2022 (Alzúa and Gosis, 2020). However, according to the WHO, this return can be expected even later. According to respondents to the WHO survey, 43% expect a return by 2023, and 41% expect a return by 2024 or later. UNWTO’s extended scenarios for 2021–2024 indicate that it could take between two-and-a-half and four years for international tourism to return to 2019 levels (UNWTO, 2020). Of course, the return to normalcy is and will also be hampered by residents’ fear of possible infection (Qiu et al, 2021; Matiza, 2020).

Some countries have begun to take various steps to save hospitality and accommodation, as these are the most affected areas that are very important for tourist-oriented countries (Grech et al, 2020). Besides, there is a large decline in outbound tourism and domestic tourism predominates. Therefore, these complaints are intended in particular for residents. In the Czech Republic, these were, for example, special vouchers for discounts in accommodation facilities and other attractions in selected regions. Similarly, other European countries had the same, as elsewhere in the world. The Maltese Government for example will give every resident aged 16 and over five vouchers of € 20 for each. Plans in development in Japan include incentivizing domestic tourism with cheap travel and discounts offering up to \$ 184 a day in subsidies and vouchers (Grech et al, 2021). A proposal in Switzerland could give every citizen \$ 200 to spend on holidays at home (Broom, 2020). From these examples, it is clear that financial support is important for starting tourism, which makes a significant contribution to GDP. This contribution depends on the financial performance of individual companies. According to Wendt (2021) as a result of the coronavirus epidemic, new tourism takes on a new dimension in the 21st century.

#### 4. Methodology

The objective of this article is found a trend of changes in the hospitality industry in the Europe

in course of the economic crisis. For this reason, there was used a content survey of financial data in the database Orbis Europe, including the economic results of companies in the Europe region. To support the objective, there were stated two conditions for company choice (as follow):

- The geographical location (individual countries in Europe);
- classification of economic activities according to NACE classification, which is connected to the tourism industry (56.1 – Restaurants and mobile food service activities).

According to these parameters, there were an obtained 2.476 companies, operating in hospitality as one of the key parts of tourism. Individual pertinence of the companies in the specific European regions is showed in Table 2.

At present days, the hospitality industry has become a very important part of each economy in connection to the service sector. Data have been gathered from Orbis Europe database, and processed by the statistical program IBM SPSS Statistics 25; subsequently:

- descriptive statistics,
- factor analysis,
- correspondence analysis has been studied.

#### 5. Results

The economic data of European companies in the hospitality industry were gained from the Orbis Europe database. All relevant cases were involved

**Table 2 » Pivot table of company size and European region**

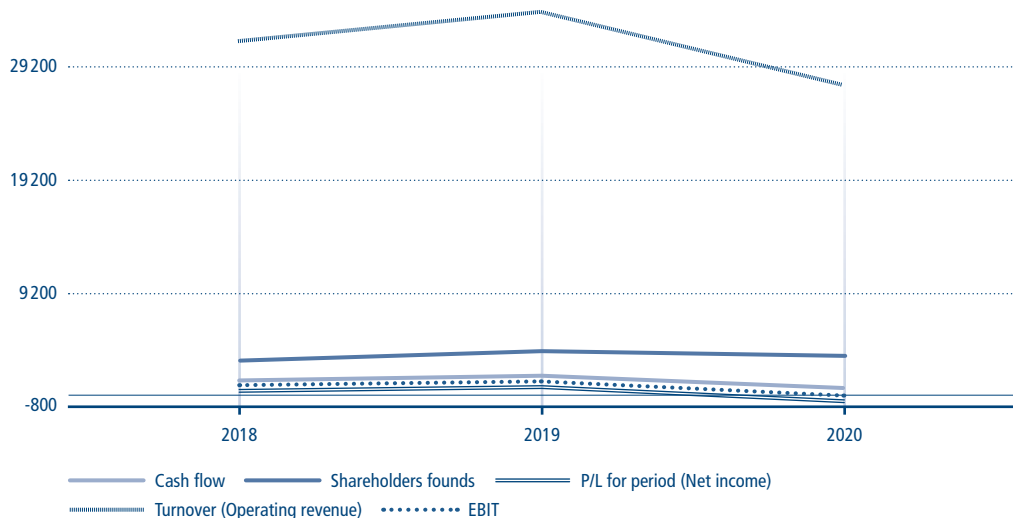
	Western	Eastern	Northern	Southern	Total
No information	270	5	340	4	619
small (0–49)	268	0	1541	23	1832
medium (50–249)	5	0	8	2	15
large (250 and more)	8	0	2	0	10
Total	551	5	1891	29	2476

Source: own work

in the years 2018, 2019, and 2020. In a general point of view, companies use financial indicators to evaluate their activities in connection to the performance level. According to this premise, we define a basic set of financial performance indicators:

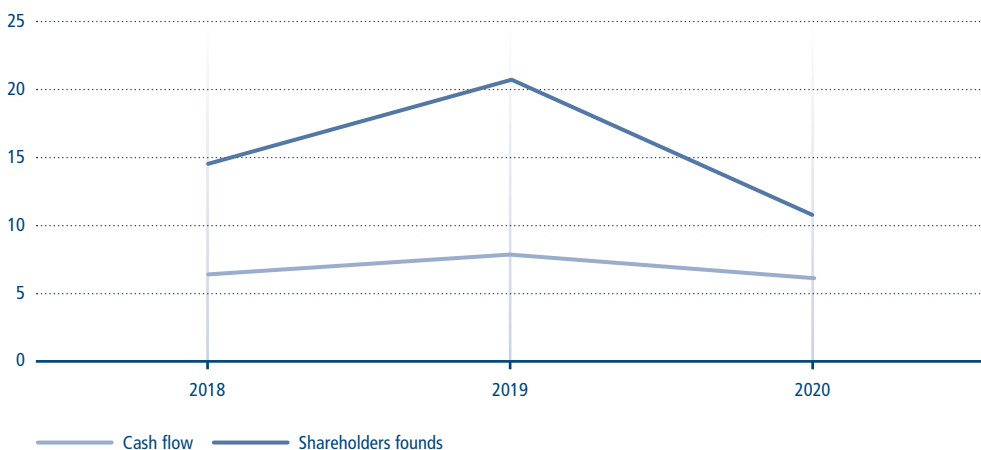
- In1: Cash flow [th EUR];
- In2: P/L for period (Net income) [th EUR];
- In3: Turnover (Operating revenue) [th EUR];
- In4: ROA using P/L before tax [%];
- In5: ROE using P/L before tax [%];

**Figure 2 » The trend of financial indicators in 2018–2020 (thousands €)**



Source: own work

**Figure 3 » The trend of return indicators in 2018–2020**



Source: own work



**Table 3 » The component matrix of the indicators with specific factor loadings**

	In1	In2	In3	In4	In5	In6	In7	Cronbach's alpha
Factor 1	.993	.993	.998			.996	.964	.513
Factor 2				.903	.903			.375

Source: own work

**Table 4 » The descriptive statistics of defined factor**

	Mean	Variance	Std. deviation	Median
Factor 1	1.98	0.041	0.202	2,00

Source: own work

- In6: Operating P/L (EBIT) [th EUR];
- In7: Shareholder funds [th EUR].

Based on the statistical characteristics of the examined groups, the conclusions could be presented as an approximate result, limited by the resulting reliability. In the results of the paper, there are characteristics of research barriers and future research possibilities.

In the first part, we evaluate trends of the chosen indicators in a defined period (from 2018 to 2020). These years were chosen as prosperity time before the COVID crisis. In both years (2018 and 2019) analyzed companies generated high business results in comparison to the previous year (year-to-year change). These results should support the economic situation of individual nations and also help to stable market positions as an integral part of tourism trend in all European regions.

It is obvious in Figure 2 that companies felt down in 2020 when all individual governments applied many restrictions against the COVID. The tourism sector with connected areas (accommodations, hospitality, etc.) was damaged, especially by closing borders and usage of many restrictions (closing companies and their stores), and by limitation of passenger transport. Profit of previous years and savings companies use on the way of bankrupt prevention, but in present time the amount of financial sources is rapidly decreasing.

A similar situation is in the case of ratios ROA and ROE, which reflects business level. Unfortunately, the sector of hospitality is one of the most damaged areas because of the fight with Covid.

For factor analysis, the value of the Kaiser-Meier-Olkin test should reach the value of at least 0.5 (the value range is between 0 and 1). To assess whether it is possible to use the factor analysis, the Kaiser-Meyer-Olkin method (KMO) and Bartlett's test of sphericity have been used. The KMO method is based on selective correlation and partial correlation coefficients. For the indicators in factor analysis, KMO is observed according to the highest level of acceptance, which means that the performed level of usefulness of the factor analysis reaches a high value. Bartlett's test of sphericity is a statistical test used to examine the hypothesis that the variables are correlated or uncorrelated. Value for the KMO test was reached by 0.695 and for Bartlett's test by 0.000. Therefore, factor analysis could be applied to the data

The total variance of the performance indicators is explained through eigenvalues, representing the total variance explained by each factor. The eigenvalues show that only three items have reached the minimum value of 1. From this point of view, Extraction Sums of Squared Loadings with cumulative percentage are important. Factor analysis has extracted different numbers of factors,

which explains variances of all cases (93.136 %). The main result of factor analysis in the area of financial metrics is a rotated matrix, indicating the strength of individual variables saturating individual factors we found (for rotation there was used Varimax method). For defining parameters there is necessary to use the component matrix (Table 3).

According to results of factor analysis provide two factors, from which is the acceptable value of Cronbach's alpha only for one of them (see Table 3). The last factor has Cronbach's alpha value under minimal acceptable value (under 0.500).

For the factor, we defined specific formula, which provides a possibility to evaluate the performance situation of each company in the hospitality industry. Final values for calculating acceptable factors need the transformation of individual coefficients. These coefficients express the significance of the used elements. Their total sum must be 1.

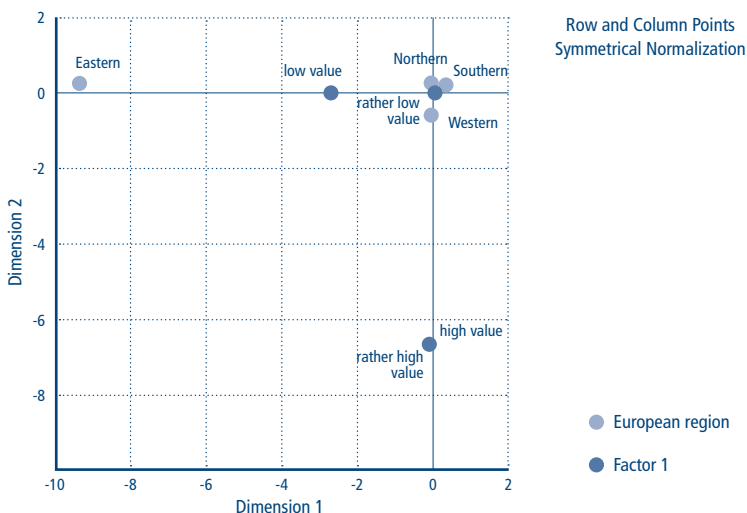
$$F1=0.20085 \times In1 + 0.20085 \times In2 + 0.20186 \times In3 + 0.20146 \times In6 + 0.19498 \times In7$$

For this factor, descriptive statistics are displayed in Table 4. Companies reached mainly val-

ue rather low, because of the gained figures of the individual indicators, when for a lot of companies generated negative results in cash flow, P/L for period, operating P/L (EBIT), and shareholder funds. In the case of turnover, there is not possible to get a negative value.

Load indicators (Mass) indicate load line which represents the percentage of information across the table in an appropriate category. That loads are obtained as the ratios of the row and column marginal frequencies ( $n_{i+}$ ,  $n_{+j}$ ) in the whole table of individual categories ( $n$ ). A score in dimension describes individual variables score in two main dimensions. These dimensions do not represent any specific area, because they are reduced from multi-dimension space. All data in rows and columns have been usually in multi-dimension space, which is reduced to two dimensions. Providing information of raw data has not been modified after multi-dimension space reduction of these variables. Inertia indicator represents the share comprehensive information on the profile (on the relevant point). This characteristic is independent of the number of dimensions. A correspondence map includes a graphical representation of both row and

**Figure 3 » The symmetrical correspond map of regions and**



Source: own work

column categories according to their dimension scores (Hebák et al., 2007; D'Esposito et al., 2014). Results of correspondence analysis are included in graphs, which illustrate relations between individual categories and variables. Figure 1 displays row and column points of the two-dimensional solution for two chosen categories by using symmetrical normalization simplifies the examining of the variables. Both dimension 1 and dimension 2 provide only “describing space”, in which were the application of observed factor and European region of a company. Gained results are confirmed by the significance value of the chi-square test. According to computation, this significance is at value 0.000, which refers to the observed statistical dependence between variables. The intensity of this dependence is proved by the contingency coefficient, which is 0.207 – that means rather low intensity.

Figure 1 displays the relations among the individual categories and variables, specific links among European region and defined factor, is the output of the correspondence analysis. Two separate groups of categories can be identified, namely:

- Eastern countries usually do not care about the effectiveness of restaurants. Typically, they care only about their income from offerings.
- Companies in western, southern, and northern Europe regions keep in mind that is necessary to care about both business parameters (income and costs) to be successful. However, in the analyzed period, companies reach the connection to rather low values.

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## 6. Conclusions

The objective of this article is found a trend of changes in the hospitality industry in the Europe in course of the economic crisis. For this reason, there was used a content survey of financial data in the database Orbis Europe, including the economic results of companies in the Europe region. The reason for the choice of companies in the hospitality industry is their close connection to tourism, which bears huge negatives because of the COVID restrictions. To support the objective, we analyzed indicators, which belong to the financial results of companies (according to Richard et al., 2009). According to the framework of the research, we found one factor, which contains the following indicators: Cash flow, P/L for a period (Net income), Turnover, Operating P/L (EBIT), and Shareholder funds. For this factor, we made confirmation results based on Cronbach's alpha. In the context of European regions, we stated statistical dependence within the factor, with significance values 0.000 and 0.207 for the contingency coefficient. To display the connections, we employed correspondence analysis within the corresponding map, where we can see relations between individual categories and variables. This factor within the formula is intended especially for owners, but for each potential investor, and other stakeholders to make a broader view of the company than the one-dimensional methods based only on their economic performance.



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## Impact of the pandemic COVID-19 on the hospitality industry – evaluation based on financial performance

### ABSTRACT

*The year 2020 brought significant changes in a global society and also in individual national economies. These changes were caused by the Covid-19 pandemic and its impact is evident in almost all sectors/market sectors. From a general point of view, the greatest impact is observed in the tourism sector, which has been gradually suspended in many countries and its recovery is very slow. Hospitality as one of the main industries belonging to tourism is burdened with constant changes, and many restaurants, cafes, and bistros are struggling to survive. This paper focuses on the field of hospitality in European countries. The main goal of the paper is to identify financial indicators of performance, developed from the changes between the pre-covid and covid period (era since 2018 till 2020). The purpose is to reveal the impact of the Covid-19 pandemic on individual states. All data for fulfilling the main goal, have been gained from the Orbis Europe database, from which we gained data of 2476 companies.*

### KEYWORDS

*Tourism; hospitality; Covid-19; financial performance indicators*

### JEL CLASSIFICATION

*G01; L25; L83; M20*



# Economic and societal challenges related to demographic change in policy documents and online sources

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## \* 1. Introduction

Policy documents and other online sources are addressing numerous economic and societal challenges. Key challenges can be identified in available policy documents using the word frequency analysis. This may enable an identification of economic and societal challenges in the demographic change area that can be also screened for search popularity of selected keywords on-line. The methodological framework of the online content analysis design include a review of key policy documents and related policy objectives that can lead to identification of relevant societal challenges and compliance with policy objectives. Selection of key challenges with the most significant impacts can be based on previous analyses and relevance with policy objectives, absolute and relative magnitude with potential significance also for partial elements as SMEs, minorities etc. The aim of the paper is to identify key economic and societal challenges related to demographic change in policy documents and online sources.

## 2. Main challenges in available policy documents

There are numerous tools for online content analysis to capture wider economic and societal trends. The methodological framework of the online content analysis design include tools that enable capturing wider economic and societal challenges based on available policy documents and identifying key challenges in the demographic change area. Issues of relevance and goal-focusing in text processing were dealt by McCrudden and Schraw (2007). Carley (1993) described coding choices for textual analysis. For the desk research of economic and societal challenges related to demographic change following policy documents were used: Europe 2020, European Commission priorities, UN Sustainable Development Goals, G7 Leaders' Declaration and "21 for 21" of the Organization for Economic Co-operation and Development, see Table 1.

A review of key policy documents enables an identification of a set of relevant key words for a following on-line content analysis. The first orientation can be done by Google Tools using keywords and terms identified by previous online analyses. The online content analysis could be also further used in next research extensions for an

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**Table 1 » Main challenges in relevant policy documents**

Document	Challenges
Europe 2020	growth, employment, research, innovation, education, poverty, competitiveness
European Commission priorities	growth, employment, equality, democracy migration policy, asylum
UN Sustainable Development Goals	poverty, education, growth, climate, peace
G7 Leaders' Declaration	growth, migration/refugees, trade, health, equality, climate, energy
"21 for 21" of the Organization for Economic Co-operation and Development	growth, productivity, competitiveness, trade, health and well-being, environment, migration

Source: own calculation

evaluation of related research projects using scientific databases Web of Science, SCOPUS, Google Scholar etc. Table 2 presents results of word frequency analysis in relevant policy documents.

### 3. Identification of key challenges in the demographic change area

This chapter focuses on main challenges related to the demographic change. Table 3 presents the frequency of keywords in relevant policy documents with focus on demographic change.

#### 4 Results of the desk research to identify key economic and societal challenges in the demographic change area

Key societal challenges in the demographic change area are existing demographic imbalances and migration issues related to two main areas: population ageing, migration management and integration of migrants. Figure 1 presents the search popularity of keywords on-line using Ads tool. Europe 2020 strategy puts much attention on demographic ageing that keeps accelerating in the European Union. The number of people aged over 60 is increasing twice as fast as it did ten years ago (by about two million every year). The combination of

a smaller working population and a higher share of retired people will place additional strains on our welfare systems. Due to demographic change, the workforce is about to shrink. The employment rate of women and older workers are particularly low. There is a strong risk that people away or poorly attached to the world of work lose ground from the labour market. It is necessary to facilitate and promote intra-EU labour mobility and better match labour supply with demand with appropriate financial support, and to promote a forward-looking and comprehensive labour migration policy which would respond in a flexible way to the priorities and needs of labour markets. It is essential to design and implement programmes to promote social innovation for the most vulnerable, in particular by providing innovative education, training, and employment opportunities for deprived communities, to fight discrimination (e.g. disabled), and to develop a new agenda for migrants' integration to enable them to take full advantage of their potential (Europe 2020a, 2020b).

The European Commission priorities point out the necessity to move towards a new policy on migration (common migration and asylum policies). Europe needs to manage migration better, in all aspects. This is first of all a humanitarian imperative. The European Commission states that on the basis

**Table 2 » Word frequency analysis in relevant policy documents**

Europe 2020	European Commission priorities	UN Sustainable Development Goals	G7 Leaders' Declaration	"21 for 21" (OECD)
84 market(s)	50 investment	17 development	77 security	33 growth
82 growth	47 growth	12 poverty	61 health	31 investment
46 energy	39 work	10 life	55 development	27 development
45 innovation	36 market	9 water	50 growth	24 trade
39 economy	29 energy	9 children/kids	49 women	13 education
36 business(es)	26 jobs	8 climate	42 energy	11 innovation
33 employment	25 economy	7 hunger	30 work	11 economy
32 education	21 democratic	6 women	27 investment	10 productivity
31 labour	18 rights	6 population	26 rights	9 gender
25 poverty	16 euro	6 energy	25 trade	8 tax
25 business	13competitiveness	6 education	23 peace	8 business
20 services	12 migration	5 oceans	22 refugees	7 migration
20 research	12 development	4 peace	22 full	7 labour
20 cohesion	11 institutions	4 justice	22 climate	7 health
19 climate	10 borders	4 institutions	21 infrastructure	7 corruption/bribery
18 technologies	9 tax	4 health	21 corruption	6 climate
18 skills	9 markets	4 girls	16 gender	5 jobs
17 development	9 investments	3 waste	15 market	5 entrepreneurship
16 investment	8 health	3 resources	15 economy	4 transformation
16 competitiveness	6 women	3 jobs	14 girls	4 SMEs
15 SMEs	6 labour	3 innovation	14 food	4 competitiveness
15 jobs	6 democracy	3 inequality	13 innovation	3 women
14 environment	6 climate	3 growth	13 governance	3 migrants
13 society	6 border	3 forests	13 extremism	3 market
12 transport	6 asylum	2 wetlands	12 tax	3 infrastructure
12 population	5 unemployment	2 sanitation	11 terrorism	3 food
11 trade	5 transport	2 ocean	11 education	2 water
10 mobility	5 society	2 medicines	10 environment	2 unemployment
9 health	5 environment	2 labour	9 resources	2 technologies
8 infrastructure	5 business	2 infrastructure	9 nutrition	2 taxes

Source: own calculation

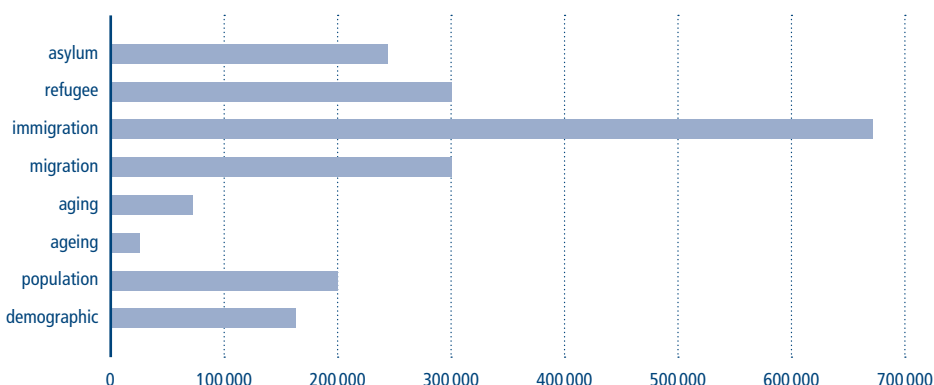


**Table 3 » Frequency of keywords in relevant policy documents with focus on demographic change**

Document / keyword	demographic	population	ageing	migration, (-ant,-ate)	refugee, asylum
Europe 2020	3	12	7	1+2	0
European Commission priorities	1	1	1	16+3	2+6
UN Sustainable Development Goals	0	6	0	1	0
G7 Leaders' Declaration	3	1	4	8+7	26+1
"21 for 21" of the Organization for Economic Co-operation and Development	1	2	2	7+3	0
TOTAL	8	22	14	48	35

Source: own calculation

**Figure 1 » Search popularity of keywords on-line (average number of searches for a keyword monthly)**



Source: own processing

of shared values of the European Union, it is necessary to protect those in needs through a strong common asylum policy. The agreed common asylum system has to be fully implemented, and divergences in national implementation removed and the European Asylum Support Office has to be used for assisting third countries and Member States authorities in dealing with refugees and asylum requests in emergency situations, where appropriate on the ground in a third country that is particularly concerned. (EPP, 2017)

A new European policy on legal migration could help EU to address shortages of specific

skills and attract talent to better cope with the demographic challenges of the European Union.

It is also necessary to deal more robustly with illegal migration, notably through better cooperation with third countries, including on readmissions. A Commissioner with special responsibility for Migration should work on this together with all Member States and with the third countries most concerned. Last but not least, one of the priorities of the EU is to secure Europe's borders as common asylum and migration policies will only work if an uncontrolled influx of illegal migrants can be prevented. This resulted in strengthening operational

capacities of the European border agency FRONTEX and pooling more resources amongst Member States to reinforce the work of FRONTEX and put European Border Guard Teams into action for quick deployment in FRONTEX joint operations and rapid border interventions. This is the joint responsibility of all EU Member States, North and South, which needs to be taken up in a spirit of solidarity. Also an application and vigorous enforcement of our new common European rules to penalise human traffickers is essential, especially those criminals who exploit the pain and needs of people in distress or suffering from persecution. (EPP, 2017) An end-of-term assessment of the Commission's ten priorities has been done by Bassot and Hiller (2019).

UN Sustainable Development Goals are also addressing demographic issues. The goal no. 10 "reduce inequality within and among countries" includes the need for helping people migrate safely so they can pursue opportunities. (UN, 2015) The Proposal for Consolidation and Further Transformation of the OECD called "21 for 21" also indicates a key importance of dealing with demographic imbalances and current migration trends. The OECD expressed the need to take a hard look at migration issues, as it is a constant in our societies; the growing global demographic imbalances have already affected migration trends. The share of migrants in the population of OECD countries has grown to over 10% whereas young migrants and their offspring account for an even larger share. Migration is according to the OECD one factor for future growth, but this depends on sound labour migration policies and more broadly on adequate integration policies. Therefore the OECD should help member and partner countries to develop better integration and skills policies for migrants, and to ensure that that diversity and migration are seen as opportunities to renew and refresh societies to work better than before for all their members. The OECD should therefore identify concrete examples of good practices on how countries use information on skill needs to adapt migration, labour mar-

kets and education policies to foster inclusive growth. Gurría (2019)

The G7 Leaders' Declaration also includes complex policies addressing common demographic challenges and migration issues including migration and refugee crisis. This declaration points out that with the number of refugees, asylum seekers, internally displaced persons and vulnerable migrants at its highest level since the Second World War, the G7 recognizes the ongoing large scale movements of migrants and refugees as a global challenge which requires a global response, in full respect for human rights and in accordance with applicable international law. According to this declaration, the highest priority should be placed on humanely and effectively managing this challenge, addressing both the humanitarian consequences and the root causes of massive displacement. Large movements of people are seen as a multi-faceted phenomenon, which requires addressing its root causes resulting from conflicts, state fragility and insecurity, demographic, economic and environmental trends as well as natural disasters. The international community should therefore increase its efforts towards conflict prevention, stabilization, and post-conflict peacebuilding and focus on finding solutions in order to reduce poverty, promote peace, good governance, the rule of law and respect for human rights, support inclusive economic growth and improve the delivery of basic services. (G7, 2017)

The G7 leaders commit to increase global assistance to meet immediate and longer-term needs of refugees and other displaced persons as well as their host communities, via humanitarian, financial, and development assistance, cooperation, as well as other measures to support trade and investment consistent with our international obligations, recognizing the necessity of closer collaboration between humanitarian, development and other actors. They aim to increase the socio-economic development of affected regions, notably regarding education, health care, infrastructure, and promotion of human rights and equal opportunities. The

→ G7 leaders recognize the importance of the implementation of the 2030 Agenda regarding effective migration management, and commit to strengthen our development cooperation with our partner countries, with special attention to African, Middle East and neighbouring countries of origin and transit. (G7, 2017)

The G7 leaders also encourages international financial institutions and bilateral donors to bolster their financial and technical assistance for refugees and other displaced persons as well as their host communities and welcomes, in particular, the launch of an initiative to support the Middle East and North Africa Region where increasing global support for relevant international humanitarian and emergency relief organizations, such as the UN High Commissioner for Refugees (UNHCR), the World Food Programme, and UN Children's Rights and Emergency Relief Organization (UNICEF), is vital. They call for the adoption of wide-range and long-term strategies and instruments to tackle the root causes of the surge of economic migration and refugee flows. The G7 leaders recognize that there is a need for tools that assist countries in providing sustainable livelihoods for refugees and other displaced persons as well as their host communities, through financing and technical advice to support access to jobs, education, health services, and basic infrastructure. Along with other World Bank shareholders, they ask the World Bank to develop a new platform that expands its toolkit to assist countries hosting refugees. They also welcome that the European Investment Bank is exploring options to develop a long-term crisis response initiative in support of sustainable growth, vital infrastructure and social cohesion in the Mediterranean region and Africa. Legal channels for migration need to be enhanced consistently with national and regional frameworks in tandem with addressing irregular migration. The G7 therefore encourages the temporary admission of refugees and the establishment of resettlement schemes, to alleviate pressure on countries hosting the largest numbers of refugees.

Recognizing the contribution made by existing initiatives, work to expand resettlement opportunities and other forms of safe and legal humanitarian admission for refugees should continue. They commit to assist the front-line states in creating education and employment opportunities for refugees in order to empower them as future assets contributing to the stability and prosperity of host communities and the reconstruction of home countries after their return. (G7, 2017)

The G7 supports the strengthening of the international protection approaches through promoting the core principles of the Convention Relating to the Status of Refugees and its Protocol, and by providing safe haven for those fleeing persecution. The leaders also stressed out that that protection frameworks should not be used to bypass legitimate immigration assessment. To these ends, individuals fleeing persecution should be granted effective protection in the first safe country they enter, and governments should provide opportunities for safe and orderly resettlement processes as well as provide international humanitarian and development assistance for refugees, host countries and communities. At the same time, they encourage cooperation with countries of origin and transit to facilitate the safe and dignified return and reintegration of migrants who are not eligible for international protection, including under the Convention Relating to the Status of Refugees and its Protocol. Further, the G7 supports UN-led efforts to strengthen the long-term capacity and effectiveness of the international system to respond to humanitarian crises, which includes: increasing resources for humanitarian assistance, reducing reliance on humanitarian aid by investing in resilience and disaster risk reduction, and by seeking durable solutions to displacement; broadening the resource base; as well as enhancing access, efficiency and effectiveness of humanitarian aid delivery systems. (G7, 2017)



## 5. Conclusions

Europe 2020 strategy and other relevant documents are addressing numerous societal challenges. Main challenges were identified in available policy documents using word frequency analysis. This enabled an identification of key challenges in the demographic change area that were also screened for search popularity of selected keywords on-line. Key societal challenges in the demographic change area are existing demographic imbalances and migration issues related to two main areas: population ageing, migration management and integration of migrants. Europe 2020 strategy puts much attention on demographic ageing that keeps accelerating in the European Union. The combination of a smaller working population and a higher share of retired persons place additional strains on European welfare systems. Demographic changes have significant impacts for the workforce that is about to shrink. The employment rate of women and older workers are particularly low. It is therefore necessary to facilitate and promote intra-EU labour mobility and enable a better match of labour supply with demand using appropriate financial support, and promoting a comprehensive labour migration policy which would respond in a flexible way to the priorities and needs of labour markets.

The European Commission priorities point out the necessity to move towards a new policy on mi-

gration including functional common migration and asylum policies. Demographic issues are also addressed in UN Sustainable Development Goals where the goal aimed at reducing inequality within and among countries includes the need for helping people migrate safely so they can pursue opportunities. Also the Proposal for Consolidation and Further Transformation of the OECD called “21 for 21” is dealing with demographic imbalances and current migration trends where they clearly state that there is a need to take a hard look at migration issues, as it is a constant in societies and the growing global demographic imbalances have already affected migration trends. Therefore migration will be an important factor for future growth, but this strongly depends on sound labour migration policies and more broadly also on adequate integration policies. The G7 Leaders’ Declaration includes complex policies addressing common demographic challenges and current migration trends and recognizes the importance of the implementation of the 2030 Agenda regarding effective migration management committing to strengthen development cooperation with partner countries, with special attention to African, Middle East and neighbouring countries of origin and transit. The adoption of wide-range and long-term strategies and instruments to tackle the root causes of the surge of economic migration and refugee flows is essential in tackling these increasingly important economic and societal challenges.

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**Economic and societal challenges related to demographic change in policy documents and online sources**

**ABSTRACT**

*The aim of the paper is to identify key economic and societal challenges related to demographic change in policy documents and online sources. The methodological framework of the online content analysis design include a review of key policy documents and related policy objectives that lead to identification of relevant societal challenges and compliance with policy objectives. Europe 2020 strategy and other relevant documents are addressing numerous economic and societal challenges. This paper enabled an identification of key challenges in the demographic change area that were also screened for search popularity of selected keywords on-line. Key challenges in the demographic change area are existing demographic imbalances and migration issues related to two main areas: population ageing, migration management and integration of migrants.*

**KEYWORDS**

*Economic and societal challenges; demographic change; policy documents*

**JEL CLASSIFICATION**

*J10; N30*



# Work-life balance in the digital age during COVID-19

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## \* 1. Introduction

As a result of the major pandemic, there have been social and economic upheavals in many countries, and subsequent businesses have been forced to run limited, suspended, or transformed businesses to make it work. The turbulent change has accelerated the pace of adoption of digital technologies, ensuring organizational functioning. Companies were forced to change their priorities and faced major participation in the form of strategy creation, changing the concept of business in a short period of time. The current situation, influenced by a number of trends, such as globalization, digital transformation, urbanization, and the pandemic crisis, is forcing society to change its long-term development plan to a short-term one.

The dynamics of the current pandemic situation is intervening in organizational life, it is characterized by open workplaces, frequent social contact, and mutual physical cooperation. Ordinary work rituals have been replaced by work from home and online communication. The pandemic situation has accelerated the pace of digital transformation. Adopt digital technology that eliminates the time and physical boundaries between work and personal life and allows easy access to private life. The benefit of a pandemic situation

can be seen mainly in the flexibility of the work plan, which is perceived positively by ordinary workers, when it is important to influence the boundaries of working life. The pandemic situation poses a great threat, but also an opportunity in the form of a new balance between work and private life.

Since the beginning of the pandemic, millions of people around the world have been working from home. Unions support this move to protect workers from contact with technology. However, teleworking can be the boundary between professional and personal life. Employers should now not take advantage of these changes in the work organization to require working hours or constant availability of their employees (Beauregard et al., 2019).

The paper deals with the issue of work-life balance, on the one hand capturing the influence of a pandemic situation on the change of working conditions and on the other assessing the benefits or limitations of digital technologies.

The main purpose of this paper is to perform a critical theoretical analysis of resources and to define and evaluate the basic assumptions, approaches, and selected tools that are the basis of social performance (especially with work-life balance) in connection with the concept of digitalization. →

The first part of the paper presents the theoretical basis of the concepts of Work-life balance and Digital age, followed by the Findings and Discussion, which deals with the research of potentially relevant resources focusing on Work-life balance and Digital age during the ongoing COVID-19 pandemic.

## 2. *Work-life balance*

Work life balance is a concept that encourages employees to find a balance between spending time at work and spending time on other activities. The origins of the Work-life balance concept can be traced back to the Industrial Revolution, where the human was still perceived as a “working tool” (so-called entry into production, or capital) and his satisfaction, personal life and needs were not much viewed. During this period, at least the high number of working hours decreases, which can be considered as the initial indications that led to a certain balance of employees. At present, the essence of this concept is relatively different, because it is the human who becomes the most important part of society and his satisfaction and balance is brought to the forefront.

The beginning of the concept is very different. Authors Harris and Foster (2008) state that the term work-life balance first appeared in the 1970s in the United States and initially referred to various family-related initiatives. This was linked to the crisis of the male breadwinner model as a result of the massive entry of women into the labor market. Starting from the 1990s, this term refers to initiatives aimed at providing support in the field of balancing professional and nonprofessional roles for all employees, regardless of their family situation.

On the contrary, Kumanu (2015) states that this concept was first encountered in the 1980s in Great Britain, where the feminist movement demanded flexible working hours and maternity leave for women. While men were “socially unburdened” to pursue their career goals, working women were expected to work, maintain, order, and raise their

children. In view of this, a clear imbalance between the personal and professional lives of men and women was often pointed out in the 1980s.

From the point of view of reconciling work and family activities, the definition of the term is taken as the ability to reconcile work and family activities by shortening the working time, through the ability of the worker to determine to varying degrees the time when work is performed (Beck, 2000; Kalleberg, Reskin and Hudson, 2000). At the same time, it can be added that it is the independence of the employee in terms of place and manner of work enabling. This allows employees to better combine work and private life.

Regarding the internal management, we can state that it is the ability (within the corporate organizational structure) to effectively allocate employees to maximize labor income in the form of training measures to support job and qualification flexibility, employee mobility, etc. (Svoboda and Ouředníček, 2015; Atkinson and Meager, 1986; Standing 1999, Kashefi, 2007).

The term is often defined positively by the authors as the harmony of work and private life, when the needs are met in both spheres (Clarke et al., 2004; Voydanoff, 2005), but also negatively as the absence of conflict of roles in personal and professional life (Frone 2003; Clark 2000).

The concept of reconciling personal and professional life should be applied by all employers, regardless of the size of the company and the area in which they operate. These may be state-owned enterprises, as well as private entities or non-profit organizations. Balance is most often achieved through alternative (flexible) working hours, but it is not always possible to offer employees the required flexibility (eg due to opening hours, continuous operation in production, etc.), but even in such a case it is often possible to find an alternative solution or problem.

One of the basic tools for reconciling work and personal life is flexible forms of employment. From a general point of view, flexible forms of employment can also be seen as a tool for adapting,

balancing supply and demand in the labor market. It is a tool for reconciling the interests of employers and employees. And these are, of course, different in many cases, but in many cases they agree.

With the work-life balance is very often associated the concept of Work From Home (WFH). However, WFH is not a new concept and it has been brought to the attention of several schools of thought for many years. The WFH concept was initially mentioned by Nilles (1988) dating to 1973, known as “telecommuting” or “telework” (Messenger and Gschwind, 2016; Vyas and Butakhio, 2020). Although telework can be defined in many ways, we are interested in all situations where an employee works from home at least sometimes. For employers, implementing a telework potentially generates cost savings by adapting available labour levels to fluctuations in demand for their services, and by reducing or restraining the need for real estate, office space, supplies (Peters et al., 2010; Verbeke et al., 2008) and other overheads (Morgan, 2004). However, these cost savings on the employer’s side cause an increase of cost on the employee’s side (Baruch, 2000).

One reason why strategically chosen organizational practices can lead to improved firm performance is that the human capital of a workforce can be unleashed and fully utilized (Vrchota et al., 2019; Wright and McMahan, 2011).

It is the subject of discussion and global study themes by researchers in the past 10 years, but this global phenomenon begins to emerge with the coming of the COVID-19 attack and becomes an alternative strategy for many organizations. Thus, it is clear that WFH is a strategy for many organizations with all advantages and disadvantages that must be received by both the organization and its employees. Flexibility, trust, life balance between work, social, and losses that must be received such as lack of trust, additional costs, and multitasking of employees who are certainly different in gender is an interesting phenomenon to be studied so that the development of the WFH concept becomes wider and contributes to increasing the productivi-

ty of human resources work in organizations (Kraulja, Vasiljevic-Blagojevic, and Radojevic, 2015).

### 3. Digital age

The rapid growth of the Internet in the 1990s caused the transition from individual IT systems to complex digital infrastructures (Hanseth and Lytinen, 2010). Digital transformation is a widely discussed topic in today’s world. It affects all industries, fundamentally changes business and organizational processes, competencies, and models in companies by introducing new technologies. Digital transformation does not just mean digitization, that is, working with digital data, but a fundamental reassessment of the way things are done by individuals, organizations, and government (O’Halloran and Griffin, 2019). Digital transformation is part of the fourth industrial revolution, known as the Industry 4.0 concept, and the idea is to create “smart factories” that integrate cyber-physical systems and use an algorithm of repetitive activities (Korbel, 2015). By combining data into one whole, companies become more productive (Kotler, 2017). Digital transformation is based on the merging of organizational strategies and information systems, strategy to use not only advanced technologies, but also the co-creation of shared goals (Porter and Kramer, 2011) by converging strategies and creative ideas. The dynamic development of the market enables the creation of a paradigm of “smart devices”, supporting connectivity, flexibility, and communication, which are important imperatives for ensuring the development of organizations. The main trends that have an impact on continuous progress are:

1. development in the field of computer technology (higher hardware performance),
2. data processing by wireless transmission,
3. development of digital technologies, generating new innovations (use of cloud services, interconnection with mobile devices, nanotechnology (Vacek, 2016).

Technological progress is reflected in the pro- →

cesses in companies. High demands are placed on skills in job positions, there is a substitution of human labor by robots. Due to the exponential growth of the development of mobile robotics, machine learning, and artificial intelligence, routine activities are automated. The organizational change is an emergent phenomenon. The use of the latest digital technologies reveals new possibilities for the organization. Transformation potential is one of the ways to ensure long-term competitiveness (Vial, 2018).

The destructive current situation caused by the global pandemic has caused an extreme change in working conditions. A dichotomy of the digital divide has emerged, caused by different hardware and internet connections (DiMaggio and Hargittai, 2001). The digital divide is represented by social inequalities rooted in a socio-economic context (Robinson et al., 2015). Many organizations, especially small and medium-sized enterprises (SMEs), have changed their development strategy and accelerated their digital strategy. Digital technologies have become a key vector of communication between workers. In this context, top management plays a crucial role in supporting knowledge man-

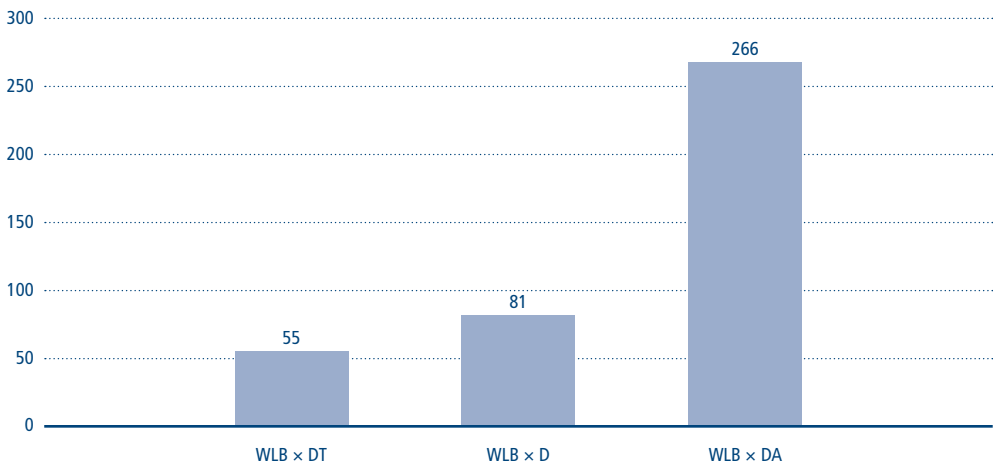
agement systems and in creating conditions in which employees are willing to apply their knowledge, share it, and exchange it with each other (Sousa and Rocha, 2019).

The whole process of digitization significantly changes the work of organizations. Recent research shows that up to 25% of traditional people would prefer to be self-employed with more autonomy and control over their working hours (Bughin, Lund and Remes, 2016).

#### 4. Findings

This contribution provides a research of potentially relevant sources focusing on their quality using the Primo database, which is a unified search interface that allows to search most of the information sources available within Brno University of Technology, including full-fledged databases (eg Web of Science or Statista). The data analysis was performed on March 3, 2021. The PRIMO database catalog used the logic of searching by combining keywords, namely “work life balance (WLB)”, “digitalization (D)”, “digital age (DA)”, “digital transformation (DT)”. Limited for selecting docu-

**Figure 1 » Number of reviewed articles**



Source: Own processing based Primo database

ment type “articles”. As can be seen in the following graph No. 1, most articles are registered within the combination of the terms work life balance and digital age, namely, 266.

The digital age brings so many benefits. Workers around the world can easily connect not just with the employer. Everyone now has access to the world’s knowledge base through the internet. Unfortunately, although, our technology makes it particularly challenging for us to achieve work life balance. Due to digitalization, workers are more flexible at work, because they can perform it as when and where they want. The work was mostly done only in the office and its separation from private life was observed. Today, however, these imaginary boundaries often disappear. However, the current lockdown due to Covid-19 has changed a lot, precisely in that work has become part of the home environment and we now have to find ways to manage work-life balance, which is more important and challenging in the current situation than at any time before (Wariar, 2020). Businesses that previously could not imagine it now allow their employees to work from home (WFH), e-commerce is experiencing a large boom, video conferencing is used in meetings, etc. Recent studies about the effects of work from home adoption on work productivity in the context of the pandemic have been published (Mendes et al., 2020). An important and prerequisite for flexible work is to give employees greater independence, but at the same time to let them learn from their mistakes and take responsibility for their decisions. The employer himself, if the manager must provide support for the whole agenda of change in the whole organization, it is necessary to strive for the effective use of digital technologies to balance work and private life. At the organizational level, it is necessary to manage carefully and communicate well.

Employees need to look for creative and innovative ways to do their work, given the learning and use of new technologies. We must all be the creators of change and we should not be discouraged from promoting the change that we know is cur-

rently needed and right. At the same time, it is necessary to plan time well and consciously within the work from home.

Implementing a flexible working policy requires mutual respect and trust, which is one of the most important means in a team.

Digitalization allows us to discover a new way how to work and manage an organization. However, this requires the manager to discard outdated thinking and create space for new management practices and understand the benefits of digitalization. Technological progress, together with digitalization, is helping to rediscover the world of work – only in a different way. As for the future, it can be said that it will certainly be more flexible. The reason will be the policy of social responsibility towards their employees, where some already know that even after the end of the Covid-19 pandemic, they will remain working at home and no longer have to return to the office. However, this transition requires new strategies for the effective organization of working life. For organizations, finding ways to work intelligently while being flexible and efficient is the right, sustainable way.

As a sustainable employer, a company must create an organizational culture that encourages employees to balance their work and personal lives (Wariar, 2020).

## 5. Discussion

### 1. Work-life balance during Covid-19

The term Work-life indicates an imaginary sliding boundary between private and professional life. Equilibrium indicates the relative allocation of working time compared to leisure time (Wilcox, 2020). Optimal balance usually indicates a preference for private life. ‘Poor’ work-life balance indicates a situation where emphasis is placed on the importance and time devoted to working life.

The first study of Work-life balance was found by search and performed in the database Web of Science in 1996. The first empirical research published in the scientific literature about the relation-

ship between Work-life balance and the pandemic COVID-19 was published in 2020 (totally published 44 articles). In 2021, 4 articles were published. The studies are expected to grow steadily in 2021.

The main topics covered included:

- The fundamental change in working conditions due to COVID-19. Switch to work from home, the transition to online communication.
- The potential for homebased working. Greater flexibility and higher productivity.
- The opportunity to reassess the importance of the private life at the expense of work.
- Concerns about the caring responsibilities of women who help with domestic tasks.

Workers face challenges in which it is important to find a focus on balance. Recently, workers have been exposed to a worrying situation. The COVID-19 pandemic has affected the economic, health, and social aspects of many families' lives.

Based on the results of the studies, it follows that most of the additional homebased working and childcare associated with COVID-19 falls on women, while childcare activities are more equally shared within the couple than housework activities. Homebased working increases the proportion of time women spend on housework and childcare (Mallett and Marks, 2020). The balance between time devoted to childcare and working time is more symmetric. Finding the optimal work-life balance is more difficult for women who have to take care about children aged 0-5. The work-life balance is especially difficult to achieve for couples who continue with homework (Del Boca et al., 2020). Optimistic studies focus on the potential of homebased working. This change brings higher flexibility to enable workers to achieve work-life balance with no commute and more time for family members and leisure (Mallett and Marks, 2020). This opportunity can evolve to generate a new set of limitations, homeworkers can tend to increase working hours, making it difficult to determine the influence on work-life balance and relationships among family members.

Early data of the studies prove that the productivity of homeworkers has increased in the first months of lockdown. They also predicate that mothers are spending less time on paid work and more on household responsibilities and they are more interrupted by children (Andrew et al., 2020; Alon et al., 2020).

## 2. Digital age during COVID-19

Digital age is defined as the era in which the use of digital technologies is widespread, in particular smart devices, and other portable devices. It is referred to as the information age, characterized by the rapid shift from traditional industry to and economy based on information technology (Robards et al., 2018; IGI Global).

The first study of Digital age was found by search and performed in the database Web of Science in 1982. The first empirical research published in the scientific literature about the relationship between Digital age and the pandemic COVID-19 was published in 2020 (totally published 28 articles). In 2021, 4 articles were published. The studies are expected to grow steadily in 2021.

The main topics covered included:

- The high inequities in digital infrastructure.
- The importance of digital technologies.
- The impact of innovation capabilities.
- The abuse of the internet to disseminate of disinformation.

In the face of unexpected crises (global pandemic, economic recessions, trade wars) are organizations tested of sustainability. The massive economic and social disruption that brought COVID-19 led to the new innovation approach of organizations, the creation of new ideas and strategies (Lee and Trimi, 2021). To survive, organizations need to use their innovation capabilities. Innovation has become the necessary condition for maintenance competitiveness.

The abuse of technology led to disseminated disinformation and produced a "collective violence" that is defined by The World Health Organi-



zation as a “instrumental use of violence by people who identify themselves as members of a group to achieve political, economic or social objectives”. The impact of disinformation is significant and shapes the thought process of a large segment of society (Chang et al., 2020).

Katz et al. (2020) mention in their article the importance of digital technologies in the situation of remote measures, ensuring at least partial functioning of economic systems and mitigating economic losses due to the COVID-19 pandemic. The situation leads to possible reflections leading to initiatives supporting digital infrastructures.

## 6. Conclusion

The pandemic situation has influenced many aspects of our lives. Organizations have been forced to accelerate their digital technology implementation strategy. All work activities moved to the online environment, physical communication was replaced by formal meetings via communication tools. Informal communication has disappeared. Workers had to work remotely and it became difficult to find the boundary between work time and life time. For the global pandemic is a significant the changing nature of work. Social distancing, contactless commerce, and remote communication are the consequences of COVID-19. This large-scale experiment of the potential effectiveness of homebased working has never been done.

Brings the pandemic situation the benefits of work-life balance in the form of greater flexibility or it is a threat because of being accessible by mobile phone, PC being on call 24/7? The situation caused by COVID-19 offers an opportunity to build

a new organizational culture that will include homebased working. It is inevitable that this situation will influence the future relationship between the labour process and the domestic sphere.

The contribution, based on the analysis of available expert articles, points to the importance of digital technologies during the COVID-19 pandemic. The use of appropriate digital tools allows to overcome a number of problems and use this time to increase the skills of employees through online training.

Extensive data sets providing an objective assessment of the benefits and threats in the area will be needed to assess the impact of a global pandemic work-life balance in the digital age. In the future, it is possible that we will hear more about the so-called Attention management, which comes to the fore in connection with these concepts. It is a set of skills that help us achieve work-life balance in the digital age. It involves training our brains to match the task at hand to the environment. Attention management increases our productivity at work, as well as helps us disengage from work when we're at home or on vacation (Maura, 2019).

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## Work-life balance in the digital age during COVID-19

### ABSTRACT

*The article deals with a critical literature search focused on the issue of human capital and social performance in the digital age in the context of the global Covid-19 pandemic. Given the present situation, this is a very current topic, and the findings can be applied to future authors' ongoing research. The article provides an overview of the importance of digital technologies as a tool to ensure connectivity of workers in the coronavirus period. As part of the research, an analysis of potentially relevant sources was performed, focusing on their quality using the Primo database, enabling the search for information sources in full-fledged databases (Web of Science, Statista, etc.). The results of the study show that organizations have been forced to accelerate digital development to ensure the connectivity of workers, and at the same time the study demonstrates the importance of work-life balance for workers who have been forced to work from home. The absence with personal interaction of workers is balanced by the benefits in the form of flexibility that working from home brings. The change in working conditions, specifically the distance form of working from home, as a result of a global pandemic is perceived positively by most workers, who consider it a welcome benefit. The results contribute to the ongoing debate on the importance of digital technologies for work-life balance in the context of the COVID-19 pandemic.*

### KEYWORDS

*Work-life balance; digital transformation; COVID-19; human capital; social performance*

### JEL CLASSIFICATION

*M12; M14; M15*



# Customers' behaviour within erotic products in COVID-19 era

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## \* 1. Introduction

Part of today's society constantly considers erotic shops as something completely controversial, which should not be talked about in any way, let alone shop here. This approach of the population to some extent complicates the marketing strategies for these stores. They cannot make full use of the potential of their campaigns. We perceive complications, for example, that they can only broadcast commercials on television at certain times, they should not have "outrageous" posters outside. We find another problem in the shop windows, which are "opaque" so that passers-by cannot see inside.

In case that potential customers purchase erotic products (regardless of the type of product or form), usually, it is perceived by a large audience as a specific topic, which is not talked about in any way and is used only in a private place. This is strange, especially considering that erotic aids have been used by people for more than a thousand years. Janiš (2020) mentions that 30,000 years ago people in caves painted the first erotic aids. The first material finds of erotic instruments date back to the time of 2,500 BC. It was, for exam-

ple, a modified mammoth tusk or a smoothed alum. It is not easy to influence conservative to negative people's opinions. For this reason, it is important to ensure effective communication and information about these aids.

If all goes well, the result of the work will not only be measures to improve the perception of this topic, but it could also open the mind of the part of the population that takes shops with erotic goods taboo and begins to perceive them as full-fledged shops. It might be embarrassing for people to talk about these stores and this topic with the people around them. Ultimately, there will be an increase in sales of these goods, which means an increase in sales of erotic shops.

When we think about it, it's not unrealistic to change people's attitudes about anything. Even in 2019, almost no one would wear a veil. And if anyone happened to be wearing it, he just couldn't avoid the strange looks of others. Then came Covid-19, everyone started to "panic" and thanks to the "benefits" of the veil, the veils began to be used by many more people. Society has generally changed its view of veils, people no longer "throw special glances" at those who wear them. For this reason, I believe that proper education and refer-



ence to the health benefits of erotic aids can significantly affect the perception of erotic shops and thus the customer's behavior in these shops (Abubakar et al., 2019).

The survey is focused on finding out how people behave in these stores and, if so, what bothers them about this type of store. Specifically, I would like to know why they are ashamed to go to such shops or talk about erotic aids. I'm also interested in whether their opinions are influenced by the striking appearance of stores, or whether it's something they don't care about at all. In my opinion, the sharp appearance of the store may be something that will discourage potential customers. Ultimately, all of these factors can influence consumer behavior when purchasing these goods.

## 2. General factors of customer's behavior during the purchase process

To understand consumer behavior, we need to understand the issue of consumer lifestyle (way). In the context of the market, we understand the way of life, as the consumer's decision about the goods (what goods he chooses, how he uses them, and what he demonstrates with them). The goods that an individual buys help to express their self-concept, image, a reflection of individual situations and experiences (Kollárová, 2016). Our decisions or behaviors may be conscious, especially if they are based on our lifestyle. However, a decision can also be made based on a life stereotype or an impulsive motive, and here we are talking about an unconscious decision. All conscious and unconscious decisions determine a person's way of life. Factors that affect the lifestyle and therefore the customer's behavior can be singled out for use in marketing practice (Jesenský et al., 2018; Komárková, Vysekalová, Rymeš, 1998; Kollárová, 2020):

- External factors
    - design of the store (POP/POS materials, sales stands)
    - the atmosphere in the store
  - Internal factors
    - influence of shop-mate on voluntary purchase
    - purchase impulsivity of customer
    - perception of fashion trends
    - emotivity and other personal characteristics
    - personal comparison of product's alternatives
- All factors (external, internal) play an important role in deciding to purchase a certain product, which in some way affects us and influences our decisions. The method of purchasing decisions is also influenced by what we want to buy, what we expect from the purchase, and what type of purchase it is. In connection with the decision-making process when purchasing, we talk about the following types of purchasing (Vysekalová, 2011):
- **Extensive purchasing:** We refer to the behavior of a buyer who has not yet decided whether to buy the product as an extensive purchase. The interested party actively searches for information here, pays attention to various information messages, which are to help him decide whether to buy the goods or not. Mostly, extensive shopping concerns more expensive items, such as the purchase of a mobile phone, car, real estate, or any more luxurious product.
  - **Impulsive purchase:** Intensive purchasing is perceived as reactive behavior, where information does not play a significant role. There is no decision-making here, it is more of addictive behavior. These are often items that do not differ much from the consumer's point of view and are not worth discussing in more detail. Intensive purchases include, for example, crushed ice on a hot day or refreshments at the cinema.
  - **Limited purchase:** A limited purchase is specific in that the buyer is limited in his knowledge/experience. He doesn't know the product or the brand he wants to buy. Shoppers quite often make the assumption "the more expensive, the better". He is also influenced by advertising, he looks at the ecological or moral aspects of the product. Last but not least, the buyer can com-

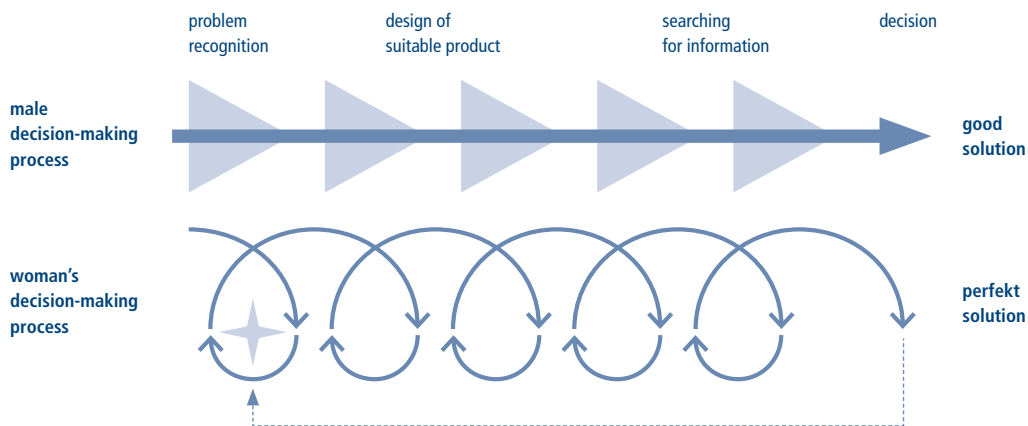
pare similar products with each other. For a limited purchase, we can include, for example, the purchase of a battery whose brand we do not know.

- **Custom purchase:** This is stereotypical shopping, we buy what we usually do. This includes buying new products from our favorite brand, we strengthen loyalty to our favorite brand. As

with impulsive shopping, there is no decision, but rather addictive behavior. We most often buy food, cosmetics, and tobacco products in the form of custom shopping.

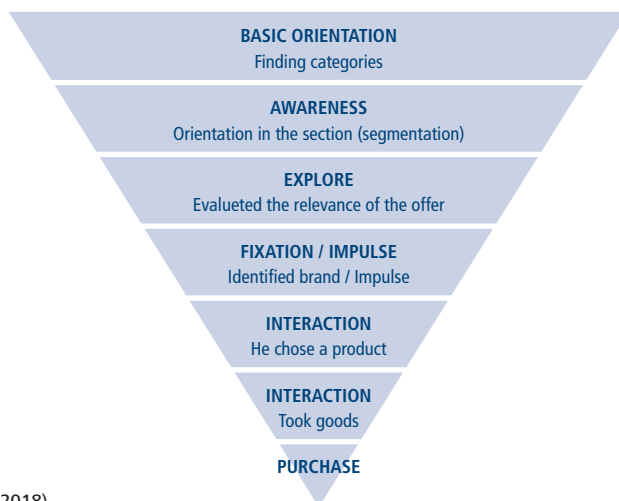
All consumers' shopping behaviors and habits are influenced by many factors. Our purchasing decisions affect our wishes and expectations, which lead to the fulfillment of our needs. Not all

**Figure 1 » The decision-making concept of man and woman**



Source: Jesenský et al. (2018)

**Figure 2 » Hierarchy of activities in the purchasing process**



Source: Jesenský et al. (2018)

our wishes could be fulfilled. Some wishes do not lead to shopping behavior (wishes cannot be fulfilled with any product, or the product is too expensive to fulfill the wishes). The essential factor in making a purchase decision is the place of sale, which should evoke positive emotions in us, such as incentives to buy (Beyene, Shi, Wu, 2016). Due attention should be paid to the design of the environment, the right choice of colors, lighting, and a well-designed store. Furthermore, music could be used to create a pleasant atmosphere. Communication (whether marketing or by the seller) is also important at the point of sale. Merchandising also has a significant effect on shopping behavior, as a properly placed product can appeal to a customer. If the seller places it in the wrong place, the customer may not even notice it. Purchasing behavior is also affected by purchasing conditions. These conditions may include sales time, range of products, and quality of goods, cleanliness of stores, additional services or service personnel (Kolářová, Ungerová, 2016). In recent years, the Internet has significantly affected the interaction between the direct seller and the consumer. Thanks to the Internet, my website has been created as an e-shop, which allows shopping at any time and from the comfort of home. Besides, thanks to anonymity, more people shop online (they can buy anything without feeling ashamed – erotic shops) (Vysekalová, 2011; Scott, Martin, Schouten, 2014).

According to the decision-making process, there are differences under gender influence. Usually, men make a straight decision-making process with a direct way of purchasing. In the case of women, they continuously think about many con-

sequences of the purchasing process (Jesenský et al., 2018; Gracia, Huertas-Garcia, 2016).

The most important is the first impression of the store as such. What emotions does the store evoke in the customer? If the first impression is positive, the customer enters the store. If the first impression is negative, he will most likely not enter the business. For comfortable shopping, the store must be properly adapted and easy to navigate (correctly placed shelves, information signs). Easy orientation is necessary, especially when it comes to ordering a specific product that he wants to buy. Various POP/POS materials should be placed in the store to attract the customer's attention. This is a form of the effect of the offer on the customer. Thanks to these materials, the buyer can learn about an item he had no idea existed and ultimately buy it. Once a customer finds the product they are looking for, they decide whether to choose and purchase the product. The same applies to the product, which addresses it thanks to its marketing, which can be realized using POP/POS materials, where these materials try to convince the customer, for example, based on function, packaging, appearance, or taste of the product (Jesenský et al., 2018).

### 3. Erotic products as controversial type in marketing communication

The topic of controversy often divides society into two halves. What is "outrageous" (controversial) for one may be perfectly normal for another. Under the term controversial topic, we can imagine a sensitive or thorny topic, such as the topic of politics

**Table 1 » List of controversial topics in marketing communication**

1. Advertisement on cigarettes	6. Sexual and erotics themes in ads
2. Religious motives in ads	7. Advertisement on non-healthy food
3. Advertisement on spirits	8. Advertisement on off-prescriptions
4. Advertisement on beer	9. Advertisement on wine incl. sects
5. Advertisement with focus on children in child program	10. Promotion of political party

Source: Martišková, Slabá, Švec (2017)



or areas related to sexuality. When we talk about controversial topics in advertising, we mean, for example, sexual motives in advertising, advertising of political parties, advertising for men's protection, women's hygiene needs, and much more. Martišková, Slabá, and Švec (2017) dealt with the topic of controversy in advertising. They published entitled *Controversial Topics in Advertising from the Perspective of Full-Time Students at Universities and Colleges in the Czech Republic*. In their article, they assess the perception of 10 selected controversial topics in advertising from the perspective of students aged 19–30. Students segment based on gender, the average number of hours spent on the Internet within one week, the most frequent stay during the academic year. 252 questionnaires answered their questionnaire survey, which took place from March to May 2017, however, they used 234 questionnaires for the article. Respondents in a written questionnaire survey stated their attitude to the researched topics.

Here we will focus on the issue of sexual and erotic motives in advertising, as it is related to the topic of the bachelor's thesis. We can read from the pictures that almost half of the respondents accept the advertisement, provided that it is corrected in certain ways. The second most common answer is that such advertising should be banned. Interestingly, people more often voted to ban advertising aimed at politics or tobacco products. Do people perceive politics and tobacco more negatively and controversially than sexual issues? If so, on what basis did they make such a decision? The second picture divides the respondents into two groups, according to gender. Men are marked in blue and women in red. The following picture shows that women are more controversial than men. Men perceive only the issue of alcohol more controversially, otherwise, women are "more critical" in all areas. The authors state in their article that the amount of time spent on the Internet does not affect their opinion on the topic. They also mention that the place of most frequent residence during the academic / school year does not affect the opin-

ions of the respondents, with two exceptions. This is advertising for cigarettes and the promotion of political parties. Here they claim that the respondents are influenced by their place of residence (Martišková, Slabá, Švec, 2017).

The crisis time influences the purchase decision-making process of customers in many areas of fast-moving consumer goods. According to many researchers (e.g. Gracia, Huertas-Garcia, 2016; Buss, 2014; Griskevicius, Kenrick, 2013), customers begin to focus on specific kinds of products, which support their psychological mindset up in connection to their sexual behavior. The setup mind is made by various cultural factors in connection to cultural norms, which support the individual source of personal sexual pleasure (Kraus, 2017; Walther, Schouten, 2016). The connection of the culture to the consumption of erotic products has become more intense, especially in western countries as one a fundamental part of contemporary life.

#### 4. Methodology of the research

The main objective of the research was to define typical customer and his characteristics within they purchase habits (how they get the goods). The key aim of the paper is a clear description of the customers' experience with all kinds of products and removing general opinions about purchasing and usage of these products by "opening" the topic in the context of the long-standing pandemic era.

Several structured interviews were conducted as part of the research. These aimed to clarify the understanding of customer behavior in the purchase of erotic products. The interview was also aimed at finding out the feelings of the respondents, which are evoked by the perception of erotic shops. The respondents to this survey were both women and men, aged 19 to 46 years. The age category 19–25 was represented by two women and two men. In the age group of 26–35 years, one woman and one man answered. In the age range

36–46, the sample was the same (i.e. one woman and one man). In the youngest age group, the sample was larger due to a greater understanding of the younger generation. The sample addressed respondents who are in a relationship and those who are not currently in a relationship. These topics were gradually presented to 12 topics in interviews. This then gradually revealed the perception and behavior of individual respondents.

## 5. Results

Erotic shops are usually perceived by respondents rather neutrally, basically like any other shop, and they do not condemn them in any way. The feelings that these trades evoke in the respondents are different. They can then be summarized in the following: no feelings, curiosity, nervousness, shame, outrage, or a sense of tension resulting from ignorance of what to expect from the business. The survey also revealed the respondent's feeling that he internally perceives this type of trade as something forbidden.

The survey also noted that the respondent perceived customers of this type of business very negatively and these stores arouse a feeling of outrage in him. In this case, it was one man from the age group of 19–15 years. If the respondents own some erotic aids, they got to them mainly by shopping in a stone shop. In some cases, they received their first erotic aid, such as a birthday present.

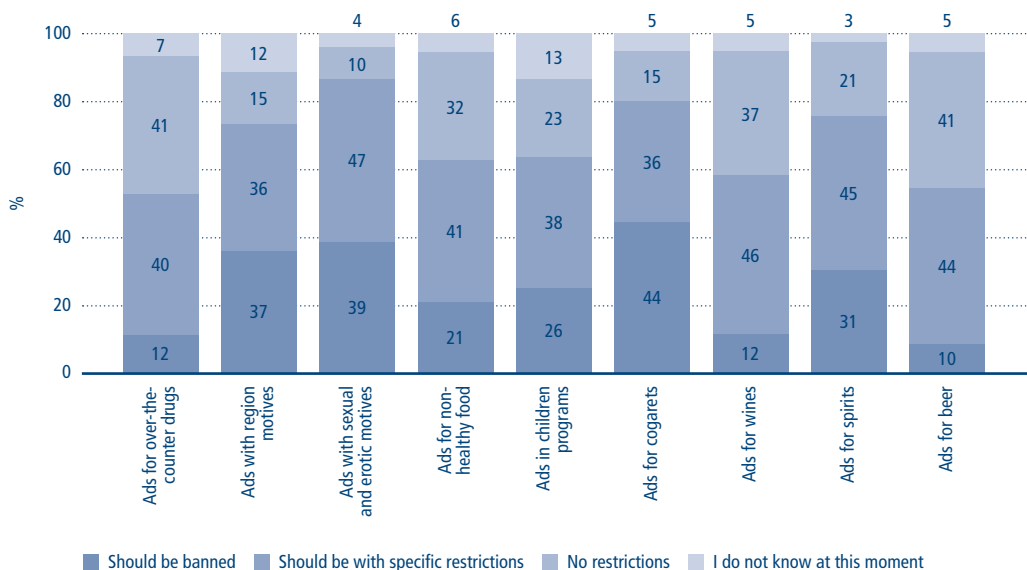
The question of the preference for visits to the stone shop over the online purchase of erotic aids has not been answered unequivocally. Respondents prefer to buy online, mainly because of shame or discretion. Some of the respondents also stated the reason for the purchase through the e-shop, mainly due to COVID. Respondents then prefer to visit the stone shop mainly to inspect individual products and get acquainted with the product together with professional help from the seller. It is also clear from the respondents that out of curiosity they would visit a shop with erotic products, but at the same time, they are afraid (ashamed) that

someone would meet/see them in the shop. It was also recognizable for some respondents that talking about this issue is much more difficult for them than a questionnaire survey, where they feel more hidden. It was also clear from this that in the case of open interviews, respondents react as if the topic/issue was taboo. A topic that is known but not talked about and some do not want to be personally associated with this issue (despite their curiosity and interest in products).

There were no major differences in the perceptions of men and women during the interviews. Likewise, there was not much difference in perception and behavior within individual age groups. From the context of the respondents' answers, it can be concluded that for many of them this topic is a kind of topic "which is not publicly discussed". Thus, it can be said that the respondents (people) can still perceive this topic as a kind of taboo.

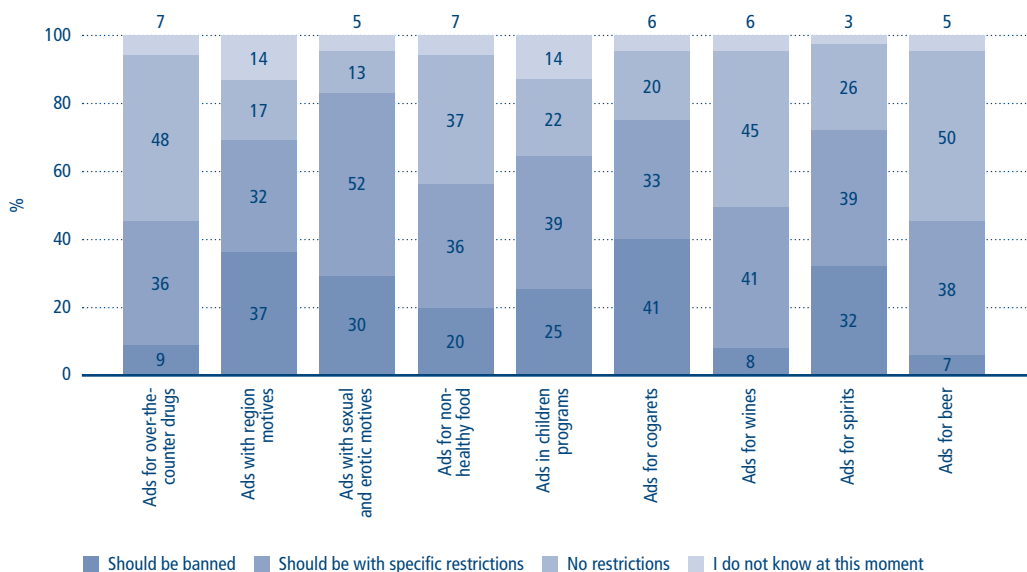
Due to the controversy of the topic of erotic aids, the process of buying in the e-shop may seem unpleasant for some customers. The purchase itself is usually completely intuitive. It may seem that the biggest problem is a selection of the most suitable goods itself, that a customer wants to buy. Then, all you have to do is add the goods to the cart, select the method of payment, transport, place of delivery, and possibly the option of opening a customer account (registration to the e-shop). After completing the order, a confirmation email is delivered. In the case of payment by bank transfer or card, you will also receive an email confirming payment. However, this confirmation comes with the sender's name (e-shop name), which can be a problem for many customers due to the focus. The reason may be the fact that nowadays these confirmations come to mobile phones, where a confirmation with the name of the e-shop itself will appear on the display. This warning can then be noticed by people from the area (whether it is family, friends, own children, or business partners). The reaction of the environment can then be very unpleasant for the recipient (customer who ordered the product).

**Figure 3 » Perception of typical advertisement kinds**



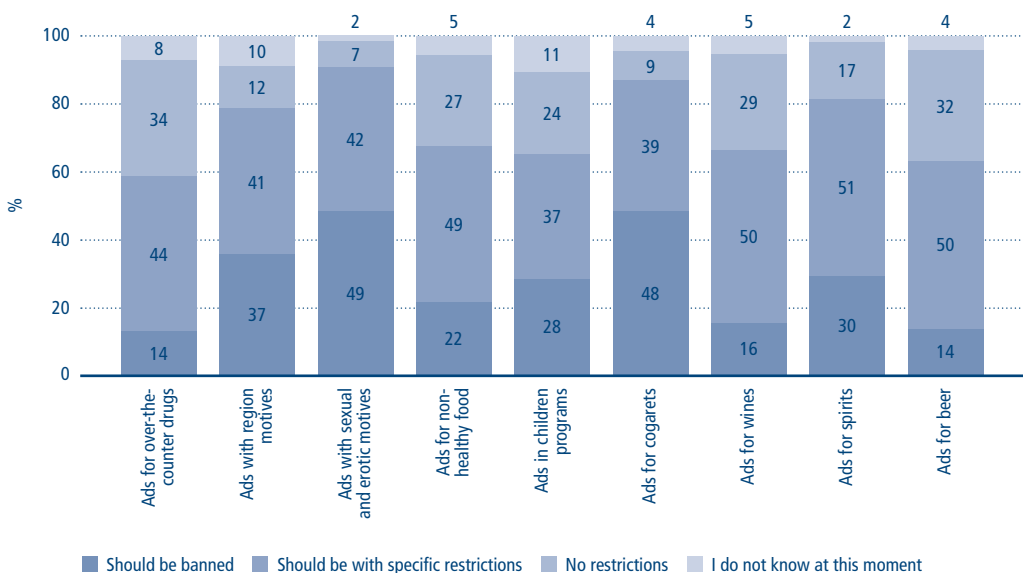
Source: Martišková, Slabá, Švec, 2017

**Figure 4 » Perception of typical advertisement kinds from man point of view**



Source: Martišková, Slabá, Švec, 2017

Figure 5 » Perception of typical advertisement kinds from a woman point of view



Source: Martišková, Slabá, Švec, 2017

## 6. Discussion

According to the situation, how people perceive (or may perceive) marketing communication for individual products, it can be concluded that many topics are still taboo today. For some of these topics, small differences in the perception of men and women can be perceived. Negative attitudes are directed towards advertising for products that are not exactly beneficial to health. But what should it be like from the point of view of communication of erotic products? It is not easy to grasp this correctly. The very negative use of sexual and erotic elements in advertising can also seem complicated, even though these are closely related to the product offered at the time. Erotic motives in advertising are perceived by women in particular almost as negatively as cigarette advertising. For men, these motives in advertising are not perceived so strongly that they would like to ban them in advertising. It could be said that advertising of erotic products

using erotic elements would bother men less than women, although from interviews it might seem that the perception of the issue of erotic products is rather comparable (both for men and women). Specific opinions about most ads' topics are shown in figures 3, 4, and 5.

## 7. Conclusions

The main objective of the research was to define a typical customer and his characteristics within his purchase habits (how they get the goods). The key aim of the paper is a clear description of the customers' experience with all kinds of products and removing general opinions about purchasing and usage of these products by "opening" the topic in the context of the long-standing pandemic era.

There are differences in perception of marketing activities in comparison to the gender of customers. In the case of online shopping, females behave in other ways in comparison to males, es-

pecially if they want to buy controversial kinds of products (Rao, Hymavathi, Rao, 2018). This situation has become more intensive in crisis and post-crisis eras such as COVID. During the crisis era, each customer needs to understand the social power of marketing activities, not only within traditional consumer goods but also with controversial kinds (Janiš, 2020; Kotler, Kartajaya, Alaydrus, 2021).

Purchasing controversial products is most suitable for younger persons than older, who can ac-

cept the possibility of the health benefits of various erotic and sexual products, supporting an improvement in their health or sexual quality. Also, it would be easier for women to talk to these professionals about the devices. As part of communication with higher potential, it is also possible to use events for “more adventurous” natures (usually striptease), where various promotional samples of offered products could be provided (e.g. samples of oils, condoms, gels), handing out leaflets or some discount coupons.

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## Customers' behavior within erotic products in COVID-19 era

### ABSTRACT

*The COVID period has changed the possibilities of all humans to do anything, professional activities, hobbies, or to have pleasant experiences. Because of many restrictions of government, both groups of customers and sellers have to move to an online environment, which limits purchase occasions to a lot of potential customers, especially in the branch of erotic gadgets and accessories. The paper is focused on customer's behavior in the branch of erotic gadgets and accessories during the first pandemic wave of COVID-19 under restrictions set by the Czech government. There was realized primary research in two lines. The first one was done as a case study in both places of erotic purchase (e-shop, store). The second one employed questionnaire survey. The main objective of the research was to define typical customer and his characteristics within they purchase habits (how they get the goods). The key aim of the paper is a clear description of the customers' experience with all kinds of products and removing general opinions about purchasing and usage of these products by "opening" the topic in the context of the long-standing pandemic era.*

### KEYWORDS

*Customer's behaviour; instore marketing; erotic goods; sales promotion*

### JEL CLASSIFICATION

*L81; M2; M31*

x

# Managers of tomorrow — Czech students in lockdown hopping during COVID-19

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## \* 1. Introduction

Globally striking in 2020 (WHO, 2020a) (WHO, 2020b), the COVID-19 pandemic forced governments all around the world to introduce countermeasures. Lockdowns (also referred to as shutdowns) were imposed in many countries around the world (Nussbaumer-Streit et al., 2020). The Czech Republic was one of the early countries in Europe to close its borders, introducing tight constraints for many areas, such as social life, work and studying. Closed schools and universities forced children to stay at home (Marinoni and de Wit, 2020), while it took countries time to establish an, in many parts unprepared, system of online education.

Already during the year 2020, first research studies came to conclusions that lockdowns and social distancing may lead to increased level of depression, stress, and anxiety (DAS). Studies on telecommuting in earlier years showed the same effects (Allen et al., 2015). Factors significantly related to the DAS were being young, being female (Solomou, Constantinidou, 2020), with precarious job or unemployed or being a student with limited financial means (Xiong et al., 2020). A further contribution factor was being single (Liu et al., 2020). With the introduction of lockdowns in 2020, social

distancing became a legal requirement and forced people into isolation. With the fear to suffer from COVID-19, people in risk got even more careful on how to treat their allowed social contacts (Nicola et al., 2020).

Studies on managers and employees conducted throughout the world found significant evidence on the increased occurrence of the DAS syndrome. While home office frameworks were able to grant higher motivation, efficiency, and satisfaction for some individuals, other individuals suffered from loneliness, demotivation, and depression. The second group also showed a lower degree of productivity during telecommuting (Guan et al., 2020). Impacts could be found for private and for professional lives (Kramer, Kramer, 2020).

With the COVID-19 pandemic, also students were sent on home study. Students, belonging to the identified group at risk, were locked out from universities. Unplanned and uncoordinated online education was not able to make use of potentials from this form of studying. Being at the beginning of study, with no orientation for students' life, showed to be a risk factor of rising importance in these conditions (Debowska et al., 2020). Other researchers came to the conclusion that older students had a higher inclination towards depression (Al Omari et al., 2020). Along the lines of the work- →

ing population, also the studying population showed significant trends for positive, as well as for negative behaviour in several research studies conducted.

The impact of positive thinking and social relations were shown in a research conducted in the US. Youth athletes that were able to maintain contact even in the pandemic, were better off mentally and physically (Graupensperger et al., 2020). Studying online, students were having a longer time in front of their computers (Xiong et al., 2020). As the extensive consumption of media was known already before the crisis to be a facilitator of DAS, the consumption that was created due to the circumstances and legal limitations. In the COVID-19 pandemic, also students from graduating years felt an increasing pressure that showed off as sleeplessness (Son et al., 2020). Students with a history of diseases themselves or within their families showed a lower ability to cope with the situation (McCracken et al., 2020) (Rossi et al., 2020) (Wu et al., 2020).

Having a look on today's students as managers, the technical and intellectual leaders of future society, this generation shall be strongly affected by the COVID-19 pandemic. The missing or only humble education that was given to students in schools and universities in the moment of the first lockdown may show long-term effects not yet clearly visible. The short-term effects, however, begin to show off already now. Concerning the recency of the situation, additional data should be able to provide another view on the situation.

## 2. Methodology

The situation of concern in this paper is the situation in the Czech Republic in the years 2020 and 2021. With the COVID-19 pandemic, the Czech Republic fell into a mode of strict and early measures. Being one of the first countries to react by closing its borders, the Czech Republic was able to cope with the first COVID-19 pandemic wave having small infection and death numbers. In this wave all

forms of schools (from elementary schools to universities) were closed by a legal decree for the summer term 2020. Due to the pressure of the situation, most of the actions taken were implemented in an unprepared and uncoordinated manner.

For the beginning of the winter term 2020/2021, students and pupils returned to their institutions. With the worsening of the situation, these institutions had to gradually switch back to online mode and tele-education. Country-wide lockdowns were realized in the months of November and December 2020. According to the existing research, it should be awaited that there would be a higher level of stress, anxiety, and depression found in current student population, representing the potential future elite of the Czech Republic. This paper wants to have a look on the perceptions of Czech students on their study and the perception on their future perspective.

### 2.1 Research

This research was conducted as an online survey with students from the Brno University of Technology, Czech Republic. The survey contained students studying mostly in undergraduate courses. During the winter term 2020/2021, a total of 916 students from the Faculty of Business and Management were approached, completing the one-time online survey.

The survey itself was available online as a survey at the end of the year 2020. The survey was returned by 132 students. In this online survey it was not possible to skip a question, submitted and considered data was only taken from fully filled questionnaires. All questions were mandatory in order to proceed to evaluation. The initial questions on sex, year, and preferred education means were considered to be the organisational questions to group the sample. All other questions were answered with a Likert scale.

The survey focused on the current situation and on how students perceived this situation. Hence, the survey targeted to understand whether



the students perceived themselves affected by the lockdown situation combined with the online education. As previously-conducted researches suggest that the effects on mental health and psyche depend on social and educational measures, the survey wanted to have a look on significant relations of the grouped survey population and the perceptions monitored in the survey. This population reflected a part of the population of future managers.

## 2.2 Research questionnaire

The questionnaire was logically divided into two parts. The first part of the questionnaire focused on general information on the returnees. Data could then be classified by a) gender, b) year of study, c) preferred communication means between lecturer and student.

The second part of the survey targeted the individual perceptions of students on their current situation, considering study and social life, as well as the outlook into the future. This part focused on the self evaluation of students in the current situation in the following areas:

- (a) Questions concerning university topics: Answered by self-assessment on Likert scales, including questions on readiness and support of online education.
- (b) Questions concerning student life: This area targeted information on the perception of students on non-organizational topics in the university. Questions concerning the daily time for study, the preferred way of studying, as well as the question on the own perception on the progress and efficiency of the study were asked. Answering possibilities were given based on Likert scales with values from 1 (minimum) to 5 (maximum).
- (c) Questions concerning private life of the students: These questions targeted the assessment of the private life and its quality. This section was not related to university, but represented the person as a citizen in a certain phase of life.

Questions belonging to this section asked for the perception on the own situation concerning the student's readiness. Answers were given on a Likert scale with values from 1 (minimum) to 5 (maximum).

- (d) Questions concerning the social circumstances: This part had a look on the impact of counter-measures taken during the COVID-19 pandemic. It targeted perceptions on the governmental actions taken by the government of the Czech Republic and on the perception on lockdowns. Further, it contained question on beneficiaries and on those who lost. This was assessed with Likert scales with minimum values of 1 to maximum values of 5.

## 2.3 Statistical analysis

The statistical analysis done in this research started by evaluating the first part. Using the categorical variables, an overview of the survey population was given, with actual numbers and percentages. Other variables were shown with means and standard deviations (SD), classified into several sub-classes. These sub-classes showed gender, the study phase, and the worsening mental state during lockdown. The significance value of the study was set to  $p < 0.05$ .

Assuming a normal distribution of the sample, this was confirmed by conducting a Kolmogorov-Smirnov tests.

The following statistical analysis tested the following hypothesis:

- $H_0$ : Perceptions of students do not depend on gender,
- $H_1$ : Perceptions of students do not depend on the study level,
- $H_2$ : Perceptions of students do not depend on a critical mental health state.

The statistical analysis started by having a look on the first section. Descriptive statistics showed the actual frequency and percentages of the classifying characteristics. Other characteristics were presented with their mean value and their SD. A

first test was conducted with a two-sided t-test in order to check whether the mean values of the characteristics differ significantly from an expected mean value on the Likert scale (3.00). These t-tests were conducted on a significance level of  $p < 0.05$ .

Applying Pearson's  $\chi^2$ -test, the found characteristics were checked for independency from the classifying characteristics. In case of a significantly differing test result, the hypothesis of an independent relationship of the characteristics should be rejected. This was re-confirmed with a further t-test. Both tests were applied on a significance level of  $p < 0.05$ . Only in case that both initial hypothesis had to be rejected on the selected significance level, the hypothesis of independence was rejected in the study.

### 3. Results

The online survey was completely filled by 132 students. This was equal to an overall return rate of 14.4%. Differences were found in the return rates itself: undergraduate students had a return rate of 15.1%, while graduate students' return rate was only 8.5%. Keeping in mind that all questions were

mandatory, only completely filled questionnaires could be returned leaving no incomplete questionnaires for assessment.

The ratio male:female in the sample was 1:1.444. The average academic year of the survey was 1.19 with a SD of 0.72, representing a sample.

The study sample was classified into two group characteristics represented by the actual academic year and gender (table 1).

Part two of the study focused on the perception of each individual, concerning university, student lives and private lives. Further, it had a look on the perception of social lives and the prospect of the future students anticipated. For all variables that were assessed on a Likert scale, the awaited outcome should be a value of 3.00, corresponding to the mean of the Likert scale.

Described by mean values and SD, there is a mean of 3.03 and a SD of 1.01 for the online education quality. The mean is close to the awaited value. The quality of presence education, in which first year students were studying only for two weeks, was assessed with a mean of 3.19 and a SD of 1.15. The education quality was assessed with a mean of 3.98 and a SD of 0.98.

Further information gathered was facebook as

**Table 1 » Sample description**

Criterion	Frequency	Percentage
Sample	132	1.00
<b>Academic year</b>		
1 <sup>st</sup> year	123	0.93
2 <sup>nd</sup> year	1	0.01
3 <sup>rd</sup> year	0	0.00
4 <sup>th</sup> year	8	0.06
5 <sup>th</sup> year	0	0.00
<b>Gender</b>		
Male	54	0.41
Female	78	0.59

Source: Own proceeding

**Table 2 » Mean, standard deviation and t-test findings for test characteristics**

Characteristics	Mean	SD	t-test significance
Quality of education	3.94	±0.98	YES
Quality of digital support	3.80	±1.01	YES
Quality of presence education	3.19	±1.15	NO
Quality of online education	3.03	±1.03	NO
Communication means – WhatsApp	1.41	±1.04	YES
Communication means – Facebook	4.32	±1.10	YES
Communication means – MS Teams	2.50	±1.15	YES
Communication means – Email	1.36	±0.92	YES
Coping with lockdowns	2.57	±1.34	YES
Coping with social isolation	2.60	±1.38	YES
Mental state – worse in lockdown	3.15	±1.43	NO
Mental state – critical	2.32	±1.33	YES
Mental state – not affected	2.33	±1.27	YES
Feeling prepared for study	3.15	±1.05	NO
Feeling prepared for life	3.14	±1.16	NO
Feeling prepared for lockdown	2.47	±1.23	YES
Feeling prepared for campus life	2.95	±1.07	NO
Feeling prepared for student’s life	3.05	±1.26	NO

Source: Own proceeding

the primary study and communication means for students, with a mean of 4.32 and a SD of 1.10. Students’ evaluation for a critical mental health condition had a mean of 2.32 with a SD 1.33, however the perception for the worsening of the situation had a mean of 3.15 with SD 1.43. The perception of being prepared for further studies and for lockdowns had means of 2.72 and 2.75 with SDs of 1.41 and 1.24.

In order to check whether there was a significant shift of mean values for the characteristic, a t-Test was applied. All information may be found in table 2.

In order to check for the independence of characteristics from each other, Pearson’s  $\chi^2$ -test was applied. In case of a significant difference of groups in the sample, it could be suggested that there was

a depending relation between the classified variables and the other characteristics.

The  $\chi^2$ -test tested for the independency of characteristics from the classifying variables. Concerning the gender, on a significance level of  $p < 0.05$ , the underlying hypothesis of the test was confirmed. There was no significant pattern found for the gender.

These statistics were additionally tested with a t-test for independent variables, where the level of significance was  $p < 0.05$ . In the majority of characteristics, the additional t-test confirmed the findings of the  $\chi^2$ -test. A partly overview for indication on the test statistics can be found in table 3.

Along the lines of the afore-mentioned class, the same analysis was also conducted for the class of study level, distinguishing undergraduate and

**Table 3 »  $\chi^2$ -test values and t-test values for the independency on gender**

Characteristics	Chi-value	critical Chi	Pearson correlation	Cramers V	t-value	critical t
Quality of education	5.62	9.49	0.97	0.20	-2.90	2.78
Quality of digital support	6.78	9.49	0.91	0.22	-2.48	2.78
Quality of presence education	5.11	9.49	-0.02	0.19	-1.84	2.78
Quality of online education	6.39	9.49	0.70	0.21	-1.56	2.78
Communication means – WhatsApp	6.61	9.49	0.99	0.22	-1.25	2.78
Communication means – Facebook	3.25	9.49	0.99	0.15	-1.23	2.78

Source: Own proceeding

**Table 4 »  $\chi^2$ -test values and t-test values for the independency on study level**

Characteristics	Chi-value	critical Chi	Pearson correlation	Cramers V	t-value	critical t
Mental state – worse in lockdown	11.31	9.49	0.55	0.28	8.87	2.78
Mental state with bad impact on study results	9.61	9.49	-0.26	0.26	20.04	2.78

Source: Own proceeding

**Table 5 »  $\chi^2$ -test values and t-test values for the independency on critical mental health**

Characteristics	Chi-value	critical Chi	Pearson correlation	Cramers V	t-value	critical t
Given support level	10.42	9.49	0.34	0.27	3.06	2.78
Mental state – worse in lockdown	18.94	9.49	-0.07	0.35	3.81	2.78
Mental state with bad impact on study results	19.76	9.49	-0.94	0.36	3.55	2.78
Mental state with bad impact on study	20.84	9.49	-0.81	0.37	2.96	2.78
Mental state with bad impact on private life	28.46	9.49	0.28	0.42	4.35	2.78

Source: Own proceeding

graduate level. On the significance level of  $p < 0.05$ , Pearson's  $\chi^2$ -test and the t-test for independent variables showed two characteristics were the hypothesis of independency had to be rejected. These characteristics were the worsening mental state in lockdowns and the perception that lockdowns had a bad impact on the study results (table 4).

Following this procedure, Pearson's  $\chi^2$ -test and

the t-test for independent variables were applied on all variables in relation to a critical state of mental health. On a significance level of  $p < 0.05$ , university-given support level, worsening of the mental state during lockdown, and bad impacts of the mental state on study results, the study perception, and on private life showed that the independency hypothesis had to be rejected (table 5).

For the hypothesis, it may be summed up:

- $H_0$  was confirmed for all characteristics,
- $H_1$ : was rejected for two characteristics: a) the mental state was worse during lockdown, b) the mental state had a bad impact on study results.
- $H_2$ : was rejected for five characteristics: a) the given university support level, b) the mental state was worse during lockdown, and for bad impacts of the mental state c) on study results, d) on the study perception, and e) on private life.

#### 4. Discussion

Results from the web-based survey showed that for the given study sample there was no pattern found for gender-specific characteristics. Across several fields and populations, several authors came to a different conclusion (Solomou, Constantinidou, 2020) (Ustun, 2020) (Wang C. et. al., 2020). For the current survey, concerning the students from the Faculty of Business and Management, the significance to distinguish female and male for their perceptions could not be confirmed.

While one group of authors claim younger students to be prone of falling into DAS (Ardan et al., 2020) (Debrowska et al., 2020) (Loh et al., 2005), other authors claim that in the COVID-19 pandemic older students were more inclined to suffer from it (Al Omari et. al., 2020). This survey found significant statistical evidence that undergraduate students from the same faculty expected a worsening of the mental state in the lockdown, while graduate students seemed to be able to cope with it. Further, the younger students being in undergraduate studies assumed this mental health state to have a direct and negative impact on their study results. A spiral of worsening mental state and worsening study results could not be concluded, nor could it be dispersed. However, students that were in the transition from secondary schools to university at the time of COVID-19 pandemic.

Further, the study results were checked for significant associations on the worsening mental

state of students. These students expected negative impacts on their study results and on their private life. Further, these students did not feel comfortable with their study situation, combined with the fact that students estimated the university to provide an insufficient level of support for them.

Applying the third COVID-19 lockdown in the Czech Republic still at the beginning of the year 2021, it was until that time uncertain when universities could return to a standard mode. Until that time, many students seemed to not be able to cope with the situation, missing confidence and mental health. Assuming a high percentage of today's students from the Faculty of Business and Management to become managers in the future, the age groups that were in the undergraduate study had a higher mental handicap. Hence, the research indicated that there might be a lost generation rising up in lockdowns that would not be sufficiently confident and successful to take their future place in management positions.

#### 5. Limitations

As part of the evaluation of this research survey, also its strengths and weaknesses have to be mentioned. A strong point is the usage of an online survey available only for a small and homogeneous population of people, ensuring also homogeneous data. The survey evaluation is done with the help of statistic instruments. Several surveys in the past had a look on students studying medicine or psychology as their major, whereas this research focused on students from the faculty of business and management.

An important limitation of this part of research may be seen in the online questionnaire. This questionnaire was only available for three courses from the Brno University of Technology in the Czech Republic. The selection of approached students tightened the sample to ask exclusively students from the faculty of business and management. Students from other faculties or from other universities were not considered. The low re-

response rate of 14.4% overall and in particular the response rate of 8.5% of graduate students provided another burden for comparison and generalization of retrieved data. Based on the data, this research focused on retrieving significant relationships for evaluating associations.

## 6. Conclusion

The underlying research study of this paper examined the perception of students from different faculties and in different phases of their study. This paper wants to give an overview on data gathered from the Faculty of Business and Management. Data showed a statistic significance on the negative impact of lockdowns on undergraduate students on their mental health. Paired with this, students also assumed to have worse study results due to the lockdown measures taken, being educated only online.

With students struggled for information and organization, students in an unhealthy mental condition rated the support from the university as poor. Those students with a critical mental health claimed their mental condition worsened during

the lockdown having negative effects on different areas of their life. This included private and student life likewise. Feeling uncomfortable in their role as student at the time of the survey, these students should not be expected to be able to rise to future leaders for society. This age group may leave a gap that would need to be filled by the upcoming age groups of students already suffering from tele-education during their secondary school. It may be anticipated that the Czech Republic may suffer from an insufficient availability of top-educated human resources, assuming that also other fields experience the same situation.

While this research only had a look on a limited part of the student population, there are still several areas untouched or only available with limited expressiveness. Open topics should target secondary school students, other study programmes, and other institutions. Another question unanswered is, whether students are able to build a resilient behaviour during these times diminishing the negative impacts of this situation. Further research should also target positive behaviour that seemed to enhance mental health in several studies conducted (Copeland et al., 2021).

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## Managers of tomorrow: Survey of COVID-19-lockdown impacts on Czech students

### ABSTRACT

The COVID-19 pandemic stroke globally in 2020, forcing governments to close institutions. Students in the Czech Republic were sent home, having only a few weeks of non-online education in the year 2020, continuing online also in 2021. Research around the globe has shown impacts on students and their studying situation, their mental state and health. This paper wants to present the research on perceptions of current students concerning these topics, focusing mainly on the students' education level and the mental health. An online survey conducted with students from the Faculty of Business and Management, Brno University of Technology, was assessed for significant statistic relationships with a return rate of approximately 15%. It was assumed that students would show significant inclination to mental health issues, showing non-confi-

dence in study. Statistical analysis confirmed significant relations on the  $p < 0.05$  level for undergraduate students' health issues paired with a lack of confidence in the further study success and in their further career. Undergraduate students that were in transition during COVID-19 lockdowns from school to university showed these characteristics. Hence, this paper concludes that the These students, being educated to be future managers, lack additional support for these students. If this support would not be provided, these students would potentially take their lack of confidence and mental health issues with them to management positions, not being able to fill the positions as future managers, while countries lose a whole generation of highly-skilled people.

**KEYWORDS**

COVID; lockdown; tele-education; success; mental health; manager

**JEL CLASSIFICATION**

I12; I23; M12; M16





# The Structure of Postformal Thinking of University Students in the Czech Republic

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## \* 1. Introduction

The aim of cognitive development theories is to explain the nature of change and to describe differences in thinking between people of different ages at different times of life (Sternberg, 2002). Individuals go through an extensive and diverse cognitive growth, a complex and multifaceted process between birth and adulthood (Flavell, 1994).

From the point of view of Piaget's theory, it is assumed that university students have developed the skills of formal operations in their thinking (Piaget, 1972). Based on Piaget's theory, several theories have been postulated on cognitive development following the stage of formal operations (post-Piaget, beyond formal operations). There are several side-by-side views emphasizing other specifics of the cognitive area, but moving in a similar direction and taking the common view that cognitive development after adolescence continues into adulthood. The name "postformal thinking" (PFT) or stage is used for various perspectives. Commons, Richards, and Armon (1984) present the assumption that the abilities described in the field of postformal thinking are characteristic of deeper and innovative thinking in the field of art, humanities, and scientific research itself. Understanding

this area can lead to a better understanding of how individuals work in everyday situations.

### 1.1 Period of University Education

Arnett (2000) finds the most opportunities for discovering one's identity in many areas into a period that also includes university studies. Research shows that identity development is rarely completed during high school education. It involves trying more life options and changes before making a permanent decision. The period of identity discovery is perceived as a full and intense period, although it may not always be pleasant or joyful. Discovery can take place in the sense of various alternatives to the existing identity (exploration in breadth) as well as revisions of existing beliefs (exploration in depth). Building identity is understood in the neo-eriksonian concept as the connection of one's experiences, feelings and experiences into a coherent whole and leading to commitments. The development of identity is related to the development of autonomy, the mentioned obligations are predictors of experienced autonomy. For university students, the field of exploration most often relates to the field of study and work, the reflection of performance in these areas (rather than in the field of



close relationships) conditions positive self-concept and self-esteem (Ježek, Macek, Bouša, 2016).

Other characteristics of emerging adulthood are lower background stability, self-focus, feeling between adolescence and adulthood, testing many life options (Arnett, 2000).

In his publications, Arnett traces the period of emerging adulthood multidimensionally in several areas of life. Includes theme of parenting, love and sex, marriage, studies, employment, modern technology and more. Culturally, the period is typical of post-industrial, Western civilizations, which allow for an extended period of transition to adulthood. Some indications can already be found in developing countries (Arnett, 2007).

### 1.2 Postformal Thinking by J. D. Sinnott

Kramer (1989) and Sinnott (1989) summarize the basic features of postformal thinking into three basic characteristics.

- 1) Acceptance of relativism, i.e., Recognition that a personal perspective is just one of many potentially valid perspectives on reality. Related self-criticism associated with the acceptance of inaccuracies of one's own thinking and perception. The result is a perception of wider possibilities for solving problems, less radicality, an awareness of relativity and temporality.
- 2) Understanding and accepting conflict and the ability to handle conflicting ideas and systems. Realizing that contradiction and complexity can be intrinsic features of reality. Tolerance is then obtained by appreciating the dialectical relationship between opposing systems, and the result is the ability to deal with opposing systems and integrate them into thinking and perceiving.
- 3) Integration of systems or reference frameworks enabled by a synthetic form of thinking that integrates several opposing systems into an abstract whole. With the development of postformal thinking comes reconciliation with the ambiguity of problems in the reality of life and

the awareness of the limited validity of individual solutions.

Sinnott (1989) defined relativistic operations as a term for a potentially unique set of information processing skills and logical operations that are postformal in Piagetian terms and allow for reconceptualization.

In relation to Piaget's theory, he considers the limitations of the operations of formal thinking in its application to a complex physical, practical or social world. Here comes the need for other aspects of thinking for the balance of the cognitive structure of man and the ability to function successfully. The individual must be able to take into account the relativistic and contradictory (i.e., dialectical) nature of reality and to synthesize conflicting information into a manageable whole.

Thus, the main characteristics of postformal cognitive operations are two: (1) self-determining thinking (or "necessary subjectivity") and (2) sorting and classifying formal operations. The first summarizes the need for subjective decision-making about the nature of "truth" and the choice of "rules of the game", according to which we then act. The second characteristic of postformal operations is the arrangement of Piagetian formal operations. A higher postformal system of self-determining decisions about truth gives order to formal truths and "logical systems" at a lower level. In the real functioning of an individual, one of these logical systems is subjectively chosen as true. Formal (scientific) logical operations assume logical consistency within a single logical system. In this single system, the consequences of the system are absolute. Postformal operations necessarily presuppose a subjective choice between logically opposing formal operating systems, each of which is internally consistent and absolute (Sinnott et al., 2017).

### 1.3 Identification of Postformal Thinking

Postformal thinking according to Sinnott (1998) consists of operations of postformal thinking. Exploring these operations that together form post-

formal thinking facilitates the experimental study of this level of thinking. An individual who is (even by default) able to use some of these postformal operations is able to respond more flexibly to problems. Those who are able to use them consciously can move purposefully and on a wider scale in the search for solutions to life's problems. "Measuring" postformal thinking requires monitoring these cognitive operations (Sinnott, 2017).

The first impulses for postulating postformal operations came from responses in open dialogues with individuals, which Professor Sinnott considered wise, complex, and generative adults and attracted to her as adaptive individuals. She wondered what aspects of their knowledge had enabled them to function successfully. In analysing the dialogues, she discovered that they have a special way of describing problem-solving and situation-solving processes. The first postformal operations were defined on the basis of a categorization of the ways in which these individuals used and through which they recognized and constructed when thinking about it (Sinnott, 2002). Furthermore, postformal operations were specified and modified based on the analysis of hundreds of answers to questions (probes) during the solution of the problem. Later, a short test paper-pencil (Postformal complex thought questionnaire) was developed, which was found to be a reliable and valid substitute (Sinnott, 1998).

The set of skills is called "relativistic operations" (also operations of postformal thinking), and individuals use these skills to solve every day logical problems, especially those involving the social environment. Postformal surgery can more accurately specify how an adult's cognitive structure develops. The degree of Postformal thought shown by the participant is based on the ten different operations that follow. Each operation is one potential indicator of a participant's use of postformal thinking (Sinnott, 1998).

### **Meta-theoretical shift (Y/N) (Metatheory Shift)**

The metatheoretic shift suggests that respondents are able to think in at least two logical systems because they have shifted between an idealized interpretation of a problem and a practical interpretation of the problem. They are able to define the approach to the problem in more than one main way, i.e., in an "abstract" way and a "practical" way.

### **Problem Definition**

Defining a problem is a second way to monitor a respondent's ability to move on two or more formal operating systems. He points out that the respondent sees more than one definition of the problem presented.

### **Parameter Setting**

Setting parameters involves limiting or organizing the problem area by the respondent. This ability is related to postformal thinking, because defining the problem space opens or limits the logical structure of the problem. These can be any constraints or variables that the participant sets and/or uses to describe the conceptual framework in which the solution will be processed.

### **Process-Product Shift**

A process and product shift occurs when the respondent indicates that the problem is solved either by a process that would work in many cases (even in the problem being solved), such as a mathematical formula, or by a product that is a specific solution, such as a correct numerical answer. In the respondent's thinking, two logical systems are again coordinated.

### **Pragmatism (Y/N) (Pragmatism)**

Pragmatism is defined as the ability to choose one of several solutions as "better". Within postformal thinking, one logic must be chosen, one point of view. In order to find pragmatism, the participant must present more than one solution and then



choose the best solution or a “clear winner” from those solutions, which will allow him to pay more attention to the next problem.

**Paradox (Y/N) (Paradox)**

The paradox is the ability of the intellect to find the strange aspect of the overlapping of two opposing logics that coexist. The respondent understands that there is ambiguity, ambivalence, in the requirements for entering the problem. This often reveals to participants a sense of humour. Awareness of the paradox means awareness of many conflicting logical realities.

**Multiple Solutions**

When solving one problem, several solutions are generated that are considered correct and that indicate the existence of more than one logic. This suggests postformal thinking.

**Multiple Goals**

Here, the direction and goal that the respondent wants to achieve in the solution is monitored. The goal may be stated orally or may be indicated by a clearly defined approach to solving the problem. Setting multiple goals means that a participant can use more than one logic to solve a problem.

**Multiple Methods**

Methods are general processes and/or heuristics that have been used to achieve a solution. These methods are of a general nature, so they can be used for a variety of problems. For example, formulas, multiplication and addition are methods. Sometimes finding a method or process that works in many situations is also a goal or operation within a “process/product shift”. Using several methods to achieve the same goal means the ability to shift logic and opt for one.

**Multiple Causality**

Another of the postformal frequency monitoring operations. Multiple causes follow the causality on the basis of which the respondent explains the sit-

uation. Surgery is present if he sees several causes in the problem.

*2. Introduction to the Present Study*

The data presented in this text are part of a research study devoted to cognitive development during university studies. The research topic of cognitive development in the period of university study is monitored on two levels:

**“Thinking”**

The title of the part is based on the subject of her study – monitoring the cognition itself, or cognitive operations of postformal thinking on a specific given material. The data here does not depend on the statements of the participants, but directly monitors the “performance” in the defined postformal operations. A comprehensive questionnaire of postformal thinking and in solving standard problems.

It uses the methods of quantitative the Complex Postformal Thought Questionnaire and qualitative – observation of respondents thinking aloud in solving assigned tasks. It uses a methodology developed by Professor Jan D. Sinnott of Towson University, US to obtain data.

**“About thinking”**

The subject of monitoring is the subjective perception of one’s own thinking and changes associated with the period of university study. That is, not monitoring or measuring cognition as such, but the view of the monitored actors on their own thinking, on changes during university studies and on the influence of the field studied. The part is based on students’ statements about their own thinking and its changes on the basis of a semi-structured interview.

*2.1 Complex Postformal Thought Questionnaire Background*

Data analysis is part of the “Thinking” section and evaluates data from the Complex Postformal

Thought Questionnaire. Complex Postformal Thought Questionnaire (Sinnott, 1998) consisting of 10 questions, each related to one of the components of postformal thought. Each participant answered the question on a 7-point Likert scale (1 = *not true* to 7 = *very true*), with a compound score (sum) being calculated for each individual to establish the average rate of complex thought attained. The instrument has been explored by Cartwright et al. (2009) who have found the reliability of internal consistency to be  $\alpha = .63$ . The analysis carried out on the present sample shows a similar level with Cronbach Alpha of  $\alpha = 0.695$ .

Based on the evaluation of statements by the participant, the questionnaire is evaluated within individual operations of postformal thinking as well as the total score of postformal thinking from the questionnaire.

## 2.2 Data and Applications

The questionnaire was created on the Google Forms platform, which enables extensive, fast collection of respondent answers and subsequent export of data to an Excel spreadsheet. The question-

naire was distributed to relevant Facebook groups and via email.

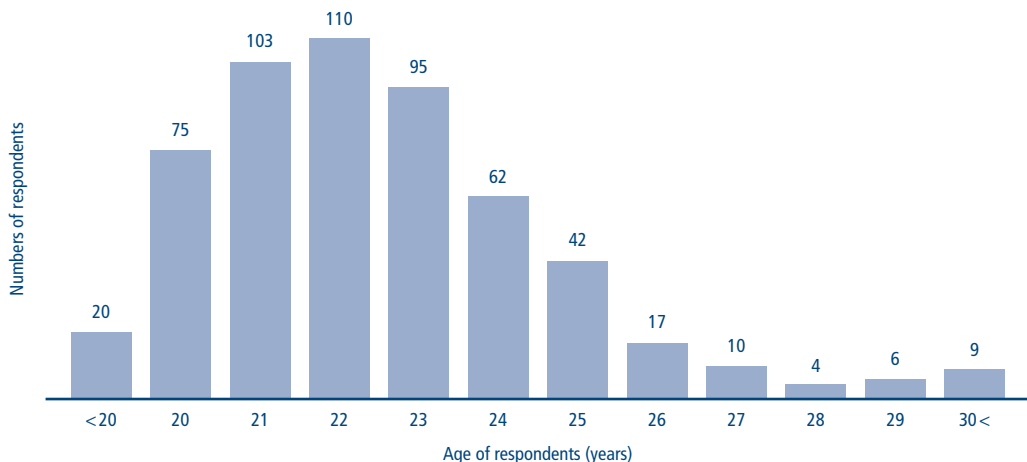
Women made up 61.4%, men 38.1% and less than 1% were marked “Other”.

The age of the respondents ranged from 18 to 45 years. The mean age of the sample was 22.5 years ( $M = 22.56$ ,  $SD = 2.45$ ).

The socio-demographic data collected in the questionnaire included information on university studies: the year of study at the university and the field studied. Currently, on average, students have achieved just over 2 years of university education ( $M = 2.82$ ,  $SD = 1.38$ ).

Based on the faculty, department or field of study (550 students have provided answers) the students were divided into five study specializations: economics ( $n = 200$ ; 36.1%), science ( $n = 142$ ; 25.6%), technology ( $n = 95$ ; 17.1%), humanity ( $n = 68$ ; 12.3%) and medicine ( $n = 45$ ; 8.1%). Most students were enrolled in a bachelor’s or master’s program, 21 participants (3.79%) were doctoral students.

**Chart 1 » Histogram of the age distribution of the respondents**



Source: own elaboration

### 3. Results of the Research

Cartwright et al. (2009) performed a factor analysis (Oblimin rotation) on the items of the questionnaire (or individual operations of postformal thinking), which divided the items into 3 factors. The four items represented the ability to think about more elements of a problem or situation and acted as basic components of postformal thinking. Factor 1 is called Multiple Elements and includes multiple causality, multiple solutions, multiple goals, and pragmatism. Factor 2 was saturated with three items and represents the ability to subjectively choose a specific logical system to be used in a given problem situation. The combination of subjectivity with logical operations is a hallmark of complex postformal thinking (Sinnott 1998), as it shows progress beyond basic logical considerations supported by formal operational thinking. The operations included in the Subjective Choice factor are problem definitions, process-product shifts, and meta-theoretical shifts. Finally, three items were included in Factor 3, which is related to the ability to see the basic complexity of the situa-

tion. The Underlying Complexities factor included operations: paradox, multiple methods, and parameter settings (Cartwright et al., 2009).

Table 1 shows a comparison of the above factor analysis of postformal operations of the study by Cartwright et al. (2009) and our studies of 554 university students. Also in our study, the factor analysis revealed three factors. The factor solution is similar to the above-mentioned data with shifts evident in Table 6, but still following the internal logic. The differences can be understood on the basis of the partial differences evident from Table 3.

From Table 2, which shows the average values for individual operations, it is clear that the respondents for all items used the whole possible spectrum of the scale to characterize their own thinking. Given the interpretation reported in the studies of Cartwright et al. (2009) and Sinnott, Johnson (1997) and the overall average postformal thinking score of the respondents ( $M = 52.33$ ,  $SD = 7.617$ , out of 70 maximum) it can be stated that the participants in this study demonstrated a relatively high level of postformal thinking overall. The highest respondents rated postformal surgery of multi-

**Table 1** » Results of the factor analysis of the realized study and validation study Cartwright et al. (2009): 1 – Multiple elements; 2 – Subjective choice; 3 – Hidden complexity

Postformal operations	Factor (CZE, 2020)			Factor (USA, 2009)		
	1	2	3	1	2	3
Paradox	.163	.030	<b>.649</b>			.750
Multiple Methods	<b>.582</b>	.003	<b>.558</b>			.602
Parameter Setting	.287	.241	<b>.482</b>			.608
Problem definition	.140	.207	<b>.731</b>		.631	
Process/product shift	.025	<b>.651</b>	.491		.716	
Metatheory shift	.209	<b>.748</b>	.084		.554	
Multiple causality	<b>.569</b>	.258	.236	.655		
Multiple solutions	<b>.766</b>	.068	.310	.762		
Multiple goals	<b>.690</b>	.279	-.004	.585		
Pragmatism	.434	<b>.609</b>	.144	.482		

Source: own elaboration

**Table 2** » Descriptive statistics for the Complex Postformal Thought Questionnaire (N = 554)

Postformal operations	Minimum	Maximum	M	SD
Paradox	1	7	5.43	1.338
Multiple Methods	1	7	6.05	1.195
Parameter setting	1	7	5.53	1.447
Problem definition	1	7	5.73	1.292
Process/Product shift	1	7	5.51	1.395
Metatheory shift	1	7	4.56	1.820
Multiple causality	1	7	4.88	1.674
Multiple solutions	1	7	4.86	1.458
Multiple goals	1	7	5.13	1.503
Pragmatism	1	7	4.66	1.516
<b>Complex thought score</b>	<b>10</b>	<b>70</b>	<b>52.33</b>	<b>7.617</b>

Source: own elaboration

**Table 3** » Descriptive statistics: comparison of the average score of the performed study and the validation study Cartwright et. al. (2009)

Postformal operations	Current sample	Cartwright study 1	Cartwright study 2
	M (SD)	M (SD)	M (SD)
Paradox	5.43 (1.338)	4.74 (1.40)	4.58 (1.55)
Multiple Methods	<b>6.05 (1.195)</b>	<b>5.52 (1.37)</b>	<b>5.72 (1.37)</b>
Parameter setting	5.53 (1.447)	4.80 (1.61)	4.93 (1.70)
Problem definition	5.73 (1.292)	<b>3.74 (1.97)</b>	<b>3.97 (2.08)</b>
Process/Product shift	5.51 (1.395)	4.81 (1.57)	4.60 (1.83)
Metatheory shift	<b>4.56 (1.820)</b>	4.62 (1.68)	4.54 (1.81)
Multiple causality	4.88 (1.674)	5.18 (1.56)	5.38 (1.46)
Multiple solutions	4.86 (1.458)	4.56 (1.63)	4.63 (1.69)
Multiple goals	5.13 (1.503)	5.29 (1.73)	5.33 (1.69)
Pragmatism	4.66 (1.516)	4.89 (1.60)	5.09 (1.45)

Source: own elaboration

ple methods (M = 6.05, SD = 1.195) and the lowest level was found in the shift of the meta-theoretical shift (M = 4.56, SD = 1.820).

A comparison of the results we obtained with previous studies conducted in the USA (Cartwright et. Al., 2009) is given in the table 3.

The highest values in the compared studies are the same – the respondents achieve them in multiple methods. In addition, this score has the lowest variance, which emphasizes the strength of this score.

On the other hand, the lowest score in the observed sample of Czech university students

**Table 4 » Descriptive statistics for the Complex Postformal Thought Questionnaire (N = 554)**

Factor	CZE study (2020) M (SD)	USA study M (SD)		
		Total	low PFT	high PFT
Multiple Elements (1)	4,88 (1,55)	5,03 (1,07)	4.38 (0.05)	5.80 (0.05)
Subjective Choice (2)	5,27 (1,63)	4,38 (1,21)	3.79 (0.06)	5.07 (0.07)
Underlying Complexities (3)	5,67 (1,36)	5,04 (1,02)	4.54 (0.05)	5.64 (0.06)

Note: For the possibility of comparison, the values of the Czech Republic include studies in individual factors of the operation according to the factor analysis Cartwright et. al. (2009)  
Source: own elaboration

appeared at the meta-theoretical shift. In a study by Cartwright et al. (2009) are the lowest values for the problem definition in both cases.

In the case of comparing the values of groups of postformal thinking operations grouped according to factor analysis (see this chapter above), the results are summarized in Table 4.

Overall, the highest values of factors do not differ in groups, students achieve it in the factor of Hidden Complexity. The values of other subscales are different, where, in contrast to the American study, Czech students show the lowest value for multiple elements.

#### 4. Discussion

If we consider the significance of the values found in specific postformal operations based on the output of the Comprehensive Questionnaire of Postformal Thinking, it is appropriate to go deeper into the content of individual operations and statements in the questionnaire that were evaluated. The highest value in our study, multiple methods, is the ability to see more procedures to achieve a goal. We can think that just finding more ways to achieve a specific goal or solve a problem is important for the thinking of this age group. Due to the composition of the monitored sample, i.e., exclusively for university students, the influence on the development of the operation of multiple methods in higher education can also be considered. If we look at the comparison with the studies of Carth-

wright et al., (2009) in Table 2, we see that the highest values of the files match. American studies also focused on undergraduate students, the difference being in gender representation. Due to the same highest value of all samples, the method of higher education, approach to students, required style of work and thinking and other aspects typical of tertiary education, which strengthen or develop this postformal operation, may also play a role.

The meta-theoretical shift, the lowest value in our sample of university students, tends to perceive the definition of the problem in more than one main way, i.e., by distinguishing between the “abstract” way and the “practical” way of understanding the assignment. The operation of meta-theoretical shift is directed more towards the field of metacognition and thinking about the problem itself “one level up”, i.e., not what the problem or task relates to in fact, but, for example, whether it is a problem related to logic, mathematics or, for example, relationships and social perception. The respondents of this study may not yet be very guided to think in this way, and it is possible that even the currently prevailing way of teaching and leadership at the university does not deepen this in a targeted way. In US studies, the lowest value for both samples was the problem definition. From the point of view of factor solution, this is the same group of operations belonging to the Subjective Choice, so it cannot be said that the results are completely different. Overall, Carthwright et al



(2009) state that in this factor, overall, respondents score statistically significantly lowest, while Factors 1 and 3 do not differ significantly and respondents are used more often than Factor 2 operations. They score significantly higher than the American ones. This is despite the fact that it factually falls into the same group as our lowest value—the meta-theoretical shift. If we look at the essence of both operations (problem definition and meta-theoretical shift), it is a similar principle, but at different levels. The definition of a problem represents a “lower”, more factual reflection on the nature of the problem and its framing, while a meta-theoretical shift represents a larger paradigmatic step. Not just more possible understandings and perspectives on a given problem, but a clear demonstration of the ability to see its abstract and practical dimension. Thus, we can assume that Czech students, although they do not have to think in nuances to differentiate the practicality and abstractness of problems, are well aware of the possibility to choose from several possible understandings of the situation. This could be an indication that Czech higher education is not focused exclusively on the acquisition of knowledge and information, as is often emphasized (compared to the American style, for example), but that the ability to think independently and share more “equally correct” views on given topics.

On the other hand, a comparison of our set in the area of subscales of Factors 1, 2, and 3 (listed in Table 4), our sample does not confirm the assumption about the sequence of development of postformal skills presented above, i.e., that operations belonging to the subjective choice factor are formed

more significantly last. In our case, the respondents reached the lowest value for Multiple Elements. However, no broader conclusions can be drawn in relation to the high and low overall scores of postformal thinking, as score values are not available from the study being compared.

## 5. Conclusion

The outputs from the questionnaire describe the structure of postformal thinking of university students within individual operations of postformal thinking. The expected output of the whole study is a comprehensive view of the development process taking place during the period of university study and related to this study. The knowledge builds on the extensive knowledge of developmental psychology about the period of adolescence, another period that is currently little studied.

Outputs can also stimulate the application of knowledge to the practice of higher education. Their practical use in teaching planning and choice of specific methods is offered, as well as targeted extra-curricular programs to support the personal and cognitive development of university students, which already operate in some countries. This type of project and program could also serve as a starting point or as an inspiration for tertiary education in the Czech Republic.

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## The Structure of Postformal Thinking of University Students in the Czech Republic

### ABSTRACT

*Postformal thinking is a construct in cognitive psychology that is developed as an “extension” of Jean Piaget’s theory of cognitive development. On one hand, it is a whole theoretical stream of research and definition of theories of cognitive development in adulthood, but also a set of partial studies dealing with individ-*

ual aspects of cognition or developmental elements of thinking. Higher education, such as obtaining a university-level education, is a stage when a young person reaches a high degree of mental functions and abilities, intelligence, and thinking. The full maturity of the students' judgement increases due to the acquisition of first practical experience, their dreaming gives way to a more realistic view of the world and the need to take responsibility. Their interest in scientifically researching things and being able to change the known reality increases. The text builds on the Theory of Relativistic Postformal Thought postulated and operationalized by American professor Jan D. Sinnott. According to Sinnott (1998), postformal thinking can be observed through the identification of postformal thinking operations. Exploring these operations facilitates the experimental study of this level of thinking. The data in the present study are based on a comprehensive research plan, the aim of which is to describe the cognitive development of university students. It summarizes data from a questionnaire survey among 554 university students in the Czech Republic. Based on the Postformal complex thought questionnaire, it monitors its structure within the framework of partial operations of postformal thinking. The results of the study make it possible to better describe the nature of the thinking of university students and to take into account the possible influence of their study focus.

**KEYWORDS**

*Development of thinking; structure of thinking; postformal thinking; university students*

**JEL CLASSIFICATION**

*A22; I20; I21; I23*



# Challenges of management education in Covid time

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## \* 1. Introduction

The coronavirus disease COVID-19 pandemic has caused an unprecedented crisis in all areas. In education, this emergency has led to the massive closure of face-to-face educational institutions in more than 190 countries to prevent the spread of the virus. The COVID-19 pandemic is, first and foremost, a health crisis. Many countries have decided to close schools, colleges and universities. The crisis crystallises the dilemma policymakers face between closing schools (reducing contact and saving lives) and keeping them open (allowing workers to work and maintaining the economy).

Teaching is moving online on an untested and unprecedented scale. Student assessments are also moving online, with a lot of trial and error and uncertainty for everyone. Many assessments have been cancelled. Importantly, these interruptions will not just be a short-term issue but can also have long-term consequences for the affected cohorts and are likely to increase inequality.

Preparing people for managerial positions is specific. The specific development of people who already hold managerial positions is also typical. In addition to knowledge of systems and technical tools associated with adequate performance, it covers a substantial part of areas directly related to

the human personality. COVID-19 pandemic has fundamentally changed the world of education. Due to schools and several other institutions' closure, enabling sharing experience in the most natural way so far, interpersonal contacts have been reduced.

The article aims to point out new challenges in educating people about the management of human systems. Also, describe the limits of the environment and the new threats that educational institutions will face.

The article shows a shift in educational institutions' priorities in providing education during the ongoing pandemic.

## 2. Key topics of management education in the time of COVID-19

COVID-19 is the greatest challenge that national education systems have ever faced. Many governments have ordered institutions to cease face-to-face instruction for most of their students, requiring them to switch, almost overnight, to online teaching and virtual education. (Daniel, 2020) This brief note offers guidance to teachers and institutional heads who must manage this crisis's educational consequences. It addresses:

### University preparations

Staff preparation and training – Many institutions had plans to make greater use of technology in teaching, but the outbreak of COVID-19 has meant that changes intended to occur over months or years had to be implemented in a few days. Academics, accustomed to meeting people face to face and sharing their experience, had to switch to a mode they are not used to or trained in. It logically caused a high degree of doubt about one's teaching abilities, nervousness associated with operating a technologically demanding environment, reduced possibility of immediate feedback and several other circumstances increasing frustration. It led to at least three of the following consequences:

- Older teachers would instead end their cooperation than “worry” about the transition to a new environment. Universities thus lost a substantial part of their teaching capacity and precious know-how, which would otherwise have served the needs of the university for many years to come,
- Teachers switched to online communication mode but only exchanged the physical contact environment for a digital environment. They have come to terms with the limitations of this space. They perceive it as an alternative solution and believe that everything will return to normal. The universities supported them with technical equipment, training in its use and methodological support for distance learning,
- Only a minimal number of institutions perceive the turbulent situation in education as accelerating the necessary changes and the start of the period referred to as 4.0 and 5.0. These institutions support their academic staff in transitioning to a moderated broadcasting model that makes full use of television studios' technological possibilities. That is, the possibility to connect experts from all over the world at one time, ask them questions, insert audio and video samples to the topics discussed. Take advantage of new opportunities to contact students through online voting, expressing opinions and preferences

and the opportunity to discuss with the teacher through the concurrence of several communication channels (audio, video, chat, etc.). Those who have embarked on this path must bear the enormous costs associated with the acquisition and implementation of technology and the enormous social costs associated with the necessary changes in people's attitudes in teams.

However, teaching is only a partial, albeit dominant, part of universities' activities in management. Safeguarding arrangements cannot be overlooked either; division of work between departments; mechanisms for teachers to remain in touch collectively for mutual support; and brief and straightforward updates on learning technologies already somewhat familiar (Daniel, 2020).

### Students' needs

Students have been torn away from their social group almost overnight. Students who transition to tertiary education this year have hardly had the opportunity to meet their classmates.

The digital age is a game-changer for communication between organizations and stakeholders (Lock, 2019).

At the same time, building social ties, especially at a university focused on business and management, is one of the critical expectations, as confirmed, for example (Chua, 2002): The findings show a positive correlation between the level of social interaction and the quality of the modules developed. Among the three dimensions of social interaction, the relational dimension was the strongest predictor of the modules' quality. Practitioners are, therefore, advised to prioritise the development of the relational dimensions of the social interaction.

The so-called student life, including a joint stay at school during teaching sessions and sports, entertainment and other activities, creates an environment for maturing personality, mutual support and competitiveness. Those are qualities essential for the preparation for demanding professions in the field of management and entrepreneurship. →

Thus, universities must necessarily work to support the establishment and formation of relationships by alternative methods in the digital social space. Students have limited opportunities to relate to each other, and the university must work all the more on the student-school relationship and become a unifying point of the social community. Tools that can be used include a broad portfolio of activities from building a PR institution (e.g. inspirational lectures, interviews and counselling available exclusively to a closed community of students) but also building a brand starting with a properly integrated institution logo in every digital interaction with the teacher to merchandising in the form of clothing, accessories or technical gadgets.

Many in the COVID-19 cohort of students will worry about suffering long-term disadvantages, compared to those who studied “normally”, when they move to another level of study or enter the labour market. Statements from tertiary institutions that they will apply admission criteria “compassionately” may not always reassure (Daniel, 2020). In this regard, a university in the field of management can do a lot. Management is primarily linked to such sciences as psychology, andragogy and communication. As a result, colleges usually have excellent knowledge of potential and staffing facilities to assist students. Although students often cannot meet with counsellors in person. It is essential to create and adequately offer the possibility of online one-to-one meetings with experts who will listen to students’ concerns and try to allay them. Likewise, the college should use student associations and other sub-communities to gather information about the mood and communicate positive news.

#### **After COVID-19**

Although institutions that usually teach face-to-face in classrooms or on campuses will likely return to that mode of instruction with some relief, the particular arrangements they put in place during the COVID-19 crisis will leave a lasting trace.

The expansion of online learning in tertiary education will further accelerate, and schools will organize themselves more systematically to pursue the aspects of technology-based learning that they have found most useful.

All institutions will derive benefit from the mechanisms they have put in place to continue their education and training missions in a crisis time.

### **3. Management education challenges**

The term challenge usually includes a negative connotation when I try to refine or indicate a potential problem or, conversely, a positive connotation when it is possible to perceive the phenomenon as an opportunity. The boundary between them is relatively thin, and the most critical parameter is the observer’s mind-set. Therefore, we will try the following division:

#### **Problem 1: Waiting for the return of old times**

According to Birkinshaw (2021), the world will never be the way it used to be. He gives four reasons for this:

##### **Structural changes**

Previously criticised changes in employment policies are legitimised. It turns out that platform businesses like Uber, Deliveroo and Airbnb are much more resilient. They have been widely criticised for not providing job security to their workers, but their low fixed-cost business model makes them highly resilient to an external shock because they can flex their capacity up and down at a moment’s notice. They provide a buffer against hysteresis. Of course, governments still need to support unemployed workers when demand dries up, but bankruptcy and restructuring costs can largely be avoided. Not only this trend in employment will change the business environment permanently. Moreover, colleges will have to adapt to this either.

**Changes in consumer behaviour**

There have been apparent changes in consumer behaviour since the pandemic started, and while some are temporary (I don't want to meet my friends for a drink over Zoom – I want to go to the pub), others are likely to endure because they are efficient (online shopping) and/or enjoyable (movie streaming).

**Changes in workplace behaviour**

While a few companies have pledged to allow virtual working to continue post-pandemic, most are gearing up for a hybrid model, with people working from home maybe half the time and careful consideration given to getting the most out of their time together in the office. Thus, the model of using long-distance communication will be relatively standard not only in a study but also in practice, for which colleges have to prepare students.

**Government rules and regulations**

Government's first economic task was keeping the whole system from collapse, and as soon as that is resolved, their next task will be to find ways to pay for their interventions – which will mean higher taxes and tighter public spending for years to come. However, there are other likely areas of government intervention that will hinder a return to normal. One will be a reluc-

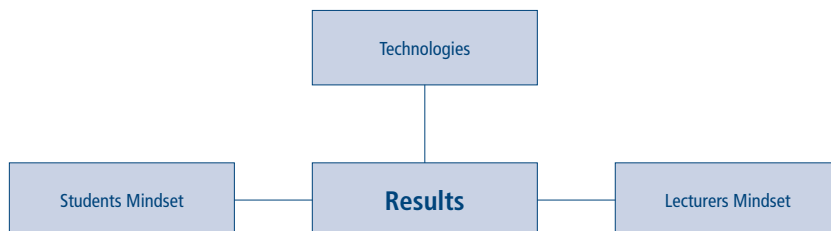
tance to relax the new rules. Just as the pilot doesn't turn off the "fasten seatbelt" sign until the turbulence is long gone, we can expect the strict rules on social distancing and travel to endure for months or even years after the danger has passed.

Therefore, it is quite clear that the hopes for returning to the "old days" are minimal and that it is worth devoting energy, money, and time to changing old habits in the education of managers. We consider the following to be critical areas to be addressed:

**Opportunity – new technologies combined with a change in teachers' and students' attitudes create a whole new space for improving teaching**

These are new imperatives of management education. It requires the connection and balance of all three elements. Results will not be achieved without adequate technical background for teaching (television and communication technology, digitisation of educational materials and increasing their accessibility to students using digital readers and other tools (modern study materials today may include audio and video inputs and other interactive elements). Furthermore, well-tuned lecturers willing to learn new things, experiment and find the optimal way to pass on knowledge, as well

**Picture 1 » Three imperatives of learning quality in digital form**



Source: own processing



as students who will take responsibility for their educational process and will be full partners in education. They will be willing to provide constructive feedback enabling trainers to improve their outputs and institutions to innovate technical procedures for sharing information.

However, this model's introduction will require a change in the current paradigm, where the student often perceives that the institution is there to teach him something. The student will have to take responsibility for his/her learning and perceiving the institution as a supporting platform. It may not even be a paradigm shift but rather a return to the roots and intentions with which the colleges were founded.

#### **Opportunity – more general impacts of teaching and college as a guide**

If the three imperatives are fulfilled, another opportunity will arise, erasing the difference between whether a student is fifty or five thousand kilometres away from school. Combined with adequate language skills, a new opportunity opens up for easier entry into international markets. Of course, along with the risk of international competition, which will not be less if the college does not internationalise. An important parameter of competitiveness will still be the personal contact of students and teachers and the college's ability to accompany the student through a labyrinth composed of a flood of available materials of various qualities, causing increased overcrowding, confusion and loss or reduction of attention. These and other changes place specific requirements on the selection and preparation (Ambrozová at al., 2015; Ullrich at al., 2019) of professional managers for their work in modern corporate environment, not

only in terms of knowledge, but also in terms of their using their natural potential abilities and skills at the end of their preparation.

#### **Opportunity – from personal to the individual – asynchronous learning**

The most critical adjustment for those used to teaching in real-time classrooms is to take advantage of asynchronous learning. For most aspects of learning and teaching, the participants do not have to communicate simultaneously. Asynchronous working gives teachers flexibility in preparing learning materials and enables them to juggle home and study demands. Asynchronous learning works best in digital formats. Teachers do not need to deliver material at a fixed time: it can be posted online for on-demand access, and students can engage with it using wikis, blogs, and e-mail to suit their schedules. Teachers can check on student participation periodically and make online appointments for students with particular needs or questions. Creating an asynchronous digital classroom gives teachers and students more room to breathe.

The virtual environment will create a much larger space for individualised work with students and their needs. Virtual reality, machine learning and many other tools will make it easier for institutions to routinely pass on tools, making it much more possible to share practical experiences and support students in applying them to their practice. This trend will also help the possibility of concurrent study and performance of employment or business. Thus, a higher education institution can create an entirely new space supporting all groups' growth in the academic community.

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## Challenges of management education in Covid time

### ABSTRACT

*Preparing people for managerial positions is specific. In addition to knowledge of systems and technical tools associated with management components' effective performance includes a substantial part of areas directly related to the human personality. COVID-19 pandemic has fundamentally changed the world of education. Due to schools and several other institutions' closure, enabling sharing experience in the most natural way so far, interpersonal contact has been reduced. The article aims to point out the new challenges in people's education to manage human systems and describe the limits of the environment and new threats that educational institutions will face. The article shows a shift in the priorities of educational institutions in providing education during the ongoing pandemic.*

### KEYWORDS

*Management; education; COVID-19; digital learning*

### JEL CLASSIFICATION

*A23; M20*



# Consumer behaviour in tourism: Czech generation Z and it's attitude before COVID-19

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## \* 1. Introduction

According to the research agency Ipsos, as stated by Česko v datech (2018), the consumer generation can be characterized as a group of people who were born at approximately the same period and are connected in time by a similar lifestyle and way of thinking.

The following generations are discussed in the current professional literature: Generation GI (born 1901–1924), Silent Generation (born 1925–1945, the so-called War Generation), Baby Boomers (born 1946–1964), Generation X (born 1965–1980, in our territory the so-called Husák's children), Generation Y (born in the early 80's – the turn of the millennium, also referred to as the Millennials), Generation Z (born 1995–2010) and Generation Alpha (born after 2010 or 2014, so-called children playing with a tablet) (The US Chamber of Commerce Foundation, 2012; Troksa, 2016; Forbes, 2019; Česko v datech, 2019).

The significance and size of Generation Z is growing significantly. The following graph shows the distribution of generations in the Czech population, currently according to Česko v datech (2018) Generation Z belongs to 19.6%. And one third of the members of Generation Z, around 6.5% of the Czech population, currently reach the age of 17 to 23 years. According to the Czechia in the data

(2018) Generation Z will have more lifetime purchasing power than Generation Y, including the fact that for people born since the 1990s, the average life expectancy has increased by 7 years for women and up to 8 years for men, which represents a total consumer age of 82 and 76 years.

Why is it important to talk about generation Z with greater intensity at the present time, and who can we imagine under this name?

## 2. Generation Z vs. Generation X (Millennials)

**Generation Z** represents young consumers who were born between 1995 and 2010 (Seemiller, Grace, 2016) and currently represent their importance due to increasing purchasing power, whether they are high school students or university students or young consumers who work / do business.

Generation Z simply reaches an age where it often makes its own decisions and is economically active. The lives of young people born after 1995 are and have been fundamentally marked by the use of modern technologies, which have become a natural part of life, and it is not for nothing that this generation includes Digital Natives, iGeneration, Net Generation, etc. (Seemiller, Grace, 2016; Navrátilová, 2016; Rosen, 2004; Prenskey, 2001). According to the above authors, the previous designa-

tion also belongs to the Y Generation. Benckendorff, Moscardo, Pendergast (2010) are added to the Y Generation by Nexters, Echo Boomers, Web Generation, etc.

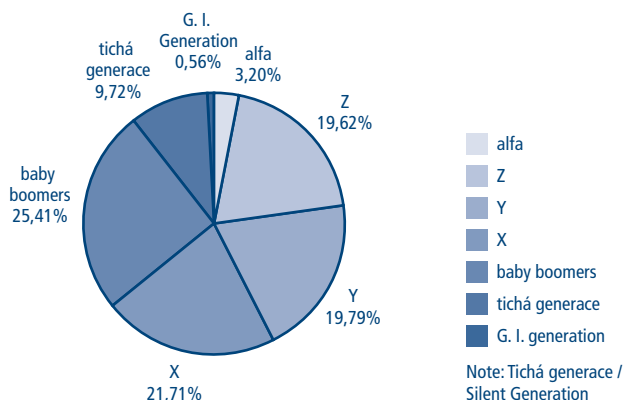
The main difference between the generation of the so-called **Millennials (Generation Y)** and Generation Z is that Z generation grew up in a period of recession and without the illusion of quickly finding work automatically after high school or university. The younger generation has different motivators, learning / receiving styles, personal characteristics, abilities and social interests than the previous generation. However, compared to the Y Generation, the Z Generation is more demanding to pay attention to, it needs more support from its surroundings in its decisions and it can develop faster if it takes advantage of the right opportunities. Gen Z often does not cling to a comprehensive higher education and perceives their development process already during secondary education (Seemiller, Grace; 2016). According to Ipsos, Česko v datech (2018), Generation Z does not insist on formal education compared to Generation Y, but specific knowledge from practice is more important for them, and therefore the young generation prefers to gather experience and likes to devel-

op. For self-development, however, it needs some freedom, incl. own organization of time, both in the workplace and in personal life. It is generally necessary to treat Gen Z as partners / colleagues involved in solving the problem, not as subordinates.

The period of birth for Generation Y is more broadly defined, Benckendorff, Moscardo, Pendergast (2010) state the range from 1977 to 2003. Many representatives of Generation Y and Z thus intertwine with the onset of the new millennium. Generation X representatives as consumers require great attention in services, often with a personal approach and individualized offer, a human element in communication is essential for them and they like to establish contact with staff. This generation, as consumers, demands more detailed professional information, but they like to receive it in a natural, easy-to-understand, unprofessional form. The way of longer-term learning and receiving information is also given by technologies, with which the representatives of this generation have not always met since birth, but have grown up with them, resp. they even learned to work with them, for example, at a young age.

According to a global survey by Deloitte (2019),

**Graph 1 » The share of generations in the total Czech population**



Source: Česko v datech, 2018 according to ČSÚ, Ipsos 2018



which was attended by more than 13,000 Millennials and 3,000 members of Generation Z. A total of 42 countries found that both generations expect their potential employers to contribute to improving the quality of life in society, agreeing to be more loyal to the employer if it deals with solving problems such as environmental protection or unemployment. Both generations do not agree in public institutions and private companies as well as in the mass media.

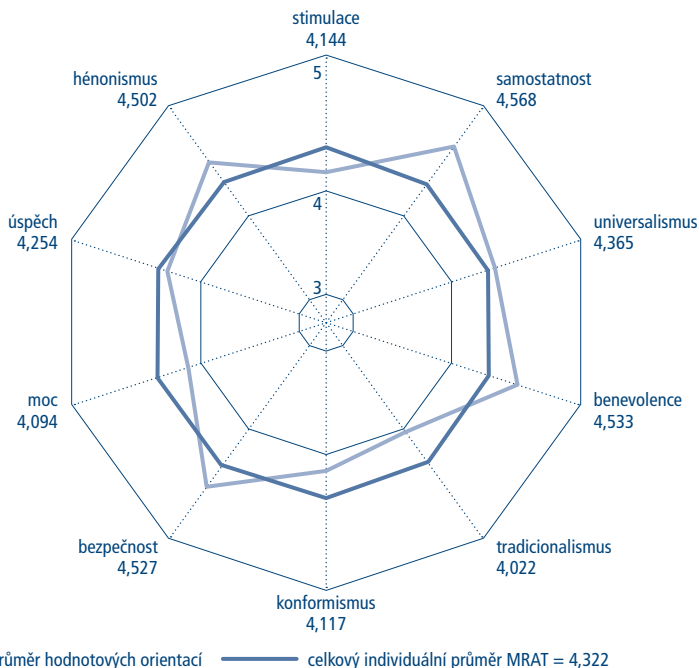
A year older survey by Deloitte (2018) published that 63% of Millennials deal with the financial aspect when looking for a job, and only then are they interested in corporate culture and flexibility. Generation Z showed the opposite result, in the first place is the corporate culture of the company, 57% and then they are interested in financial reward and flexibility.

### 3. Specifics of the Czech consumer – cultural context

The research of the Czech consumer, as stated by Navrátilová (2016) in the age category 15–34 years, as captured by the following graph, showed the strongest value orientation towards: *independence, benevolence, security, hedonism*. Value orientations are less characteristic for the younger category: *stimulation, traditionalism, power*. It should be noted that in the overall comparison of the Czech population, even less characteristic categories are stronger than at the age of over 35 years.

For higher-order values, the above findings mean a stronger tendency for the age group 15–34: openness to change, overcoming oneself / self-transcendence, strengthening the ego / self-enhancement, on the contrary, a weaker inclination for con-

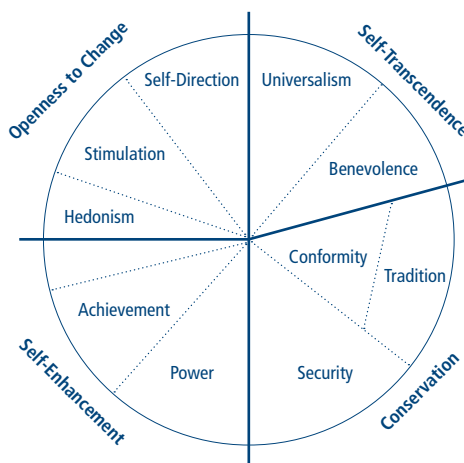
**Graph 2 » Value orientations of respondents aged 15–34 years (Gen Y and Gen Z)**



Note: samostatnost / independence, universalismus / universalism, benevolence / benevolence, tradicionalismus / traditionalism, konformismus / conformism, bezpečnost / safety, moc / power, úspěch / success, hénonismus / hedonism, stimulece / stimulation, individuální průměr hodnotových orientací / individual average of value orientations, celkový individuální průměr MRAT / overall individual MRAT average

Source: Navrátilová, 2016, p. 93

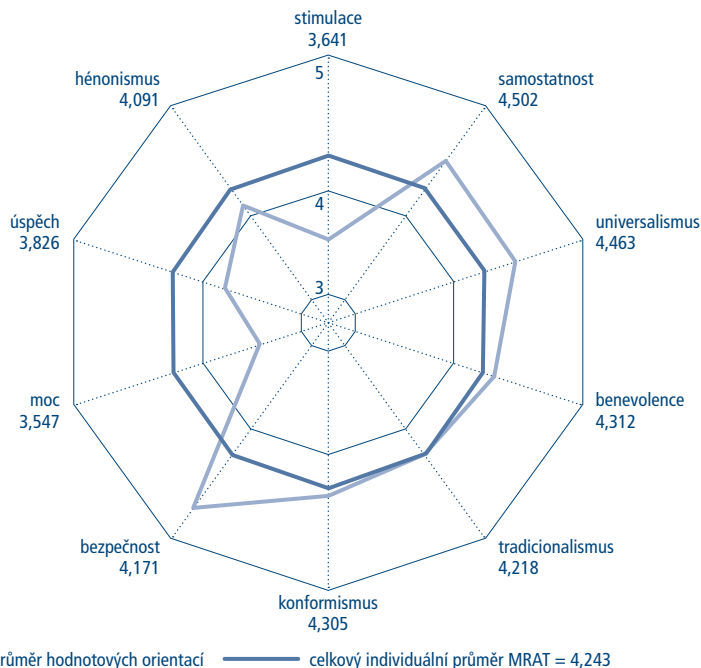
**Figure 1 » Theoretical model of relations among ten motivational types of value: inconsistent motivational types of values**



Note: samostatnost / independence, universalismus / universalism, benevolence / benevolence, tradicionalismus / traditionalism, konformismus / conformism, bezpečnost / safety, moc / power, úspěch / success, hédonismus / hedonism, stimulační / stimulation, individuální průměr hodnotových orientací všech věkových kategorií / individual average of value orientations of all age categories, celkový individuální průměr MRAT / overall individual MRAT average

Source: Schwartz, 2012, p. 9

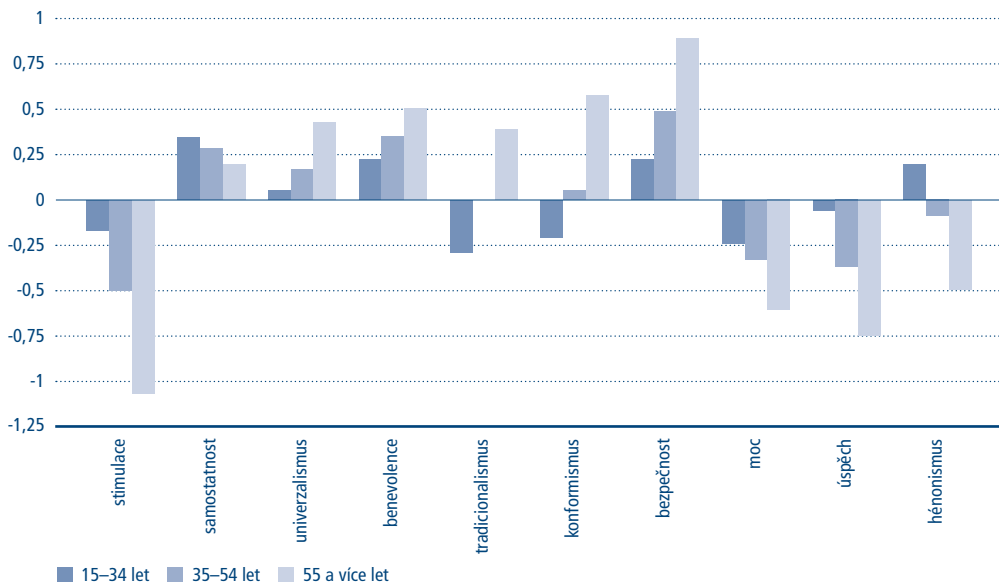
**Graph 3 » Value orientations of the Czech population**



Note: samostatnost / independence, universalismus / universalism, benevolence / benevolence, tradicionalismus / traditionalism, konformismus / conformism, bezpečnost / safety, moc / power, úspěch / success, hédonismus / hedonism, stimulační / stimulation

Source: Navrátilová, 2016, p. 93

**Graph 4 » Comparison of centralized values of averages of age categories**



Source: Navrátilová, 2016, p. 93

servatism / conservation (Navrátilová, 2016). For overview see Schwartz’s theoretical model (figure 1).

However, the researched age category 15–34 years includes both generation Z and partly generation X (Navrátilová, 2016). The author’s research confirmed that most value orientations depend on the age category of the consumer, therefore the results will be compared as a whole with the population of the Czech Republic that is consumers sufficient for this kind of reflection. The research part itself focuses on Generation Z only with the help of in-depth interviews.

According to Navrátilová (2016), the current Czech population of all ages tends to value orientations: *independence, universalism, benevolence, conformism, security*, on the contrary, less important values that are not purely characteristic of the Czech population are: *stimulation, traditionalism, power, success, hedonism* (see the following graph).

The difference of the young Czech generation up to 34 years from higher age categories is recorded in the following graphic processing. The values

from the horizontal axis upwards are significant in the given age category, the values pointing downwards are less pronounced in the tent age category of the Czech population (Navrátilová, 2016).

In the youngest age category compared to the rest of the population, the difference is thus quite visible, especially in *traditionalism, conformism and hedonism*, positive vs. negative values. Following the age of the Czech population, younger people recognize these values more intensively than older people: *stimulation, independence, power, success, hedonism* (Navrátilová, 2016).

#### 4. Tourism – context and trends before COVID-19

Traveling has become an integral part of Generation Y and Z. In times of economic prosperity, there are tendencies in the development of business in tourism and interest in tourism across generations, especially among the younger generation (Cook, Hsu, Taylor, 2018). Customers are more de-

manding on the quality of services, both in all V4 countries (Tučková, 2014) and specifically in the Czech Republic, and spa tourism and cultural events are currently growing across generations (Vystoupil, Kotíková, 2017; Navrátilová, Koudelková, 2019).

Despite the growing expenses and financial possibilities of today's tourists, it is necessary to divide tourism customers into different categories of tourists according to their budget, not only for the whole holiday, but also for spending in restaurants, transport or personal services. However, most customers do not perceive how many services can be included in tourism services and generally do not always have an accurate overview of where their free funds went (Sharpley, 2015). The author further states that consumers are often mistaken in spending a lot on goods and services, underestimating the total amount, in fact they have spent much more.

The development of today's tourism also includes good food and drink, enjoying not only nature, but also staying on weekends in large cities, which offers more and more varied services and growing quality. Young travelers are often in no hurry, they want to enjoy the destination with more peace or a busy evening, and interesting places such as restaurants, bistros, bars, cafes are the basis for them (Clancy, 2018).

Tourism businesses offering catering services currently have far more interesting and affordable targeted online promotion options, both through performance campaigns and social media. In recent years, customers have learned to drive, especially for food, and tasting menus or various culinary specialties from remote corners of the planet are currently not a surprise (Everett, 2016).

The mentioned social media help to build and maintain a long-term relationship of consumers with a given destination or tourism company, thus increasing customer value and experience in the long run, which the customer often shares with others around them other than through social networks (Sigala, Gretzel, 2018).

Venclová (2015) mentions that customers are increasingly looking for intense experiences that will make their holiday unforgettable. Travel Agent (2018) adds that Generation Z currently influences and brings trends to family travel, namely: searching for active experiences, independent planning of holidays without a travel agency, personal recommendations, social media and reviews, searching for unusual destinations, selection of visually attractive destinations and experiences that will look good when shared on social networks. Currently, the youngest Generation Alpha (children born in 2010–2025), even family travel, in terms of destination choice, influence even more than the previous Generation Z (Gauthier, 2019). The author speaks of this generation as the first true “digital natives” generation.

The young generation, both Generations Z and Y, differ from previous generations by increased interest in the environment, so the importance of eco-labels in tourism is more important for them due to the growing trend of interest in nature, climate change, etc. (Závodná, Závodný Pospíšil, 2018). In this context, the social responsibility of companies doing business in tourism is strengthened in both mentioned generations, where the representatives of the generations acknowledge and are a more loyal customer, if the company in which they leave their funds is responsibly interested and cares about the environment around them. However, it must be clear that it is not just a self-promotional marketing tool, because the younger generation is more sensitive to the perception of advertising than the generation of their parents (Pásková, Zelenka, 2018). According to the author's remark, however, this does not apply across all advertising formats; for Generation Z social networks, it is often unable to distinguish hidden advertising, especially on influencer profiles, such as Instagram.

Tourism is also very positively affected by mobile applications. Iványi and Biró-Szigeti (2019) researched the use of urban applications in smartphones to help Generation Z help them navigate

the city faster, provide faster and more personalized information, turn real-world experiences into online environments, and offer online communication local platform with tourists. The authors state that, for example, young tourists behave differently according to the size of the group that travels together and are also influenced by the specific interests and preferences of individual persons.

Generation Y, as well as Generation Z, is a very active user of mobile applications when traveling. More than 66% of Generation Y representatives use mobile applications to organize trips and the rest of the generation combines online / offline tools according to their own effectiveness. However, almost 99% of survey respondents said they see huge potential in mobile tourism applications and expect their considerable development, increase in quality and user friendliness (Werenowska, 2018).

#### 4. Research methodology

##### 4.1 Data collection

Data for this article were obtained by secondary and primary research through qualitative data collection, through structured in-depth interviews in the period March-May 2019 and March 2020 before the outbreak of the global COVID-19 pandemic. Research respondents can be considered as typical representatives of Generation Z, their age ranged from 20–24 years, at the same time they are at an age when they largely earn their own funds and travel often.

In-depth interviews were conducted with a total of 43 respondents, students of NEWTON College, studying specialization in Tourism Management, in Prague and Brno, in full-time and part-time form of study.

##### 4.2 Research design

The research focused on searches of secondary professional sources focusing mainly on Genera-

tion Z. For a closer understanding of this generation, the author also focused on approaching previous generations, especially Generation Y, to which Z is directly connected and intersects with it in a narrow period of time.

Secondary research was also used to understand the cultural values and aspects of young Czech consumers, in the context of value orientations according to Schwartz, where the author Navrátilová builds on her research prepared within the dissertation. The results of the secondary research will be connected with new primary data from in-depth interviews with representatives of Generation Z and applied according to Schwartz's concept of value orientations focused on national culture. The application of Schwartz's methodology will be used in one of the research questions.

##### 4.3 Research questions

For the research of the current Generation Z, the following research questions were set, which the author asked the respondents within the solved topics of teaching the subject Marketing of Tourism or beyond the teaching. The greatest emphasis was placed on the consumer aspect, then on the readiness of tourism companies to face the challenges and requirements of the young generation.

###### **Consumer perspective in tourism:**

- RQ<sub>1</sub>: What are the requirements / expectations of customers, based on which they evaluate the quality of tourism services (catering and accommodation facilities)?
- RQ<sub>2</sub>: What financial amount do consumers spend on tourism services (catering and accommodation facilities)?
- RQ<sub>3</sub>: How does Generation Z most often obtain information related to tourism?
- RQ<sub>4</sub>: How is Generation Z influenced by its own national culture and value orientations?



### *Perspective of the companies vs. consumers in tourism:*

RQ<sub>5</sub>: Who does set trends in tourism – tourism businesses or consumers?

### *5. Research results – Behaviour of the Czech consumer of Generation Z in tourism*

RQ<sub>1</sub>: What are the requirements / expectations of customers, based on which they evaluate the quality of tourism services (catering and accommodation facilities)?

Respondents, representatives of Generation Z as the main evaluation criteria when visiting a company in the field of **gastronomy** most often mentioned the quality of the offer (attractiveness, use of quality ingredients, home products, etc.), interior (visual side of the company, equipment, concept), offer of alternative food and drinks vegetarian, vegan, gluten-free, lactose-free), positive reviews (from acquaintances, on social networks, shared photos from friends or influencers), service (pleasant and smiling staff, professionalism of the staff).

Overall, the target group agreed that the atmosphere of the company (subjective impressions and feelings from the place), cleanliness of the company (polished dishes, tidy environment, clean toilets,), price-quality ratio, city location and availability of the company and professional presentations are important to them. company incl. processed advertisements, on the Internet and outside the digital space.

In particular, the first part of the answers speaks volumes about the needs of the current young generation. Criteria for evaluating gastronomic establishments, such as the quality of the offer, the interior, positive reviews or a personal factor in the form of pleasant service, are standard for this generation.

The results that provided an answer to the evaluation criteria of **accommodation facilities** in the analyzed target group did not bring major changes and findings compared to older generations of cus-

tomers. Generation Z as well as the previous generation assesses: exterior and interior of the company, the ratio of quality and price, entertainment in the immediate vicinity (trips, nightlife, sports activities, etc.), quality Wi-Fi connection, cleanliness of accommodation, dining options directly or near-by accommodation facility, parking lot, room equipment (hairdryer, minibar, air conditioning, etc.), positive reviews, well-designed marketing presentation and helpful staff incl. quality service.

RQ<sub>2</sub>: What financial amount do consumers spend on tourism services (catering and accommodation facilities)?

The rising price level also affects funds spent on services in catering establishments, where Generation Z representatives most often spend between CZK 90–130 and CZK 131–200 within the lunch menu, depending on the size of the city and the number of courses or drinks within the lunch menu. For the item catering, especially in large cities, the respondents acknowledged the breadth of the offer, especially in both cities of their study (Brno, Prague), and also recorded an increase in prices. For the first price category, they agreed that a full lunch meal can be purchased for the price, but the condition is essential experience or knowledge of where to eat such food. Respondents almost always fit into the second price category when consuming lunch.

The question regarding the financial demands of catering was also directed to the price category of meals, incl. one drink, spending always per person. Respondents stated that for many companies, the prices between the lunch menu and the all-day offer are significantly felt. Most often, the expected expenditure for Generation Z representatives ranges up to CZK 200 or CZK 201–350. Even higher spending was no exception, here the amount was based on the festive occasion of the evening or who paid for the spending.

The research of the price level for accommodation again shows the expected spending of the

young generation, which likes to visit places where it has someone with whom it can sleep for free. If the Z Generation goes to the accommodation facility, where it is necessary to pay for it, the price per night was very diverse, it depended mainly on the location / country, type of accommodation facility and expected service, the average / most numerous values given by respondents would therefore be meaningless.

RQ<sub>3</sub>: How does Generation Z most often obtain information related to tourism?

The majority of young people, from in-depth interviews (93%) of the respondents, responded to the fact that they search for information on their short-term and long-term journeys on the Internet. 7% of people who do not search for information online often travel spontaneously by hitchhike or their own car to places they know and do not need to find out about them.

For planning for the Z generation, the Google search engine dominates, especially Google Maps and Google Places, and in the Czech Basin, the mobile application Gastromap by Lukáš Hejčík for pre-selection of restaurants and cafés. An important part of obtaining information for Generation Z travel are also influencers, which are connected with a certain place and events that take place in the given locality and are connected with cultural entertainment (festivals, concerts, students event “Majáles”, etc.). The Airbnb shared accommodation platform and the Kiwi.com cheapest airfare search engine dominated the accommodation. No respondent uses touristic information centre to obtain important information about a city or a place of visit.

RQ<sub>4</sub>: How is Generation Z influenced by its own national culture and value orientations?

In-depth interviews with university students confirmed the results of the author’s research, which she devoted herself to in her dissertation, where

she revealed for generations under 34 her affiliation to value orientations such as: *independence, benevolence, security and hedonism*.

**Independence** of the Z generation is reflected in the courage to travel independently, to undertake adventures during trips and to choose destinations that are outside their financial budget. **Benevolence** has manifested itself in this consumer generation in the form of making friends while traveling or choosing a very good friend as a travel partner. For this generation, travel has become a manifestation of benevolence as a message of life. **Security** is a very strong value orientation for the entire Czech population, for the Czech Z Generation it can be seen, for example, in travel planning, finding alternative ways to solve cheaper transport, etc. **Hedonism** as a fundamental value orientation of the Z Generation even outside the Czech population means enjoying life for young consumers in the form of activities in tourism, whether night / student life, frequent visits to cafes, clubs, restaurants, festivals, etc.

RQ<sub>5</sub>: Who does set trends in tourism: tourism businesses or consumers?

The research question, which addressed the trendiness of new approaches in tourism, brought interesting findings. In-depth interviews with students revealed that the current approach of companies is often divided into two categories. The first of them is very accommodating to what the customer expects, for example, in a restaurant, cafe, bistro or accommodation facility and meets his high demands. In this case, the representatives of the Z generation agreed that this innovative approach by entrepreneurs in tourism is desirable and very proactive across the needs of the target group. New companies in tourism reflect these needs to the maximum, especially in large cities in the Czech Republic or European capitals.

The second approach of entrepreneur the Z Generation described as resistant or outdated, when the operators of tourism facilities stopped

10–20 years ago and are not interested in the new type and wishes of the young generation of customers. Respondents stated this mainly in the menu, the quality of services and equipment in accommodation facilities.

So where does Generation Z see the main trends that meet their needs? The **catering facilities** included, for example: alternative ways of eating (vegetarianism, veganism, raw, gluten-free, etc.), quality bistros, food trucks and others (fast and quality snacks), zero waste (trying not to produce waste or minimize it), food art and food styling (emphasis on the appearance of food, its decoration, etc.), experiential gastronomy (foreign cuisine, non-traditional dishes and food combinations), healthy lifestyle, slow food (consumption of healthy food slowly and calmly), card payment via mobile phone, tablet instead of the paper menu.

In **accommodation services**, Generation Z customers often requested: private accommodation (Airbnb, profile on social networks Instagram and Facebook), quick booking via accommodation portals (Booking.com, Trivago, etc.), accommodation as an experience (themed rooms, accommodation on a cliff, etc.), travel on your own, accommodation without children, connection with nature (accommodation without wi-fi, without light), extra luxury services, smart rooms (controlled by smartphone – room temperature, music, light etc.), travel on shorter times several times a year (low-cost tickets, for a few days).

The answer to the research question therefore involves both parties: tourism companies and consumers themselves, because their interconnection shifts the mutual demands on the supply and demand of quality services and tourism trends.

## 6. Conclusion

The article brought the perspective and trends in tourism for the consumer Generation Z, which were examined before the outbreak of the global pandemic COVID-19. Attention was also focused

on this selected consumer group from the point of view of the cultural background, i.e. the Czech national culture.

Professional searches including of own research brought knowledge to the consumer Generation Z in the areas of tourism, especially valid for catering services and accommodation facilities.

Generation Z, known for its demanding quality of services, does not differ in this case either. Thanks to their income, young people can afford to spend on services in tourism even during university studies, where we include a group of respondents. It has been shown that young people travel more often for shorter stays, look for non-traditional places of interest and are highly influenced by social networks, both for their destination and the area where they stay or eat. Representatives of Generation Z practically do not use tourist information centres like their previous Generation Y.

Representatives of the Czech Generation Z are influenced by their Czech national identity according to the methodology of Shalom Schwartz and previous research on value orientations, which this article followed up on. Specifically, these are the value orientations of independence, benevolence, security and hedonism.

The conclusion of the research was devoted to the area that creates trends in tourism. Whether these are companies operating in tourism or tourists themselves. The author found the answer that it is their cooperation, because demanding customers give companies the opportunity to prepare and offer them what they really need and appreciate during their travels, as well as regular time in restaurants, cafes, accommodation facilities, etc.

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## Consumer behaviour in tourism: Czech generation Z and it's attitude before COVID-19

### ABSTRACT

Generation Z, young people born between 1995–2010, gets it's importance into the global market in many ways, ig. customers preferences, incomes & spends, the way of living, finding job, personal development and further more tourism. This paper/case study shows trends and attitudes of these young, mostly economically active, young people of the Czech Republic in tourism before COVID-19 period when data were collected. The goal of this article is to understand their consumer behaviour before economical and pandemic situation and in the future compare their habits and spends in tourism activities. The qualitative and



→ quantitative analysis will be used in the following paper as well as expert evaluation through university students studying Global business and management – Management of tourism. The result of the paper should be beneficial for after COVID-19 period and comparison of such important customers of generation Z and their consumer behaviour in tourism business.

**KEYWORDS**

Generation Z; consumer behaviour; tourism; Czech Republic; Schwartz’s value orientation

**JEL CLASSIFICATION**

L83; Z30; Z32; Z33; M31



# Economic Impacts of Extremely Low-interest Rates

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## \* 1. Introduction

From an economic point of view, interest represents the price of money or financial capital. From the debtor's point of view, the price (costs) that the entity concerned pays for their loan; from the creditor's point of view, on the contrary, it is a monetary reward. It means that the interest rate is a percentage of the increase in the amount borrowed over time, or how many monetary units the debtor has to pay the creditor for lending a certain amount for a pre-agreed period (Mishkin 2016).

The interest amount is usually expressed in terms of the interest rate, which represents the borrowed amount (capital) increase over some time, and is, therefore, the essence of the principle of the time value of money. Furthermore, it follows that in "standard" circumstances (or in an environment of a functioning market economy and assuming the use of commodity or covered money), the interest must be positive (or exceptionally zero). However, it must never be negative, which means that no economic entity would ever lend gold or another (valuable) commodity, provided that it has to pay for it (interest).

At present, however, it has been the case that, especially in the "most economically developed

countries", extremely low-interest rates have existed for many years, and in many countries, even negative rates can be found. Moreover, it is not only their tremendous or temporary and therefore only short-term use, but a long-term permanent condition. Moreover, this fact is significant and high risk (Urbánek 2015) and is therefore also the reason why it is essential to deal with the issue in more detail.

## 2. Interest as a primary factor in the financial markets functioning

It is undeniable that practically all central banks' monetary regulation methods are closely related to the interest rates factor or interest rates significantly. Their amount has a crucial impact on developing the individual's value (mostly financial) investment instruments and commercial banks', other financial institutions' and all other economic entities' economic activities.

As long as national economies functioned without significant macroeconomic intervention and used commodity money (or later fiat gold-backed currencies), their circulation was limited, and interest rates were determined on a market basis. Moreover, as "*The Classical Theory of Interest*" →

*Rates*” states (ROSE and MARQUIS 2009), it was a “long-term equilibrium market interest rate”. Moreover, it was also significant that individual currencies’ purchasing power (or exchange rates) was determined transparently by converting commodity money or gold. Subsequently, when, after the departure from the gold standard and especially after abolishing the Bretton-wood monetary system, only completely uncovered “fiat currencies” started to be used worldwide, the situation began to change radically. Not only did central banks gradually increase their money supply, but as a result of the elimination of gold, as a single globally recognised valuation commodity, individual currencies began to trade directly with each other on foreign exchange markets, the exchange rates of individual currencies began to be manipulated. Moreover, as evidenced by “*The Loanable Funds Theory*” (ROSE and MARQUIS 2009), the intended changes in exchange rates (mainly foreign exchange rates) can be most easily achieved by purposefully setting interest rates. Therefore, interest rates can generally be considered the most critical monetary regulation tool (currently also often used in “currency wars”).

However, too high-interest rates (which would not be in line with current economic needs) occur only rarely. It is because it hampers the economy’s development and hinders economic growth. Moreover, last but not least, because the increase in interest rates devalues the vast majority of (already existing) mainly financial, but also real investment instruments (REJNUŠ 2014) and at the same time complicates the situation of over-indebted economic entities, regardless of whether they are households, companies or state (including municipal or other public institutions). It results in the fact that, as far as the purposeful increase in interest rates by central banks is concerned, this is generally only for the following reasons:

- *either in the event of too high inflation, which needs to be addressed immediately,*
- *or to strengthen the domestic currency or possibly prevent its decline.*

Moreover, these are usually only temporary measures or as short as possible due to the above-mentioned adverse effects.

However, cases of purposeful interest rate cuts are significantly more frequent than their purposeful increase. It results from low-interest rates increasing consumer spending (including indebted entities), supporting business investment, and, last but not least, facilitating the economic activities of the state, municipal and all other institutions. It implies that central banks purposefully seek to reduce interest rates, especially in the following situations:

- *in case of extremely low inflation, or imminent deflation,*
- *or if the economy, which needs to be monetarily supported, is declining,*
- *or to weaken the domestic currency, or possibly prevent its strengthening,*
- *or in case of currency wars.*

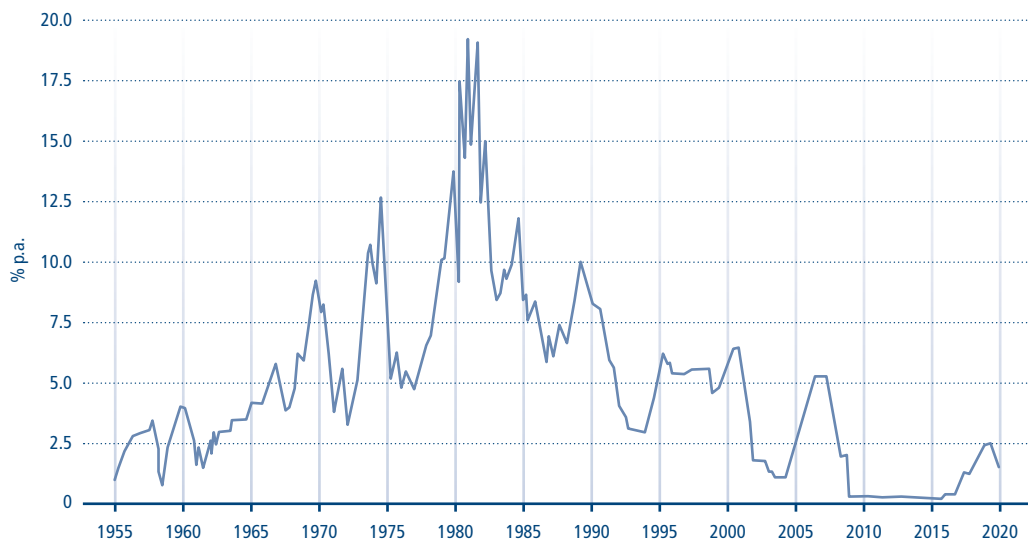
At the same time, it is clear that all these particular reasons are interrelated, which leads central banks to be generally in no hurry to end purposeful interest rate cuts instead of raising them.

### ***3. Analysis of the historical development of world interest rates and contemporary reasons leading to their extreme reduction***

Influencing the level of interest rates has always been one of the primary monetary regulation methods used by central banks to fulfil their mission, i.e., maintaining price stability and a reasonable exchange rate of domestic currencies against foreign currencies. Moreover, as evidenced by individual interest rate theories, only favourable interest rates were always considered, with negative rates generally considered impossible. However, in recent decades, central banks have been using ever lower, or even negative, interest rates, not only in exceptional cases but also in the long term. It has not been considered in the recent past, and a possible extreme reduction in interest rates close to zero, or even to negative values, was considered a

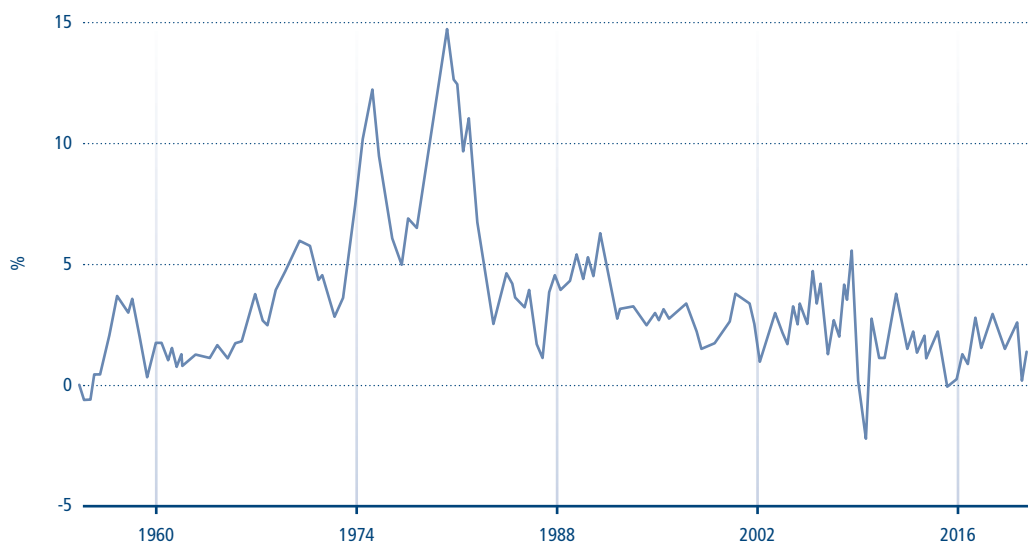


**Figure 1 » Development of the US Fed Funds Rate over the last sixty-five years [% p.a.]**



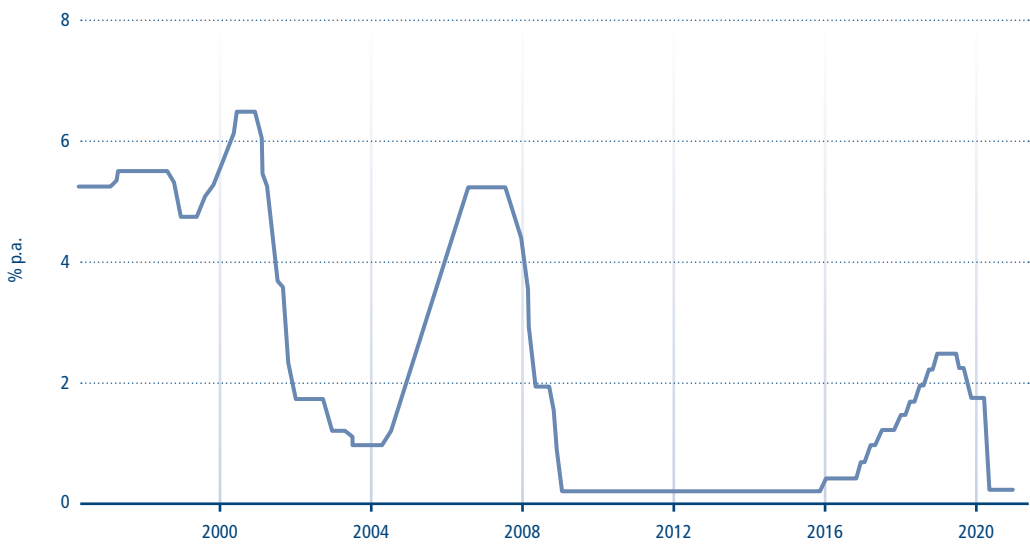
Source: Federal Reserve Bank of St. Louis (2021)

**Figure 2 » Inflation development in the US over the last sixty-five years [%]**



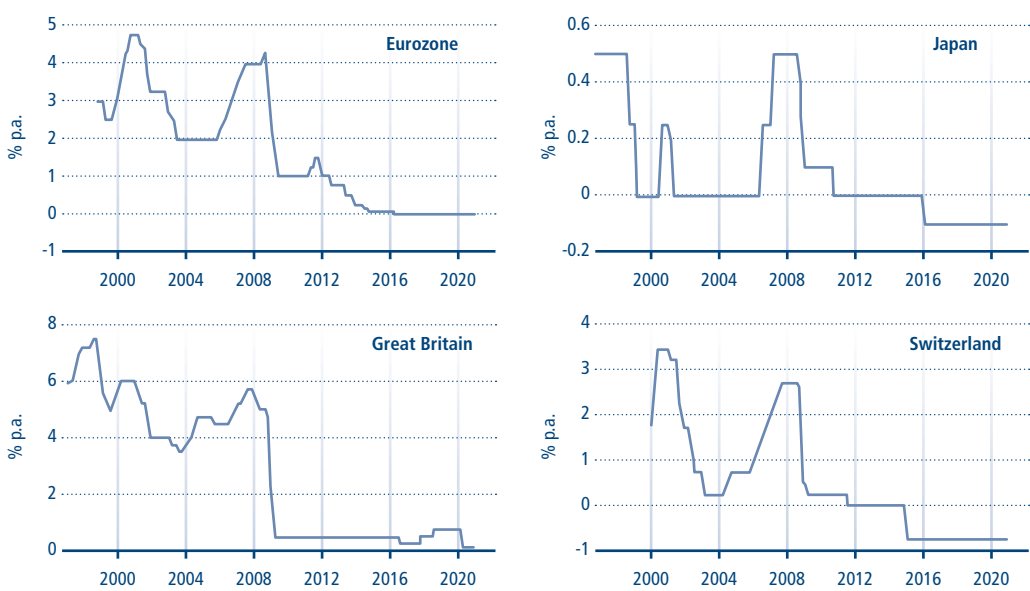
Source: Trading economics 2020

**Figure 3 » Development of the US Fed Funds Rate during the last twenty-five years [% p.a.]**



Source: Trading economics 2020

**Figure 4 » Primary interest rates development of the Eurozone, Japan, the UK and Switzerland over the last twenty-five years [% p.a.]**



Source: Trading economics 2020

high-risk crisis measure, applicable only for the time strictly necessary. However, this is no longer the case at present, and this type of monetary policy (surprisingly applied in particular to the “most economically developed countries”) is becoming more and more frequent and, above all, a long-term reality.

However, this raises a fundamental question: what level of interest rates is correct? Moreover, while it is easy to answer this question in general, the “correct” set of introductory central bank interest rates should correspond to the current economic situation. It is still essential to determine what dimensions central bank interest rates should generally fluctuate? Moreover, since the US dollar (USD) has been the dominant world currency since the end of World War II, it seems appropriate to analyse the long-term (in this case, about sixty-five years) development of the US central bank’s primary interest rate, i.e. “United States Fed Funds Rate” – see the following Figure 1:

The figure shows that, historically, US interest rates have been relatively wide-ranging, always closely linked to current inflation, as evidenced by the following Figure 2:

However, now let us approach a more detailed analysis of the development of interest rates of the world’s major central banks in the last twenty-five years, the US – see Figure 3, and then the Eurozone, Japan, Great Britain and Switzerland, see Figure 4, which have five major world currencies at disposal.

Figure 3 shows that since 2000 there have been three significant events to which the US Federal Reserve has been forced to respond by sharply lowering its interest rates, which have fallen sharply over the past twenty-five years from common values of approx. 4–6 % p.a. to recent 0.25% p.a.

Moreover, the significance of Figure 4 proves that individual national and so-called supranational economic systems are very closely interconnected with the US economy in today’s globalised world economy. Therefore all world currencies are near interconnected. Moreover, since the US dollar

(USD) is still the world’s most important currency, it is clear that the monetary policy of the Fed (The Federal Reserve System) significantly affects the monetary policy of other central banks, which also applies to the development of their (primary) interest rates. Subsequently, however, it will be necessary to analyse in more detail in the last twenty years. The three significant global declines in interest rates led to the current extreme situation in extremely low or even negative interest rates of most major central banks.

**The first significant drop in interest rates** occurred in 2001 when after about a decade of peaceful world economy development and long-term growth, especially US stock exchanges, a speculative bubble burst on the US stock exchange NASDAQ. This bubble arose from overconfidence in new technologies and a wildly exaggerated investor expectation of profits for companies in this sector. The NASDAQ-Composite Index, which had risen sharply before and even exceeded 5,000 points in March 2000, subsequently collapsed unexpectedly to below 1,500 points. Although other stock market indices have not fallen so much, it is still estimated that US stocks have lost a value (market capitalisation) of about \$ 6 trillion at this time, creating a threat of a severe economic crisis. Therefore, the US Federal Reserve (and the central banks of other economically developed countries) began to lower their interest rates sharply. The reasons for this sharp fall in stock markets can also be seen in the fact that there was an extremely rapid development of Internet trading, which allowed many new inexperienced investors to start trading on the stock exchange. It was further exacerbated by intense targeted advertising, which caused extreme optimism, which initially brought all market participants high returns on their investments. It subsequently grew into a massive shopping spree, which drove virtually all stock prices (often even almost worthless stocks) to an extraordinary level. Other primary factors were the so-called financial engineering, which initiated the emergence of new types of securitised bonds (Rejnuš 2004) and vari



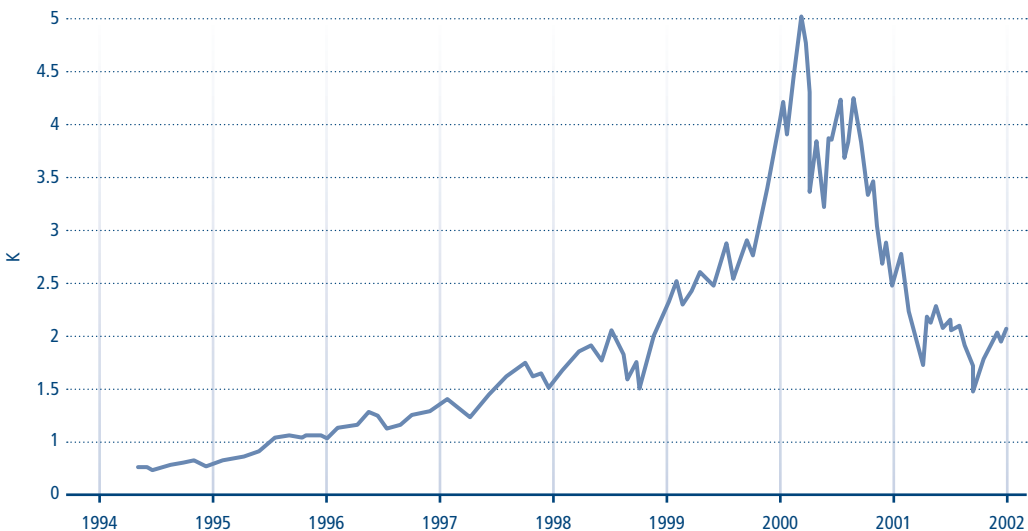
ous frauds, meaning a failure to regulate and supervise the US capital market. The formation, development and bursting of this speculative bubble are shown in the following Figure 5.

**The second significant drop in interest rates** occurred at the end of 2008 and then in 2009. The main reason was the bursting of an even more significant stock speculative bubble, which arose from the mortgage market problems. Its main reason was the disproportionately high indebtedness of American households, mainly caused by the US FED keeping very low-interest rates in the economy after a previous stock market crash for a long time and by bank management money without thoroughly testing the ability of clients to repay their loans. It mainly concerned real estate lending, where mortgages were also provided to citizens for whom it was clear in advance that the repayment of the loan would be very problematic or even impossible. It created many “subprime mortgages” in the US, which later became a significant problem in the American (and later global) econo-

my. The situation became serious when the US Federal Reserve ended its low-interest-rate policy in 2004 and raised interest rates due to existing inflationary pressures (raising the introductory interest rate from the original deficient level of 1% p.a. quickly to 5.25 % p.a. in 2006). It was subsequently (albeit with a specific time lag) reflected in the growth of commercial bank interest rates and mortgage loans’ interest rate. The interest rates on newly provided mortgages increased, as did the size of repayments paid by existing borrowers (especially those who took out mortgages with only short-term fixation). It resulted in the bursting of the real estate bubble in the summer of 2006, which manifested itself as follows:

- *The interest in purchasing family houses and, at the same time, the demand for mortgage loans has dropped dramatically.*
- *Due to the decline in family houses demand, their surplus arose, which initiated a drastic decline in prices.*
- *Economically weaker families were unable to re-*

**Figure 5 » Development of the NASDAQ-Composite stock index from 1994 to 2002**



Source: finance.yahoo.com (2021)

pay the mortgage payments (also connected with the extremely high energy and fuel prices), which sharply increased the number of households that lost their homes.

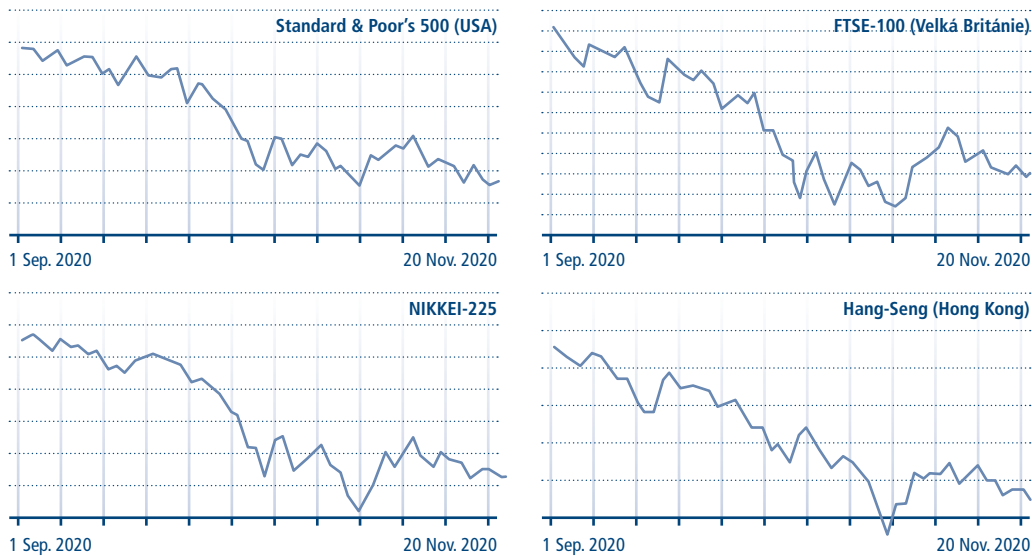
- As a result of the growing number of outstanding (or only partially repaid) mortgages, banks began to run into liquidity problems, which began to increase the riskiness of the securities issued by them.
- Mutual distrust arose between the banks, which resulted in the fact that they stopped lending to each other, which began to collapse the inter-bank market.
- Moreover, as many other (non-banking) financial institutions were involved in CDS purchases, the crisis spread throughout the financial system.

The failures described above first began in the US, but due to the interconnectedness of individual countries' financial systems and many foreign financial institutions' investments in American securities, they spread very quickly throughout the

world. Although the US Federal Reserve, later the US Government, and subsequently the central banks and governments of all crisis-stricken countries began to pursue robust expansionary monetary and fiscal policies, they failed to prevent a mortgage crisis. In the second half of 2008, stock prices began to fall very sharply on virtually all major world stock exchanges (see Figure 6 below), and many major banks began to collapse, not only American ones (Rejnuš 2014). These were (if it was decided to save them) most often nationalised, while practically all major central banks had to provide banks with the necessary liquidity due to the interbank market's malfunction. Moreover, in connection with this, the outlook for the world economy deteriorated significantly, and it began to move towards recession.

The above developments confirmed the fact that the 2001 crisis has not yet been resolved and that it has escalated into a long-term chronic illness, which was de facto confirmed in the current world economy during the coronavirus crisis,

**Figure 6 » Development of the leading stock indices of the US, GB, Japan and China from 1 September to 20 November 2008**



Source: finance.yahoo.com (2021)



**Figure 7 » Development of the US stock index S&P 500 since 2011**



Source: Trading economics 2021

which is the reason for the current third decline in world central bank interest rates during the reference period.

**The third sharp cut in central bank interest rates** over the last 20 years can be seen as the last possible effort to save the world economy from its overall collapse. If the central bank is to have room to use interest rate changes to intervene effectively to support the economy, it should reduce its interest rates by at least three percentage points. Moreover, this is also one of the most important reasons, which underlines the extreme riskiness of the current situation, as the central banks of the most influential countries in the world no longer have this option and therefore no longer have this main regulatory instrument. The US Federal Reserve exhausted it in March 2020, responding to an extremely sharp fall in stock markets (see Figure 7).

As can be seen from the above figure, although the US Federal Reserve has successfully managed this extremely sharp fall in the stock markets, it

has had virtually zero interest rates since then. Moreover, at the same time, the European Central Bank was practically unable to respond to anything other than to increase the intensity of quantitative easing and issue very questionable European bonds. Moreover, the other central banks of the “economically developed countries” face a similar issue.

#### ***4. Functional nature analysis of the mechanisms of purposeful interest rates reduction***

Several interrelated instruments are used to implement those mentioned above non-standard expansionary monetary policy based on purposeful interest rate cuts. These are mainly the following types of monetary interventions:

- 1) *Interest rates reduction announced by central banks;*
- 2) *Quantitative easing;*
- 3) *Extreme “money printing”.*

Simultaneously, it is demonstrable that all these individual sub-instruments work in the same direction and reduce the market interest rate in the relevant financial system and thus in the given economy.

#### *4.1 Reduction of primary interest rates announced by central banks*

It is a purposeful reduction of interest rates by the central banks themselves through those rates that they announce themselves. At present, however, it is no longer a matter of “standard” monetary regulation but a purposeful “extreme” compression of interest rates to zero or even to negative values. Moreover, since commercial banks and subsequently, other economic agents must respond to changes in central bank interest rates, and since all interest rates are interrelated, interest rates must naturally fall throughout the economy.

#### *4.2 Quantitative Easing*

Quantitative easing is a policy of financing governments through central banks. However, since most states’ laws do not allow direct financing of governments by central banks, this is circumvented in this way. The government will have the parliament approve a new government issue (usually long-term) bonds, which will be bought primarily by commercial banks, then resold to the central bank. It will pay them to the commercial banks (thus de facto return their money to them) and include the purchased bonds in its balance sheet. It will result in “indirect” government financing by the central bank (Finmag 2016).

This instrument is further specified in that the government saves interest, which is formally paid until the maturity of the given bonds to the central bank, which then transfers it back to the state budget; on the other hand, the government’s money is pro-inflationary. Moreover, this is the difference from the classic sale of government-issued bonds to external investors, who keep the interest,

but because they buy the bonds for their own money, no new money enters the system and therefore does not cause inflation. However, the risk is that if the owners of government bonds decided (e.g. as a result of an event) to sell these bonds, and there was not enough interest in the bond market, their prices would fall, which would increase their yield. So, if the central bank did not start buying them in time and sufficiently, the market interest rate would rise).

However, in connection with the implementation of “*quantitative easing*”, it is necessary to state other essential facts. First, it does not have to repurchase government bonds and bank, municipal or corporate bonds. Moreover, it does not have to be just classic bonds and various types of structured bonds. Recently, it has also been found that some central banks even buy (either directly or indirectly) shares, thereby partially affecting trading on stock exchanges (this is “*quantitative easing* in a broader sense”). Second, it is also essential that if the interest rate on newly issued government bonds fell to negative values, the reasons for implementing a policy of quantitative easing would be meaningless. Then logically, the scope of use of this method of monetary regulation is limited.

#### *4.3 Extreme “money printing”*

In this case, of course, it is not just about the traditional printing of cash, but above all, about the creation of deposit money. Central and commercial banks create it (although they are limited by the currently set rules of banking regulation). Since increasing the supply of money reduces its price (i.e. the interest), it is clear that the intensity of “printing” money is another important factor in reducing market interest rates.

### *5. Adverse effects of extremely low or negative interest rates*

Although it is often “purposefully” stated that extremely low or even negative interest rates are ben- →

**Table 1 » The debt ratio of countries with a GDP of over USD 500 billion whose debt was higher than 60% of their GDP in 2019 (data from 2019 and outlook for 2020)**

Countries		Debt/GDP		Countries		Debt/GDP		
Year	2019	2020*	Year	2019	2020*	Year	2019	2020*
Japan	238 %	266 %	Pakistan	86 %	87 %			
Italy	135 %	162 %	United Kingdom	85 %	108 %			
Singapore	130 %	131 %	(Euro Area)	78 %	100 %			
United States	109 %	131 %	Brazil	90 %	101 %			
Belgium	99 %	118 %	Austria	70 %	85 %			
France	98 %	119 %	India	72 %	89 %			
Spain	96 %	123 %	South Africa	62 %	79 %			
Egypt	84 %	87 %	Israel	60 %	77 %			
Argentina	90 %	97 %	Germany	60 %	73 %			
Canada	89 %	115 %						

Source: KNOEMA, TRADING ECONOMICS \* preliminary assumption

eficial for the economy, it is not valid. They can only be beneficial in tremendous and only short-term-crisis use when they can prevent extreme economic losses. However, with their more extended use, they have a very adverse effect, with several interrelated consequences, which are mainly:

- a) **Suppression of market allocation of available cash resources to the most profitable investment projects:** The point is that if companies do not have to pay interest on borrowed funds, then by not bearing interest costs, they often invest in insufficiently profitable investment projects that can quickly become loss-making, which may subsequently affect their creditors. Moreover, it is not just about companies but also about all economic entities, including the state, municipal institutions or non-profit organisations, which can easily promote economically disadvantageous projects, and therefore inappropriately spend state or public money.
- b) **Suppression of interest in saving or investing in debt instruments:** If the savings do not bear the appropriate interest, the savers will stop depositing their money in commercial banks' ac-

counts and not even invest it in bonds. Instead, they will start buying different types of alternative (financial and real) investment assets.

- c) **The emergence of speculative bubbles in stock markets:** Low or even negative interest rates (accompanied by a surplus of newly “printed” money) force investors to start investing primarily in stocks in financial markets. However, this causes a significant rise in their prices, which leads to the creation of risky speculative bubbles, the possible bursting of which could cause severe economic shocks or even lead to an economic crisis in the future. An important economic factor supporting interest in shares (but also in various types of real investment instruments) is that investors replace low or even negative interest rates (or current yields commonly arising from debt instruments) with expected growth in market prices (or capital gains). Undoubtedly, a fascinating fact is that the central banks themselves often buy shares or physical gold and silver.
- d) **Promoting further indebtedness of all types of economic entities:** The point is that both households and companies or state administration



bodies cease to deal with the obligation to repay their debts in the event of extremely low or even negative interest rates. They only roll, so they settle old debts with new loans and payout maturing bonds from money obtained from newly issued bonds. It, in turn, causes:

- **Over-indebtedness of households:** Many households are “lured” by the fact that low-interest “debts do not hurt” and thus continue to borrow carefree.
- **Reducing regular bankruptcies and the emergence of “zombie” companies:** Low-interest costs allow to survive even “bad” companies that would typically go bankrupt under normal conditions. It increases the number of highly indebted “zombie companies”, whose bankruptcy will occur later.

Moreover, as their over-indebtedness increases even more, it often has more significant consequences for their creditors.

- **Increasing the indebtedness of the vast majority of governments:** As a result of gradually reduced interest rates, national governments stop striving for balanced state budgets. It is because gradually declining rates allow them to go into debt more without any problems, and their policy focuses on their re-election rather than on the rational management of the economy. (The indebtedness level of the world’s most influential countries to GDP at the end of 2019 and the preliminary outlook for 2020 are documented in Table 1 below).

The table shows that the expected data for

**Table 2 » GDP Annual Growth Rate of the most influential world economies**

Countries	GDP 2019 [trillion USD]	GDP Annual Growth Rate [%]							
		I/ 2019	II/ 2019	III/ 2019	IV/ 2019	I/ 2020	II/ 2020	III/ 2020	IV/ 2020
United States	21428	2,3	2,0	2,1	2,3	0,3	-9,0	-2,8	-2,5
China	14343	6,4	6,2	6,0	6,0	-6,8	3,2	4,9	6,5
(Euro Area)	13336	1,5	1,3	1,4	1,0	-3,2	-14,7	-4,3	-5,0
Japan	5082	0,8	0,9	1,7	-0,7	-1,8	-10,2	-5,8	-1,2
Germany	3846	1,1	0,1	0,7	0,4	-2,1	-11,3	-4,0	-3,9
India	2875	5,7	5,4	4,6	3,3	4,0	-24,4	-7,3	0,4
United Kingdom	2827	1,7	1,5	1,4	1,2	-2,2	-21,0	-8,7	-7,8
France	2716	1,8	1,8	1,6	0,8	-5,7	-18,9	-3,9	-5,0
Italy	2001	0,4	0,4	0,5	0,1	-5,6	-18,0	-5,1	-6,6
Brazil	1840	1,2	1,5	1,3	1,6	-0,3	-10,9	-3,9	-1,1
Canada	1736	1,7	2,1	1,9	1,7	-0,3	-12,5	-5,2	-3,2
Russia	1700	0,4	1,1	1,5	2,1	1,6	-8,0	-3,4	-3,1
South Korea	1642	1,8	2,1	2,0	2,3	1,4	-2,7	-1,3	-1,4
Spain	1394	2,2	2,1	1,8	1,7	-4,2	-21,6	-9,0	-9,1
Australia	1393	1,9	1,7	2,0	2,2	1,4	-6,3	-3,7	-1,1
Mexico	1200	1,4	-0,9	0,0	-0,6	-1,4	-18,7	-8,6	-4,5
Indonesia	1119	5,1	5,1	5,0	5,0	3,0	-5,3	-3,5	-2,1

Source: Trading economics 2021



2020 will be significantly worse, given the current global pandemic. It is also shown in the following Table No. 2, documenting the very problematic current GDP development of the sixteen most influential economies globally (as well as the Euro area), whose annual GDP in 2019 exceeded a trillion USD.

e) **Disabling the business cycle mechanism functioning:**

Extremely low or even negative interest rates represent a significant interference with the functioning of the business cycle mechanism, enabling the long-term survival of overly indebted economic entities that should have gone bankrupt long ago. Moreover, if the economy cannot cleanse itself naturally of insolvent entities, it means a dysfunction of the market principle and a gradual transition to its political management.

f) **Adverse effects on most financial institutions activities:**

Extremely low or even negative interest rates also have adverse effects on the activities of most financial institutions (Rejnuš, 2016)

- **Commercial banks:** Under normal circumstances, commercial banks in the banking business borrow the necessary funds relatively cheaply from central banks and then lend them to their clients at a higher interest rate, from which they generate a profit. However, if interest rates are extremely low, they have to lend money to their clients very cheaply. At the same time, older, still sufficiently interest-bearing bonds gradually decrease in their portfolios, which harms their economic activities. Moreover, if the central bank's deposit interest rates are negative, then there is also a negative interest rate on their bank reserves. The significant problem is that the transmission of negative rates to retail clients is practically impossible. However, it implies that in these situations, commercial banks have to achieve their revenues differently: primarily through higher prices of services provided, the introduction of var-

ious fees and, last but not least, riskier banking transactions.

- **Pension companies, pension funds:** These financial institutions' mission is to collect citizens' savings and subsequent investment in the least risky investment instruments for their additional appreciation and later payment of old-age pensions. Moreover, since government bonds are generally considered the safest financial investment instruments, they are also the most represented in pension fund portfolios. If the interest rate on government bonds falls sharply, these institutions will be severely affected. If they buy them in times of extremely low or even negative interest rates, the resulting income will not even cover inflation, so that citizens' pension savings will begin to lose their real value. Therefore, even in this case, if extremely low or even negative interest rates last longer, the yields on bonds held by pension funds will decrease due to the end of the life of older, higher-interest government bonds. It is a severe problem that can only be solved by switching (if the applicable laws allow it) to another investment type (e.g. in shares). However, this is often very risky because, it can completely paralyse the entire pension sector if the stock markets collapse.
- **Insurance and reinsurance companies:** Insurance institutions are de facto similar to pension funds. It is because they also keep their money in government bonds, which are an additional income source. Moreover, in extremely low or even negative interest rates, they lose this income, which they must pass on to their clients.
- **Bond funds:** Investment, mutual funds have a similar problem, which must naturally lead to their liquidation in the longer term. It means that no investors will be willing to invest in loss-making bonds.
- **Other types of financial institutions:** As for

the impacts on other financial institutions, they cannot be precisely defined, as their activities tend to be diverse, and some negative economic impacts may be of short-term benefit to some of them. However, even in these cases, it can be stated that any uncertainty regarding future developments in the financial markets hurts the vast majority of financial institutions.

**g) Changes in the financial investment assets and liabilities features that prevent their correct valuation:**

Negative interest rates are also characterised by the fact that they can change the features of several investment assets and liabilities. Under normal circumstances, investment assets should generate returns for their owners, while liabilities should represent individual costs. However, if interest rates become negative, the situation will change radically, as some profit-generating assets may begin to be repaid by their owners, and paradoxically, some liabilities may begin to be revenue-generating.

**h) Increasing inequality in income and asset size:**

Negative interest rates benefit mainly large companies whose interest costs have fallen and especially hedge funds, which can professionally use special investment techniques, including leverage. Moreover, since hedge fund shareholders can de facto only be high creditworthy clients, it is clear that there is a concentration of ownership of their assets (J. P. Morgan 2019; Bloomberg 2020).

**i) Disabling of effective monetary regulation:**

The point is that economies with the vast majority of overly indebted economic entities are practically non-monetary unregulated, as any possible tightening of monetary policy (or increase in interest rates) will cause significant financial problems for all indebted entities. Moreover, if they are households or companies (which cannot be indebted indefinitely as a state), this leads to fiscal imbalances and a gradual increase in state debt.

**j) Creating the conditions for currency wars:** As evidenced, for example, by “*The Loanable Funds Theory*”, the purposeful reduction of interest rates weakens domestic currencies. Since the individual currencies are no longer tied to gold, each central bank must take care of its domestic currency itself, thus creating the conditions for conducting currency wars (Faber 2015).

**k) Creating the conditions for the emergence of hyperinflation:**

An influx of newly created money accompanies all ways of implementing strongly expansionary fiscal or monetary policies. It is associated with the risk of rising inflation, which may grow into hyperinflation in the event of long-term expansionary and non-standard macroeconomic policies. Fischer’s shift equation best illustrates this fact:

$$M \cdot V = P \cdot T$$

where: M - the amount of money in circulation;  
 V - the speed of circulation (turnover) of money;  
 P - price level (price index);  
 T - the physical volume of transactions

It is a historically significant and currently valid equation of Irving Fischer (Fischer 1922) related to the “*Quantity Theory of Money*”, according to which the money supply directly affects the price level. Its economic significance lies in the fact that it represents a basic macroeconomic model that defines a directly proportional relationship between changes in the growth of the amount of money circulating in the economy and the growth of prices or inflation rate.

If we start from this equation, it is clear that equilibrium in the economy exists only if the amount of money in circulation multiplied by the rate of money turnover is equal to the price level multiplied by the physical volume of transactions or the performance of the real economy. It means that if there is an increase in the amount of money in circulation due to real economic growth, then



the investment rate should not increase, as the higher performance of the economy also requires its proper management by increased money circulation. The quantitative theory of money claims that the supply of money directly affects the price level, i.e., there is a direct relationship between the growth of the amount of money in the (real) economy and the growth of prices. There is a direct relationship between the growth of the amount of money in the (real) economy and the prices' growth. This fact has been proven in the "long term", which quite logically corresponds to the fact that: *"if the powerful instruments of expansionary macroeconomic policy of governments and central banks are used only in the short term, they can save the troubled economy. However, if they become long-term instruments, whether fiscal or monetary expansion, they will lead to hyperinflation in the future."*

If the amount of money in the economy increases without corresponding economic growth at the same time, the following extreme situations may arise:

- 1) either this money gets into the real economy,
- 2) or do not enter the real economy (at least temporarily).

**Ad 1)** If the newly created money gets into the real economy (e.g. in the form of government investment expenditures or state social support, or otherwise), demand for final consumption products will increase. On the one hand, this will revive the economy (in this case, at the expense of an increase in the state debt), but by spending on goods and services that are quantitatively limited, it must naturally have a pro-inflation effect. What is essential in this case is that: "money can be" printed "at any time (and at almost no cost), but the goods must be produced"; and if new money added to circulation increases demand in the markets for goods and services, then by keeping their supply the same at the moment, the price level must naturally increase.

**Ad 2)** However, if the newly created money is obtained, for example, by highly creditworthy in-

dividuals who subsequently invest it in financial investment instruments (especially in shares and bonds), then this newly created money will increase their market prices (exchange rates). However, they do not enter the real economy temporarily (and in the above Fischer equation, they cause a slowdown in the circulation of money). In this case, it is also essential that "if the securities are bought or sold by their owner on the secondary market, then only a financial transaction took place in which only the owner changed with no effect on the real economy."

It should draw attention to the fact that in case of investment other than financial instruments, the situation would be different, as, e.g. real estate, precious metals, diamonds, or other types of real assets must be produced (built, extracted, etc.) and can therefore be considered as goods arising from production. It means that their purchase supports their further production or the real economy (new construction of real estate or mining of precious metals, diamonds, etc.). For these reasons, it is necessary to separate them from financial investment instruments.

## 6. Conclusions

A well-functioning economy is characterised by balanced, relatively stable and "positive" interest rates. It operates primarily on a market basis and does not require significant macroeconomic (neither monetary nor fiscal) interventions. Therefore, the level of the current interest rate is usually close to its equilibrium state. In the case of troubled economies, however, it is different. If they were not monetary or fiscally supported, they would be in danger of an economic crisis.

Moreover, as already mentioned, monetary and fiscal support to the economy is always linked to lowering the interest rates. It implies that extremely low or even negative interest rates identify that the economy faces severe trouble, and the central bank has already exhausted all its standard expansionary monetary policy options and adopted non-

**Table 3 » Current and expected future world economic development according to the IMF**

Countries	The year 2019	Growth projections	
		The year 2020	The year 2021
World output [%]	2.8	-3.5	5.5
United States	2.2	-3.4	5.1
China	61	2.3	8.1
(Euro Area)	1.3	-7.2	4.2
Japan	0.7	-5.1	3.1
Germany	0.6	-5.4	3.5
India	4.2	-8.0	11.5
United Kingdom	1.5	-10.0	4.5
France	1.5	-9.0	5.5
Italy	0.3	-9.2	3.0
Brazil	1.1	-4.5	3.6
Canada	1.7	-5.5	3.6
Russia	1.3	-3.6	3.0
Spain	2.0	-11.1	5.9
Mexico	-0.3	-8.5	4.3

Source: KNOEMA; IMF, World Economic Outlook Update, January 2021

standard ways of supporting it.

If a country's economic situation deteriorated further, its central bank would have to purposefully reduce its interest rates on a purposeful basis, regardless of what negative values it has already reached. It is very problematic, especially in international monetary unions with a single common currency. At present, the "Eurozone" in particular can be cited as a completely deterrent, where the European Central Bank (ECB) has to deal with significant discrepancies between its interest rates and the current needs of individual national economies. Moreover, not according to the real economic needs of individual Member States, but through a compromise. Thus, it has so far managed to save individual troubled states and thus the "eurozone" project, but only at the expense of other, more prosperous economies (Karpíš 2015).

Negative interest rates do not endanger debtors

as much as those economic entities that have money (savings) or financial investment assets. It means that they primarily endanger responsible economic operators, regardless of whether they are legal or natural persons. Moreover, they, of course, defend themselves against this through gradually increasing volumes of cash held, despite the inflation losses they have suffered.

It raises a very fundamental question, how can this catastrophic development of the economy finally end? Of course, only catastrophically. The last possible measure of the ruling elites is implementing monetary reform, eliminating debts and savings and the abolition of cash by a directive transition to deposit money (Vlachynský 2017). That would mean a loss of civil liberty for human society and the end of democracy.

The analysis also shows that human society's global debt relief using standard fiscal and primar-



ily monetary macroeconomic instruments is practically impossible. The global indebtedness of states, corporations and today also households is reaching such a level that it can no longer be returned to normal with standard macroeconomic regulation tools (Urbánek 2015), while the current coronavirus pandemic will significantly accelerate this problem. According to the *Institute of International Finance* (IIF 2020), global debt will rise to a record \$ 277 trillion due to coronavirus, so raising interest rates would only accelerate the global economic collapse, which, as shown in Table No. 3 below, taken from the IMF in the future can probably be expected.

Therefore, based on these facts, it is to be feared that the moment will soon come when standard and historically proven macroeconomic, regulatory instruments will fail, and new instruments will have to be used. It is even beginning to be proclaimed by the “Modern Monetary Theory (MMT)”, according to which central banks should be obliged to supply governments with a virtually unlimited amount of money, with the only restriction being the “full employment”. That is an attempt to destabilise the world economy (Issing 2020), as it would cause uncontrolled hyperinflation and end today’s way of managing the world economy and destroying the current social order of human society.

Why did this current state occur at all? Economics is a social science that has evolved from philosophy. Therefore it is clear that the main reason human society’s current functioning is endangered is primarily the human, i.e. the decline of human morality. Above all, it is an extreme opening of the scissors between the “rich and the poor”. This fundamental factor has already grown into a significant global development trend, characterised as ever-increasing differences between the sizes of individual people’s income (and consequently the value of their property) and the related struggle for power. In particular, this is reflected in the growing number of “millionaires” or even “billionaires”

who often impose special privileges on human society. It would not be a problem if differences in individuals’ incomes were based solely on their merits and benefits for society, but in reality, this is often done through covert violations of the law and corruption. In some countries, this may even be related to the abuse of state or economic functions, even without possible sanctions (e.g. parliamentary immunity). The worst thing about it is that all such “tunnelled” values are then transferred to individual states’ debts, which means on the shoulders of “ordinary” taxpayers.

There are many other reasons too. First of all, it is the growth of bureaucracy – which is typical, especially for the European Union (Rejnuš 2019). Furthermore, the increase in tensions between individual economic groupings and individual states, which so far manifests itself primarily in the conduct of increasingly intense currency wars, and rising arms costs. Then, the unsatisfactory or even completely catastrophic solution to world migration cannot be neglected, including the rapid growth of visible and hidden (secondary) “migration costs”, as well as many other catastrophic consequences associated with migration. Moreover, it is impossible to omit the increasingly significant purposeful abuse of the “environmental policy”, which serves to maximise multinational conglomerates’ profits rather than to protect the ecology. It strengthens politicians power and their money-backed policies, or entire, often purposefully established political parties – no matter what damage it will do to humanity in the future.

How will it all end? Very bad, of course, which is in line with Marc Faber’s (2015) statement that: “The collapse of the current system is inevitable.”

**Acknowledgement**

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## Economic Impacts of Extremely Low-interest Rates

### ABSTRACT

*The article deals with the current development of the world financial system and the world economy connected with the long-term use of non-standard monetary regulation instruments, exceptionally extremely low or even negative interest rates. The first part of the paper explains the function of interest rates and their importance in a market economy and the reasons leading to the purposeful influence by the central banks of individual states or supranational economic communities. It is followed by an analysis of the historical development of interest rates and contemporary reasons leading to their current extreme reduction and the functional nature of the particular regulatory methods used. The next part analyses the consequences of extremely low or even negative interest rates and their impact on individual economic entities and the economy as a whole. Finally, the most significant risks of long-term use of negative interest rates are defined, including the tools used to reduce them purposefully for the future of the global world economy and, consequently, concerning human society's future development as a whole.*

### KEYWORDS

*Monetary regulation; central bank; interest rates; quantitative easing; the world economy*

### JEL CLASSIFICATION

*E58; F3; G18; O11*





# Why Billionaires want to go to space?

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## \* 1. Introduction

Globalization and substantial economic, social and technological developments which were dominant in the last century transformed the world and created new challenges and new possibilities. On one front, new markets were created and their service quickly became a natural part of everyday life. Social media, new ways of communication both for pleasure and for commercial use, and other gadgets and applications are a great example of this transformation. There is also another business sector, which was only possible through a significant technological development – the space economy. This business sector showed an immense growth, which was initiated by a political competition, but continued for economic soundness as there was also a deepening role of the private capital. Space is a difficult environment but offers multiple applications and benefits, which were only boosted with digitalization, scientific discoveries or new technological development.

Currently this business sector has many segments in fields of telecommunication, network, navigation, science observation and such. It uses a robust apparatus of the “Internet of things” in space. From a tiny nanosatellites, mega-constellations, up to planned commercial human space-flights. Space industry was initially a domain pri-

marily for national space agencies, however numerous applications, technological transfers and certain degree of pragmatism lead to increasing government use of commercial services through procurements and co-funded mechanism. This opened doors for private companies and technological start-ups.

Main aim of this paper is to provide the latest characteristics of the space economy with focus on private business entities. The structure of the paper is as follows. Second chapter will introduce and describe the space economy. Third chapter offers a closer look on a specific branch of space launch providers, where you can see impacts of the world’s richest individuals and their companies. Fourth chapter will provide insight in future programs and challenges for private companies. Fifth chapter will conclude this paper.

## 2. Space Economy

Space economy as defined by OECD (2020a) consists of “*a full range of activities and the use of resources that create value and benefits to human beings in the course of exploring, researching, understanding, managing, and utilising space.*” This definition includes all aspects of space economy. To put into perspective, how large the space economy really is, we can check the revenues for global →

space industry. This can be seen in the figure 1. Global space industry achieved revenues worth of \$366 billion in 2019 according to Satellite industry association (2020). This sum corresponds to GDP of Singapore in the same year based on data from the World Bank. We can distinguish this overall revenue to two main parts. First is the satellite industry, which had revenues of \$271 billion, and non-satellite industry, which consists of government space budgets and commercial human spaceflight.

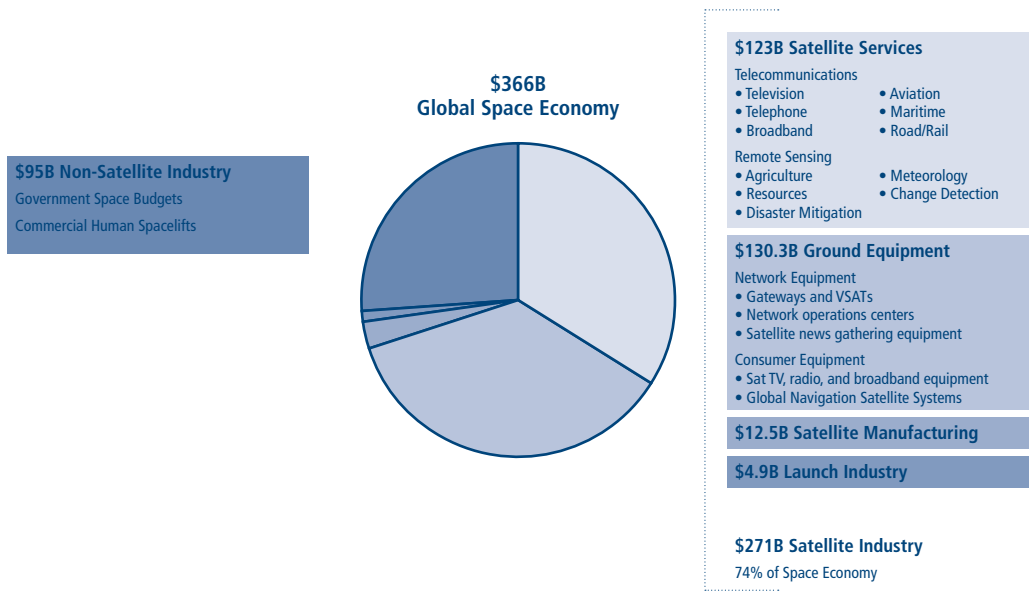
Satellite industry is a dominant branch and is likely to increase its revenues in following years with new constellation projects such as global satellite internet service and others. Morgan Stanley (2020) estimates total space economy revenues to exceed \$1 trillion in 2040 due to increasing significance of global internet services and worldwide broadband coverage access.

Another perspective to observe and measure impacts of global space economy is an absolute number of satellites currently active and orbiting

our planet. Up-to-date number is 3372 active satellite according to UCS Satellite Database (2021). However, this number can soar in the following years. The dynamics of space industry is rather quick as new launch providers are now accessible for broader companies/projects. According to Statista data, number of active satellites crossed 1000 threshold in year 2010 while in year 2018, number of active satellites was over 2000. This pace may even quicken as estimates provided by Ryan-Mosley at al. (2019) suggest cadence of launching satellites may exceed one thousand every year.

Reason for this is on one hand exponential growth of very small satellites, which we can refer to as cubesats, and multiple planned mega-constellations of small satellites in low-earth orbit. The former is caused by option of a so-called piggyback payload, which optimize payload capability and cost-effectiveness of launchers as big satellite is a primary payload with many cubesats attached as a secondary payload. This system offers price availa-

**Figure 1 » Global space economy revenues worldwide in 2019**



Source: Satellite industry association (2020)

**Table 1 » Notable billionaires' space investment**

Billionaire	Company	Space investment	Activity
Bill Gates	Microsoft	Kymeta	Data
Jeff Bezos	Amazon	Blue Origin	Launch
Larry Page	Google	Planetary Resources	Mining Resources
Paul Allen †	Microsoft	Stratolaunch	Launch
Elon Musk	Tesla	SpaceX	Launch/Data
Richard Branson	Virgin Group	Virgin Galactic	Launch
Lynn Schusterman	Samson Investment	Spacell	Launch
Mark Zuckerberg	Facebook	SETI	Data

Source: Bryce Space and Technology (2017)

bility for broader audience of satellite manufacturers and providers.

Another perspective to measure the scale of satellite industry is to see number of countries with a satellite in orbit. Based on OECD data, in 1994 less than 30 countries had the privilege of putting their satellite into orbit (launched via a third party or independently). This gradually rose up to 50 countries with satellite in space in 2007. Currently over 80 countries put their satellite into earth orbit. This proves increasing role of satellite industry and higher international involvement in space activities.

To compare development in space sector, OECD (2016) distinguishes five long-term cycles. We are currently in the final fifth cycle, which can be summarize with growing use of satellite infrastructure outputs and data in mass-market products, with new generation of space stations, extensive mapping of our solar system, robotic missions and new space activities.

Boom in the space economy can be seen also from investments in commercial space ventures. The main sources of funding for new space companies are usually the founder's own funds, with investments from family circles, bank loans, equity capital (including from business angels and venture capitalists) and government support. Year 2019 was a record year from this perspective so far.

Start-up space ventures were able to collect over \$5.7 billion in investment financing, from which majority was in form of venture capital according to Bryce Space and Technology (2020). Largest portion of these investment were allocated to two companies, which are also mentioned in the next chapter, SpaceX and Blue Origin with combined investment of \$1.9 billion.

Investment from billionaires are not rare and increasing trend can be seen. OECD (2019) presented review stating that most of the recent space companies are privately funded (such as SpaceX, Blue Origin) and not publicly traded. Their capitalization is considered important in view of their ongoing large projects (launchers, space exploration modules) and commercial contracts with governments. Table 1 presents chosen mentions of space investment made by billionaires. You can see examples of the companies founded by the billionaire in first column, such as Blue Origin, SpaceX and Virgin Galactic. Others provided significant investment to targeted company in space industries.

Space industry thus present a dynamic environment, however it is highly capital demanding. This may prove an obstacle for many start-ups in this business sector. As mentioned, many current space-oriented companies had to be backed by immense initial capital from their founder.

Space start-ups also require periodical boosts in →

investment as their business processes can anticipate returns with a significant delay. Hence, these investment in space start-ups are for the long term rather than imminent profit. According to Bryce Space and Technology report (2020) only a small fraction of space start-ups financed since 2015 are drawing any revenue on their business operations. Even smaller fractions reached profitability.

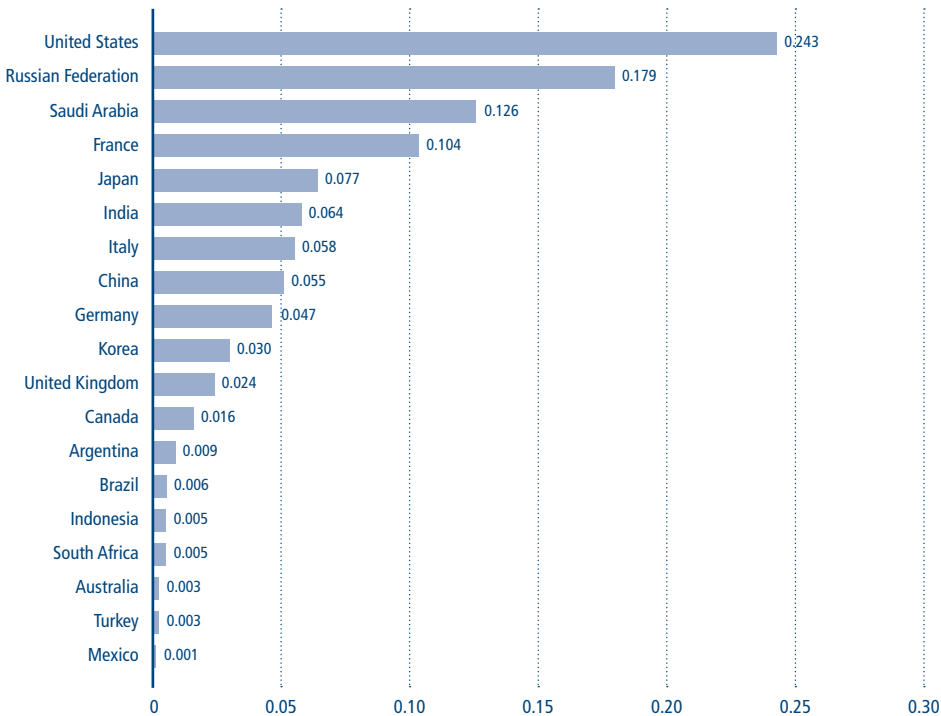
Governments play important role for space industry as they are both source of direct funding and provider of approvals building confidence among private investors. Governments invest in their space capabilities for numerous reasons, such as governance objectives, to support national security and scientific development. Lucrative contracts issued by government can provide essential source of income for many companies to overcome turbulent period of uncertain gains and re-

turns. In return, start-up space industry is becoming an important source of innovation and new technology for the government, which otherwise would be costly and burden with lack of flexibility and higher degree of bureaucracy.

There are many indicators to help measure intensity of government space activity and funding. One of the most useful can be seen in figure 2, which shows estimates of government space budget.

Leading positions in space budget share belong to United States followed by Russian Federation. This should come as no surprise for anyone as both countries had historically the biggest involvement in space activities mostly in time of space race. There are also other countries with notable shares of space budget to their respective GDP such as Saudi Arabia, Japan, India, China and Eu-

**Figure 2 » Government space budget estimates as a share of GDP in 2019 (%)**



Source: OECD (2020a)

European countries. Presently it seems that countries with space programmes are no longer part of exclusive and prestigious club as a much wider group of developed and even developing countries now follows with diverse space capabilities. However, as you can see, the share for all countries are in fractions of one percent. OECD report (2019) note that government investment in space research and development are relatively smaller compared to other government-funded investment in areas covering areas of health, energetics or agriculture.

As all business sector, the space economy was also affected by crisis caused with Covid-19 outbreak. On one hand, space agencies and manufactures have contributed to quick response efforts during this crisis. Help to produce medical equipment, provide storage and data processing capabilities for medical research, modelling and other study material. Space industry also provided high-speed connectivity to isolated and remote locations.

On the other hand, the Covid crisis showed vulnerabilities in this sector as well. Nature of space industry as a range of activities and manufacturing processes in cutting-edge low volume processes can be sensitive to significant delays and decline of government and customer demand. There is distinguish impact of this crisis based on company size. For large space manufacture companies, the Covid crisis caused slowdown in delivery and deployment of various missions. Government restrictions, social distancing measures and delays in supply chain were main contributors to this situation which caused only limited decline in revenues. Companies with government contracts even have benefits in form of administrative and financial support from national space agencies.

Stronger negative impact fell on smaller and younger space suppliers and manufactures. As they are more dependent on contracts from larger firms and must now wait for critical payments. Situation for these smaller players can even deepen with continuous delays and uncertain revenues as presented in OECD study (2020b).

The space economy presents a dynamic business sector with certain level of prestige and growth possibilities. It focus on the latest technological advancement and development. However, same as other sectors, it also had its challenges. Next chapter focuses on challenges in one section of the space economy – launch industry.

### 3. *Launch Industry*

The launch industry is the smallest sector of the space economy in terms of revenue, as you can see in figure 1. But it is also critical, as without launch industry, there would be no possibility to get payloads into space. Historically, launch industry was domain for national space agencies run by government. There was a strong collaboration with either bureaus or commercial companies, but ultimately all design plans for rocketry were explicitly for the government purposes only. With era of telecommunication satellites, commercial demand for launch capabilities began to spike. However, all launch vehicles used to cover this demand were developed originally for military programs with their corresponding cost structure.

Little progress were made in terms of innovation and development as entire industry was under government control and regulation. This meant for companies (besides government agencies) the need to obtain a necessary permit to launch payloads to space. All necessary terms and conditions to get international license for such launch can be found in Hudgins (2002).

Situation in launch industry market begin to shift in 2010's for two main reasons. First was decommission of Space Shuttle program in 2011, which cost US the prime position in space launch services. Another reason were the new private options for obtaining space launch service emerged. This resulted in appearance of new private startups dedicated to launching capabilities, innovation and cost effectiveness.

A new era of private launch providers began. The pioneer in this era was Space Exploration →

Technologies known as SpaceX. Since then more private companies followed in this example, many of these can be found in table 1. Many of these companies was founded in early 2000s, but only a decade later, they were able to finish their projects and developments. SpaceX was found in 2002 but were able to successfully launch their first orbital rocket Falcon 1 in 2008 after several failed attempts, but only after 2013 company begun private launch service with their upgraded rocket version Falcon 9.

Currently private space-launch companies have a different taken a different approaches as there are targeting a different market. Jeff Bezos' Blue Origin with their New Shepard rocket wants to provide affordable sub-orbital touristic experience. Blue Origin also developed new engine, which is being sold to another US based launch provider United Launch Alliance (ULA). Currently Blue Origin is in process of development of launch vehicle New Glenn. This new vehicle will offer heavy launch capabilities.

Richard Branson's Virgin Galactic is now testing sub-orbital space plane VSS Unity for space tourism and microgravity research, while also developing orbital LauncherOne vehicle, which can be launched from a modified Boeing 747.

Another space launch provider is Rocket Lab founded by New Zealand's engineer Peter Back. Rocket Lab already developed small rocket Electron, which provides small payload orbital delivery. So far Elector had over dozen successful launcher for various private contractors and US Air Force. Rocket Lab targets on small satellite and cubesats delivery market enabling multiple payloads launch for different customers.

Current leader in private space launch market is SpaceX. According to Vance (2015), SpaceX evolved from an absolute dwarf to a full-featured space company, which delivered cargo to ISS in 2012, as a first private company to do so and since then accomplished many unique tasks. In 2015 SpaceX successfully launched payload for U.S. Air Force as a first privately funded company. SpaceX

also developed heavy version of Falcon 9 rocket called Falcon Heavy. It maiden flight with iconic payload (Elon Musk's personal Tesla Roadster) took place in 2018 with first commercial flights a year after. Latest achievement was sending astronauts to International Space Station (ISS) in 2020 with Falcon 9 rocket. It was first time after Space Shuttle retirement for astronauts to launch from US soil.

You can find basic introduction and latest progress of the most important private space launch companies above. Kindly note that businesses with space launch capabilities often have business operations in other sectors of the space economy. SpaceX besides their launch capabilities also developed Dragon supply spacecraft to deliver payload to ISS and to return samples and science experiments safely back to surface. SpaceX also developed crewed version of Dragon spacecraft, which was used in first test flight and now it is used by NASA to carry astronauts on regular basis. Mentioned accomplishments does not belong to the launch industry, hence they are listed here separately. These achievements and future plans of private companies will be discussed in next chapter.

There are three main characteristics of payload, which determine optimal rocket type used to deliver payload to targeted destination – size, weight and desired orbit. Each rocket has unique launch capabilities, some are optimal for specific payloads. However, this also comes with a certain price tag. The price does not necessary reflect overall rocket performance. One measurement of performance to price ratio is cost of 1 kilogram of material to specific orbit.

Table 2 shows estimates for cost to performance of launch vehicles. Kindly note that these are only estimates for situation when launch vehicles are actually used in full capacity, which is not a common feature of space launches. The cost per one kilogram launched varies widely due to other factors, such as negotiations, supply & demand, customer requirements, and the number of payloads

**Table 2 » Cost/performance ratio of launch vehicles (1kg of payload to low Earth orbit)**

Designation	Country of origin	Cost of flight (\$ mil.)	Weight capacity to LEO (kg)	Price of 1kg to LEO (\$)
Ariane 5	Europe	165	16,000	10,300
Atlas V (401)	USA	109	9,797	11,125
Delta IV	USA	125	9,050	13,812
Delta IV heavy	USA	375	28,370	13,218
Electron	New Zealand	6	300	20,000
Falcon 9	USA	61	21,600	2,675
Falcon Heavy	USA	90	63,800	1,410
Proton	Russia	85	21,600	3,935
PSLV	India	14	3,800	3,684

Source: Price list of provider companies, own calculations

manifested per launch. Pricing also differs depending on required orbit. For more information regarding price comparison, please check Jonas (2018). There is also economies of scale in place, hence small rockets have significantly higher cost per kg ration, as you can see for the Electron rocket. However, for small satellite and cubesats market demand, these types of launchers are most affordable, as it is not economic to use heavier rocket class.

Table 2 offers most common launch vehicle used. There is significant price differences between American (with exception of SpaceX) and European rockets. High launch price in USA and Europe is caused by state regulation, government contracts and price negotiations. In US, another reason is considerable higher cost of Atlas and Delta rocket manufactured by ULA, a 50-50 joint venture of Boeing and Lockheed Martin corporations. These high prices were able because of government contracts, which were highly overpriced, causing lack of competitive pressure in US market.

The new players in international launch industry, such as SpaceX changed the situation and all launch companies are now pressured to new and innovative ways making launch less costly. Technological evolution through innovation can be seen in current launch industry.

- Reusability – This is an older concept known since beginning of space race, but can radically change launch industry. Prior year 2015, all rocket vehicles were expendable, meaning they were used only once. SpaceX is mostly know for this innovation, however first company which launched rocket to space and brought it safely back to surface for refurbishments and repeated use was Blue Origin. SpaceX followed soon after with Falcon 9 rockets which now being refurbished and used for multiple missions. More about SpaceX reusability model and cost-saving can be found in Zimčík (2017). Launchers, which are currently being developed as a next generation rockets have also applied various degree of reusability in their design.
- 3D-printed components – Boom in 3D printing was implemented in launch industry and 3D-printed parts are now common feature is this sector, notably in engine components. Rocket Lab uses additive manufacture for all main components of their own Rutherford engine. Ariane group uses 3D-printing components on all engine types in their new Ariane 6 rocket. Using 3D printed parts is easier, cheaper and quicker than standard manufacture process and since rocket engines contain hundreds
- Vertical integration – Automation and serial →

production lowers the cost of production. If the company is capable of manufacture and assembly of their own vehicle “in the house”, it saves significant payments for contractors and sub-contractors with high added margin. Ability of making most of parts at one place require big capitalization and initial investment, but long-term investment are usual for launch industry. Another perspective to look on vertical integration for companies is to expand outside the launch industry and basically become their own customer. This is the case for all space companies, as they currently have projects where they are using their own rockets, either for space tourism or own satellite manufacturing and service. Launch industry is highly dependent on changes in customer’s demand, hence ability to combine satellite and launch industry is only logical next step.

Listed above are innovation which confirms the dynamic nature of this market environment. They show that companies can benefit from technological advancements to gain a competitive advantage and push limits of current technology. There are other challenges and opportunities in space industry, which are listed in the next chapter.

#### 4. Future in space

There are several projects in place, which will impact the space industry in this decade. Projects or more precisely prospects of opportunities are listed below.

Another Moon race is anticipated as national agencies have already declared intentions to use Moon as a base of operations. Some agencies already proved their intentions. China National Space Administration (CNSA) was able to return a small sample of moon rocks back to Earth in previous year. NASA is targeting to send humans to the Moon in 2024 with help of private sector. More about these plans can be found in Smith et al. (2020). Private companies SpaceX and Blue Origin are among selected partners for this endeavour.

We can also expect boom in the space tourism in very near future. Both Blue Origin and Virgin Galactic are finishing tests of their sub-orbital vehicles and SpaceX also offers space tourism with their Crew Dragon capsule. Some flights have been already booked, see Patel (2021).

SpaceX has another project which have already started and it is prepared for another phase. Their satellite mega-constellation Starlink is now operational but it’s not near full capacity as thousands of Starlink satellites still need to be put into orbit. Company OneWeb also have plans to launch mega-constellation of their own satellites, see Foust (2021).

There is a significant impact of all space activity. As mentioned in second chapter, number of satellites in orbit is increasing and considering mega-constellation realization soon to happen, orbit will be a very crowded space. Astronomers around the world have already warned about effect on night-gazing and scientific observations, which will be limited by higher numbers of orbiting satellites. Risk of this situation is mentioned in Massey et al. (2020). Second negative effect of higher number of objects in orbit is presence of space debris. More satellites means higher probability of random collision with another object, which could create thousands miniature projectiles. This danger needs to be controlled, which is task for space debris management. Few companies already offered services to help clean space around our planet from various form of space junk. More information regarding first official mission ClearSpace-1 can be found in ESA (2019). This mission is planned for year 2025.

These are immediate projects which are planned or currently are in any form of realization phase. As you can see there are a lot of space activity and incentives for space industry.

#### 5. Conclusion

This article offered the latest characteristics of the space industry and position of private companies. As shown, this is a competitive market with high risks and uncertain returns. Second chapter pro-



vided a deep insight into space economy, while third chapter was more focused on a single branch of this industry. It also presented technological advancements in this field. Forth chapter highlighted current projects and missions for private space companies.

Question remains, as the title says, why billionaires want to go to space or rather why are they founding or investing their time and resources into space businesses.

Simple answer would be “because they can”. Successful businessmen have a diverse portfolio of businesses, so they are not too dependable on one particular company. This explains why billionaires accept the higher risk of creating or funding space start-ups, as this is a long-term and uncertain investment.

Another reason may be their personality. Billionaires tend to be highly intelligent, resourceful and competitive. Space start-ups offer a unique position of exclusivity for their founders, which presents a tempting choice for investment from billionaires. It is also evident from public interviews that billionaires want to create a legacy. For example, Elon Musk is convinced about importance of people to be interplanetary species to prevail. Hence, his mission and efforts to colonize Mars. Jeff Bezos on the other hand has a more pragmatic view and his vision is to see thousands of people living and working in space. Legacy and conviction may also explain the drive behind these successful individuals and their will to accomplish goals and push the limits even further.

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## Why Billionaires want to go to space?

### ABSTRACT

*This article focuses on one of the most growing business sectors in the world – the space industry. Aim of this paper is to examine this specific branch of economic activity. Space industry was for a long time period solely domain of the national space agencies such as NASA or Roscosmos. However, in recent years, private companies begun to show that space industry offers enormous space for growth, innovation and realisation of business endeavour. Situation in this industry can be described as dynamic and quickly changing, hence this article has an aim to highlight the latest characteristics of this sector.*

### KEYWORDS

*Economies of scale; innovation; space industry; technology*

### JEL CLASSIFICATION

*D40; L22; O30*



# Discursive analysis of globalization and autarchy in the present global economy

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## \* *Introduction*

The global economy constantly has been facing new challenges and risks that affect its development in the short term as well as in the long term. From the risks of natural disasters that are capable of weakening economic power at the regional or state level, to global security threats such as international terrorism and the risks of escalating military conflicts. The recession of countries, after the economic crisis of the last decade, has left many negatives on national economies up to this day. The time will show whether the applied solutions will be successful. The socio-economic stratification of the population is closely related to wage of inequality or a high unemployment rate even in the developed countries of the world. In total, there are more than 200 million working-age people and the long-term unemployed in the world, which, if the world population rises to expected values of up to 10 billion, at which the initial stabilization or partial culmination should occur, will pose a high threat to the problem.

In the future there equally important will be the consolidation of public finances, especially in the peripheral countries of the European Union, and in the long term perspective it will be very important to cope with rising prices of commodities, goods and services which are attacked by high inflation.

Equally important, however, will be the area of addressing global imbalances and the enormous regional and transcontinental disparities that are localizable in every geopolitical sphere of the planet. (Klinec, Pauhofová, Staněk., 2010) [1]

From a medium to long-term perspective, we can predict the development of the world economy from the expected regional development. Emerging Asian and Latin American countries will have a strategic position, with their share of world GDP growing from year to year as well as their populations. According to estimates, the US and Japan will experience some stagnation, which causes that they will have to cope with new challenges and will have to absorb a series of measures. We have already addressed the challenges facing the EU and Europe itself, but we cannot ignore, in particular, the need to build a new and functionally institutional and management infrastructure. Last but not least, the world economy will be directed by the regions of the Middle East and sub-Saharan Africa, which have very significant long-term potential, in the case that they can effectively suppress and eliminate disruptive factors in the form of civil wars, political or military conflicts. As P. Júza states in his study: *“De facto we have a dying old world with its self-destructive values and an emerging phenomenon – China. However, this does not appear as a ‘gramscian’ ... intertemporal*



monster” ... “but as a phenomenon that gradually increases its presence in the whole spectrum of possibilities. Also in the possibility of increasing its overall influence in Central Asia, which, however, does not preclude a broader discussion about the growing global authority and influence of China”. (Júza, 2019, s. 34) [2]

The coronavirus pandemic, which some regions of the world have been overcoming for more than a year, will become a significant deterrent to economic and economic growth in the future. It is the global pandemic that is reflected in the constant rise in unemployment and in the stagnation of several economic sectors. Estimates of the onset or the amalgamation of the economic crisis and recession with the pandemic are varying, as well as the predictions of a possible end of the pandemic from the point of medical view. The perspectives of globalization as a multidimensional phenomenon are very difficult to predict in the future. Globalization represents a new dimension of social matter of fact and reality. The social dimension has an economic dimension, which in turn follows the political one. From politic dimension we can easily deduce military, security and international level, which is returning to the economic base, whether in energy, communication, transport, research or other levels. Multidisciplinary, interdisciplinary, dynamism, and ubiquity could still be characterized by globalization. It logically follows that any attempt to estimate its future development, formation or position in the global world political system, is only a consideration or partly a utopia, based on empirical facts and knowledge from the past and present, but as we have shown above, also it depends on trifles, which can have a global character and impact. (Mucha, I., 2006) [3]

### Risks of autarchy

Contradictory phenomena to globalization, of which we know much and cannot imagine life to a large extent, are the processes of autarchy, which gradually took place in regional form in many countries of the world due to the coronavirus pandemic, and states or regions began to rely more on themselves. This has manifested itself in many sectors of the healthcare and consumer industries, where states have gradually discovered that in the event of such a large-scale global crisis as we are facing, globalization can be a great burden and risk. The answer to these questions has been autarchy<sup>1</sup> or self-sufficiency of the state. Of course, there are many definitions and typologies of autarchy, but they all agree that it is a process where the state closes all its activities with the outside world beyond its borders. It is most often associated with the economic self-sufficiency of the state, but we also know several other subtypes, where it is advantageous to use the benefits of international trade and economics, but to guarantee its own legislation or the army. Such states therefore do not participate in military-political pacts, but seek to fully guarantee their own sovereignty and the security of the population. Autarchy is not a new concept, but today it is no longer an adequate answer to globalization processes. In the past, under certain circumstances, the state could have existed more or less independently and did not have to import almost any commodities, respectively if such a situation threatened it, it preferred to go to war and occupied the strategic territory for such commodities militarily and violently. As the world modernized and globalized, several subsystems of state interdependence have been emerged.

Focusing only on the economic sphere would be a mistake of shortsightedness, as of course it is

<sup>1</sup> Autarchy — “autarky” — a word, which has its origin from Greek, means self-sufficiency respectively autonomy and independence. In relation to the state and the economy, it defines the ability of the state to exist independently without the external influences of aid and dependence.

dominant, but not the only one sphere. As the world and civilization evolved, the raw material and energy dependence of states has increased, both on the primarily supplier of the commodity and secondarily on transit states – see many examples from the past. Subsequently, the aforementioned economic dependence deepened, when international trade increased and the exchange of goods, services, capital, but also labor became routine, but the impact on states was significant and their economies became essentially directly dependent on each other. The business partnership brought a third dimension – the dimension of communication dependence, which meant freedom of access to information and its almost immediate dissemination. If we want to apply autarchy to this functioning organism, we need more than just the statement that the state can be self-sufficient. The demands of the citizens of the state are growing intergenerationally with a geometric series. If the state were unable to secure the supply of the necessary energy raw materials, industry, the economy and thus the economy of the state would be stopped and it would be irrelevant that it wanted to cover only its own consumption. Citizens who have experienced a taste for freedom and liberty would feel cut short and they could revolt. Censorship of communication services and the Internet would have to be strict and effective, but it would only cause an unnecessary wave of resentment and unrest among the population. (Weiss, 2010) / (Huntington 2001) [4, 5]

It logically follows from the above that it is almost impossible and unrealistic to apply autarchy to today's modern, liberal and democratic state, which is a member of an indisputable number of integrations, alliances, pacts and organizations. Even if there was a political consensus to implement such a decision, societal pressure would destroy such a political elite. However, what is not possible in countries with a tradition of globalization values, this is maintained in the past and in the present in countries that have not yet fully experienced the internationalization of the world and

whose citizens are closer to the national ideology of the leader than a secret. (Weiss, 2010) [5]

There were many efforts to use autarchy in the past. The most important was mainly Nazi Germany in the years 1933–1944, when A. Hitler tried to achieve independence in the economic field, which was not real and seemed functional only in the first years, thanks to the extremely inflated bubble of the military industry, which supplied the country with job opportunities. In the 19th century Japan tried a similar policy under the name “Edo period” and this so-called the “sakoku” system created bilateral relations between China, Korea and the Netherlands, and trade with the other states outside of this Union alliance was kept to a minimum. During the time of Benito Mussolini the Italian Kingdom also experienced a form of autarchy, but there were direct trade relations with Germany in preparation for World War II. More exact results came in Spain under General F. Franco between 1939 and 1959, when the period of autarchy ended with the adoption of the Foreign Trade Act, which, following other specific posting factors, executive started Spain's rapid economic growth. Even a superpower such as the United States did not bypass the stage of autarchy in the past. It began in December 1807 and lasted until March 1809. That time the President Jefferson imposed an embargo on international trade during the height of the American Revolution. However, these efforts could be seen as a need to show the world the ability to resist and economically blackmail other countries especially the United Kingdom. It is difficult to find there a motivation from the skepticism of globalization, which at that time was far from reaching today's level. (Dlouhá, Dlouhý, Mezřický, 2007) [6]

The last country that has been able to absorb, establish and develop autarchy is undoubtedly North Korea or DPRK. Since 1955 there has been in force so-called Juche ideology, which means absolute self-sufficiency. It represents the official political, governmental and economic ideology of North Korea. Ideology respects man as an element in the

forefront of interest, and his interest is the most important thing: “*Man leads everything and decides in everything.*” The author of this ideology was Kim Ir Sen, who combined the ideas and views of Stalinism, neo-institutionalism and Maoism. Its current form is already based on the next leader Kim Jong-il, who revised it in 1982 and then in 1996 he extended the “songun principle”, which means that this principle prefers the army. It is this principle that is typical for the North Korean leader. Juche’s ideology can be divided into three basic points: (Společnost Česko-kórejského..., 2017) [7]

- Independence of citizens in thinking and politics; self-sufficiency in the economic and military field.
- Politics must strictly fulfill the wishes of the masses and use its position in creating a new one and or a revolution.
- The methods which are used for building and revolution must be in accordance with the current situation in the state and its economic strength. (Společnost Česko-kórejského..., 2017) [7]

However, the strict application of Juche’s<sup>2</sup> ideas in the past was only able to cause a significant economic crisis and depression, but at the same time it affected the poor population, which suffered from famine. Its consequences have been quite tragic, killing more than 2 million people. Today, ideology is built at least on the level of religion and the number of followers’ attacks Christianity or Buddhism, which it does not perceive as its alternatives, but a real competition and a threat.

*“Recognition of Juche means acceptance of the lord’s position in the revolution and construction of the country. This means maintaining an independent and creative attitude in finding solutions to the problems that arise during the revolution and socialist construction. It follows that these problems can be solved mainly by their own efforts and in ac-*

*cordance with the current conditions of the country’s own policy. The realization of independence in politics, self-sufficiency in the economy and independence in national defense are principles that the DPRK government strictly adheres to”.* (Společnost Česko-kórejského..., 2017) [7]

The other side of the autonomous life of this ideology has caused, and still is causing, a significant violation of fundamental human and civil rights. Likewise, military tensions against the United States, South Korea, Japan and China are escalating in DPRK’s hands. From the long-term point of view of the standards set by the world economy today, the interconnectedness and liberalization of the market in the global world is the ideology of Juche, but also autarchy itself is doomed to failure and also it is doomed to a gradual extinction. As B. Fekete mentioned it in her publication: “*The biggest challenge for small states is the pressure from large states to change the institutional structure of the EU in their favor. On the other hand, small states run the risk that the large ones will increasingly decide on serious problems outside formal institutional procedures.*” (Feketeová, 2018, s. 64) [8] It is clear that there may be an increase in local or regional projects, which are trying to apply anti-globalization ideas, but for their more complex success in practice today’s world and the near future do not provide a suitable environment and act against them “toxically”.

Anti-globalization and anti-globalization movements are emerging around the world, and their voices are paradoxically growing in the most developed countries, where the real effects and negatives of globalization are also the most intensive. Today, however, there are no official and legal tools for anti-globalists to defend themselves, and so they tend to resort to the most extreme solutions, such as international terrorism and cyberterrorism, which can most effectively highlight the ex-

<sup>2</sup> *Juche’s ideology was fully applied only in North Korea, but also attracted several world leaders during the Cold War. Indonesian President Sukamno tried to apply it, but it was unsuccessful. Romanian President Nikola Ceausescu also had the ambition to introduce its elements after visiting North Korea in 1971. The Pol Pot regime in Cambodia has also taken advantage of some of its applications. (Czech-Korean Society ... KLDK-info.cz., 2017)*

treme interconnectedness and dependence of all spheres of human life across countries.

In the context of the adoption of anti-globalization ideas, left-wing political parties have been dominated in the past, and the right-wing parties were considered as the liberal and free-thinking area for the development of globalization. Today, the focus of the fight against anti-globalization issues is shifting to the right-wing scale of the political spectrum, which is realizing the needs to limit the limits of globalization and its impact on the state, otherwise it could have adverse consequences for its future functioning. Just as globalization is a global phenomenon, for that there must be a “fight” against it, respectively for a higher degree of its responsibility and global control. It must have the support of the biggest players, from transnational corporations to the state. Nevertheless, we think that globalization will not be effectively controlled and limited in the long run and that it will continue to grow exponentially, with local protests against it, but those will have no real chance of assertion within its geographical, economic and political strength.

Globalization is not based on ideas, it is not perceived as a program that would evoke the need for its fulfillment in the future. It is a real process that develops together with society and is mutually shaped and influenced, while its final or final position and form is not clearly defined. Unfortunately, the absence of a comprehensive cultural pattern has a negative effect on the influence on the national cultures of states, regions or civilizations, which partially degenerates and causes cultural influences to spill over across their civilizational circles. It also slows down or even prevents the deconstruction of the cultural environment and traditions. Modern society should serve both the whole and the individual, while it is striving to develop their abilities, talents and knowledge in order to elevate the material and spiritual meaning of their being. However, globalization brings considerable illusion to this process and has a destructive effect on values that are in conflict with it from the

point of view as a power. The emerging world society does not contain the ideals of humanism and humanity, but rather tends to autonomous processes, in which the elite groups of politicians, economists, managers and others, those we have included above to the so-called super class.

The result is the creation of pressure groups and organizations, as a part of TNC that affects the state and individuals. According to Lipovetsky, this situation occurs because *“the current civilization of a globalized and ever-globalizing world is not governed and controlled by a single center of power, is not governed by any religion or moral, ethical code that would enforce a living attitude of fulfilling obligations and duties in absolute meaning”*. (Európska komisia, 2017) [9]

The vast majority of globalization processes take place on the international level, which suffer from the absence of significant legislation or regulation, which give these processes considerable power and freedom to develop and set precedents for the future, which will be difficult to remove. We do not find the priority of moral, ethical, humanistic or religious criteria, which stand in the background and in their positions they are established increasingly intensive economic, technological capabilities of solving these problems. There is a significant share of dominance of new communication technologies with the aim of shaping public opinion, these systems become indifferent to the value requirements, qualitative dimensions, or verification of information. However, propaganda, disinformation and internet hoax would be the subject for another, at least one monograph, possibly even a habilitation thesis, so we are not going to develop them to a greater extent. (Mucha, I., 2006) [3]

Much more significant than economic problems are the risks of moral decay, cultural suicide and political disunity. Here we include mainly:

- I. Increasing antisocial behavior such as crime, delinquency, organized crime, use of both soft and hard drugs and addictive substances, precursors, and social violence and hostility.



- II. The gradual decline of the family as a once sacred institution of man and woman, the increase in the number of divorces, single mothers and single-parent families.
- III. Not only in the USA, but also in Europe, a gradual increase in the decline of social capital in the context of people's membership in voluntary associations and organizations.
- IV. Declining level of devotion to leadership and intellectual activities – higher education only for obtaining a degree in irrelevant and unprofitable areas, which are in society unusable because of quantitative amount of those educated people, and an overall declining trend in the level of education at the cost of earlier employment and financial independence. (Huntington, 2001) [4]

As Kováč states: *“It is also important to realize that the development in Europe and the fulfillment of the Europe 2020 strategy, which is focused on the development of the knowledge economy, leads to modifications of economic paradigms, which means that the production sphere will gradually shrink, social security will increasingly depend on the knowledge-based industries, and the demand for higher education will increase in the labor market.”* (Obadi, 2010) [10]

Interpersonal relationships are constantly under pressure from global society and, under its influence, they are negatively devastated, with increased attention which is being paid to new forms of life and to the process of their legitimacy rather than to the effort of improving existing relationships. However, the future of globalization will require the introduction of a functional formula that is ethically and morally pure and fulfilled, and which respects the anthropological, moral or philosophical point of view, and thus becomes a correlation for the development of critical reflections on global society and system. (Huntington, 2001) [4]

Another dimensions of the future development of globalization are the civilization, integration and security aspects. The established theory of realists is the idea that liberal democracies that share

common values, goals, and philosophy do not fight together. As they contain considerable economic kinship and dependence, the belonging of a population that enjoys the freedoms of liberal worlds and thus learns about new cultures and nations, or intensifies its economic goals and identifies them in such countries. This logically forms intercultural ties between the populations, which would be the first in terms of public opinion, to reject the military conflict with the allied country. As J. Kaitainen, the Vice-President of the Commission for Jobs, Growth, Investment and Competitiveness, points out:

*“Globalization is an astonishing force that brings benefits and many challenges to Europe and the rest of the world. In order to maintain the benefits of openness while overcoming the disadvantages, Europe must support a rules-based world order, then it must take decisive action against unfair practices and it must increase the resilience of our societies and the competitiveness of our economies in a rapidly changing environment.”* (Kováčová S., Kováčová N., 2017, s. 8) [11]

Regardless of the fact that the conflict itself would have adverse consequences for the economies and economies of the involved parties as they live, operate and trade in the global market with each other. This fact is stated by J. Kalický: *“The issue of national security is not only an internal issue, but also an external one. The state must be able to identify external threats that may be from both state and non-state actors. In the second half of the 20th century until the present, in particular the dynamic development of non-state actors has been shown in their ability to endanger the elementary functioning of a state actor. Examples include terrorist organizations and insurgent groups which are aimed at changing or destabilizing state regimes.”* (Kalický, Mutňan, 2018, s. 37) [13] The belief that sometime in the future, non-Western nations should embrace Western civilizational values, institutions, and rules is immoral as a result of the resources which are necessary to enforce them. The universalism which is offered by



the West is dangerous for the world itself because it could culminate in a global intercivilization war between the dominant states of the world political order. However, there would also be danger for the West itself, which could end up as a defeated in this war. The Western world differs from other civilizations not in the way of its development, but in the different values and institutions that are prominent in it: Christianity, pluralism, individualism and the rule of law. These values have enabled Western civilization to discover modernity and to achieve global expansion through it. (Mucha, I., 2006) [3]

### Final summary

In the middle of the 20th century, L. Pearson warned the world against a period in which solidarity and mutual acceptance of nations living close together would be necessary, in an ever-shrinking space of a growing world population. There will be meetings within one civilization bloc, but also between blocs with each other. These clashes will evoke a process of ever-changing and dynamic development of the power structure, and the academic community of American universities believes that under no circumstances it would be appropriate to artificially enter into this process, respectively to prevent it from changing in the natural and periodic process of both regional hegemony and their number in terms of the uni, bi, or multi-polar arrangement which we are witnessing today. (Huntington, 2001) [4]

The EU does not lag behind in the alternatives for the future of globalization, and the project of European integration itself was in the past perceived by many authors as a step in the anti-globalization direction, which will provide Europe with protection against globalizing world civilization. The opposite has become true, and today both the EU and small Slovakia represent a strong player in the field of globalization in terms of both the recipient and the spreader and supporter. European leaders are also aware of this fact, who, in

addition to perceiving the positives, are also trying to draw attention to the possible negatives that globalization brings to a specific European market. (Európska komisia, EÚ, 2017) [9]

F. Timmermans, the First Vice-President of the European Commission, said: *“Globalization has had a positive impact on the European economy as a whole, but our citizens do not perceive it unless its benefits are shared fairly and more evenly. Europe must be involved in rewriting global rules so that free trade also means fair trade. Globalization must become sustainable and must benefit all Europeans. At the same time, people need, through our policies, to acquire the education and skills needed to keep pace with the development of our economies. Better redistribution will help to guarantee the social cohesion and solidarity that are at the heart of the Union.”* (Európska komisia, EÚ, 2017, s. 2) [9]

The Union, like other world leaders, will have to strive to create a coherent, functioning and sustainable world order based on common rules and a common agenda. The interdependence of states is very high, and underestimating or delaying the need to reform the system of standards on which it stands would not pay off in the future. However, a prerequisite for a successful revision of the rules of the global world will be the creation of a specific status for man as an individual and a citizen, in terms of securing his needs and rights, but on the other long term population.

Autarchy is a utopian concept in today's globalized world, its pure realization would be possible only in a closed and regionally isolated community that would live an ascetic way of life. From the long-term point of view of economic development and power, the pure application of autarchy or such an economic philosophy in the state is unprofitable and would lead to uprisings and destructions of the regime itself. Nevertheless, we have made certain exceptions, although we have applied them with reservations. The most significant advantage of globalization is and will be in the future that it develops in an international environ-



ment in which there is no unified legal regulation and rules, which gives localization processes new dimensions and possibilities. If we want to limit globalization in an effort to protect world civiliza-

tion from its negatives, we must first and foremost build a world order based on rules and a common agenda and goals with a mutual respect.

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## Discursive analysis of globalization and autarchy in the present global economy

### ABSTRACT

*A retrospective look at globalization brings a series of shots of its dynamic development from mortgage, financial, economic through political, social, to finally moral, systemic and civilizational. It is thus a qualitatively new generated crisis phenomenon, which has been formed into its current form, especially in the last three decades. It put pressure on the humane cultivation of socio-economic relations, which, however, did not materialize perfectly and pointed out the negatives and risks involved in globalization. There are many possible causes for the rapid and radical development of globalization. Likewise, there are many determinants in the process of motivating states to use the tools of autarchy or autarchy in its pure form. Nowadays, there are some few states with this political system in the world, however the current crisis, which is associated with the ongoing coronavirus pandemic situation, has the potential to increase the autarchy of states' behavior. Some states as well as some regions have largely begun to solve the pandemic situation by themselves as well as they have begun to rely on themselves, even they have disengaged themselves from integration or even central divisions and they are trying to solve the situation in their own way. Based on the previous behavior, it is possible to predict that some states or regions, not only in Europe but also in the world, will evaluate the current situation as a form of breaking globalization tendencies and significant interdependence of the world, which brought the current pandemic to this status. Autarchy is very demanding, in the present globalized world, a utopian notion of new local examples can work very successfully, and the region does not have to lose global competitiveness. The aim of our report is to bring a critical and factual discussion in the mutual controversy of the concepts of autarchy and globalization. It is obvious that globalization processes are dominant and their development is unstoppable and difficult to limit, but nevertheless it indicates that when autarchy is used in the right segments of the economy, it can play an important role in the process of sustainable economic and economic sustainability of the region or state in the future.*

### KEYWORDS

*Globalization; autarchy; crisis; global economy; economy; integration; state; political system*



# Future Markets for the German Automotive Industry

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## \* 1. Introduction

To define a Strategy for the German automotive industry to face the actual and future challenges, it is important to know the relevant markets and thus the customers of today and tomorrow. The following questions, among others, are central to this. What is the position of the various markets regarding electromobility and how has demand for German cars developed? Are certain markets already saturated and do new ones need to be developed? Are there markets in which the German automotive industry has not performed so well in the past, but is now gaining momentum? To answer these questions, a market analysis is carried out.

## 2. Theoretical Background

A systematic approach was used for the market analysis. The steps for the structured market analysis are shown in Figure 1 and are as follows.

- Definition of specific question(s)
- Determination of the relevant markets for the analysis
- Definition of quantitative criteria
- Definition of qualitative criteria
- Data collection
- Answering the defined questions

## 2.1 Definition of specific question(s)

A market analysis must always be subject to a specific question (or several) to be able to carry out a goal-oriented analysis and later achieve useful answers and results. The more precisely the intention and thus the questions are defined, the more successfully an analysis can be carried out and the results meaningfully interpreted. In this case, the question is: What are the potential markets of passenger cars with special reference to electric vehicles?

## 2.2 Determination of the relevant markets for the analysis

Based on the research questions, the market has to be defined. The better the market is defined, the more precise the analysis can be. Various factors can be considered for this purpose. For example, the analysis can be carried out according to products, regions, or sociological factors. In this case, the specific objective is to analyze different regions in relation to the sale of (electric) cars. The regions to be analyzed must then be narrowed down and defined. This can be done with regard to existing analyses, known important regions for the segment or strategically important new regions.

### 2.3 Definition of quantitative criteria

The quantitative criteria can be clearly measured based on actual figures. In this case, standard criteria are, for example, the sales figures for automobiles. The advantage of this is that they are usually collected in a standardized manner over many years and can therefore be easily compared and analysed using standard methods.

### 2.4 Definition of qualitative criteria

The qualitative criteria are not simply measurable and must therefore be interpreted and for example linked to existing quantitative criteria. These can be, for example, political developments that influence the market or may influence it in the future. Sociological factors such as the mindset of a region's customers also belong in this category. Trends can be identified by identifying market barriers or drivers. Key players that are currently influencing the market or will do so in the future are also important. For example, an expiring or new government may pass or change laws that have an impact on market development.

### 2.5 Data collection

For the collection of data, it is important to use reliable data sources. One way is to collect your own data, e.g. in the form of surveys or interviews. Particularly with regard to the qualitative criteria, a professional analysis by experts is helpful. For the quantitative criteria, authorities or professional associations are reliable data sources.

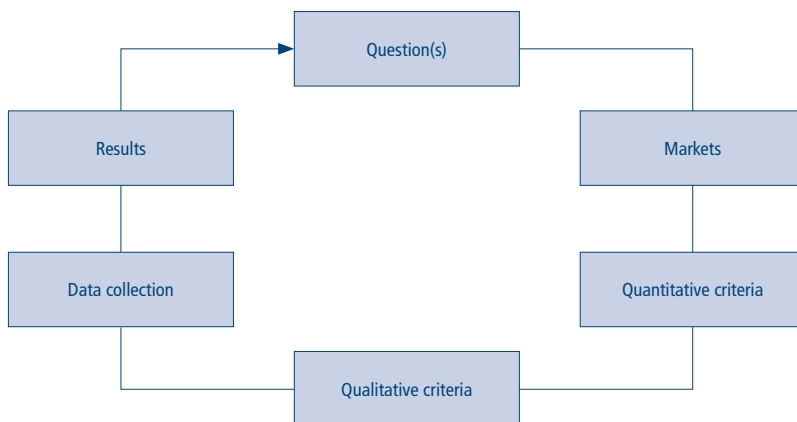
### 2.6 Answering the defined question(s)

Finally, the previously formulated questions are answered on the basis of the criteria determined. Various methods are also available for this purpose, for example a direct market comparison between the regions or a time series analysis.

## 3. Key Markets and Areas in the past and now

Before discussing the present trends and potential markets for the German automobile industry, it is important to have an insight into the past trends in global as well as German markets of German passenger car manufacturers. The year 2015 was full

**Picture 1** » Structure Market Analysis



Source: Authors



of surprises for the global automobile industry. The first important thing to be noticed is the unexpected downfall of the Chinese automobile industry which failed to reach the double-figure growth rate as the preceding years. The economic conditions of Russia and Brazil forced their automobile markets to collapse. In contrast, the market of light vehicles in the US reported the highest growth in US history. Similarly, the automobile industry of Western Europe recorded the highest growth rate of 9%. This had a positive effect on the German market as well which was evident from the increase in the production and exports of automobiles especially passenger cars. The increase in the production of passenger cars created an environment conducive for increased employment as well (Association of the German Automotive Industry (VDA), 2016). An example of the increase in employment due to the increased sales of vehicles is the Slovak Republic. The production of automobiles is one of the most important industrial sector and therefore the development of unemployment figures can be directly related to the sales of vehicles and the increase in foreign direct investment. While in 2014 12.29% were still without employment, in 2017 it was only 5.94% (Stolicna, Z.; Grozak, A., 2018).

The automobile industry across the globe showed similar trends in 2016 as the sales of passenger cars showed a positive trend in the two largest automotive markets which include Western Europe including Germany, and China whereas the passenger car market in Russia, the US, Brazil, and Japan had lesser sales. By mid of 2016, the Chinese market had reported a 12% increase in the sales of passenger cars. A total of 10.6 million units had been sold, therefore. EU sanctions and the economic recession in Russia halted the growth of its market and resulted in a 14% decrease in the new car sales, and it forced the prices of passenger cars to fall significantly. Only 672,140 cars were sold which is the lowest amount of car sales since 2003. Brazilian market reported the lowest sales since 2006. Fortunately, even in 2016, the Western Euro-

pean automotive market, reported fair growth. Italian car market increased by 19 percent, Spanish car market by 12 percent, French car market by 8 percent, British car market by 3 percent, and German car market by 7 percent (Association of the German Automotive Industry (VDA), 2016).

In 2017, varying trends were observed in the global automobile market. The growth rates of previously increasing Chinese and US markets contracted whereas the fortunes of the previously declining markets of Russia and Brazil witnessed a positive turnaround. Most European markets reported positive trends in growth rates in the market of passenger cars again and the German market reported the largest number of registrations during the decade. It is worth mentioning here that despite the positive trends in most of the European passenger car markets, the British market showed a declining trend. (Association of the German Automotive Industry (VDA), 2018)

During the first half of 2018, China reported a 6 percent increase in car sales. German passenger car sales increased and the German car sales in China marked the end of 2018 with a momentum much stronger than other car brands in China. German manufacturers achieved a market share of 21.4% in China. In the USA, German manufacturers maintained the market share at 7.7 percent. German passenger car market reported an increase of 3% and French passenger car industry, of 5%. The UK markets continued their decline and it reported a negative growth rate i.e. -6%. By mid-year, India reported a 13% rise in sales of passenger cars which indicated potential in the Indian market to take over the German market as the fourth largest single market in the world. However, at the end of 2018, a sharp fall was seen in the growth of the German passenger car market that can be attributed to the changeover to the WLTP test cycle. (Association of the German Automotive Industry (VDA), 2018)

In 2019, the global passenger car market suffered the largest decline ever recorded to date. It was due to the decline in the global market which

attributes primarily to the Chinese market which shrunk by 9%. Moreover, another significant reason for this decline is the conversion of a large number of German car production plants to produce electric vehicles. (Association of the German Automotive Industry (VDA), 2020)

In 2020, the world suffered a massive economic disaster due to the COVID-19 pandemic, and this pandemic not only halted the growth of the automotive industry but also forced it into the deepest crisis since 1930. The lockdown in countries like China, the US, UK, Russia, Brazil, and Western European countries, etc which are potential markets for the German passenger car industry caused the closure of trade. With the closure of trade as well as a decline in the economic condition of the public, car sales dropped all over the world. By mid-2020, a 28 percent drop in sales of passenger cars was seen in the USA, China, and Europe; in Spain, Italy, and the UK, by 97 percent; in Germany by 35 percent. However, a positive trend was seen at the start of the second half of 2020 as the trade restrictions were gradually being uplifted. (Association of the German Automotive Industry (VDA), 2020)

To sum it up, the passenger car market all over the world has been undergoing varying trends all over the world. Before the economic recession of 2020, the global passenger car industry was on a rise from 2015 to 2017 and then in 2018, it started to decline which continued in 2019 as well. It is, however, worthy to be noticed that this decline in the global passenger car market doesn't mean that the individual passenger car markets also suffered. It was mainly due to the decline in the world's biggest passenger car market i.e. China which fell by 10% and this fall in the sales can be attributed to the trade conflict with the US. Moreover, the markets of the US, Russia, and India also declined. The European market, however, showed positive growth. In 2020, the worst economic recession caused all the passenger car markets to suffer. No market could report positive growth.

### 3. Criteria that impact the passenger car market

The dynamics of the passenger car market depends upon a diverse range of criteria ranging from policymaking to societal behaviours. Some of these criteria are mentioned as under:

#### 3.1 Sustainable Development Goals

The sustainable development goals lay a great emphasis on environmental preservation and therefore most of the countries are trying to modify their policies regarding the automobile industry to be environment friendly. Automobiles are one of the main causes of air pollution. This can be controlled by using electric vehicles that do not emit hazardous gases from their exhaust and are environment friendly. The increase in the use of zero-emission electric vehicles, instead of the conventional vehicles which run on fossil fuels, can help achieve the goals like the reduction of greenhouse gas emission as well as in energy diversification. Other than these benefits, electric vehicles also possess the qualities like better efficiency as compared to conventional internal combustion engine vehicles. These advantages of electric vehicles over conventional vehicles have forced the policymakers of most of the countries of the world to make policies to aid and facilitate a transition from conventional combustion engine vehicles to electric vehicles. It is worth mentioning here that till 2019, 17 countries have announced their targets regarding a complete 100% shift from conventional vehicles to the electric vehicle. These countries have set their target to phase out conventional combustion engine vehicles till 2050. Among these countries, France was the first one to announce the transition to electric vehicles before 2040. These ambitious goals of the countries have been forced the countries to develop their policies in a way that favors the manufacturing and the purchase of electric vehicles. New vehicles and charger standards are being introduced. To enhance the sales of elec-



tric vehicles, new procurement schemes are being launched which allow the electric car manufacturers to produce bulk orders of electric vehicles. Even the developing countries with emerging economies are making policies to ensure the imports of new as well as used electric vehicles. Tax rates on electric vehicles are being reduced to encourage their sales whereas the tax rates on the combustion engine vehicles that emit high levels of greenhouse gases e.g. CO<sub>2</sub> are being increased to discourage their sales. Policies are being made to decrease the road tolls and the creation of low emission zones are also facilitating the sales of electric vehicles. Some countries are also offering subsidies and tax reductions on the purchase of electric vehicles and also for developing charging stations. (IEA, 2020)

No matter how much the governments are facilitating the purchase of electric vehicles, it can be thought of as temporary support and facilitation to enhance the transition from conventional to electric vehicles. After the transition has taken place and the bulk sales of electric vehicles have started among the public, the government might stop the facilitation. For the first time, this was seen in 2019 when the US and Chinese governments lowered the subsidies and on electric vehicles. It might be attributed to the increase in customer spending on electric cars. Although the Chinese government was planning to terminate a phase-out that dates to 2016 due to the decrease in sales of electric cars in the second half of 2019, the Chinese government had to extend this phase-out scheme till 2022. In contrast, there were other countries, like Germany and Italy, which introduced new incentives on the purchase of electric vehicles and extended the tenure of the previous subsidies. Therefore, the policies of the governments in many parts of the world are the main drivers of the transition to electric vehicles. Of these policies, some policies facilitate the manufacturers of electric cars to sell a higher number of electric cars. 60% of the overall global sales of electric cars can be attributed to the three policies which are China's New Energy Vehicle

mandate, which is applicable in China; the European Union CO<sub>2</sub> emission standard, which applies to all EU member states; or zero-emission vehicle mandate, which is applicable in selected US states and Canadian provinces. New fuel economy standards have been approved by the European Union for passenger cars for the decade 2021-30 which involve incentives and bonuses to the electric vehicles. EU had targeted to comply with its CO<sub>2</sub> emission standard of 95g of CO<sub>2</sub> per km for light-duty vehicles by 2020. This was one of the motives behind increased sales of electric vehicles. China, in 2019, planned to tighten its New Energy Vehicle mandate scheme which will result in more indirect subsidies and incentives as compared to the direct subsidies and incentives on electric vehicles. The examples of direct subsidies include the tax relaxations, toll relaxation and incentives that the government provides to the buyers who buy electric vehicles instead of the conventional combustion engine vehicles. Indirect subsidies, however, include the measures and policies like raising the taxes on purchase of combustion engine vehicles, raising road tolls for combustion engine vehicles and introduction of policies for zero-emission standards which can lure the potential buyers to buy electric vehicles instead of combustion vehicles. The United States is 2020, unlike the other countries, replaced the 2012 rule by the introduction of Safer Affordable Fuel-Efficient (SAFE) vehicles final rule hence limiting the annual improvement in fuel economy standards from 4.7% to 1.5%. In a program announced by the federal U.S. program, there is a tax credit for about 200,000 BEVs and PHEVs. According to this program, BEVs and PHEVs having the battery capacity of 5kWh receive 2,500 USD per vehicle and those with battery capacity of 16kWh receive 7,500 USD per vehicle of tax credits. Apart from this, various states of USA have been providing reduction on license tax as well as on vehicle registration fees. Arizona registration fee exemption which is till date the biggest registration fee exemption in USA provide a benefit which can sum up to 1,000 USD through-



out the electric vehicle's life. Other steps include the parking benefits, carpool lane access etc (Nic Lutsey, 2015).

Many other countries are actively setting the stage for policies that will encourage the transition towards electric vehicles for example Canada, India, Chile, New Zealand, and Costa Rica. Concisely, a long-term vision, effective policy measures, and tax subsidies are being done to promote buyers to buy electric vehicles instead of internal combustion engine vehicles (IEA, 2020)

### 3.2 Government responses to COVID-19

COVID-19 can have a diverse range of confounding possible impacts on the electric car market. These impacts include the increase in the potential efforts of the governments to facilitate the transition from combustion engine vehicles to electric vehicles as a consequence of the economic situation of the world including the changes in oil prices and behavioural changes of buyers due to the confinement measures. The smart lockdowns in selective areas of the countries are being enforced which limits the use of public transport. It can highly increase the car traffic. Policies are therefore made to promote walking and cycling to cater this issue of increasing cars so as to promote clean transport. The governments may also cater to this problem by encouraging the sales and purchase of electric vehicles. The automobile industry has been one of the most important industries for economic growth and has hired millions of workers in the supply chain. Appropriate policy responses are needed to bolster the economy in countries whose economy depends on the automotive industry. During these unfavourable economic conditions, it must be the priority of the governments to do effective policy-making in order to maintain the momentum of the electrification of the automobile industry. The Chinese government was very quick to identify the need for these policies and thus the central government of China encouraged the local governments to offer relaxation on car permit quotas along with

strengthening targeted New Energy Vehicle measures. Similarly, European countries like Germany and France increased their supportive policies regarding electric vehicles. (IEA, 2020)

### 3.3 Technological advancements and the need for innovation

Technological advancements have a very significant impact on the market of the automotive industry which has been evolving continuously. One of the few examples is electric vehicles. It is a grave concern that soon the world will run out of fossil fuel especially oil in 2038 if we kept on utilizing the oil at the same pace without being able to discover more oil sources (Mehrdad Ehsani, 2018). It is, therefore, the need the time to develop alternative sources of energy for cars. Electric cars are therefore a great option. Electric cars not only limit the use of oil, but they also fulfil the zero-emission standards hence they can be a blessing for our car industry as well as a saviour for our environment. These potential benefits of electric cars have pushed lawmakers to make policies to increase the production and sales of electric vehicles (Gobble, 2019).

### 3.4 Economics aspects

Economics has a very significant impact on the automotive market. Not only the economy of a country, but the financial condition of the household is also a very striking factor in the purchase of cars (Bobeth, 2018). The costs of cars are therefore one of the main players in the car market. Despite that the lion's share in the German automotive market still belongs to combustion engine cars, it must be noted that there is an increasing trend towards the sales of e-cars due to a reasonable decrease in their prices and the governmental policies in their favor. The decrease in costs of electric cars can be attributed to the cheaper batteries, efficient production, governmental facilitation, as well as cheaper running costs because electricity is cheaper than petrol or diesel (Volkswagen AG, 2020).



### 3.5 *The role of Government and Policy Makers*

The policies of the government of Germany and the European parliament are vital for the future of the passenger car market in Germany. Both of them have introduced policies to highly limit the CO<sub>2</sub> emission levels by 37.5% during the decade 2021–2030. Car manufacturers are bound to pay a penalty of 95 Euros per gram per kilometre of target exceedance (AG, 2019). The European Commission aims to achieve a 100% decarbonization in Europe by 2050 in order to make Europe free from greenhouse gases. An environmental bonus is given by the German government according to which the buyers of the electric vehicle will get a purchase bonus of up to 6000 euros by 2025. Another important step of the German government that directs the future of electric cars in Germany is that it is investing 3.5 billion euros to make charging stations all over the country in order to increase their to 50,000 by 2022 and 1 million by 2030 (Statista, 2020). All these objectives are the goals of the Climate Change Agreement in Paris. Concisely, the policies of the German government are directing the future of cars in Germany to promote the public to buy electric vehicles, and therefore the market share of electric vehicles is going to increase multiple times.

### 3.6 *Societal behaviours*

The shift in the social behaviour of society is also an important factor that can pave the way for unprecedented changes in the automotive market. The passenger cars industry is feeding the German economy as one of every 15th car sold in the world comes from Germany (Kuhnimhof, 2017). It must be noted that passenger cars have become the most important means of transport and according to the research, it has been estimated that nearly 58% of all trips are done in passenger cars as well as 79% of passenger-kilometres are travelled in passenger cars. Talking about the bigger metropol-

itan cities where high-quality public transport is available, the people still use passenger cars for half of their journeys which means implies 71% of passenger-kilometres. This has led to climatic problems as well as noise pollution and unprecedented levels of fuel consumption. Social attitudes of German people are now changing and carsharing can be seen to be getting popular and it has a vital role in sustainable urban mobility. This shift in the behaviour of society is changing the mobility behaviours in Germany and has the potential to redefine the priorities of the passenger car industry.

### 3.7 *Vehicle density*

Vehicle density can be a potential driver of the automotive industry in a particular direction to make certain decisions and policies. The vehicle density alone is a very confounding measure of the market and is a double headed sword as it shows the number of vehicles per 1000 persons hence showing the success of the automotive industry whereas at the same time it is a representation of how low potential a particular automotive market has become. A higher vehicle density directly represents that a particular market has been a success but at the same time a higher vehicle density means that only a low number of people are left without the vehicles which means that the market has now become smaller and the competition has gone up. For instance China, USA and India whose vehicle density is 110, 28 and 800 vehicles per 1000 inhabitants. Considering the USA, in which 800 out of 1000 inhabitants have cars, one may infer that it has been such a high profit market as compared to China and India where only 110 and 28 people out of 1000 have cars. On the one hand you may infer that the markets are very weak. On the other hand, having low vehicle density could mean that there is still a great number of people left to buy the cars so there is more room and more potential in market. But, as already mentioned above, vehicle density alone can be very confounding. For example, a

country with low vehicle density but a large population can have greater number car sales as compared to a country with high vehicle density but a very small population. Therefore, a lot of other factors must be addressed and statistically analyzed before using vehicle density as a criterion to define market dynamics.

### 3.8 Income structure

Income structure also affects the dynamics of the automotive market. In a country having high income per capita, individuals may have more than one car. Even if they have one car, they might have a more expensive car as compared to the countries with low income per capita where individuals may not be able to afford one car and even if somehow they become able to buy a car, they might buy a cheaper one.

## 4. Potential markets of passenger cars with special reference to electric vehicles

The downfall of the global automotive industry due to COVID-19 restrictions can be thought to be temporary because it is expected that as soon as the COVID-19 restrictions will be uplifted, the automotive industry will be back on track. So, to describe the potential passenger car industries, I will consider that data before the COVID-19 restrictions were imposed i.e. data of 2019. As the economic situation around the world is improving in 2021, it is a good sign for the German automotive industry because the passenger markets around the world are expected to show positive trends and car exports are expected to rise significantly.

Although the passenger car market has shrunk in 2019, it is worthwhile to mention here that despite the decline in sales of passenger cars, there has been a significant increase in the sales of electric cars. It is estimated that 2.1 million electric cars have been sold globally in 2019 which is 2.6% of all car sales; it indicates the growing market of electric cars around the globe. The global stock of

electric cars, therefore, increased to 7.2 million i.e. 1% of the total car stock globally. By 2019, there were 9 countries having more than 100,000 and there were 20 countries in which electric cars had gained a market share of more than 1%. This transition from conventional cars to electric cars has been catalyzed by ambitious policies that provide subsidies to the electric car industries and lower taxes on electric cars as well as the implantation of the zero-emission and fuel economy standards. (Association of the German Automotive Industry (VDA), 2020)

The potential markets for German passenger cars as well as the German electric cars are discussed below:

### 4.1 Chinese Market

2019 was a year of immense trouble for the Chinese passenger car industry. Signs of this downwards trend were eminent in 2018 when the overall sales decreased by 4%. However, the significant drop in sales of cars happened in 2019 when the sales fell by 9%. Only 6.5 million cars were sold which is the lowest since 2015. The US has been continuously imposing tariffs on the Chinese market and China has been imposing tariffs on the US. This trade war is affecting the buyer's credibility and is creating uncertainty among them. Apart from the external causes, the drop in the Chinese car market can be attributed to the China 6 emission standard which was implemented in some provinces of China in mid-2019 but not in the others. It created confusion among both the buyers and the dealers. This emission standard was expected to be completely imposed all over China in 2020 but due to the developing circumstances, the imposition of these standards was delayed till January 2021. This confusion halted the Chinese passenger car market. Despite the falling trends, German manufacturers were able to maintain healthy growth and their market share increased from 21.8% to 24.7%. German passenger car sales in China increased by 2% and a new record of 5.2 million



German car sales was set. (Association of the German Automotive Industry (VDA), 2020)

The stronghold of German car manufacturers on the world's biggest passenger car market can be demonstrated by the fact that in 2019, corporate German passenger car manufacturers manufactured a higher number of passenger cars in China than they did in Germany (the production of German cars by German manufacturers in China). It can be said that the Chinese market is a goldmine for the German passenger car industry (Heymann, 2020).

China has been one of the most demanding markets for electric vehicles. In 2010, there were just 17,000 electric cars on roads in the world whereas, in 2019, 7.2 million electric cars were on the roads in the world. It should be noted that out of these 7.2 million electric cars, 47% of the cars were in China. The market share of electric vehicles in China remained at 4.7% which is commendable (IEA, 2020).

#### 4.2 European Market

The European passenger car market has been showing a positive trend since 2015. 2019 was also a year of growth for the European market. The WLTP test was introduced in late 2018 and its impact has been seen in car sales in 2019. The sales of passenger cars kept on decreasing in the first half of 2019 and sales fell by 3 percent. In the second half of 2019, there was a 7% increase in car sales as compared to the second half of 2018. There was an overall positive growth of 1% in the European car market in 2019. If we talk about the individual markets, the UK car market, for the third consecutive year, reported a fall of 2% in the car sales which is the lowest since the year 2013. This significant negative effect can be attributed to Brexit. The passenger car market in France, despite showing a decrease in sales during the first half of 2019, increased by 2%. The Spanish passenger car market maintained its momentum and the market demand remained almost the same as it was in 2018 at

238,300 cars. A similar trend was seen in Italy, where the registrations of the new cars remained at 1.9 million cars which are equal to 2018. Most of the Eastern European markets positively grew in 2019. There has been a 6% increase in the new registrations and for the first time in history, 1.5 cars were sold. These markets have been continuously growing since 2014. The overall increasing European market is, therefore, a high paying potential market for German cars (Association of the German Automotive Industry (VDA), 2020).

One of the highest contributors to greenhouse gases in Europe is the transport sector. For meeting sustainable development, ensuring environmental health, and minimizing CO<sub>2</sub> emission, the carbon emission by the transport sector must be decreased. European Union has targeted to reduce CO<sub>2</sub> emissions from cars by 37.5 % which can be achieved by an increase in the purchase of electric vehicles in Europe. The sales of electric cars in Europe are picking up a healthy momentum and their market share is increasing. The market growth for electric vehicles in Europe can be demonstrated by the fact that there were only 700 electric car registrations in Europe in 2010 which rose to 550,000 cars in 2019. The market share of electric cars in the European Market in 2019 was 3.5%. On a total, 2% of the total car registrations in Europe were BEVs and 1% of registrations were of PHEVs. Registrations of BEVs increased by 129 % in 2019 as compared to 2020. This increase can be highly attributed to the Norwegian market as 60 000 BEVs were registered in Norway in 2019. Apart from electric cars, sales of electric vans were reported to be more than 20 000 in 2019, which makes 1.3 % of the market share as compared to 0.5% in 2018. 4% of the newly registered cars in 2019 in Europe were non-plug-in hybrid electric vehicles in which the conventional internal combustion engine is coupled with an electric propulsion system and are not included in the electric vehicles because they are fuelled by conventional fuels instead of being charged. During 2019, an increase was seen in the market share of electric vehicles especially BEVs

and PHEVs all around Europe. Norwegian market reported the highest market share i.e. 56 %. Following Norway, Iceland reported a 19 % market share, the Netherlands reported a 16% market share and Sweden reported a 12% market share of electric vehicles. 50% of all registrations of electric vehicles i.e. BEVs were reported in only three European countries i.e. Norway, Germany, and the Netherlands. In the Norwegian market, sales of BEVs were reported to be 42% of the total new car sales which was only 30% in 2019. These countries are offering plenty of financial incentives to electric cars such as tax relaxations as well as permission to use bus lanes. Unlike these countries, the market share of electric cars remained low in other countries like Spain and Italy where the market share of electric vehicles was below 1%. (European Environment Agency, 2020)

### 4.3 German Market

The most important and easy access market for German cars is the German passenger car market itself which has been on a rise for the last few years. It reported 5% higher sales in 2019 as compared to 2018. Talking about the figures, 3.6 million new cars were registered. This is the second-highest number of car sales reported in the German car market, only after 2009 when 3.8 million new cars were sold. During the first half of 2019, WLTP's implementation has caused a 1% rise in car sales which picked momentum, and in the second half of the year, the sales increased by 10%. Another reason for this increase in sales may be attributed to the CO<sub>2</sub> regulation for 2020. In 2019, the highest sales were shown by the German car giant i.e. Volkswagen followed by Mercedes-Benz. It was surprising to see Ford outnumbering Audi and BMW. (Bekker, 2020)

The German market is also one of the main markets for German electric cars and has the potential of growing because of the active support of the government. A goal was set in 2010, under the banner of the National Platform for Electric Mobil-

ity, to have approximately 1,000,000 electric vehicles by 2020 on the roads of Germany (Blau, 2010). Till 2014, the German government didn't provide any subsidies or tax relaxations upon purchase and sales of plug-in electric vehicles when it was realized that the absence of the policies in favor of the electric vehicle industry was halting the fulfillment of this ambitious goal. Therefore, new policies were made to promote the sales of electric vehicles. These subsidies hold only for the electric vehicles which have been purchased after May 18, 2016. The market share of diesel-powered cars decreased by 32.3% in 2018 and 32% in 2019. There was a total of 700,419 plug-in electric vehicles on German roads at the end of 2020. It is worth mentioning here that in 2019, Germany became the top-selling European market for electric vehicles by leaving Norway behind. The sales even increased in 2020 when 394,632 plug-in passenger cars were registered which means a growth rate of 263%. Germany is, therefore, the best market for electric vehicles in Europe. (European Automobile Manufacturers Association, 2020)

### 4.4 US Market

2019 wasn't a good year for the US passenger car market as the sales fell by approximately 1%. 16.96 million cars were sold. Although China replaced the US as the biggest market for German cars, it remains the potential market for German cars. It reported a shift in the buying trend as there was an increase in the purchase of SUVs as compared to Saloon cars. Despite a dipping US market, the German car manufacturers somehow managed to retain an increasing trend in their sales in the USA. Although the car sales in the USA as a whole were shrinking, German cars still maintained their sales and consequently, their market share has increased from 7.8 to 8.1 percent in 2019. The increase in the market was not that much significant but considering a declining market, it was something worth mentioning. Talking about the individual German brands, only Porsche was able to make



a significant mark which can be attributed to the high popularity of its variants i.e. Cayenne and Macan in the USA. Although Volkswagen sold the highest number of cars in the USA in 2019 i.e. 569,900, the highest increase in the growth rate was reported by Volkswagen i.e. 8.0%. It is, therefore, a potential market for German cars. (Association of the German Automotive Industry (VDA), 2020)

The US market has been one of the biggest markets for electric cars. The government of the USA has invested 2.4 million USD in to nourish the electric vehicle industry. This pushed the electric vehicle industry in a positive direction and as a consequence, this industry had a positive impact on the US economy. The market for plug-in electric vehicles (PEVs) has been rapidly increasing as it has been reported to be tripled from 2104 to 2018 but this is still 1.2% of the market share. The market share of PEVs is expected to rise to 7.6% percent by 2026. Despite the zero-emission levels, the advantages of electric vehicles are shadowed by the battery range of the electric vehicles. Despite this issue, an electric vehicle company i.e. Tesla by Elon Musk is the champion of the US electric car market and it has sold 160,000 units in the United States in 2019. (Wagner, 2020)

#### 4.5 Indian Market

India, the second most populated country on the face of the earth, is emerging as one of the biggest economies of the world and therefore is expected to be a high-profit market for German cars. Regardless of the potential of the Indian passenger car market, it faced numerous setbacks in 2018 when reportedly 3 million passenger cars were sold. This is 13% less than 2017. The decline continued in 2018 as well as in 2019. This significant decline can

be attributed to the halted economic growth and rising prices of vehicles because of the Implementation of the Bharat Stage VI emissions standard. (Association of the German Automotive Industry (VDA), 2020)

According to a report of the Indian Energy Storage Alliance, 380,000 electric vehicles were sold in India in 2020 of which the majority is of two-wheel drive cars that use lead-acid batteries. It is expected that the Indian electric vehicle market will grow by a compound annual growth rate (CAGR) of 44% with 6.34 million annual sales by 2027. (The Economic Times, 2020) CAGR is the mean annual growth rate of an investment over a time span that is greater than a year. It can predict the probability of gain or loss on an investment over time.

#### 5. Summary

The analysis carried out has shown that the existing markets of the German automotive industry will continue to be relevant even with a new focus on electric mobility. Europe is a very strong sales market and the incentives introduced for electric vehicles lead to the assumption that sales of electric vehicles will continue to increase strongly in the future. Well ahead of Europe, China is by far the most important market for the German automotive industry. Above all, the strong demand for electric vehicles makes it the most important market for the future as well. Local production of the vehicles and also battery production should therefore be pushed. Another result of the analysis is that electrification cannot open up new markets in addition to the existing ones. India was examined here as an example. The high cost of electric vehicles, especially if there is no support from the government, is a major hurdle for low-income countries.

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## Future Markets for the German Automotive Industry

### ABSTRACT

*The German automotive industry is undergoing a technological shift from combustion engines to electric vehicles. This paper examines the key markets of the industry with particular regard to the potential sales and demand for electric vehicles. The aim is to clarify whether electromobility is a profitable business segment and which markets should be focused on. The market analysis is the first step for further strategy development. For example, to answer the question of where local production makes sense or whether it is more favorable to export electric vehicles.*

### KEYWORDS

*Market analysis; automotive; key markets; German automotive industry*

### JEL CLASSIFICATION

*M11; L11; L22*





# State Agency in Education Management during the Coronavirus Pandemic in the Slovak Republic

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## \* 1. Introduction

The consequences of school closures during the lockdown imposed in many countries are multiple and concern numerous aspects: educational, economic, health, family, and abuse. The most vulnerable children were the most affected by school closures. Preexisting vulnerabilities have been exacerbated, and inequalities have worsened, particularly in access to high-quality distance education (Cohen et al., 2020). Scientists and experts from various fields agree that the return of children to school is an essential element in ensuring that children have proper access to education. On the other hand, there are arguments in favor of health protection in the context of the coronavirus pandemic. However, the impact of restrictions on the economy and household economies needs to be taken into account. The Slovak economy is not following a very favorable global trend in the saving-to-debt ratio, which is one of the worst in the EU for Slovak households (Stoličná, Grožák, 2020). The current situation in the Slovak Republic is serious, during the 7th and 8th week of 2021 the rate of 14-day death reports per 1,000,000 inhabitants for the observed period was 241.8 (“COVID-19 situation update for the EU/EEA, as of week 9, updated

11 March 2021”, 2021), and thus the highest in the countries of the European Union. These figures support the adoption of restrictions and measures to prevent the spread of the coronavirus pandemic. Organizations are constantly trying to figure out how to improve and do more with less, especially with today's budgetary pressures. We can also make visible the public value factors. Public value can be described as “what adds value to the public and what is valued by the public” (Majerčáková, Mittelman, 2014). Efficient and economically viable management of these organizations brings not only the achievement of the objectives, but also increasing the quality of provided services. At the same time setting limits for these organizations can have positive impact on the Slovak State budget and efficient expenditures within the limits of budgetary rules without the need of the state debt increasing (Stoličná, Barjaková, 2020).

This paper focuses on the analysis of measures taken within the competencies of the Ministry of Education, Science, Research and Sport of the Slovak Republic (MŠVVaŠ SR or the Ministry) with an impact on kindergartens, primary and secondary schools in the Slovak Republic during the coronavirus pandemic. The Ministry represents a specific ministry managing three different areas of activity →

– education, science and research and sports. The Ministry's remit has a direct impact on a relatively wide section of the professional and lay public, as it is related with education from pre-primary through primary, secondary and tertiary to life-long, with a direct impact on students, pupils and teachers, as well as other professional staff. Schools in the Slovak Republic are attended by 692,950 pupils and have 133,124 employees. A total of 6,898 (Table no. 2) schools are included in the network of schools and school facilities, while the annual total contribution from the State budget for the normative financing of schools for 2021 is € 1,943,135,198 ("Normatívne financovanie | Ministerstvo školstva, vedy, výskumu a športu Slovenskej republiky", 2021).

Currently, a number of scientific studies and articles deal with the issue of the coronavirus pandemic and the need for pupils to return to schools. The purpose of this article is to summarize the measures taken in the context of full-time and distance education and measures to mitigate the negative consequences of distance education, respectively to ensure the access to education in the Slovak Republic.

The first part of the article presents the current state of the need for schools to be open, respectively providing full-time education. The second part is focused on decisions taken on the level of the government and the Ministry. The third part of the article deals with the currently applied tools to mitigate the negative effects of the coronavirus pandemic during distance education. In the final part, the article points out the current problems perceived at the level of central state administration within distance education.

## 2. The aim and methodology

The aim of the article is to clarify the current state and determinants influencing the system of education management during the coronavirus pandemic with a focus on the application of government regulations and decisions of the Ministry during

the coronavirus pandemic. The article has the ambition to approach the support mechanisms provided by the state, respectively by the Ministry, but also to point out the problems in the application of particular decisions and measures.

In order to achieve the main goal, the following sub-goals were intended:

1. to clarify the basic framework for decision-making at the level of the government and the Ministry connected with distance education during the coronavirus pandemic and the legislative framework limiting the competence of the Ministry,
2. to find out which tools were applied by the Ministry in order to reduce the negative impacts of the coronavirus pandemic on education and which are currently applied in practice,
3. on the basis of specific data to draw conclusions about current problems in the application practice of the decisions taken.

Within the processing of information, several methods of analyzing the materials, data and legislative documents were applied, as well as practical knowledge and experience from the government department

From the scientific methods, an analytical and descriptive method was applied to approximate and analyze the current and legal situation. Analysis, synthesis, abstraction and comparative method were used to examine the factors and elements influencing the management of education by distance or full-time form.

In this paper, we scrutinize the development of the decision of the Ministry issued in connection with the interruption of the full-time form of education and the transition to the distance form and vice versa. Due to the fact that the process of education is provided primarily by kindergartens, primary and secondary schools, we will focus on decisions related to these schools. School facilities, e.g. language schools, art schools, school canteens, universities, are excluded from the study.

The starting materials are mainly publicly available sources – government regulations and resolu-

tions, decisions of the Ministry and other legislation, namely generally binding legal regulations and departmental internal regulations. Legislation is very important element in governance in public administration because it significantly limits it. Other research documents included manuals regulating the return of children and pupils to schools, as well as concluded contracts and other publicly available resources.

### *3. Theoretical background – Distance education in connection with the coronavirus pandemic and the need for full-time education*

The coronavirus pandemic has affected, among other areas, education worldwide. During the first wave of the pandemic in spring 2020, there was a massive interruption in the full-time form of education around the world. The return to schools took place during the first wave of the pandemic in various ways.

Most countries have implemented a phased reopening approach. Others such as Italy, Spain, Portugal, California and parts of the UK (Scotland and Northern Ireland) opted for schools to remain closed until the new academic year. New Zealand and Israel have prioritised children with the greatest need such as those from vulnerable homes, younger children requiring adult supervision and children with learning difficulties. Germany and China have reopened schools for older children first prioritising those most able to comply with social distancing measures. Denmark has reopened primary schools and for older children due to take exams focusing on the urgency of educational need. There is insufficient scientific evidence to guide the decision to reopen schools for all or certain age groups. However, key influencing factors in most countries that have chosen to reopen schools are low daily number of coronavirus cases and high testing rates (Ziauddeen et al., 2020).

The reopening of schools with the physical presence of pupils is therefore an objective around

the world. The admission of children to school should be made on the condition that transmissibility in the population is reduced, or better still eliminated, through testing and supervision. It is particularly crucial to set up a rapid screening strategy around adult cases, targeting as a priority the circle of close relatives. The risk of an epidemic in a community of children will also be lower if adult staff in the establishments follow strict health measures, since transmission in communities is mainly from adults to adults or from adults to children. It is crucial to recall that the educational and social benefits provided by school far outweigh the risks of a possible COVID-19 contamination of children in school environments or in daycare centers. In line with the position taken by pediatric authorities in many countries, in France there is proposed a practical management of COVID-19 infections in schools, compatible with regular in-person teaching and without imposing on children repeated screening tests, which is of no benefit for epidemic control (Cohen et al., 2020).

The situation is also serious in the United States, where due attention was paid to returning to schools. Until children physically return to school full time, many will lose out on essential educational, social, and developmental benefits; neither the economy nor the health care system will be able to return to full strength given parents' caretaking responsibilities; and profound racial and socioeconomic injustices will be further exacerbated. We believe that safely reopening schools full-time for all elementary school children should therefore be a top national priority. Many parents and educators are reasonably concerned, however, about whether any large-scale reopening plan can ensure safety for students, school staff, and household members, given high levels of community transmission in many U.S. regions. Contagion is a particular concern in schools that serve predominantly low-income communities of color, given that such schools are often overcrowded and understaffed and that the families whose children at



tend them are at especially high risk from Covid-19. It would be best – and evidence from many countries demonstrates that it’s possible – to lower community transmission rates by means of stringent control measures this summer so that schools can reopen this fall with an acceptable level of safety. Even under conditions of moderate transmission (<10 cases per 100,000 people), however, we believe that primary schools should be recognized as essential services – and school personnel as essential workers – and that school reopening plans should be developed and financed accordingly (Levinson et al., 2020).

It is therefore clear that schools worldwide switched to the distance form of education during the coronavirus pandemic, but at the same time the need for the full-time form of education is emphasized by the professional public.

#### *4. Distance and full-time education during the coronavirus pandemic in the Slovak Republic*

MŠVVaŠ SR is according to law the central state administration body for kindergartens, primary schools, secondary schools, primary art schools, language schools and universities, school facilities, lifelong learning, science and technology, state care for youth and sports.

The Minister of Education, Science, Research and Sport (hereinafter referred to as the “Minister”) is based on § 150 par. 8 of School Act, authorized to issue relevant decisions on extraordinary interruption of schooling or on other dates decisive for the organization of the school term if a state of emergency, if a ban on the operation of schools and school facilities according to a special regulation is ordered. It is common for the decisions of the Minister related to the interruption of the full-time form of education that they are issued on the basis of a measure of the Public Health Office of the Slovak Republic or on the basis of a resolution of the Government of the Slovak Republic. All decisions in which the full-time form of educa-

tion is allowed are conditioned by the decision of the founder and local operational possibilities.

During the first wave of the pandemic, the state of emergency only affected the health sector. The government announced it on 16 March 2020 and it lasted until 14 June 2020 (Ministerstvo vnútra SR, 2021). The emergency situation declared by the government on 11 March 2020 has persisted since then. At present, a state of emergency is declared by 19 March 2021.

Since 8 February 2021, the COVID Automat Alert System on the basis of a resolution of the Government of the Slovak Republic has been in force in Slovakia. The districts are divided according to the current epidemiological risk into 4 levels of warning. It enables predictable setting of measures – balancing economic activity and public health. The aim of this system is to ensure that measures are: simple, comprehensible, predictable, targeted, enforceable, secure and in line with legislation (Ministerstvo vnútra SR, 2021). It regulates the operation of schools as follows in Table no. 1.

#### *4.1 Minister’s decisions*

The extraordinary interruption of education, ensuring the distance form of education, as well as the full-time form of education took place in the school term 2019/2020 as follows:

1. First of all there were issued Education Guidelines on 2 March 2020 (MŠVVaŠ SR, 2020) and 9 March 2020 (MŠVVaŠ SR, 2020) and on 11 March 2020 (MŠVVaŠ SR, 2020).
2. On 12 March 2020, the Minister interrupted education at schools during the period from 16 March 2020 to 29 March 2020 inclusive. The school directors had to ensure, according to the local conditions and possibilities, the self-study of the pupils through electronic communication with the pedagogical staff of the school.
3. On 24 March 2020, the Minister informed about the closure of schools until further notice, referring to the fact that the Public Health Office of

**Table 1 » Schools operation in Slovakia according to COVID Automat Alert System**

Level	Monitoring	Level of vigilance I.	Level of vigilance II.	Level of warning I.	Level of warning II.	Level of warning III.	Level of warning IV.
Schools	no restrictions	kindergartens, primary and secondary schools – no restrictions	kindergartens, primary and secondary schools – no restrictions	kindergartens, primary and secondary schools – no restrictions (full-time education)	kindergartens, primary schools and graduating classes of secondary schools – full-time education	Kindergartens, first grade of primary school – full-time education,  special schools and pupils not able to study distance form – full-time education in groups of 5 pupils and a teacher,  graduating classes of primary and secondary schools – full-time education; full-tie study with negative COVID-19 test.	Kindergartens, first grade of primary school – full-time education,  special schools and pupils not able to study distance form – full-time education in groups of 5 pupils and a teacher,  graduating classes of primary and secondary schools – full-time education; full-tie study with negative COVID-19 test.

Source: COVID Automat Alert System (2021)

the Slovak Republic was responding to the measures concerning the prevention of the spread of the new coronavirus (MŠVVaŠ SR, 2020).

4. On 28 May 2020, the Minister allowed to reopen schools from 1 June 2020:
  - kindergartens,
  - primary schools for zero, first to fifth classes, and
  - special primary schools for preparatory, first to ninth classes.

The founder of the school decides on the length of operation of the school and the school club for children depending on the personnel, material and spatial possibilities, respecting the number of pupils in the group, which is stated in the decision of the Minister – maximum of 20 (MŠVVaŠ SR, 2020) pupils for schools and a maximum of 15 children for kindergartens (MŠVVaŠ SR, 2020).

5. On 16 June 2020, the Minister allowed to reopen schools from 22 June 2020 in all types of schools and in all grades. Extraordinary interruption of education in schools is considered to be complied with the regulation if the founder of school decides to reopen the school but the child's or pupil's legal representative does not show interest in his or her upbringing and education at school due to health concerns (MŠVVaŠ SR, 2020).

In the school term 2020/2021, Minister's decisions were taken to interrupt the full-time form of education and its subsequent resumption as follows:

1. On 11 October 2020, the Minister, with effect from 12 October 2020 until further notice, decided to limit educational activities at secondary schools in the full-time form, as they may be carried out at a distance. At all types of schools there are limited activities that are not



- critical to the educational process (MŠVVaŠ SR, 2020).
2. On 23 October 2020, the Minister, with effect from 26 October until further notice exceptionally interrupted full-time education process at:
    - a) primary schools for pupils in the fifth to ninth class,
    - b) secondary schools.

The school directors will provide distance education for pupils and students. The extraordinary interruption of school teaching in schools and the operation of school facilities follows the Resolution of the Government of the Slovak Republic no. 678 of 22 October 2020 and the restriction of the freedom of movement (MŠVVaŠ SR, 2020).
  3. On 12 November 2020, the Minister, with effect from 16 November 2020, reopened
    - a) special secondary schools, vocational schools and practical schools and
    - b) in primary schools and secondary schools in small groups for pupils from socially disadvantaged environment, if conditions do not allow access to distance education, the operating conditions allow it and the founder decides so; small group means a group of up to five pupils and one teaching staff (MŠVVaŠ SR, 2020);
  4. On 4 December 2020, with effect from 7 December 2020, the Minister resumed education
    - a) in primary schools in the fifth to ninth classes and
    - b) in secondary schools

for pupils and students who meet the conditions set out in point Resolution of the Government of the Slovak Republic no. 760 of 4 December 2020 and in the Decree of the Public Health Office of the Slovak Republic no. 32/2020, which orders measures in the event of a threat to public health to prove a negative test result for COVID19 before entering schools (MŠVVaŠ SR, 2020).
  5. On 8 January 2021 with effect from 11 January

- 2021, education in schools other than kindergartens for children of legal representatives working in critical infrastructure and for children of legal representatives who are not allowed to work from home is exceptionally interrupted; director of schools, where education is interrupted will provide distance education for children, pupils and students. This decision responds to developments in the epidemiological situation during December 2020 and from the beginning of 2021 (MŠVVaŠ SR, 2021).
6. On 2 February 2021 with effect from 8 February 2021 in accordance with the conditions specified in the Resolution of the Government of the Slovak Republic no. 77 of 5 February 2021, if the operating conditions allow it, it is resumed full-time education in
    - a) kindergartens,
    - b) primary schools in the first stage,
    - c) primary schools in the second stage for groups of one pedagogical staff member and maximum of five pupils, if the conditions do not allow them the access to distance education,
    - d) secondary medical schools,
    - e) secondary schools in the graduating classes,
    - f) secondary schools, except for the graduating classes for groups of one teaching staff and a maximum of five students, if the conditions do not allow them access to distance education.

Based on negotiations between state representatives, scientists and experts on 23–25 February 2021, a proposal to update measures to stop the increase in hospitalizations and slow down the spread of coronavirus infection was submitted and adopted by the Government of the Slovak Republic by Resolution no. 122 of 28 February 2021. One of the measures was mobility limitation by minimizing full-time work, including by maintaining the possibility of “pre-school and school attendance of the 1st degree for children of employees with the necessary full-time work” (MŠVVaŠ SR, 2021).

#### 4.2 Guideline “COVID – School Traffic Light” and guideline “Return to Schools 2021”

The 2020/2021 school term began with the opening of all schools. COVID – School Traffic Light was in effect.

The aim of the manual is to determine the basic operating conditions of primary schools for the duration of the coronavirus pandemic and the need to comply with anti-epidemic measures and recommendations. It regulates only those operating conditions that differ (or are modified beyond the scope) from the standard conditions resulting from school, hygiene, labor law and other regulations. The manual is designed as an Alert system and a recommendation manual in three levels – green, orange and red. The green phase represents a situation where the school has no confirmed positive student or employee. The orange phase captures a situation where a school has a student or employee with a confirmed coronavirus disease. The red phase contains a list of measures in case of positivity of several cases (epidemic occurrence) among students or staff.

The Ministry has prepared a communication portal with school directors, which contains ques-

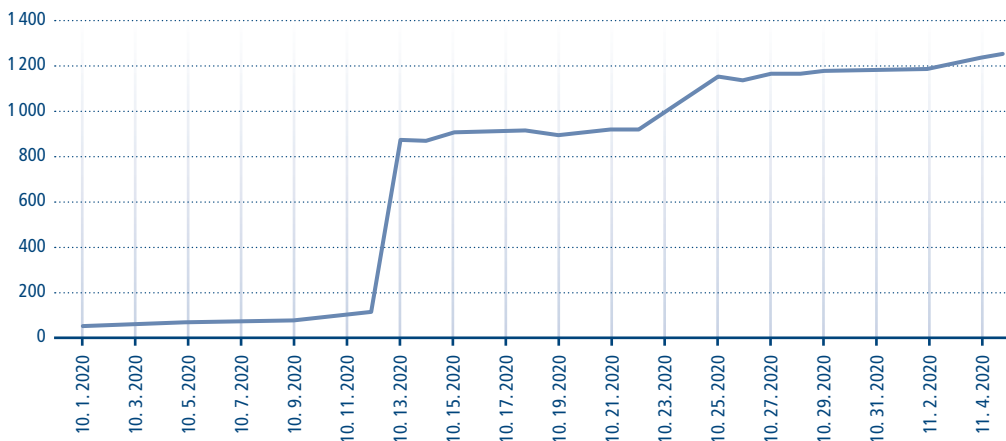
tions on various possibilities for the development of the epidemiological situation in the school. The school management is obliged to inform the ministry in this way about:

- a) granting “director’s leave” to a class or the whole school on suspicion of COVID19,
- b) closing of a class or school on the basis of a decision of the Regional Public Health Office,
- c) return of one or more classes to school; and
- d) the beginning and end of domestic isolation of employees due to suspicion or diseases on COVID19.

Schools only send up-to-date data on the relevant day, when a change has occurred (deterioration or improvement). Immediate and rapid data enable the Ministry to respond promptly to the situation in schools and to update measures and recommendations. The form is available on the website (MŠVVaŠ SR, 2020). The number of closed schools based on information from schools is described in graph no. 1.

The material “Return to Schools 2021” is primarily intended for the founders of primary schools, secondary schools and school facilities and for their directors. It serves for quick orientation in providing education in schools according to

**Graph 1 » The number of closed schools — completely closed schools**



Source: own processing (2021)

the conditions in accordance with the decision of the Pandemic Commission of the Government, Central Crisis Staff, resolutions of the Government, Public Health Office, decisions of the Minister and according to the rules of COVID Automat Alert System issued by the Ministry of Health of the Slovak Republic with regard to the epidemiological situation of COVID-19 in the territory of the Slovak Republic (MŠVVaŠ SR, 2021). It regulates the forms of education, but also the conditions of COVID-19 testing, including the conditions of the contribution to the procurement of tests, school attendance in connection with testing, as well as the conditions of functioning of school facilities.

The Ministry of Education recommends the use of testing in schools and school facilities during the full-time form of education in schools in the event of suspicion or diseases on COVID-19 for earlier return of students or staff from preventive home isolation. Therefore, especially in larger schools, it is a suitable solution to consider setting up a mobile collection point, which will serve schools at specified times or when needed. The procedure for setting up a mobile collection point, the operating rules and other necessary documents are annexed to this manual (MŠVVaŠ SR, 2021).

School, respectively the founder, providing testing of employees, pupils and one legal representative of the tested pupil living in the same household may apply for a financial contribution from the Ministry for the proven number of actually tested eligible persons. The amount of the financial contribution is EUR 5 per authorized tested person. The school or founder contracts this type of activity in its own mobile collection point as a "special service" (budget classification item 637005). Based on an application (submitted via an online form, which is published on the Ministry's website and serves to report the number of tested persons) the Ministry pays the request up to the amount of the claim according to the proven number of tests performed for authorized persons (MŠVVaŠ SR, 2021).

## *5. Measures taken by the Ministry to mitigate negative impact of regulation of distance education and the ensuring the full-time education during the coronavirus pandemic*

The Ministry intends to take measures to mitigate the negative effects of distance education. These measures have been taken since the outbreak of the pandemic.

### *5.1 Communication with schools*

Since 25 March 2020, the website [www.ucimenadi-alku.sk](http://www.ucimenadi-alku.sk) (we teach at distance) has been accessible. The website was created in cooperation with several non-governmental organizations and the Ministry and has served as a tool for official communication during interrupted education at schools in times of emergency. The website provides an overview of the possibilities of distance education, as well as recommendations and guidelines for schools, teachers, professionals, counseling, parents. The call center of the Ministry has been available to the general public since 26 March 2020. Experts provide advice and answers to questions about the situation in education on weekdays from 8:00 to 16:00 on a toll-free number or e-mail (MŠVVaŠ SR, 2020).

### *5.2 Summer schools 2019/2020*

Summer schools are a part of the measures of the Ministry to mitigate the effects of the crisis period during the coronavirus pandemic, which arose as a result of the interruption of education in schools. The summer school does not copy classical education, but should contribute to the stimulation of the educational process. The Ministry announced a call for development projects aimed at organizing summer schools with an allocation of € 500,000 (MŠVVaŠ SR, 2020).



### 5.3 Budget increase

Due to the occurrence of a pandemic related to the COVID-19 disease, the Ministry of Finance of the Slovak Republic approved to exceed the limit of expenditures for 2020 in regional education by the amount of € 15,919,901 (MŠVVaŠ SR, 2020).

### 5.4 Distance learning – online learning

Professional educational videos related to the current necessary distance education for the 6th to 9th class of primary schools are available via the original “EDUTV” format, which is owned by the Ministry. The result of the project is the creation of videos making available the basic curriculum of selected subjects for the 6th – 9th class of primary school according to the valid state educational programs (according to the guidelines, these years are most endangered by the interruption of school teaching due to COVID-19). The videos can also be useful independently of coronavirus pandemic. The videos will still be available on the website and usable in the case of

- a) deputing the teacher during his / her absence
- b) absence of a pupil in education (due to illness)
- c) need for distance education
- d) tutoring a pupil e.g. in case of moving to a new place of residence (“Viki”, 2021).

### 5.5 Vaccination of school staff

Vaccination of teachers aged 55 and under began on 13 February 2021. This was the first phase in which the Ministry, in cooperation with the Ministry of Health, has provided free of charge and voluntarily the opportunity to be vaccinated against coronavirus for school staff (MŠVVaŠ SR, 2021). After that weekend, 30% of teachers were vaccinated (ÚVZ SR, 2021). Since 26 February 2021, it has been possible to register for vaccination for all employees of schools under the age of 55 (inclusive). Unfortunately, the Ministry of Health is still waiting for the supply of the relevant vaccines for cate-

gory 56+, and for this reason there are no further dates for vaccinating employees over the age of 56 in the coming days (MŠVVaŠ SR, 2021).

### 5.6 Mouth rinse and gargling testing

By a resolution of 18 February 2021, the Government of the Slovak Republic imposed the Ministry to ensure all the necessary steps for testing on the principle of oral rinsing by gargling for the collection of biological material for the detection of SARS-CoV-2 by PCR test at schools. Based on the above-mentioned government resolution with a financial allocation of € 22 million, the Ministry contracted 4 providers of tests and diagnostic services (Centrálny register zmlúv, 2021).

### 5.7 Voice and data

Based on the results of public procurement, the Ministry concluded contracts with mobile operators in order to provide a sufficient number of voice and data services for pedagogical staff and professional staff for the needs of distance education as one of the measures in response to the coronavirus pandemic. The purpose of the contract is to create a contractual framework with a mobile operator to provide the pedagogical employee or professional employee involved in distance education and using the mobile operator’s mobile telecommunications network with services defined in contract paid by the Ministry. Users of the services are pedagogical employees and professional employees using the Provider’s mobile telecommunication network, whose subscribed telephone number was provided by the Ministry to the Provider and whose Service Package was activated by the Provider (Centrálny register zmlúv, 2021).



### 5.8 Emergency stocks from Administration of State Material Reserves of the Slovak Republic

In the interest of the Ministry in accordance with the aim of eliminating the nationwide closure of schools, respectively to ensure the safe opening of schools, the Ministry asked the State Material Reserves Administration for allocation emergency stocks for school employees.

However, the specification also took into account the currently available stocks of Administration of State Material Reserves of the Slovak Republic. Within the current epidemiological situation, as well as the current stocks, the requirement may be changed, supplemented and updated.

1. Application of 20. 05. 2020:
  - a. Disposable drape – 1,500,000 pieces
  - b. Washable drape – 200,000 pieces
  - c. Protective shield – 2,000 pieces
  - d. Safety glasses – 10,000 pieces
  - e. Disinfection in pieces [1 package = 5 liters] – 320 (i.e. 1,600 l) (MŠVVaŠ SR, 2020)
2. Application of 16. 10. 2020 – textile washable drape – 266,248 pieces
3. Application of 03. 02. 2021
  - a. Washable textile drape – 270,000 pieces

- b. Respirator – 135,000 pieces
4. Application of 04. 02. 2021
  - a. Disposable drape – 500,000 pieces
  - b. Respirator – 135,000 pieces
5. Application of 08. 02. 2021
  - a. protective shield – 21,000 pieces (MŠVVaŠ SR, 2021)
6. Application of 16. 02. 2021
  - a. Respirator – 270,000 pieces
7. Application of 02. 03. 2021
  - a. Respirator – 274,536 pieces (MŠVVaŠ SR, 2021).

The district office, through the relevant department of education, will ensure the distribution of emergency stocks to eligible applicants (founders of schools) according to Table no. 2.

### 6. Results and discussion

Based on the available data, it can be stated that the Ministry responds flexibly to the current pandemic situation, as evidenced by the number of issued decisions on extraordinary interruption of education or resumption of education. In the school term 2019/2020, 3 guidelines and 4 decisions were issued, in the school term 2020/2021 there were 6 decisions. In the school term

**Table 2 » The number of schools and employees**

Region	Kindergartens		Primary schools		Secondary schools		Together	
	Number	Employees	Number	Employees	Number	Employees	Number	Employees
Bratislavský	352	3 963	215	8 558	125	5 105	692	17 626
Trnavský	353	2 883	250	6 895	88	3 204	691	12 982
Trenčiansky	331	2 994	215	6 939	75	3 078	621	13 011
Nitriansky	439	3 180	345	8 589	106	3 505	890	15 274
Žilinský	409	3 653	322	9 551	114	4 669	845	17 873
Banskobystrický	415	3 087	319	8 546	118	3 972	852	15 605
Prešovský	579	4 507	502	11 860	178	4 919	1 259	21 286
Košický	494	3 635	382	10 875	172	4 957	1 048	19 467
Slovak Republic	3 372	27 902	2 550	71 813	976	33 409	6 898	133 124

Source: own processing (2021)

2020/2021, the ambition of the Ministry was also to ensure the operation of schools according to the document “COVID – School Traffic Light”. Other conditions for the schools operation, especially in connection with the testing of pupils, are regulated by the document “Return to Schools 2021”. However, these materials are of a recommendatory nature. Decisions of the Minister are binding for schools. In addition to them, schools are also governed by the decisions of the Public Health Office of the Slovak Republic and other binding decisions, issued by government. Orientation in these decisions and binding regulations can be chaotic and challenging. In addition, most of the Minister’s decisions entered into force on the day or the Monday following the decision issued on Friday. Such time is insufficient to make all relevant decisions for the opening and proper operation of the school.

As for the adoption of measures to eliminate the consequences of the coronavirus pandemic, these have been adopted gradually in several areas. First, a call center was set up. Subsequently, when resuming education, the Ministry requested emergency stocks from the Administration of State Material Reserves of the Slovak Republic. The Ministry requested these stocks due to the reopening of schools. When recalculating the amount of the emergency stock per school staff, this number seems very low. It is necessary to keep in mind that emergency stocks serve only to deal with emergencies and critical situations. During the summer, the Ministry provided a grant for summer schools and the Ministry of Finance increased the schools’ budget by almost EUR 16 million. The preparing of educational videos, the use of which will be possible even after the end of the pandemic, can be seen as a very positive step. The increase in voice and data services for teachers to increase the length and quality of distance education can also be viewed positively. However, the contracts were not concluded until March 2021, a year since the outbreak of the COVID-19 pandemic. The vaccination of school staff is a very topical issue, with

school staff being prioritized over critical infrastructure. Also, testing students by gargling and a more reliable PCR method than antigen testing will contribute to more relevant testing results, but also to obtaining samples in a more comfortable way for students.

## 7. Conclusion

Evaluating the results of the research, we are convinced that we managed to meet the set goals. We analyzed the current state and determinants influencing the system of education during the coronavirus pandemic, focusing on the application of government regulations and decisions of the Ministry. At the same time, we summarized the support measures provided by the state via MŠVVaŠ SR and possible problems in the application of individual decisions.

Based on the essential facts and considerations contained in this article, it can be concluded that the short time between the adoption of a decision and its effectiveness is problematic when school directors do not have sufficient time to ensure the proper operation of schools. Another problem may be the orientation in decisions and binding regulations due to the number of constantly changing regulations, but also the bodies that issue them (government, ministry, public health office and regional public health authorities).

The article focuses on the analysis of measures taken within the competencies of the Ministry with an impact on kindergartens, primary and secondary schools in the Slovak Republic during the coronavirus pandemic. Within the processing of information, several methods of working with text, data and legislative documents were used, as well as practical knowledge and experience from the given department.

From scientific methods, analytical and descriptive methods were applied to approximate and analyze the current and legal situation. Analysis, synthesis, abstraction and comparative method were applied to examine the factors and ele-



ments influencing the management of education by distance or full-time form.

By applying these methods, it was possible to draw conclusions about current problems in the application of individual decisions in the manage-

ment of education during the coronavirus pandemic in the Slovak Republic and to bring the output of the article, which is a set of measures and financial implications of some of them.

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## State Ingency in Education Management during the Coronavirus Pandemic in the Slovak Republic

### ABSTRACT

The article is focused on the analysis of the current state and determinants influencing the system of education during the coronavirus pandemic with a focus on the application of government regulations and decisions of the Ministry of Education, Science, Research and Sports of the Slovak Republic (MŠVVaŠ SR). At the same time, it points to the support provided by the state, respectively MŠVVaŠ SR, but also to problems in the application of individual decisions. Due to the fact that all schools included in the Network of schools and school facilities of the Slovak Republic are financed from the state budget, it is necessary to point out that effective school management during a coronavirus pandemic is a necessary factor in ensuring access to education for 692,950 children and pupils. A total of 6,898 schools are included in the network of schools and school facilities. The annual total contribution from the State budget for the normative financing of schools for 2021 is € 1,943,135,198. Effective management and functioning of schools not only during the coronavirus pandemic ensures the right to education for thousands of students, but also increase the quality of educational services, but it is also necessary to determine limits and impacts on the Slovak budget and effective budgeting within the limits of budgetary rules without the need to increase expenditures or increase the debt of the Slovak Republic. Specific decisions, facts and settings of school management and function-

ing during the coronavirus pandemic in the Slovak Republic are the basic criteria for processing the practical aspect of this article. The aim of the article is to clarify the current state and determinants affecting it and on the basis of the obtained data to point out problematic areas in making these decisions. Within the processing of information, several methods of analyzing the materials, data and legislative documents were applied, as well as practical knowledge and experience from the government department. The set of measures taken as well as the financial implications of some of them are one of the outputs of this article.

**KEYWORDS**

Government; ministry of education; schools; coronavirus

**JEL CLASSIFICATION**

H52; H00; H83

x

# How to deal with sudden shocks on Labor market during world pandemic, evidence from Slovak Republic

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## \* 1. Introduction

At the beginning of the year 2020, a new strain of coronavirus, known as SARS-CoV-2, unexpectedly hit almost the entire world, causing serious health problems for the people it affected with its high level of contagion. However, it did not only influence those infected, but it has affected all the inhabitants of individual countries, and the states of the European Union, where we are no exception. Individual countries have been forced to put in place preventive and protective measures to prevent the new coronavirus from spreading and leaving the health of citizens at risk. As a result of these measures, the economies of individual countries also began to run into problems, as factories, shops and services, which are the driving force of the economy in all countries, began to close down. The level of measures varied from country to country, in some life worked almost unchanged, but in some high-risk countries there was a significant reduction in population mobility, which resulted in several economic problems. One of these problems, of which there are many more, is unemployment. In this article, we will focus on unemployment and analyze the Slovak Republic, assess its state and try to look at the development of the situation.

## 2. Unemployment on a European scale during Covid-19 pandemic

The coronavirus affects the whole of the European Union, and experts and analysts have said that up to 59 million jobs could be at risk due to a coronavirus pandemic. Most vulnerable jobs are allocated to services, trade and construction. The most vulnerable sections of the population are people with lower levels of education and lower social groups without professional qualifications. The analytical company McKinsey, which also reports the above results, stated that unemployment rose from a February low of 6.5% to 7.6% in the total scale of the 27 countries of the European Union. According to the most probable forecast, the unemployment rate should return to the situation in February 2020 in the last, fourth quarter of the following year. In addition, it is stated that the worst-case scenario would be an unemployment rate of just over 11%, which would be a long-term unemployment problem, as eleven percent would take four years for the unemployment rate to return to its original, minimum level. 6.5%, which was a record low in February 2020.



## 2.1 European complications related to Covid-19

The European Union, in cooperation with its member states, has developed various measures to prevent the emergence of poverty or existential problems. These measures also include various benefits or subsidies to help not only companies but also individuals to overcome a difficult period. Once the possibilities of subsidies and assistance were announced, many people took advantage of this situation even if they do not experience existential difficulties and are not dependent on this assistance. Another group of people who applied for various allowances or subsidies is long-term unemployed and did not even look for a new job. These applicants argued in the application that they were long-term unemployed, and that the coronavirus did not allow them to be employed. As a result of this argument, they expressed before the competent authorities that they had to take care of their children or had to stay at home for another legitimate reason and that was why they applied for various forms of subsidies. However, in addition to these measures, it should be noted in the context of the European Union that due to coronavirus jobs that require international cooperation have disappeared or been interrupted, or the international environment is essential for the performance of work activities. Among such jobs we can rank companies in the field of transport or logistics. Typical professions include pilots, train drivers, truckers, bus drivers and the like.

## 3. Unemployment in Slovakia

In 2020, the European Union brought together 27 Member States and all the countries were affected by the coronavirus. The coronavirus came unexpectedly, and many countries were not prepared for this situation. One such country is the Slovak Republic, which was “one step ahead” compared to other countries. According to foreign experts, the measures introduced in Slovakia were exagger-

ated and even more to some people laughed at them, but it turned out that they were in place and did not allow the massive spread of coronavirus. In addition, at the time of the biggest pandemic, there was a change of government, which temporarily meant unclear statements, a mess of information and the citizens of Slovak republic were not informed exactly where the next measures would go. After this period, it turned out that many, not only Slovak companies, introduced the so-called home-office, which was previously defined in the Labor Code as telework, which we will get to later in this article. This form of work allowed many people to continue their jobs without having to physically come to work and thus not be exposed to risk in the workplace, respectively. during commuting.

### 3.1 Home office

Home-office represents computer work or the use of another method to perform work duties from home and does not require the presence of an employee at the workplace and work goals can be met remotely. In connection with the coronavirus, it was necessary to define this type of work in the Labor Code as well, and specifically the Act was amended, which was published in the Collection of Laws 66/2020 Coll. following the government meeting on the 2<sup>nd</sup> of April 2020. This amendment represents an aid to employees and employers to overcome the coronavirus period with the least possible losses. In this amendment, the home office is defined as the working method to which the employee is entitled if his presence at the workplace is not necessary, e.g. operating employee, maintenance worker, etc., so the nature of the employee’s work does not require his physical presence. Also, with effect from 4<sup>th</sup> of April 2020, the employer acquired the right to order the employee to work from home, in the form of a home-office, in other words, the employee may be forced to work from home despite his will. The home office is used mainly by administrative staff or people who do not have to be in contact with the public. →

The opposite of home-office workers are workers who are necessary to keep some services running, e.g. units of the Ministry of Inner Affairs (police, emergency medicine, fire brigade), public transport drivers, operators, etc., who are referred to by the media as front-line workers

### 3.2 Slovak companies and their operation during the coronavirus

During the coronavirus, not only shops and services were limited, but also large factories and companies on which the Slovak economy is partly built (Stoličná, Grožák 2018). Among the biggest downsides we can state the suspension of production in the Volkswagen factory in Bratislava, as well as in the PSA Peugeot concern factory in Trnava (Štrba, Ištók 2020). These factories represent a large number of jobs, and it was the suspension of these factories that began to mean problems for their employees, often subsistence. In the case of the Volkswagen in Bratislava, employees were at work for the last time on the 16<sup>th</sup> of March 2020 and were allowed to decide whether they were interested in a holiday or to receive 60% of the total salary. Most of the 12,000 employees chose the second option. However, it was not long before Volkswagen resumed production a month later, on the 20<sup>th</sup> of April 2020. In the case of the second-mentioned carmaker, production resumed in the week from the 11<sup>th</sup> of May 2020 in the form of single-shift production and from the following week in two-shift production. Car manufacturers have handled the

coronavirus relatively well, but smaller businesses or the self-employed were not so lucky (Groos, Stoličná 2020).

### 3.3 Protecting Small Businesses and Self-Employed

Among the more sensitive economic entities at the time of the coronavirus were mainly small and medium-sized enterprises and self-employed. In order to prevent their extinction or liquidation, it was necessary for the state to take some measures to save these businesses, as well as their jobs, which they provide to thousands of people. The measures taken by the Ministry of Finance of the Slovak Republic include 4 stages (Sivý 2020) in which the state supports risky employers or self-employed. The table below lists the individual stages.

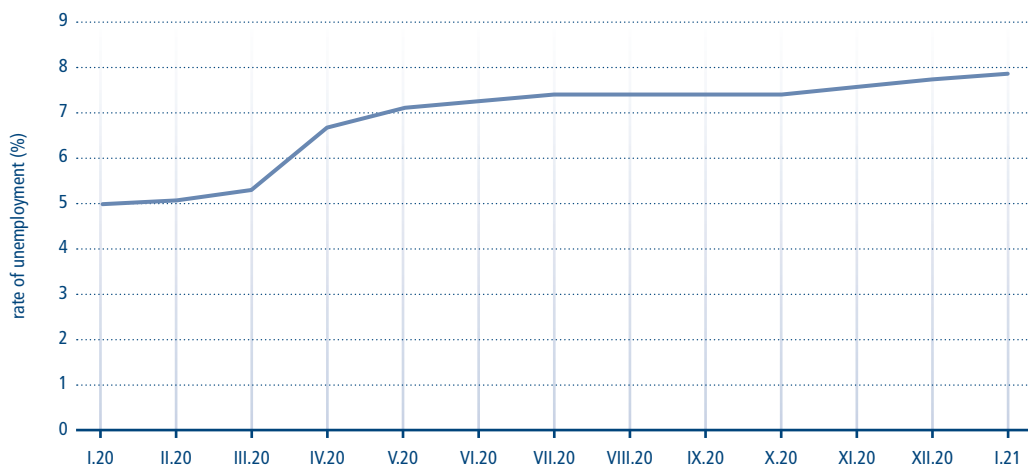
- *Measure no. 1* – This measure has been valid since the 6<sup>th</sup> of April 2020 and constitutes aid to employers who have been forced to close down their businesses as a result of the ÚVZ (Public Health Authority) regulation in times of national emergency.
- *Measure no. 2* – The measure has been in force since the 9<sup>th</sup> of April 2020 and represents assistance to self-employed, which were forced to cease their activities, i.e. as a result of the ÚVZ (Public Health Authority) regulation, revenues from their activities decreased significantly during the national emergency.
- *Measure no. 3* – The third measure, consisting of measures 3A and 3B, constitutes compensa-

**Table 1 » The support of small businesses in Slovakia**

Measures:	Transmitted payments	The sum of payments	Number of requests
Measure 1	7 150	8 824 594,40€	48 256
Measure 2	18 274	4 626 440,46€	27 054
Measure 3	1 133	2 626 787,89€	41 801
Measure 4	5	1 170€	2 703
Total	26 562	16 078 992,75€	119 814

Source: Ministry of Investment, Regional development and Informatization of the Slovak Republic (2020), Own processing

**Graph 1 » The rate of unemployment in Slovakia**



Source: National Bank of Slovakia (2020), Own processing

tion for the salary of an employee to whom the employer cannot assign work because of an exceptional or emergency situation, as he is prevented from doing so. The amount of wage compensation represents 80% of the employee’s average wage, but at the same time this amount may not exceed € 880. This measure was applied on the 17<sup>th</sup> of April 2020.

- *Measure no. 4* – The last, fourth measure is aid to self-employed, which has no other income and is therefore directly dependent on support. This measure was applied on the 23<sup>rd</sup> of April 2020.

#### 4. Rising unemployment in Slovakia

According to the National Bank of Slovakia (NBS), in March 2020 there began a slight increase in unemployment as a result of the coronavirus pandemic (Karšay 2020). However, coronavirus unemployment will only increase after the end of the pandemic, as it responds to the reduction in employers’ recruitment activities, which have been suspended due to the deteriorating economic situation. If we compare the Great Depression in 2009

and the current development in Slovakia due to the coronavirus, the monthly increase in unemployment is far from reaching the numbers documented in 2009. For comparison, in March 2009 there was a month-on-month increase in unemployment by about 23 000 people. At the turn of March and April 2020, there was a month – on – month increase in the number of unemployed by 3,000 people. As we have already mentioned, unemployment is mainly caused by the non-inclusion of new employees and the suppression, interruption or cancellation of recruitment activities, recruitment allowances etc. In March 2020, the unemployment rate reached 6.2%, which represents an increase of 1.6% compared to January 2020. For illustration, we enclose the graph below. By the end of January, the rate of unemployment has reached below 8% and it is still increasing, due to the ongoing pandemic.

##### 4.1 Unemployment and legislation

As we mentioned in the introduction or previous subchapters, coronavirus has complicated the lives of several employers, which has led not only to a

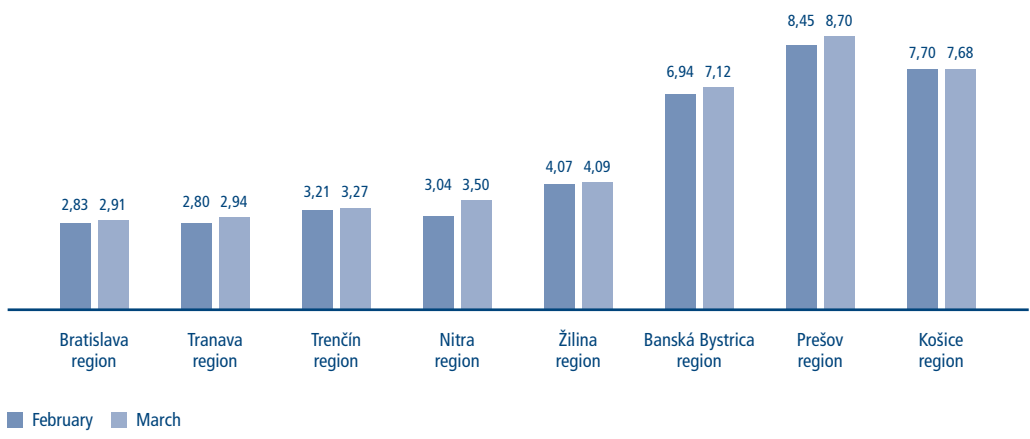


change in the type of work, but often also to a reduction in jobs. Many employees found themselves in a crisis situation from day to day, when they lost their jobs and did not know how to continue, where to work and how to survive this difficult situation. It is this situation that many employers are trying to use to their advantage so that they can dismiss employees legally on the pretext of coronavirus. However, according to the National Labor Inspectorate (NIP 2020), there is no exception or mitigating circumstance that would allow employers to take advantage of such unfair practices. The employee must continue to be assessed in the same way as before the pandemic, i.e., a proper notice must be given in writing. This is also complicated by the fact that in the event of termination, employees must also be paid a wage during the notice period, which normally ranges from 1 to 3 months, and in the case of another agreement when concluding an employment contract, even more. This discourages several employers and does not lead to mass redundancies as expected.

#### 4.2 Mass redundancies on Slovak Labour Market

The coronavirus has led large companies to so-called mass layoffs, which in translation means that companies must terminate their employment with a large number of employees, either because of their redundancy, the preservation of the company's existence, or for another rational reason. Between early March and May, 34 companies reported to the authorities that they would lay off a large number of employees. Decodom, ZKW or PPS Group Detva are among the largest redundancies in this period. The first mentioned company Decodom is engaged in the production of kitchens and furniture in Slovakia in Topoľčany, and during the mass redundancies (Hudáková 2020) it had to terminate its employment with more than 900 employees. The company declares on their website that this situation has suspended their production, closed seventeen stores and this has led to a surplus of employees whose company has no way to pay, as well as the company would not have money left to pay liabilities to the Slovak Republic. The second largest collective redundancies took place in Detva, where PPS Group Detva is laying off

Figure 1 » Unemployment rate by regions in Slovakia in 2020



Source: UPSVAR- Central Office of Labour, Social Affairs and Family (2020), Own processing

736 employees. Another mass redundancy was reported by nine companies in the Bratislava district, which totals 638 employees.

### 4.3 Regional unemployment in Slovakia

Among those most affected regions of Slovakia belonged: the Nitra region with a month-on-month increase (February-March) of 0.46%, which was largely caused by Land Rover-Jaguar car factory, which laid off 500 employees in January. In Prešov, there was also a sharp increase in unemployment by 0.25% and the unemployment rate thus reached 8.70% in that region alone. However, companies in the Prešov region have announced further redundancies, so the unemployment rate will continue to rise. Another affected region is the Banská Bystrica region, where unemployment increased by 0.18%. The least experienced changes in employment in recent months were the Košice Region, where the unemployment rate even decreased month-on-month from 7.70% to 7.68%, the Žilina Region, where we can observe only a 0.02% increase in unemployment, and the Bratislava Region with an increase of 0, 08%.

## 5. Conclusion

The scope of this article was to offer the analysis of the development of the rate of unemployment in Slovak Republic during the first wave of coronavirus. The rate of unemployment is an important economic indicator, and in the current situation we can say that the economies of most countries in the European Union are still, even after the first

wave of Covid-19 in recession. There is prognosis, that the crisis caused by the coronavirus will continue for several years after all the restrictions have been lifted, which will further affect both unemployment and the overall economy of the states. Although unemployment is likely to rise further, states will use various means of fiscal policy and means of monetary policy to stabilize the situation. The coronavirus has closed not only shops and services, but also educational institutions, offices, or other places that pose an increased risk of infection or contamination. In general, it should be borne in mind that all the measures that have been put in place in relation to the coronavirus have served to preserve as many jobs as possible and to keep the society as it was before the pandemic. As far as the jobs themselves are concerned, the situation does not yet look very favorable with regard to new jobs, but it is likely that many jobs that were suspended before the pandemic or the form of their performance has changed, e.g., home-office, will gradually return to the original state in connection with the release of measures based on a more favorable epidemiological situation not only in Slovakia but also in the world. Gradually, shops, services and restaurants are being opened, and with it the employees who have disappeared from these workplaces due to the pandemic. Part-time jobs, brigades / conciliators, etc. they will most likely have to wait for some time for the situation to stabilize, where employees who were part of the workforce had to return to work in the first place before the coronavirus pandemic broke out and the related emergency was declared.

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## How to deal with sudden shocks on Labor market during world pandemic, evidence from Slovak Republic

### ABSTRACT

*The scope of this article is to offer an analysis of development of the rate of unemployment due to the Covid-19 pandemic, during its first wave. Slovak Republic reacted to this “first wave” very quickly and the protective measures against the spreading of virus showed itself as effective tool in fighting the pandemic, but it has taken the toll on the economic performance of the country, mainly the labor market. To protect the*

*general population from contagion, the government had closed down, for the given period of time, even the biggest producers in the automotive industry. But not only these factories were the problem, but also small businesses and self-employed people were in danger and many of them lost their jobs. That is why the government released the protective measures to help people, who lost their job from day-to-day. These measures are really important and evaluating their effectiveness and performance in such critical time period as world pandemic is the key react faster and more effective in the future time of crisis.*

**KEYWORDS**

*Covid-19; automotive industry; rate of unemployment; protective measures; macroeconomics*

**JEL CLASSIFICATION**

*E20; E24; F01*

x

# The influence of stressful situation on the effect of an implicit reputational cue

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## \* 1. Introduction

In general, people are sociable and form groups. They form bonds and learn to get along with other members of these groups from an early age. With the emergence of these groups, various prosocial mechanisms began to form. One of them was altruism. According to reciprocal altruism, individuals who help each other tend to survive (Trivers, 1971). There are two forms of altruism: direct and indirect. In direct altruism, repeated help occurs, alternating between the helper and the recipient (Nowak, 2006). The individual assumes that the help he provided will be returned to him later so that both individuals can prosper by this exchange. However, during the day, people encounter a large number of unknown individuals, whom they will probably never meet again and to whom they are equally willing to help. In this case, indirect reciprocity step in (Trivers, 1971). The main driver of indirect reciprocity is a reputation that people pass on to each other (Emler, 1990). Based on this idea, the theory of reputation-based cooperation partner choice emerged. This theory is also called competitive altruism (Sylwester and Roberts,

2010). The first step is to create our own quality and good reputation by helping others (Noë and Hammerstein, 1994). Of course, it is important to be seen in such an act. When we feel that someone is watching us, we behave more prosocially (Izuma et al., 2011). The feeling of being watched can come from the presence of another person or it can be the simplest, subtlest cue such as a picture. Not only other people are needed for the supposed surveillance, for example, but a picture of the eyes is also enough. Cues that support prosocial behaviour are called Implicit Reputation Cues (IRC). For example, IRC can be eye images that promote altruism, cooperation, and overall prosocial behaviour (Ekström, 2012). In the experiment described below, we used the image of the eyes and thus the Watching-eyes effect.

The other important mechanism in our study is stress. Stress has many connotations, but in this research, we have focused on its 'nicer side' — as a promoter of affiliation. In addition to adrenaline and other hormones (Suresh et al., 2014), the hormone oxytocin is released during the stress response (Neumann et al., 2000). This hormone causes affiliation, searching for support from oth-



ers (Taylor et al., 2000) and motivates to protect their loved ones (McGonigal, 2015). It could be said that stress increases the chances of behaving more prosocially (von Dawans et al., 2012). Even though stress has such properties, it depends on many factors that affect the resulting behaviour (Buchanan and Preston, 2014).

There are several methods that are used to induce stress in probands. The most effective is Trier Social Stress Test (Helminen et al., 2019), other methods are: the Trier Mental Challenge Test (Kirschbaum et al., 1991), Mental Arithmetic (Sharpley, 1994) and the Montreal Imaging Stress Task (Dedovic et al., 2005).

In previous years, many experiments were performed in the direction of the watching eyes effect. The watching eyes effect encourages prosocial behaviour and can be used in many ways from contributing to charity (Fathi et al., 2016) to crime prevention (Dear et al., 2019). An important finding is that the eye effect is more powerful when there are fewer people around it (Ernest-Jones et al., 2011), and at the same time it can be supported by setting a norm (Ayal et al., 2019). The experiments were performed on respondents from different parts of the world, which shows that it is generally applicable. However, in combination with stress, it has not yet been studied and this was the goal of our research. In our experiment, we wanted to find out how stress would affect the “watching eyes effect”.

## 2. Methods

A sample consisted of university students, a total of 161 participants (age 19–26 years; 91 males and 70 females; fluent in the Czech language) resident in university dormitories in Prague and Olomouc participated in this study. We asked students who were randomly encountered in dormitory hallways at the time of the experiment to participate. Participants were randomly assigned to four groups: control without eye image (CC), control with eye image (CE), experimental without eye image (SC) and experimental with eye image (SE).

The experiment setting consisted of two parts in different places – a dormitory hallway and a separate closed room. The first part of the experiment took place in the hallway. Random passers-by were invited to participate in a simple study.

There were no more than 5 students that rejected the offer to participate. Every student present at the moment of the free experimenter in the hallway was invited. If the participant was included in the control group, he was asked to complete the Trail Making Test. The Trail Making Test was chosen as a simple method that does not require any personal data (remains in full anonymity which was crucial for the experiment) and the completion of which convinced the participants to deserve a reward. The test results were not further investigated for it was not the aim of this study. If the participant was included in the experimental group, we asked him to subtract the number seven in a row aloud for one minute. After completing one of these tasks, thanks were given and the participants were offered one reward, which they could take in the second room.

After thanks were given, we parted with the participants and we emphasized that they should not return after the withdrawal of the reward with the pretext of working with other participants.

The actual experiment took place in the second room. Our goal was to find out if the participants would comply with our rule and take only one reward, or if they would transgress it and take more rewards. In such a case, we were no longer interested in the exact number of collected rewards. In the second room, there was a large number of rewards and if the participant belonged to a dedicated group, a picture of watching eyes. The assignment to the group was random, however, in each dormitory, we gradually assigned participants to all four groups. A larger number of rewards was displayed so that it would not be possible to know whether more than one reward had been withdrawn. We ensured there were a high and varied number of rewards on the table. One of the reasons was to attract not only “sweet tooth”, but all types

of students. The specifics of rewards are found in materials. In addition to the rewards, a hidden camera was placed in the room. The camera was placed at a specific angle that recorded the hands, a small part of the lower body and the rewards only, making it impossible to identify the participant in any other way than gender.

In total 208 students were approached to participate in the experiment, but some participants were excluded from the analysis. The exclusion occurred for one of the following reasons: a) The participant took part in the Trail Making Test but refused the reward b) The participant waited for the other participant and formed a pair together c) During the experiment, a person living in the dormitory came to the room with rewards. Although we tried to avoid possible exclusion, it was more important not to reveal the true nature of the experiment, and thus not to thwart the opportunity to continue the experiment with other students of the same dormitory. For one of the above reasons, a total of 47 participants were excluded. The experiments always took place in the afternoon, as lessons take place in the morning.

### 3. Ethics

Within the experiment, all data were completely anonymous, only the gender of the participants was gathered from the camera. Participation was entirely voluntary and the participants could terminate the participation at any time. However, informed consent could not be signed as the participants would cease to be completely anonymous. We had to ensure complete anonymity because of the watching eyes effect (Ernest-Jones et al., 2011).

The stress of the participants was carried out to such an extent that none of the participants was harmed. Participants could always refuse to participate in any part of the experiment. Nobody took this opportunity. Before the start of the subtracting aloud, the course was explained to each and every participant and everyone decided to continue participating.

The true purpose of our research was hidden from the participants. During the experiment, participants were filmed with a hidden camera. As already mentioned the camera was placed at a specific angle that it recorded the hands, a small part of the lower body and the rewards only, making it impossible to identify the participant in any way.

Debriefing was not possible immediately after the experiment for several reasons. If the probands knew about meeting the examiner, they would not probably transgress (higher chance of getting caught). We spent an average of three hours in the dormitory and not returned to the same dormitory, because the real reason for our experiment could spread to other possible participants and thus prevent the validity of the research.

The recordings were downloaded to a flash drive and kept in a safe place to ensure that the videos could not be misused. After the end of data collection and analysis, a leaflet intended for debriefing was shared through the Facebook pages of the given dormitories.

Based on the leaflet, we were contacted by two individuals who expressed interest in the results. They were assured that their data were completely anonymous, they were acquainted with the nature and results of the experiment and with the possibility to withdraw. However, the data is anonymous to such an extent that they would need to know the exact time during which they participated in the experiment in order to be able to trace them on the video. They did not request to be excluded from the experiment.

### 4. Materials

To ensure that anybody could choose from rewards, there were pens, pencils, highlighters, bubblegums, cigarettes, wafers, chocolates and lollipops. For recording, we used the Logitech C270 HD WEBCAM. The watching-eyes picture was printed onto paper in A4 format. The eyes alone occupied about one-third of the paper, the rest of the paper was blank.

### 5. Results

After we carried out all the experiments, we collected all the data from the cameras observing whether our participants transgressed the rules that we set. The groups differ from each other, as can be seen in Table 1. But the difference is far from significant as seen in Table 2.

First, we present a table of absolute values for better clarity of the obtained data.

We performed statistical analysis in the program TIBCO Statistica 13.4 using the “binomial logistical regression”. It gives the results in the format of the odds ratios (O.R.s) of the transgression in a control vs. experimental group. It indicates how many times the chance of a given phenomenon decreases or increases as the value of the independent variable increases by one (Wooldridge, 2006). Thus, an interference which has no effect will produce an O.R. of 1, an intervention that increases transgression in the experimental group will produce an O.R. significantly less than 1, and an intervention that decreases transgression in the experimental group will produce an O.R. significantly greater than 1 (Nettle et al., 2012; Wooldridge, 2006).

The O.R. of stress was 0,89 (95% confidence interval 0,46–1,70) and the p-value was 0,73 thus the result is not significant. The O.R. of the eyes was 1,40 (95% confidence interval 0,74–2,67) and the p-value was 0,29 thus the result is not significant as well.

Our last goal was to determine whether the

combination of stress and watching eyes would reduce transgressing compared to watching eyes alone. The O.R. of stress combined with watching eyes was 0,72 (95% confidence interval 0,28–1,84) and the p-value was 0,21 while the O.R. of watching eyes alone was 1,66 (95% confidence interval 0,73–3,76) with p-value 0,49 which makes both results insignificant.

### 6. Discussion

First, we would like to focus on the watching-eyes effect which reduced the number of thefts in previous experiments. As the results showed, the image of watching eyes reduced theft by 13 %. These results with a p-value of 0.295 are not sufficient to be considered significant.

Interestingly, there is a notable difference in the percentage proportion of thefts in comparison to previous experiments. The number of participants who transgressed the rule in the control groups in other experiments was much lower than the number of participants who transgressed in our experiment. Notably 38 % in Žihlavníková (2016) experiment and 19 % in Josrová (2017) experiment. In the group with watching eyes only 9% in Žihlavníková’s experiment and 6% of participants at Josrová’s experiment cheated. When we compare groups, whether control or experimental, our values are notably higher.

Why did our participants transgress the explicit rule of one reward in such an amount? We will first focus on the reward as such. Among the rewards, it

**Table 1 » Absolute numbers of compliant and transgressing participants**

Group	Compliant	Transgressing	Total	% of transgressing
Control	23	17	40	43
Control + eyes	28	12	40	30
Stress	23	17	40	43
Stress + eyes	26	15	41	37
<b>Total</b>	<b>100</b>	<b>61</b>	<b>161</b>	<b>38</b>



was possible to find chewing gum, wafers, lollipops, pens, cigarettes, pencils and highlighters. The average price of one chewing gum or lollipop is about 3 crowns (0,11 €), the average price of wafers or highlighter is 13 crowns (0,5 €). These rewards differ in their value. It is possible to consider the highlighter and the wafer as more valuable while the lollipop or pencil as cheaper. To justify a minor transgression is easier than to justify transgression for a higher value subject (Mazar and Ariely, 2006).

It was crucial for this experiment that each participant was alone in the room. Previous research has found that the more people present an eye image, the more their effect decreased (Ernest-Jones et al., 2011).

Not only whether the student was alone in the room, but also for how long, plays an important role in the implicit reputation clue. As confirmed in a meta-analysis by Sparks and Barclay (2013), time spent under watching-eyes stimulation is crucial. When participants are exposed to this stimulus for too long (several minutes), the effect does not appear. This fact can be for example supported by the experiment of Shinohara and Yamamoto (2018). They exposed the participants to the eyes throughout the whole experiment and the effect was not established. Among other things, we can attribute such results to System 1 and System 2 (Kahneman, 2012). When the participant realizes that it is just a photo/picture of the eyes, the effect is lost. In our experiment and through the recordings, it was clear that the participants did not spend more time in the room than was absolutely necessary (in the order of seconds) to withdraw the reward. The mean time spent in the reward room during our experiment was around 15 seconds.

Moreover, it is also necessary to take into account the possibility that the participants came up with the real intention of our experiment. We cannot estimate how they would behave at such a moment, but we believe that nothing similar happened in our experiment, thanks to the recordings.

It is clear from the records that the image of the eyes does not attract any attention, participants were fully focused on rewards. This assumption was confirmed by two participants who e-mailed us after the debriefing. We also spent only the necessary time in each dormitory, and none of the participants returned to us with a question about the image of the watching eyes.

The topic of watching eyes is constantly receiving a lot of attention, and many of the experiments did not follow the first assumptions (Fehr and Schneider, 2010; Manesi and Pollet, 2017) and did not find the effect of watching eyes (Carbon and Hessler, 2011; Oda et al., 2015; Raihani and Bshary, 2012) similarly to our experiment. So is it possible that the watching-eyes effect affects behaviour in a different direction and it does not reduce theft? Dear et al. (2019) pointed out that watching eyes have a far more consistent effect on reducing anti-social behaviour, which they define as acts against the laws and customs of a society that cause resentment and displeasure to other people, such as theft and littering on the street.

More importantly, we did not find an enhancing effect on stress either. Stress did not reduce transgression. We set aside one minute to stress the participant, during which the participant performed our adjusted mental arithmetic. Although previous research has shown that mental arithmetic (Sharp-ley, 1989, 1994) and counting aloud (Helminen et al., 2019) cause stress, it is possible that a single minute was not enough time. The original mental arithmetic (Sharp-ley, 1994) lasted for two minutes, and the entire Trier Social Stress Test lasts 20 minutes, part with a subtraction of the last 5 minutes. When replicating this experiment, we would probably extend the counting aloud time. It is as well possible to consider adding a command to return to the beginning of the counting in case of a participant's mistake, which we did not do in this experiment.

An interesting finding was that a much larger number of participants went for a reward if they were stressed out. It is possible that we stressed

the participants enough, but other confounding variable played a role. Perhaps, very attractive rewards? And the temptation of that reward after a demanding stressful act. As Ariely (2012) mentions in his book, a tired person chooses junk food driven by emotions rather than rationality. When we subjected the participants to such a difficult task, their will was weakened and they had more difficulty regulating their desire to take two Fidor-kas instead of one. This idea is also supported by a study showing reduced self-control under the influence of stress (Maier et al., 2015).

Although this experiment did not turn out as we expected, we think it is important to continue the research precisely because of the heterogeneity of the experiments. If we decided to perform this experiment again, we would keep the rewards

at a similar value and we would probably choose another way of stressing out, perhaps the Trier Social Stress Test, which has good results (Helminen et al., 2019). However, this would make the whole research much more time consuming and could discourage participants. If we decided to use mental arithmetic again, it would be appropriate to extend the time spent by subtraction aloud. In the future, we consider it necessary to check and determine the effect of watching eyes, or what errors lead to its failure and what types of behaviour watching eyes can influence.

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## ABSTRACT

*Is it possible to influence someone's behaviour simply with a picture? How would be affected participant's behaviour by stressful stimuli? Would stress enhance the watching-eyes effect? This research examines the effect of stress on the watching-eyes effect. Watching eyes as one of the implicit reputation cues (IRC) are established on the basis of altruism, cooperation and reputation. The effect of watching eyes has been studied by various disciplines for many years and its mechanism has been confirmed by a number of experiments and scientists. In our experiment, our goal was to further investigate the results of the previous experiments and potentially increase compliant behaviour due to the IRC, as well as finding out whether the stress would increase the IRC effect. The experiment was conducted in Czech college dormitories. As a stress-inducing experiment, half of the participants were told they had to subtract number seven out loud within a certain time limit. A control group performed the Trail Making Test. All participants were then observed in a room containing multiple rewards and instructed by the stated rule to take just one. We were interested in observing whether participants would transgress by taking more than one reward. In half of the cases for each test, an IRC was placed on a wall behind the rewards. Interestingly, based on obtained data and statistical analysis we did not confirm any of our established goals. We did not even confirm the effect of watching eyes, nor did we find the effect of stress on IRC. We propose some of the factors that could play a role in such results which can shed more light on the underlying mechanisms of the IRCs.*

## KEYWORDS

*Implicit reputation cues; cooperation; compliance; transgression; stress*

## JEL CLASSIFICATION

D91

# Strategic alliances and business networks during the Covid-19 pandemic and the change in their market value

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\* The Covid-19 pandemic, which has affected all countries globally, is involved in shaping most businesses' new reality. Some companies, unable to adapt quickly to the newly emerging market situation, have disappeared or might disappear shortly. Some entrepreneurs have refused to do business under these conditions and prefer to keep their companies hibernating to hold out the current situation. However, we also chance to find business organisations and people who own them or are in charge of their management, who have fathomed and at the same time felt that the world might never return to the state it used to be before this unexpected pandemic. A large part of the business sector, like education, is undergoing significant changes and transformations. One of the directions that companies have seized and are getting on with is to create strategic connections and networks. Such relationships and networking allow them to take several steps to maintain their business and develop it in a direction that was not on the agenda a year ago.

## *Main Title*

Since the 1980s, businesses' primary goal has been or at least should be, to increase their market value for all stakeholders. It is necessary to look for new, specific, and unique competitive advantages for a company to increase its value continuously. A small business is very vulnerable and endangered, mainly due to its small width of both portfolio and capital base. Thus, it has difficulty competing with established companies that can benefit from economies of scale and is often dependent on their demand.

A possible way out of this situation for small businesses seems to be creating business networks and creating strategic alliances.

The so-called creation of strategic alliances (intercompany cooperation) and networking is a possible competitive advantage.

As transaction costs fall, economic units decrease radically. At present, these units have unprecedented opportunities to communicate with each other, share information, and form temporary alliances, groupings, communities, networks – based either on vertical or horizontal integration,



aggregate purchasing power or just the common interest. These conditions provide them with the necessary background new information and communication channels, contacts, a better negotiating position in the market, infrastructure for their development. Networks of small, flexible and technologically agile enterprises derive their success from financial capital (although capital accumulation may be the exact reason for their emergence) and the knowledge, skills, innovation, adaptability, flexibility, and spirit of enterprise of human beings.

The existence of successful business networks should be based on assumptions such as cooperation, trust, initiative, skills and flexibility. However, these prerequisites are still rarely found in Czech companies. Restoring these fundamental characteristics of modern business ought to be a priority for companies and national governments.

Definitions of strategic alliances mentioned in the literature:

- [1] *"...A strategic alliance is an agreement between two companies (or more) to cooperate in need to carry out specific tasks or projects. At the same time, each company contributes to an area with exceptional qualifications or competitiveness. By contrast, each business relies on other participants in the alliance that assist in areas where they are strong. In this way, businesses can share their costs and risks. It also enables them to be highly economical to develop."*
- [2] *"Businesses form alliances to meet specific business needs and to respond to opportunities that they cannot handle internally... They work together to achieve their strategic goals..."*
- [3] *"Strategic alliance is an organizational form that helps to ensure joint cooperative business activities. It consists of two or more mutually independent administrative units (strategic partners)."*
- [4] *An alliance is a partnership, usually a long-term one.*

Based on these definitions, a strategic alliance is a form of cooperation between companies to in-

crease the competitive advantages of cooperating companies. An increase in competitive advantage leads to an improvement in the factors influencing the company's market value.

Businesses associated with a business network or in strategic alliances can reduce disadvantages arising from their size. They can strengthen their bargaining power and sometimes the availability of capital and business processes' efficiency and achieve specific competitive advantages.

Also, they can still enjoy the competitive advantages typical of small businesses, such as organizational flexibility or innovative behaviour.

However, we cannot ignore the disadvantages of "getting closer" to large companies uncritically on these benefits' emergence. In business networks, just like in large companies, communication barriers may occur (whether due to a desire to profit at the expense of another member of the network or for other reasons).

***Business networks***  
***"FROM THE OUTSIDE TO INSIDE"***

One of the types of business networks is the so-called "FROM THE OUTSIDE TO INSIDE" network (Fig. No. 1), where several companies focusing on one product (either the same or similar) are merged to strengthen their market position and strengthen competitiveness. Better availability of information, joint marketing are other reasons for uniting such companies.

***Business networks***  
***"FROM THE INSIDE OUT"***

Another type of business network is the so-called "FROM THE INSIDE OUT" network, illustrated in the following figure. The principle consists of the original company's division, which opts to essentially displace some of its activities into new companies (either with legal personality or only as a division – SBU). In this model, individual companies contribute to the original company's overall activi-



Figure 1 » Business networks "FROM THE OUTSIDE TO INSIDE"

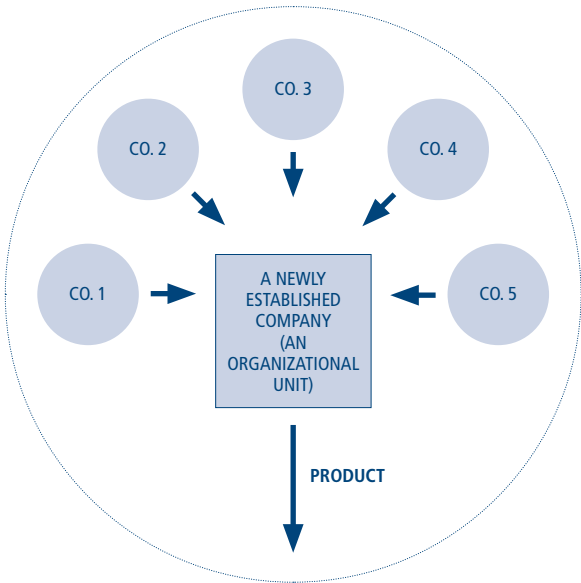
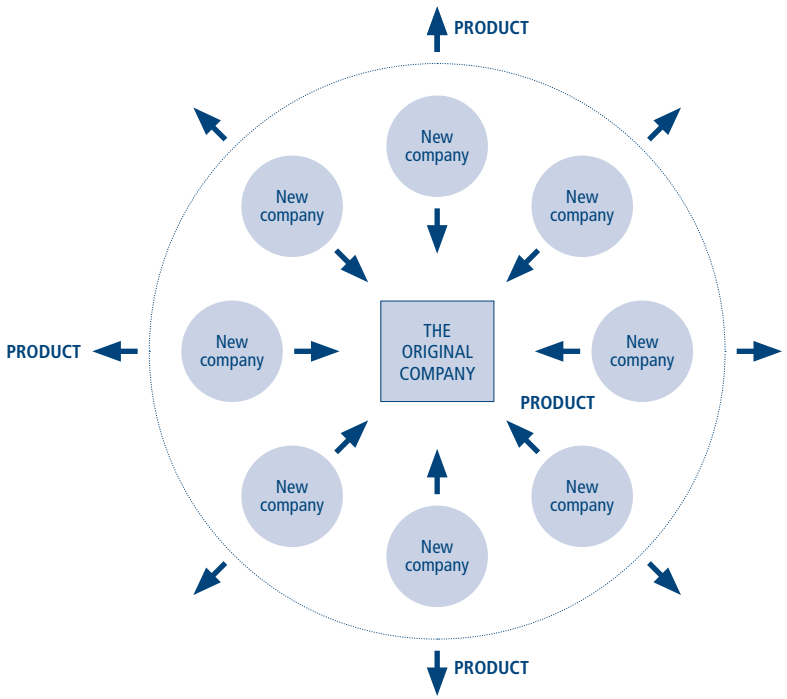


Figure 2 » Business networks "FROM THE INSIDE OUT"



ties and further develop their independent business activities. For example, after creating such a network, the original accounting department provides both the accounting of the former company and offers bookkeeping (and related other services) to other customers. The departments of marketing, research and development, logistics and finance may act this way, too.

The main assets of such a business network can be, in particular, cost savings, more accessible communication, new services and products and thus the expansion of the original company's portfolio and risk diversification.

### *Market value in terms of strategic alliances and networks*

Every company has a particular market value, which we can call essential (i.e. primary). We can define it as:

“The estimated amount for which the asset would be exchanged at the measurement date between a potential buyer and a person willing to sell in a transaction with independent partners after proper marketing, with each party acting with knowledge, prudence and without coercion.”

Each company should have a quantifiable market value, referred to in this post as the primary market value. This market value does not cease to exist with intercompany cooperation (strategic alliance or network). On the contrary, we can say that a new, added market value occurs at this point. Market values arising from the synergistic effect, i.e. a kind of secondary – secondary market value.

As Mařík states, mergers based on property cooperation (i.e. mergers or acquisitions, strategic alliances) should create a synergistic effect. That is the effect resulting from the connection of parts into the whole. This connection can be elementary as “1 + 1 = 3”. The appreciation of synergy is the increase in value from the merger, i.e.:

$$\Delta H = H_{AB} - (H_A + H_B)$$

At the time of the property connection, at least one entity ceases to exist (i.e. according to the symbolism from the given example, company B ceases to exist). However, in a contractual arrangement based merger (i.e. an alliance or network), neither entity ceases to exist. The businesses only use joint activities to achieve objectives in a particular area, resulting in a collaboration effect. Joint marketing, distribution networks, joint production can serve as examples for such a condition.

These companies, therefore, continue to generate revenue from their original activities, although significantly dampened by the Covid-19 pandemic, only temporarily lost to them, independent of the cooperating partner, and generate revenue that is directly affected by the merger with the partner

Companies Dáme Jídlo, Wolt, Glanc, are sure examples of such an alliance. These retailers are on the website associated in order to offer a wide range of their products. This connection brings both joint marketing and a guarantee for the customer and other benefits for business owners. However, at the same time, these entrepreneurs continue to have their operations, whether functional or now subdued, and either still generate cash flow from their individual, independent activities or survive this situation and avoid going bankrupt thanks to a strategic network alliance.

It is necessary to quantify the income from the impact of collaboration and the income from the entrepreneurs independent activity to appreciate the benefits of this alliance, i.e. the effect of cooperation. Nonetheless, this is a significant problem in practice, as the entities participating in such a partnership do not generally monitor this groupings results. Businesses enter into alliances for the sole purpose of increasing profits or increasing the market value of each company involved. On the other hand, almost none of the entities, tiny and medium-sized enterprises, entering into such cooperation cannot quantify what part of the profit is and what is not the inter-company cooperation effect. In addition to the effects of increasing profits, we are also talking about other



factors affecting the company's market value.

### *Factors affecting the market value of the company*

The fundamental factors influencing a company's market value include the so-called value generators, which means a set of several essential business variables, which in their totality, determine the company's size. The term value generators began to appear in the USA's literature in connection with the concept of shareholder value.

These generators are:

- Sales (turnover and their growth)
- Operating profit margin (adjusted operating profit)
- Working capital investment
- Investments in long-term assets vital for operations
- Discount rate
- Method of financing (the size of loan capital)
- The period for which we assume the generation of a positive cash flow (i.e. the period of existence of the company, in the case of a strategic alliance, we would consider the duration of this alliance)

#### **POSSIBLE APPROACH TO THE VALUATION OF STRATEGIC ALLIANCE, or more precisely NETWORKS (CORPORATE COOPERATION)**

- Based on the procedures generally valid for companies' valuation, we can infer a concise strategy for evaluating this newly created secondary market value. The adjustment (using the DCF method) of the FCF calculation (whether entity or equity) appears to be the most effective method.
- The procedure for determining the market value could, therefore, be as follows:

#### **1. Quantification of corrected operating economic result generated in business cooperation**

It is possible to start from the company's operating

profit and adjust it by a quantified estimate by an increase (decrease) in sales due to intercompany cooperation.

- Determining this factor will probably be the most challenging task in assessing the secondary market value, given the difficulties mentioned above-such as the impossibility of clearly quantifying which revenues have come from the company's current activities and which are from newly created cooperation.

#### **2. Determination of depreciation**

- Here we should emphasize the use of depreciation (or part of depreciation), which is directly related to the assets used for intercompany cooperation. The calculation could be based on the use of production capacity (for manufacturing companies) or an estimate of the employment of the human potential for intercompany cooperation.

#### **3. Investments in fixed assets and working capital**

As with point 2.-depreciation, only investments made within the framework of intercompany cooperation should be included here. The quantification of these investments will be a relatively complex matter. In determining them, it is necessary to consider all other factors that affect these investments so that we didn't include them as an effect of cooperation.

#### **4. Addition of ffcf**

The results of free cash flow ought to result from expert estimates and calculations and should show free cash flow due to intercompany cooperation. By discounting it, we could determine the company's secondary market value, which added to the primary value will express the success or failure of the established cooperation.

#### **5. Discount rate**

Quantifying the discount rate in intercompany cooperation is another crucial factor that makes it im-

possible to determine the correct market value. Currently, the WACC method is used to determine the discount rate, which includes the cost of equity and debt. At present, the cost of equity is most often determined using the CAPM method.

The calculation is as follows:

$$r_e = r_f + \beta (r_M - r_f)$$

The main field's designation is essential in determining the cost of equity in assessing the discount rate for intercompany cooperation. The question remains whether to use data on the cost of equity according to the business field for which we choose the secondary market value when determining the company's secondary market value or using a combination of branches of cooperating companies. Another problem is the determination of individual weights of capital used in the funding of intercompany cooperation.

All the adjustments, as mentioned above, require excellent knowledge of the company's finances before starting intercompany cooperation. Only in this case, the appraiser can identify as like-

ly as possible the changes (positive or negative) related to the changes to intercompany collaboration. Simultaneously, the evaluator is expected to be able to abstract from all other factors affecting the company (examples include changes in inflation, state policy, changes in the market, changes in consumer behaviour, the entry of a new competitor.)

Although the situation is devastating concerning the Covid-19 pandemic for many companies and the economic sphere in general, we chance to discover businesses, smaller or larger, that are currently looking for ways and opportunities to strengthen their market position and increase their value for stakeholders – and if nothing else, at least “lose as little as possible”. In the article, I have attempted to outline the valuation process in companies' current operation with altered conditions due to the Covid-19 pandemic. We may use this method to evaluate the results of the company's approach during the covid-19 pandemic, or when the pandemic is over, or employ it as a new strategy of choice related to the complete transformation of the current market and our future life.

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**ABSTRACT**

*This article concerns businesses' opportunities in the current market change due to the Covid-19 pandemic and their raising market value options. The article describes the possibility of merging companies, primarily through strategic alliances or creating corporate networks. Finally, I have tried to outline how to approach the evaluation of this market value.*

**KEYWORDS**

*Market value; business opportunities; strategic connection; strategic network; evakuation*



# COVID-19 and its impact on Czech Education System

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## \* 1. Introduction

COVID-19 has its impact on many aspects of one's life. The pandemic situation in the World has been affecting the way people live, the way they go shopping as well as education. On the one side, the pandemic situation may help to accelerate services digitalization, people and students are getting used to delivering their services online via a variety of applications. However, on the other side, it may be considered that accelerated online education may not be accessible to every single learner (e.g., for learners from poor countries or for learners with hearing/sight impairment).

During pandemic situation in 2020 at least four times more respondents reported that they use online platforms for teaching, training, or assignment in a comparison with pre-COVID-19 times. Scientists (e.g. Chen) also highlight that synchronous learning platforms are being used in the COVID-19 era (e.g. 2020) which is the absolute opposite of pre-recorded learning videos from 2018 and 2019. Many respondents stress out that online education is the future for teaching, learning, and assignments, especially in higher education and adults' professional training (Chen, 2020). We can see the shift from in-class teaching to online platforms. However, is this the most significant way the COVID-19 has been affecting the education system in the Czech Republic?

The COVID-19 pandemic situation has affected the Czech education system as well, especially with the government-enforced restrictions which include for instance using online means of education only and mandatory COVID-19 tests for elementary school students. Many parts of the education system remain closed for in-class education (e.g., High Schools and Universities). The effects of COVID-19 on the education sector are visible and they may affect not only education providers (e.g., schools), but also students and parents (Ministry of Education, Youth, and Sports, 2021). The research aims at providing a short overview introduction of COVID-19 effects on the Czech Education System ranging from Elementary Schools to Universities.

## 2. Methodology of the research

For making this article, the methodology of analysis, compilation, and description has been used. The research aims at providing overview information regarding:

- COVID-19 effects on Elementary Schools from the point of view of restrictions and its effects (illustrated on one specific chosen measurement) in the Czech Republic,
- COVID-19 effects on High Schools from the point of view of restrictions and its effects (illustrated on one specific chosen measurement) in the Czech Republic,



- COVID-19 effects on Universities from the point of view of restrictions and its effects (illustrated on one specific chosen measurement) in the Czech Republic,

The main source of data is previous research of published scientific articles and data provided by the government and government-related agencies (e.g., The Ministry of Education, Youth, and Sports of the Czech Republic and Czech Statistical Office and Czech School Inspectorate).

In accordance with the presented methodology, the following hypotheses are set:

- Hypothesis H1: In elementary school, students and teacher use mainly School platforms which are designed to facilitate communication between students and teachers to communicate with each other (e.g., Google Classroom or personalized Education School System),
- Hypothesis H2: The most significant changes in the lesson plans and content delivered to students may be seen in Vocational School (which are not finished by the Maturita High School Leaving Exam), no more than 40 % of vocational schools teach their students according to the in-class lesson plan online,
- Hypothesis H3: University students have significantly more online classes in comparison with the pre-COVID-19 pandemic situation; the growth of weekly time distribution of online lessons for university students is highest in their weekly time distribution.

### 3. COVID-19 in Elementary Schools

COVID-19 has impacted especially elementary school students and their mental well-being. The isolation and not being able to be in contact with other students and their normal school environment affect the way how elementary school students socialize. The use of online means of education may result in cyber-bullying and its effect on pupil's development and mental well-being, as well as in certain cases, the safe environment for education and socialization in school is now miss-

ing due to isolation and school closure. The isolation has its effect on the education and learning process as well (Čermáková et al., 2020).

**The following figure investigates the communication during the COVID-19 pandemic situation between Elementary School Students and their teachers (chosen specific measurement).**

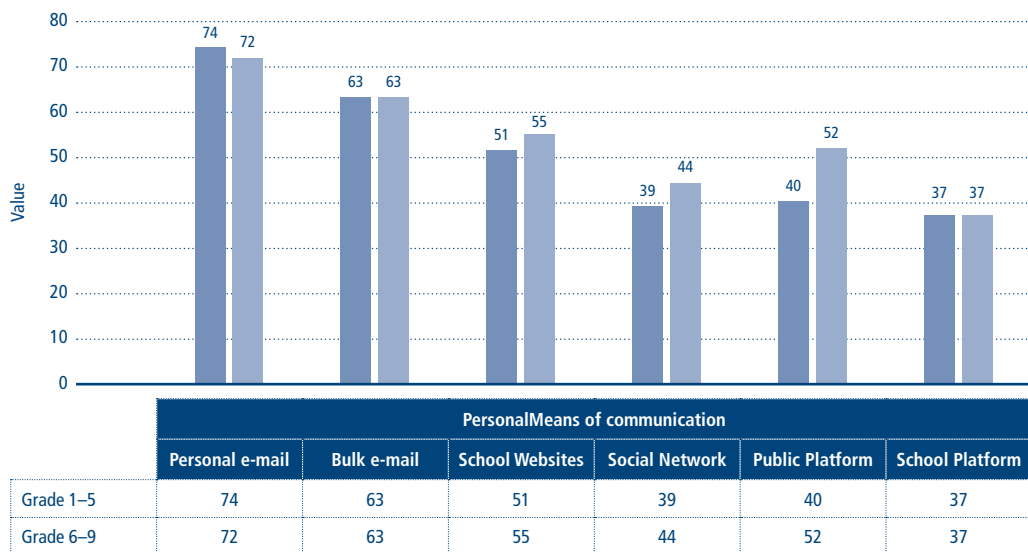
The COVID-19 affects the means of communication between students and their teachers. In-class communication is not possible, therefore it is necessary to provide online communication and education to the students. Figure 1 shows the means of communication between students and teachers in Czech Elementary Schools during 2020. It is visible that the most used mean of communication is personalized e-mail (e-mail sent to every single student separately) followed by bulk e-mails (one non-personalized e-mail sent to all students at once). In both groups, Grade 1-5 Group and Grade 6-9 Group it may be surprising that e-mails (both personal and bulk) and school Websites are common means of communication, however specialized school platforms and public platforms for communication (e.g., Google Classroom and School System "Bakaláři") are not used as primary means of communication as often as it could be (Czech Statistical Office, 2020).

According to the research, Grade 1-5 Group uses slightly less Social Network as means of communication (39 % vs 44 %) as well as significantly fewer Public Platforms as a communication means (40 % vs 52 %) than Grade 6-9 Group. According to the effect of COVID-19 on communication between Elementary Schools Students and their teachers, it is possible to conclude that:

- E-mails and School Websites are used for communication in Elementary Schools during COVID-19 more often than Social Networks and Public/School Platforms,
- Grade 1-5 Group teachers use less Social Network Communication and Public Platform to communicate with their students than Grade 6-9 Group,
- Hypothesis H1: In elementary school, students



**Figure 1 » Means of communication in Elementary Schools during COVID (Czech Statistical Office, 2020)**



■ Grade 1–5 ■ Grade 6–9

and teachers use mainly School platforms which are designed to facilitate communication between students and teachers to communicate with each other (e.g., Google Classroom or personalized Education School System). Hypothesis H1 has not been confirmed.

#### 4. COVID-19 in High Schools

The pandemic situation has effects on class organizational management. There is visible a reduction of study plans and content delivered to the High Schools students. For further examination, the following division of the Czech Education System at High Schools (“middle”) level is used:

- Type 1 (HS Type 1): Vocational Schools without Maturita High School Leaving Exam (not finished by Maturita High School Leaving Exam),
- Type 2 (HS Type 2): Vocational Schools with Maturita High School Leaving Exam (finished by Maturita High school leaving Exam),

- Type 3 (HS Type 3): High School (“classic” High Schools, always finished by Maturita High School Leaving Exam).

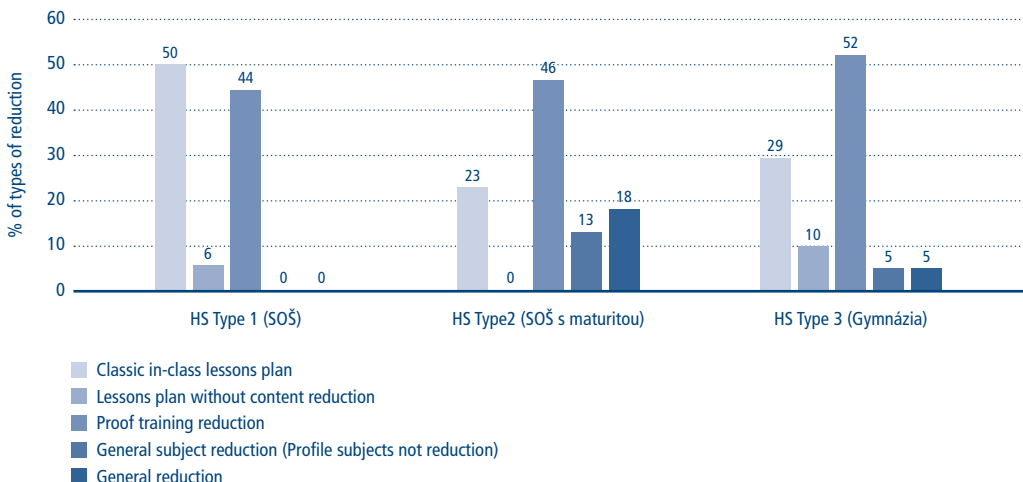
The main difference between HS Type 1, HS Type 2, and HS Type 3 is that if students finish High School or Vocational School and pass the Maturita High School Leaving Exam, they can continue to study further in Bachelor’s Degree Studies in Universities directly. On the other hand, students who finish only Vocational Schools without Maturita High School Leaving Exam (HS Type 1) are not allowed to directly enroll at Bachelor Degree Studies at Universities and have to study further to obtain and pass the Maturita High School Leaving Exam.

**The following figure investigates the changes in lesson delivery from the point of view of content and/or subject selection during online classes in the COVID-19 pandemic situation.**

It is seen that HS Type 1 (Vocational Schools which are not finished by Maturita High School



**Figure 2 » Changes in lesson plans/contents delivered to the students during COVID-19 in High Schools (Czech School Inspectorate, 2021)**



Leaving Exam) teaches students in online lessons mostly according to the classic in-class plan (50%) or with reduction of professional training subjects (44%).

HS Type 2 (Vocational Schools which are finished by Maturita High School Leaving Exam) teaches the students mostly with reduction of professional training subjects (46%). Only less than one-fifth of HS Type 2 schools teach their students according to the classic pre-COVID lesson plan (23%). HS Type 3 schools (classic High Schools) teach according to the reduced professional training plan (52%) (Czech School Inspectorate, 2021).

From the chart, it is possible to read the following statements:

- HS Type 1 (which is not finished by Maturita High School Leaving Exam) teaches mostly according to the classic pre-COVID in-class lessons plan in their online lesson (50%),
- The highest percentage of an overall general reduction of lesson plans and content delivered to students is in HS Type 2 (Vocational School finished by Maturita High School Leaving Exam), which is 18%,

- Content reduction or reduction of professional training or general reduction of delivered content to students (e.g., fewer subjects or teaching only the “core” subjects) is a problem especially for High Schools and Vocational Schools which are compulsory finished by Maturita High School Leaving Exam. Vocational Schools which are not finished by Maturita High School Leaving Exam may not face as many changes in delivered contents/lessons to students as other types of Czech High Schools.

Hypothesis H2: The most significant changes in the lesson plans and content delivered to students may be seen in Vocational School (which are not finished by Maturita High School Leaving Exam), no more than 40% of vocational schools teach their students according to the in-class lesson plan online. Hypothesis H2 has not been confirmed.

On the other side, it was discovered that HS Type 1 seems to be the less affected type of High School in the Czech Republic by an online lesson delivery. A total of 50% of HS Type 1 Schools have been teaching without any changes in lesson plans or content delivered to students in their online lessons.

### 5. COVID-19 in Universities

Universities may be affected by COVID-19 from the point of view of providing the lessons delivery time to their students. Unfortunately, there is a big difference among Czech Universities in point of view on in-class lessons supplement.

**The following figure investigates the weekly time distribution of university students before and during the COVID-19 pandemic situation from the point of view of lesson delivery and self-study.**

The data show that students tend to spend more time self-studying during the COVID-19 pandemic situation in comparison with online studies (Institute of Sociology of the Czech Academy of Sciences, 2020).

The time distribution of university students (weekly) shows a significant shift in the point of view of lesson delivery. It can be seen that in-class lessons for university students have become very restricted for students during the COVID-19 pandemic situation. However, in contrast, we cannot see a significant increase in online lessons (pre-COVID vs COVID pandemic situation). What, however, can be seen, is that:

- During COVID-19 there is no sign of a significant increase in online lessons delivery for university students (weekly time distribution),
- During COVID-19 university students seem to prefer self-study, in which can be seen a significant increase in weekly time distribution,

Hypothesis H3: University students have significantly more online classes in comparison with the pre-COVID-19 pandemic situation; the growth of weekly time distribution of online lessons for university students is highest in their weekly time distribution. Hypothesis H3 has not been confirmed.

On the contrary, we can see that there is a significant increase in self-study, which is higher than the increase of online lessons (weekly time distribution for students). It is possible to conclude that university students during the COVID-19 pandemic situation focus more on self-study than on other means of studying (e.g., online lessons).

### 6. Conclusion

The research investigates public data issued by e.g., Czech Statistical Office, Czech School Inspectorate and Institute of Sociology of the Czech Academy of Sciences, and other government and gov-

**Figure 3 » Weekly time distribution for students of Czech Universities (Institute of Sociology of the Czech Academy of Sciences, 2020)**



ernment-related organizations in the Czech Republic. For further investigation, the following hypotheses are set:

1. Hypothesis H1: In elementary school, students and teacher use mainly School platforms which are designed to facilitate communication between students and teachers to communicate with each other (e.g., Google Classroom or personalized Education School System),
2. Hypothesis H2: The most significant changes in the lesson plans and content delivered to students may be seen in Vocational School (which are not finished by the Maturita High School Leaving Exam), no more than 40% of vocational schools teach their students according to the in-class lesson plan online,
3. Hypothesis H3: University students have significantly more online classes in comparison with the pre-COVID-19 pandemic situation; the growth of weekly time distribution of online lessons for university students is highest in their weekly time distribution.

Hypothesis H1: In elementary school, students and teachers use mainly School platforms which are designed to facilitate communication between students and teachers to communicate with each other (e.g., Google Classroom or personalized Education School System). Hypothesis H1 has not been confirmed.

Hypothesis H2: The most significant changes in the lesson plans and content delivered to students may be seen in Vocational School (which are not finished by Maturita High School Leaving Exam), no more than 40% of vocational schools teach their students according to the in-class lesson plan online. Hypothesis H2 has not been confirmed.

Hypothesis H3: University students have significantly more online classes in comparison with the pre-COVID-19 pandemic situation; the growth of weekly time distribution of online lessons for university students is highest in their weekly time distribution. Hypothesis H3 has not been confirmed.

The effect of the COVID-19 pandemic situation is visible in all levels of the Czech Education Sys-

tem. The most immediate effect is government restriction of in-class lessons a de facto closure of School Education as we used to know before the COVID-19 pandemic situation.

From the point of view of Elementary Schools in the Czech Republic, it is possible to state (according to the data) that E-mails and School websites are used for communication between teachers and students during COVID-19 more often than Social Networks and Public/School Platforms in general. It is also possible to state that Grade 1-5 Group teachers use less Social Network Communication and Public Platform to communicate with their students than Grade 6-9 Group teachers.

In general, it is possible to conclude that school platforms that are designed to deliver online lessons to students may not be the main means of communication between elementary school students and their teachers. On the other hand, personal e-mails, bulk e-mails, and School Websites are used more often.

In High School Level Education, it is possible to see the change of lesson plans and content delivered to the students during the COVID-19 pandemic situation. Surprisingly, Vocational Schools (which are not finished by Maturita High School Leaving Exam) seem not to change the lesson plans/content delivered to students and teach their students according to the original in-class lesson plans from before the COVID-19 pandemic situation.

On the other hand, it is possible to conclude that the highest percentage of an overall general reduction of lesson plans and content delivered to students is in HS Type 2 (Vocational Schools finished by Maturita High School Leaving Exam). Classic High Schools (HS Type 3) are affected as well, mostly by Professional Training reduction in their lessons plans.

University students do not show a significant increase in online lessons delivered to them (in comparison to weekly time distribution), on the other hand, it is possible to see a significantly higher increase in self-study hours in comparison to

weekly time distribution. Therefore, it is possible to assume that during COVID-19 university students seem to prefer self-study to online classes and other means of lesson delivery.

Summary of the conclusion of the research paper:

- Elementary schools' teachers use mainly personal e-mails, bulk e-mails, and websites as means of communication with their students during COVID-19,
- High Schools which are finished by Maturita High Schools Leaving Exam (HS Type 2 and HS Type 3) are more affected by COVID-19 from

point of view of lessons plans, lessons, and subjects reduction than Vocational Schools which are not finished by Maturita High Schools Leaving Exam (HS Type 1). The most affected part of the lesson plan/content seems to be Professional Training which is reduced in all types of High Schools.

- University students seem to prefer self-study to online classes during the COVID-19 pandemic situation.

It may be recommended to investigate the effect of COVID-19 from the perspective of changes that prevail after the pandemic situation in the future.

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## COVID-19 and its impact on Czech Education System

### ABSTRACT

*Education is one of the most affected fields of the COVID-19 situation. The main aim of this research paper is to briefly describe and illustrate the effects of the COVID-19 pandemic situation in the Czech Education System. Methodology of description and analysis is used to evaluate the effects of COVID-19. The research paper focuses on elementary schools, high schools, and universities and highlight outstanding issues caused by the COVID-19 pandemic situation in respective education system levels. The research paper also suggests related conclusions based on the presented research.*

**KEYWORDS**

*COVID-19; education system; schools; lockdown; students*

**JEL CLASSIFICATION**

*F15; G18; H7; H83; L88*



# Systemic Leadership for Leading People and Human Systems

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\* People's and human systems' management and leadership (groups, teams, organisational units, and communities) are constantly at the centre of attention, whether from the human or social sciences. The development of these sciences and applying the knowledge in a dynamically evolving and changing social environment, in all its specific modalities, reflect the competencies, demands or requirements of a particular individual and the demands and requirements for abilities, activities, and functions of human systems. One of the dynamically evolving directions, with increasing application potential, is a systemic approach, representing a pragmatic system of applied knowledge of traditional and modern natural sciences, human and social sciences. In this respect, the systemic leadership is developing as a comprehensive, educational and training, methodologically developed direction with application potential for leading people and human systems in current environment conditions at the NEWTON University Center for the Humanities and the Management Center, and the Department of Leadership of the Faculty of Military Leadership at the University of Defence in Brno.

The systemic approach pragmatics and its methods emphasise connecting theory with practice, the meaningfulness and effectiveness of coop-

eration, and focus on solving problems and situations of tasks concerning system development and dynamics (man – situation – environment [context]) for factual and informed decision-making and effective action. Systemic leadership deals with leading a specific (constantly changing) entirety in changing conditions and environmental circumstances. It is based on the need for a “*non-representative view of knowledge based on the ability of an autonomous living system to create meaning*” (Maturana, Varela, 2016, p. 225), and the human mind apparent ability to be an object, to evolve, to recognise and learn, as well as know, how to learn.

Cognition and learning is a dominant theme in the development of our modern information and knowledge society. We can only agree that: “... *a successful future manager will have to be a leader of change, i.e. adaptable, resilient, and willing to learn all the time*” (Řehka, 2017). Because the fact is that in the future, it is inevitable to do business (operate) in a rapidly changing environment, the complexity of which will continue to evolve. Systemic leadership is a comprehensive approach. Our knowledge does not fully correspond to the concepts of often one-sidedly oriented models of “leadership”, whether it is a shift and transaction in relationships, needs and values, or emotions →

and empathy, with overlap into socially acceptable, docile and “correct” thinking, cognition and action – alternatively other, especially anthropocentric or socio-centric models, emphasising a specific philosophical, ontological, epistemological, economic, psychotherapeutic and another concept. Systemic leadership builds on the basic principles and knowledge of cybernetics, synergetics and systemic coaching. It represents a qualitatively higher level of systemic management and coaching, applies the principles and methods of Cognitive Management, establishes, develops, and applies core concepts of a systemic approach for the three primary domains: self-management, human systems management, and team management.

Self-management reflects in autonomous and authentic decision-making and conscious action in situational contexts, reasoned self/consciousness, and self/updating in the changing environment. Studies and exploration of the functionality essence of principles and methods of cognitive management and systemic leadership result in skill or rather art in their conscious application, especially situational modification, which ultimately manifests in realistic decision-making and effective conscious action.

Human systems management reflects in mental mobility and proactivity in finding, creating and using practical tools, procedures and methods of cooperation and building relationships in organisational units and groups, in the ability to apply tactics and pressure strategies concerning context, conditions and circumstances, and push/pull strategy for a synergistic effect in achieving goals.

Team management reflects in the ability to establish, keep, and cultivate social systems in the form of an adult, exceptional team, i.e. “membership” of people, able to behave like a living, intelligent (in the sense of intellectual) whole, usefully and proactively organise their functions, relationships and competencies for achieving goals with minimum energy. Exceptionality results in the

ability to transform in the problem-solving process to proactively designing programs for effective process control and function management in changing conditions and circumstances of situations and tasks contexts.

By systemic leadership, we mean the “target” qualitative state, or rather the resulting, in the sense of permanently achieved, renewed and changing, process qualitative “state”, as an effect of continuous study and practice of internal work, leading to a radically subjective form, self-conscious, individualised, a self-actualising, authentic and consciously acting human individual<sup>1</sup> or exceptional team. From the perspective of human systems, the dominant feature of systemic leadership is the idea of an autopoietic organisational grouping of people respecting the context, situation and process of their development and changes. From this point of view, systemic leadership, whether in the form of systemic leaders or systemic (exceptional) teams, does not create “structures” in the organisational environment, but “golden” cores, living “places”, or “places of positive deviation” (deviations, exceptions), which become an internal, self-regulating and self-learning aspect of the broader environment of the organisational unit, with the potential for transformation and change of either prospective (endogenous) type or proactive, adaptive character (exogenous influences – transformation and change of environment).

It contributes to functioning independent units (self-employed) individuals and companies. In a corporate environment that tends to institutionalisation, “islands” create positive deviations with a significant effect of added value in transformation management, innovation, adaptation to changing conditions, circumstances and specifically in crisis and project management. It participates in the aspect of the system being and survival, especially in the processes and functions of a proactive and prospective nature, concerning prosperity actively in-

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<sup>1</sup> In this respect, systemic leadership shows seeming correspondences with some original or charismatic leadership concepts.



fluencing the organisational system's internal and external environment development.

Systemic leadership focuses mainly on working with the mind, change, and language in cognition, sound decision-making, conscious, practical action, building, maintaining, cultivating relationships, communicating, and sharing. This context applies knowledge of the modern sciences of mind, thoughts, and cognition (cognitive sciences) and draws on doctrines permanently demonstrating competence and significant application potential today (Taoism, Buddhism) and sciences, focusing on systems, information, relationships and communications. The primary methods of systemic leadership are reflection, meditation, intention and pragmatic dialectical scepticism of conscious study practice. The core source of study practice is personal development in the form of learning about and cultivating the natural potentials of a particular person and a particular human system (organisational unit). Modern diagnostic tools can objectify these potentials in the level of psychophysical, mental or social (personal) condition of a person, and socio-psychological, ethical, cognitive, communication and behavioural qualities of the human system reflected in the team "adulthood" or participates in the characteristics of the development phase of the human system as an organisational unit. The effects of systemic leadership and systemic andragogy practice developed within it can be seen at personal, team and organisational, professional level. The personal level is represented by an individual<sup>2</sup>, self-confident and self-actualizing, authentic and autonomous, mentally mobile, critically-thinking, self-sufficient and conscious person. The human system, reaching the fourth stage of development allows members to individualise and realize themselves at the team level. The organisational (professional) level repre-

sents authentic self-realisation in the conditions and circumstances of the context of the organisational environment, the mastery of the profession, i.e. penetration from within, to the essence and principles of the acquired methods and means.

The effect of systemic leadership practice is a mature, realistic, practical and conscious behaviour, proactivity and independence of a particular person, leader, and an adult, "exceptional" team with high adaptive potential. The selected characteristics of the systemic leader and adult team (organisational unit) are presented in the following text. However, it is necessary to draw attention to limiting the language and standard terms used in various disciplines such as individuation, qualitative aspects of people management or human systems – their organisation and development.

Systemic leadership has the ambition to keep up "with" the modern environment development and influence and shape it. In a way, it also represents a program for meaningful action in the present reality. It is not just about "life 1.0 and 2.0", as Tegmark (2020) suggests for the "evolutionary model" of intelligence and thinking, but about cultivating the people's and human systems' natural potentials, especially the mind, cognition and knowledge and goals. Life 1.0 represents a bio-social evolution (living and surviving in a given environment, new skills and ). Life 2.0 includes socio-cultural aspects and introduces people who can learn complex, new skills and fundamentally update their "worldview" and goals. These are thinking people, mentally mobile, i.e. free and self-conscious people who want and can proactively "re-program" their "software" (cognitive model), people who can adapt patiently and reactively, as well as proactively (consciously act), with an ambition and skills to program their being and life. Tegmark's model applies the life 3.0 concept to

<sup>2</sup> *Individuation is egoic; individualisation is egoistic. The effect of egoic individuation is self-realisation. The effect of egoistic individualisation is self-realisation. In egoic individuation, the individual becomes an absolute idiot in the word's original sense — a private individual. In the case of egoistic individualisation, he becomes cognitively docile and mentally "right," mass, multi human in the environment, or "rebel" or idiot in a pejorative sense, underdeveloped or unable to live or socially interact according to the current "valid" standards.*

technologies that can reprogram their software and hardware (i.e. life 1.0), which we cannot (Tegmark, 2020, p. 29–32). In the context of systemic management and leadership for the life 3.0 concept, we propose transforming social “hardware”, forming and transforming the human reference system of which man is a member. Social hardware is about designing and creating the organisational behaviour of “small” units (teams). We add life 4.0 to the model to design and program the behaviour of “large”, complex human systems, communities using modern intelligent communication and information technologies.

### *Systemic Leader*

We perceive the systemic leader as a multidimensional environment, a whole, a being, not just a “personality” or a social construct. Selected dimensions for the formulation of characteristic features represent mental, noetic, gnoseological, epistemological, ontological, ontogenic dimension of decision-making and action, leadership and management.

The mental dimension represents the thinking of a systemic leader that is radically subjective, constantly evolving, and its characteristic feature is mental mobility, which manifests itself in six domains. The first domain is mobility on the cognitive continuum (Hammond, 2000; Kostroň, 1997), the second domain is mobility on the detail continuum (part, element, relationship) and whole (context, system), the third domain is mobility on the insight and outlook continuum with the essential feature of subtle and accurate differentiation resulting in a “complex” view, the image of reality as a basic scheme of resolution on the continuum of the fourth domain, which contains the known and the unknown. The fifth domain is the ability to “change thinking” valuable and appropriate for the decision-making phase and thinking useful for the negotiation phase and implementing decisions. It

is not a complete setting aside of one and acceptance of the other (model 0/1), but the dominance of some pragmatic aspects (analysis and its depth, scope, feedback and updating, to adjust the “direction” and method of progress, ongoing evaluation and correction) for thinking in the reasoning phase and thinking in the negotiation phase. The sixth dimension of mental mobility is the flexibility of thinking corresponding to openness, spontaneity, improvising, the distinction between necessity and possibility, which contribute to reasoning and decision-making in standard conditions and risks and uncertainties and form a fundamental aspect of the antifragility (Taleb, 2011, 2013) of the system as a whole in standard and non-standard environmental conditions. In this complex conception, it can be said that mental mobility is a category in which the idea (metaphoric and symbolism) of waves is more suitable than the idea of the flow of a river (stream of consciousness). This wave “oscillates” like a strange attractor, permanently “around” one state, but the “mass” of the mind does not move. Mental mobility ultimately creates the conditions for practical and truly realistic critical thinking in different and dynamically changing conditions, for proactive “adaptation” (designing and programming meaningful and valuable changes in the internal and external environment<sup>3</sup>), and for situational continuum mobility (operational, tactical) and systemic, complex thinking for strategic planning and management. In this context, mental mobility also relates to the control of systemic time management, i.e. work with the type of Chronos and Kairos.

Noetic, gnoseological, epistemological (Bateson, 2006, 2018; Taleb, 2013) dimension is based on the assumption that mental mobility results in a situationally and contextually constituted “state of complete – perfect knowledge”. This fullness, completeness or “perfection” of cognition is a radically subjective state, a state of cognition of the living, situational (therefore realistic, objective) re-

<sup>3</sup> (Tegmark, M., 2020)

ality, not artificial, constructed by any form of paradigmatically determined logic rationalising objectification, including rationalising introspection and self-reflection. It is a matter of practising the methods of reflection and meditation and of truly sceptical, critical thinking, the effect of which is cognition and knowledge, manifested in practical reasoning and decision-making. At the level of a particular person, this is the accurate content of individualisation, as thought by C. G. Jung (2019), not individualisation, and in the context of the task situation then the categorical basis for meaningful, practical and effective action.

Ontological – ontogenic (Patočka, 2018; Bondy, 2007a, 2007b) dimension is another aspect of systemic leadership and represents bringing the concept of autopoiesis proposed by Bateson (2006), Maturana and Varela (2016) into practical consequences in terms of conscious action (being) of a particular individual in specific situation and context. It is a “shortening” of feedback processes, where: “... *feedback, or even the present consequences and causes (conditions), their full dialectical unity would mean that the consequence (effect) affects the*” treatment “*of the substrate, in which the cause manifests, by which the cause occurs and thus “in advance”, or “simultaneously” modifies the cause in its concrete image.*” (Bondy, 2007a, p. 214). We understand this process, for which Bondy uses the terms self-movement and self-emergence, within the framework of his proposed non-self-sufficient ontological model “, as the situational proactivity of the whole individual (of a specific person) or in the ideal form of a whole “mature” professional team. It is not about designing and programming the “future” internal or external environment of the whole, but its “direct”, unmediated, aware and proactive “adaptation”

with the potential to transform and change the external and internal environment in the process of implementing the plan, contract or goal, mission. This self-emergence and self-development occurs through the natural, vital quality of the mind as an active, mobile, complex and dynamically evolving, and qualitatively changing phenomenon. It manifests itself, for example, in the mastery and management of a skill or task situation, and its integral part is professional intuition. It is most often observable in conscious, truly creative activities, actions and thus falls more into the field of art than into the field of traditionally described abilities, skills or competencies. The thinking, cognition and creation form a kind of “living” alloy manifested by conscious action at the background of spontaneity or realistic improvisation.

The dimension of decision-making and action is characterised in systemic leadership by a leader’s decision-making being independent, authentic and naturally ethical in the complete sense of the word. It is a conscious and proactive action, not reactive behaviour. A crucial contributing aspect from the point of view of decision-making is the cognition and insight into the dominant specifics of the paradigm<sup>4</sup> and context, in the frameworks, conditions and circumstances of which the individual and the human system is updated and realised (Kuhn, 1997; Sardar, 2001; Neubauer & Fiala, 2011). The ethics of nature or the natural order of living or situational reality is a matter of being a particular thing, a situation, its insight and conscious “following”. Nature and “order” is nothing metaphysical<sup>5</sup> in this context and sense (Neubauer & Fiala, 2011; Neubauer, 2004; Hayek, 2011). It is a matter of course that there is a whole “thing” (individual, system) and environment. The pragmatic ethics of the naturalness of the order of living, sit-

<sup>4</sup> T. S. Kuhn (1997) understands the paradigm as: “... generally accepted and scientific results, which at the moment represent for the community of experts a model of problems and a model of their solution”. In a broader sense, the term paradigm is used as a term for a generally accepted and shared explanation of the phenomena, processes and relationships that people encounter and that take place spontaneously or in a controlled manner in society. They are, therefore, also the principal shared ethical values and their manifestations in codified and informally observed forms.

<sup>5</sup> Aristotle’s metaphysics was radically relativised by the theory of relativity and consistently by quantum or subatomic physics.

ational reality can be realised at the level of a particular person or community, as shown by the original teachings of Lao   or Siddh rta Guatama. Ethical aspects such as values or morality are neither supranatural nor above the order of nature. (Bondy, 2020, p. 143). On the contrary, being invented, created and formulated by man and the human system, they cannot evolve or derive from anything other than the living reality, ethics, shared values, meaning and significance within the whole and its relation to the environment. The ability to realise, explore its principles, and follow this “order” of living, consciously lived reality is a core theme of systemic leadership and systemic andragogy. Alternatively, man can be nothing but man, and human systems, whether in the form of a team, organisational unit, or society, cannot be anything other than the whole of relationships, meanings, and senses formed by living and recognising, thinking people.

For the dimension of leadership, management, it is characteristic in systemic leadership that a systemic leader is neither a leader, ruler, or manager. However, aspects of these functions or roles appear in the “portfolio” of his potentials (possibilities). Leadership is more about the notion of faith, the ruling is more about the order, and management is more about the notion of vision and following. Leadership and ruling are, in a way, “static” social or socio-psychological specifications. Management or leadership in systemic leadership is more tied to the situation and context, conditions and circumstances. A guide, such as a mountain guide, knows the landscape and track. People rely on him and trust him. Instead, leader and leadership are about the fact that while we know where from and where to (direction), we have an idea of “what” (usefulness, purpose), and we can reasonably argue “why” (sense), we are not “experts” in the environment because it is constantly evolving and changing. The systemic leader must also be able to make a fine distinction between leadership and guiding. Guiding concerns the establishment or insertion of order, principles and relationships

into the “functioning” of an organisational unit and participates in its “definition” concerning the environment. Its effect is “maintaining” this order, as a reference, normative and normative structure, from which derive the criteria (for reasoning) in cognition and decision-making, as well as ethical, determining the behaviour and actions of the whole (communication, sharing, including the performance of specific activities and functions). Governance is a matter of control and “power”, and like guiding, it implies hierarchical organisational structures and relationships, and ultimately duality in the model (push/pull, motivation/stimulation, reward/punishment, etc.).

The position of a leader or a manager in an organisational unit of human systems is, by its nature or mostly its content focused on the “administration” of the order, its maintenance, and care for its functionality, or the optimisation of “deviations”. The management domain is the stability and eventually growth of efficiency of the organisational unit in terms of its activities and functions at the output. To lead does not mean to be in the lead, “in front”, ahead or above something, but in essence, it means to be worthy of following. It is a matter of attraction, the gravitational potential that is “recognised and acknowledged” by the leaders. They are drawn to it for some reason, and not every individual in a leading or top position is worth following or has gravitational potential. Leadership refers to the situation or context-specific “states” where the “order of guiding” does not allow or even limit the meaningfulness of being, or the survival and prosperity (usefulness, meaning and significance) of the whole, concerning the environment. In this context, systemic leadership is primarily the ability of situational and systemic “mobility”. From the point of view of leadership, the situational mobility of a systemic leader is pragmatically governed by the context, conditions and circumstances of task situations. One of the models of context-driven leadership is presented by J. G. Hunt and R. L. Phillips (1991). The model works with two dimensions. The first dimension

includes common, standard conditions, and conversely, non-standard, unique or exceptional conditions and circumstances. The second dimension includes decision-making under certainty, low risk, which on the contrary, complements decision-making under uncertainty or high risk. In terms of the requirements of situations arising from their nature, the authors of the model propose various ways of human system leader behaviour, which they situate, following the categorisation according to Quinn (1988, pp. 176–178) into eight types of roles (innovator, broker, producer, director, coordinator, observer, facilitator and mentor). However, according to them, it is not only the ability to play various “roles,” i.e., changing their behaviour. They also emphasise mental mobility, as suggested by K. R. Hammond (2000) in cognitive continuum theory, and suggestions for the ability to consciously work with both analytical and intuitive modems of cognition and consciousness, similar to Papparone, Crupi (2002), a model of Janus thinking (Nastoupil, 2003). Ultimately, in terms of mental mobility, we can say that a true leader must respond dynamically and proactively to the various situational frameworks occurring in the environment of routine versus exceptional, and confident, algorithmic and uncertain. The fact is that in some cases, the response must be virtually simultaneous in managing paradoxical dynamics, such as managing the uncertainty of open systems, while manipulating routine, standardising procedures included in the internal process model (Hammond, 2000). Coping with paradoxical dynamics is a matter of the leader’s ability to balance the conditions and circumstances. It requires opposed tasks, both rational, linear thinking/behaviour

and intuitive, nonlinear thinking/behaviour of the leader in specific situations and over more extended periods (J. G. Hunt & R. L. Phillips, 1991).

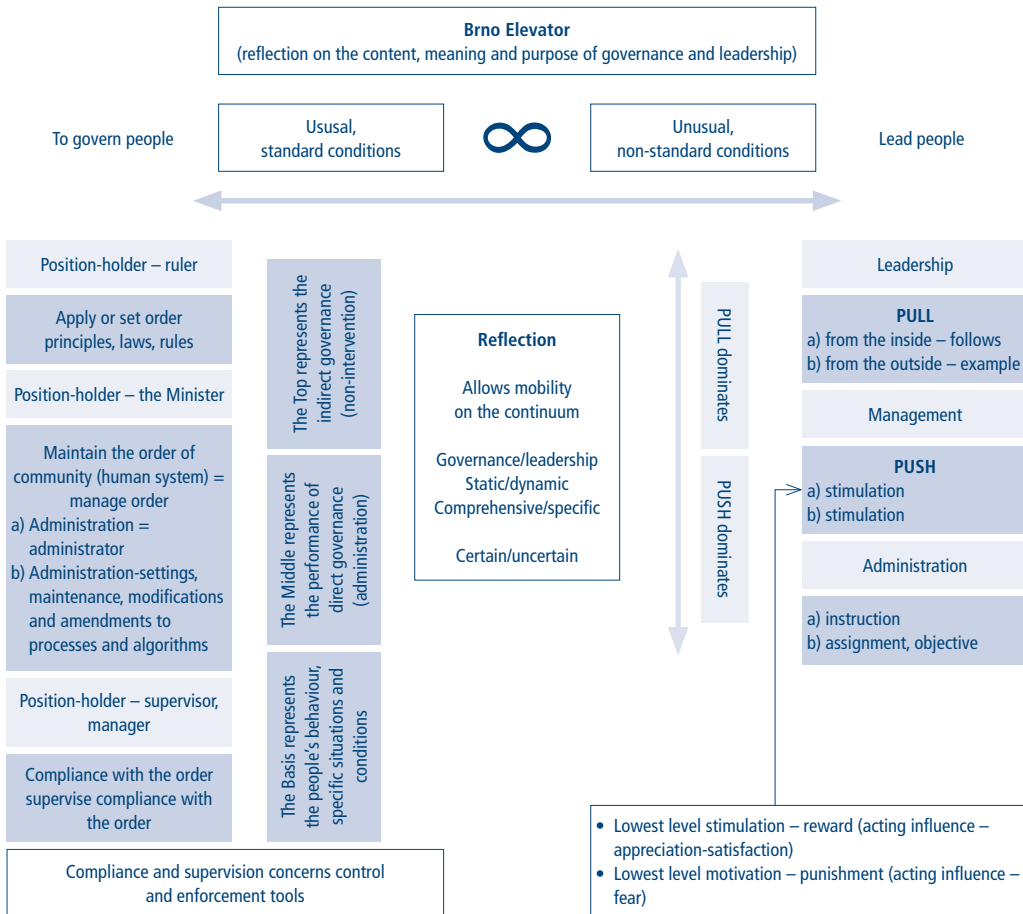
In this respect, systemic leadership is both a matter of individualisation and a matter of conditions and circumstances of task situations. It cannot be understood statically in the sense of a once and for all achieved state, social status, or role-play. It is essential to perceive it as a dynamically evolving and situationally emerging phenomenon, the essential characteristics of the individual’s potentials nature, the human system, and their situational mobility. To express the demands on mental and situational mobility in terms of leading people and human systems, we have created a model called “Brno Elevator” in the practice of training and education. The basis reflects context, situation, place, position model for cognition, reasoning, decision-making and action. This mobility enables us not only to apply and maintain “order”, and in the context of systems thinking, we understand order as an arrangement of elements and relationships of the human system, which allows us to assume not only its other behaviour but also its development, maintenance (survival) and prosperity. The recognition or “application” or “establishment” of the order does not have to have the character of law in the sense of objective validity. However, this is an indispensable aspect for discussing the complex phenomena that human systems undoubtedly are. According to the typology of systems, whether it is a classification according to K. Boulding (1956) or P. Checkland (1981), it belongs to the highest and most complex systems from the point of view of actual practice<sup>6</sup>. Around the con-

<sup>6</sup> K. Boulding (1956) proposed the distinction of systems according to properties, into inanimate — physical, mechanical and cybernetic, living systems — open systems (cell), genetic, animal, human, as a specific system (the only system with mental properties, self-awareness, the ability of symbolic and abstract thinking and deliberate action). The highest level of complexity then forms social systems, followed by a transcendent system (beyond our comprehension). P. Checkland (1981) proposed a typology of a different kind, dividing the systems into natural and proposed, then into systems of human activities — the decisive elements are the people forming the socio-cultural system (intertwined with the natural and proposed) and some meta-level observed as the quality of relationships between elements of natural systems, systems of human activities and relationships between these systems.

cepts of management and leadership, there has long been a vague debate and confusion. In some models, they are still understood or positioned opposite ways; each depends entirely on what goal or intention the model or researcher aims at and what point of view the problem is studied and researched. We believe that there are two aspects of the same thing. Guiding and management are first understood as the application of controls, administration of the organisational rules of the organisational means, and dedicated decision-making at higher levels, where concerns statistics, measura-

ble and quantifiable indicators, numbers or data than specific human beings, individuals. Management, in general, is the active influence of the controlled subsystem based on information, purpose and objective aimed at the action of the control subsystem aimed at inducing the desired target behaviour of the controlled subsystem. Management is understood more broadly and comprehensively; however, man is here, despite all attempts at humanisation, understood as a unit of “energy” or a source of performance of activity or function. The management domain is mainly issuing instruc-

Figure 1



Own source

tions, setting goals, criteria, limits and algorithms for achieving goals, planning and organising activities, ensuring optimal processes and functions for performing specific activities, etc. In traditional terms, some behavioural roles or styles of organising relationships and functions of human systems can be classified as pure management, some as pure guidance or leadership, and probably most of them as a mixture. Leadership is most often understood as part of organisational theory, and lately, it seems that leadership theory and organisational theory ultimately converge. Leadership theories, which have traditionally dealt with direct, motivating, stimulating, or inspiring influence, now focus more on indirect influence, policy-making, vision, reducing uncertainty, and external representation.

The figure presents a basic orientation scheme for judging and decision-making of a leader in various situational contexts. A leader must make decisions by respecting the conditions and circumstances of the situation and the environment (external and internal) and making realistic forecasts (Tetlock & Gardner, 2016) and using them. In this context, they must have self-confidence and self-consciousness, the effect of which is a realistic degree of self-confidence, which creates “gravitational” potential, makes the leader “attractive” to people and evokes confidence and self-confidence in them. A realistic degree of self-confidence results from identifying the basic parameters of a place, situation and position, taking an inner position, and being a fundamental source for leading oneself and human systems, especially in the conditions and circumstances of “uncertainty”. The ability to make decisions for both certainty and uncertainty (Tetlock & Gardner, 2016, p. 241–243), risk (Hammond, 2000), or to effectively manage the effects of “chance” (Taleb 2011, 2013) is related to the awareness of the fact that *“no plan does not go beyond the first contact with reality”* (Bisio, 2017), and with the limited meaning and significance of experience, as two “same”, i.e. identical situations will never occur (Hammond, 2000; Kostróň, 1997), and best practices of the past may

not have its validity, effectiveness, meaning and sense now or in the future. It requires spontaneity and improvisational potential, but above all, mental mobility with a high proportion of reflection. These qualities are approached by the quality of determination, which allows ending the process of evaluating the situation and reasoning by some decision, its formulation and transformation into action, and the ability to communicate and share specific goals and intention and vision. It means, for example, the ability to make decisions, formulate them in the form of goals, and leave the way to achieve them to their implementers, and it also means the ability to distinguish between necessity and possibility (Bondy, 2007, p. 215–219). In the sense of possibility and in the sense of “I can”, power is an essential complex cognitive aspect. It relates to the practical realisation of the “possible” and takes place at the “interface” of the necessary, possible and not/possible, the external and internal environment of a thing, system, entirety, through an external and internal relationship. Comprehensive because it includes, for example, thinking, ways of cognition, experience, will, expectations, motivation, conditions, circumstances, and others, as well as a realistic analysis of existing “phenomena”, things, conditions and events. In a way, it falls into the area of the unknown/known and un/certain (Mercier, H., Sperber, D., 2019).

It requires, for example, for teams and organisational units to create a “hologram” effect, where team members “think as a unit”. This “mind alignment” is the effect of the fourth phase of a mature or exceptional team. Work with language, thinking in language, and the related field of communication plays a significant role, according to our experience. For a systemic leader or team, the interface between the phase of preparation and performance “disappears”, and the content of preparation and learning, i.e. the creation or transformation of knowledge, algorithm and methodology, as well as its own “organisational” environment, takes place directly in the process of conscious action. Therefore we speak about a constantly, con-



sciously learning system. For example, the “reaction time”, whether a straightforward, simple reaction or a selective (disjunctive, complex) reaction under both relatively stable and dynamically changing conditions and circumstances, becomes an almost “non/measurable” quantity.

The effect is a quick and energy-saving adaptation to change and a realistic, meaningful proactive, conscious action, affecting the whole itself and its environment, i.e. conditions and circumstances in the “desired” direction. (Bisio, 2017). In practice, this is the effect of the concept of “self-creation” or self-development, when an individual or a team or an organisational unit acts as an “intelligent agent” in the language of informatics (Tegmark, 2020). The concept of self-creation and development originates in two or better three source environments. The first source environment is the knowledge of biological and system sciences, which Bateson (2006, 2018), Maturana & Varela (2016) introduces. Others are philosophical knowledge examining the nature of substantial ontological models (Bondy, 2007a) and analytical philosophy, and the third is knowledge of the cognitive, behavioural, information and systems sciences, including chaos theory or second-order cybernetics. It is based on the premise that something can arise on its own, and: “... *not only from something and something else.*” (Bondy, 2007a, p. 211-214, 2007b), and from the simple fact that man is not born with usage instructions.

Nevertheless, he has the natural potential for self-development and creation, similar to his co-created human systems. In this context, systemic leadership introduces cybernetics “of the Third order” aspects of which is the assumption of the cause and effect correlation (i.e. neither parallelism nor seriality or succession, as simple causality), and the postulate or categorical imperative of nonduality (mind and thought), in the sense of unity of reality (Watzlawick, 1998). Third-order cybernetics works with the principle of “excluded” third and reduces both the influence of the assumption of subject-object determinism, charac-

teristic of first-order cybernetics and its principles of feedback of various kinds and its constructivist variant in the form of autopilot, independent observer, etc. The epistemological concept of nonduality is based on the ability of the human mind to be an object of itself and the factual ability to view reality directly. The concept of reality is an aspect of ego II (social consensus) evolving in a given social (consensual) reality, known as culture, norm or context and paradigm, and ego II corresponding to the concept of the process of individuation according to C. G. Jung resulting in the conscious conjunction of the self and the “being SELF” and being in this state. This model dissolves the functionality of different types of cognitive biases (Kahneman, 2012), influences (Cialdini, 2012) or illusions (Watzlawick, 1998), including the illusion of repeatability, understood in natural science methodology as “proof” of the validity of an assertion, experience or interpretation of experimental results. Experiment, unlike observation, which is inherently one of the most effective tools of cognition, is always manipulation, reduction, and simulation. However, experiment, however an essential methodological tool and expression of conscious cognition, is, in dynamically changing and complex environmental conditions, a somewhat cumbersome tool regarding cognition requirements, otherwise more demanding than “non-interfering” observations, which as an effective method of practice can become the only source of information for a judging leader who needs to make realistic decisions and act effectively.

### *Systemic Team*

A committed systemic, mature team can work with motivation, effort, energy, circumstances, and relationships between internal and external environments. It is not only about achieving quality and quantity of performance with the least possible energy requirements for internal and external resources but also about the ability to make intensive efforts, e.g., in terms of information retrieval



and sharing, and knowledge creation, increased emphasis and agility concerning the development of conditions and circumstances of the task situation. It has two qualities. The first quality is the characteristics of a “living” organism in the sense of permanent “adaptation” to conditions and circumstances. The second quality is the use of thinking for proactive and prospective “adaptation” and programming of “behaviour” of the environment (application of the art of war and war strategy).

It also features correlative polarities, and a mature, excellent team is characterised by conscious “balancing”, for which, as a “general principle” of the systemic team existence, we use the term respect. One of the polarities, for example, is the balance between “unity” and diversification, based on respect for the specificity of the functions and activities carried out by team members and respect for their “individuality”. This balancing or respect leads to the cultivation of both the “unity” of the entirety and the functional diversity. It turns out that excellent, professionally diversified professional teams have a higher degree of accuracy than experts, professional individuals (Tetlock & Gardner, 2016, pp. 231–233, 239) and also have higher efficiency and speed, adaptability and ability to improvise in terms of problem-solving and lower energy intensity, self-sufficiency, including the ability to renew resources or their substitution, and lower demands or requirements for “external” support in terms of management (self-management, self-learning and self-organisation). The development of a systemic team is conceived autopoietically, organically, and it cannot be programmed, instructed, purpose- or benefit-oriented training, but a coaching-type practice focused on meaning, sense and usefulness. One of the reasons

is the fact that the aspect of the systemic leader and the team as a whole is also antifragility, not only as of the ability to perceive generally negatively perceived characteristics such as volatility, randomness, chaos, stress or stressors, positively but also effectively to orientate not only in confusing but also unknown, complex and dynamically evolving situations, with a high proportion of asymmetric influences and coincidences featuring unpredictable decision-making in conditions and circumstances of uncertainty and risk. According to the antifragility theory author, N. N. Taleb (2011, 2013), antifragility<sup>7</sup> is quality at the background of all “things” that evolve and change, and applies not only to managing change, shocks and overcoming crises while maintaining “integrity”, capabilities and functions of the system, but it can valorise the effects of these changes and transformations, permanently “improve” it, strengthen and expand the potentials range (possibilities and powers). In this sense, it is not a linear “readiness” or evaluation of “experience” but a qualitative aspect of vitality, viability, longevity, the art of learning, intelligence, etc. The dynamism of the systemic team shows the following aspects: utility, efficiency, stability, dynamics and synergetics—usefulness concerns both the internal and external environment. The team must comprise sense and significance. It must provide someone with a particular benefit (either to their surroundings or to themselves). Someone must need it. Efficiency is the ability to use, renew, search or create resources (internal and external). Stability includes both an effective feedback organisational and communication structure, as well as its meaningful change. It is both a “self-regulation” and the ability to take care of the balance and harmony of the internal and external environment, as

<sup>7</sup> According to the concept of antifragility, all things or systems can be included in one of three categories:

- 1) *The fragile category represents matter requiring calm, stable conditions, order, predictability, symmetry, algorithmic and standardised processes.*
- 2) *The resilient category represents systems and things that are satisfied with calm and complex conditions, deviations, mistakes, change, or chaos. However, going through change and crisis, they remain unchanged and return to the original qualitative state.*
- 3) *The antifragile category represents systems and things that can “benefit” from asymmetries, deviations and “chaos”, undergo a crisis qualitatively changed and gain strength and power through pressure or change.*

well as the ability to adapt to change – it can “learn”. Feedback in the systemic team shows all aspects or modes characteristic of linear and non-linear, symmetric and asymmetric, as well as closed, relatively closed and open systems. Dynamics means proactivity, i.e. the ability to react to changes, anticipate them, control and actively evoke, and program them. The basal sources of dynamics are mainly the internal attitudes of the system members and their natural abilities quality. Synergetics is the sense of the ability to create qualitatively new structures in a system and create knowledge, search for resources, and organise desirable energy and information flows.

Systemic leadership in terms of team development is based on a network, centrist model, not hierarchical. Instead, it uses an organismic concept for the team development process, and in practice, four phases can be distinguished, which express the qualitative changes of the team and all its members as a whole, including organisational and communication aspects. The need to create a situationally own organisational structure and “establish” a leader also speaks for the organismal concept, a required feature for organisational units operating in a modern environment. In this context, we speak of “... *smart, intelligent, adaptable and efficient organisation*” (Tetlock & Gardner, 2016, pp. 241-242). Experience in training leaders and teams also shows that teams must have the ability to spontaneously “adapt” and improvise, i.e. the ability to create new knowledge and procedures for implementing decisions directly in the process of achieving goals or mission. In complex and dynamically changing environmental conditions, as in nature, two identical situations will never occur, and it is impossible to establish binding rules, algorithms and methodological procedures that would work in all circumstances. The process of origin and development of the human system into such a form that it behaves as a whole, the living organism is continuous, and it can be formally divided into specific phases. The first phase is the phase of the arising group. Next, we talk about the

adult group (functional unit of the organisational whole), the third phase is the arising team, and the last phase is the mature, exceptional team. Phases cannot be “precisely defined” because the processes characteristic of the next phase can already take place in the previous one. The process of developing an excellent team in a security environment in terms of duration usually involves a period of three to five years (Bartone, P. T. & Kirkland, F. R., 1991). Our experience shows the possibility of limiting this period to one year, and given the article range, we will focus only on the first and last, fourth phase.

The first phase focuses mainly on individual and group functions, activities and skills. Relative isolation from ordinary social networks (shielding the influence of reference groups) and close daily contact to develop social ties based on trust and mutual reliance on each other prove to be appropriate. The co-factors at this stage are, e.g., perspective, awareness of long-term cooperation, acquisition of skills, certification of competencies and empowerment in terms of individual acquisition of the meaning and purpose of a joint mission. It turns out that significant attention needs to be paid in the first phase of team building to a quality process of self-knowledge with all team members and language harmonisation. These aspects are significantly shortened throughout the development period. A necessary and, in a way, determining factor in the first phase is the care of communication, working with language, and sharing. This factor participates in all stages of development and is necessary, both in terms of relationships and in terms of thinking and thinking in language and terms of the personal development of team members. Another important factor involved in team development is the topic of the team leader, and for a structured environment (such as security forces or corporate environment) is the fact that an essential factor that distinguishes coherent, highly effective units from average is the behaviour of their leaders (managers). This factor is so vital that highly effective teams are sometimes found in al-

ienated and fragmented organisational units, and conversely, fragmented, inconsistent, or “alienated” groups are found in larger organisational units that are otherwise consistent, functional, and efficient. Leaders of cohesive and effective units usually exhibit the following characteristics to varying degrees: they are competent, caring, respectful and dedicated to team members, but the leader of the team up to the quality level of the fourth phase must also have “behavioural” mobility, i.e. change their behaviour concerning qualitative changes during the development of the unit. In the fourth phase, the standard position of leader, tied to a specific person, essentially “ceases”, and this process is usually initiated during the third phase as the decentralisation of decision-making powers and authorities. Characteristic features for the fourth phase are observable in the language, were not only the method of formulation in terms of communication and sharing (I think, etc.) changes but also the ratio in the frequency of occurrence of “ich/I” form changes in favour of the occurrence of “we”. A specific team language and a way of understanding specific to a given team are created. The importance of the feeling of “uniqueness” resulting from team membership, which is not “shown” externally, is also growing among team members. The competence of the meaning and significance of the mission on an individual level (the potential of an individual) is also viewed as a team competence (individual as a team member). The fourth stage is achieving, maintaining and developing competence, continuous innovation and refinement of partial and team functions, activities and abilities (skills).

For the fourth phase, common psychological, socio-psychological or sociological concepts are challenging to use (because they are meaningless, do not capture meaning and significance). They are often misleading, anthropocentric, socio-centric or ideological or culturally biased. Instead, the terms neutral, de-individualising are suitable for grasping the meaning and purpose of the described quality, such as respect, compassion or

cognition and reasoning, without the burden or intervention of emotions (respect), consideration and compassion or Aristotle categorisation, logic or rationality (cognition and reasoning). The specific team paradox of the fourth phase is openness to the environment and, conversely, “functional” structural closure. There are neither human resources engineering nor adaptation or development programs of the standard type. Changes in team members have a comprehensive, qualitative impact on the entire team. The following sub-indicators are characteristic of this phase.

#### **Area of Mind and Thinking**

- Openness and mobility of thinking.
- Creativity to maintain adequate performance as an antidote to routine.

#### **Area of Change and Transformation**

- Spontaneity and the ability of realistic, functional situational improvisation.
- Commitment and the ability to make enormous efforts to solve or overcome a problem.
- Shared paths, processes, functions, and work methods are not the same in all team parts but are based on a shared set of values and rules.
- Members think in terms of an individual self, and we, as a team, feel special, use unique methods, procedures (know-how).

#### **Area of Language and Sharing**

- Open communication (communicating and sharing) is impersonal, to the point, with a significant share of questioning, as a more appropriate technology for sharing goals and values than persuasion, evidence or justification.
- Own, specific language as well as the sense and meaning of terms, symbols and characters.

#### **Relationship Area**

- The team is guided synergistically by ideas and values rather than “people”.
- Specific ethics (not morality – this is what social groups need).



- Partnership and respect, with “mastering” the paradox of the unity of the entirety and sharing (procedural area) and diversity (human area) being typical.
- Continued efforts to grow an individual and a team, there is a critical, permanent reflection about personal and team needs and goals in the process of satisfying and achieving them.

### Conclusion

Systemic leadership, in general, is characterised by low energy intensity for the performance of activities and functions of individuals and teams in the organisational environment and the requirements for instruction, knowledge, and control. The ability to take care of the quality of the unit’s state and relations with the external environment in terms of energy and technological (organisational, relationship, communication, methodological) balance is essential. The energy balance concerns the external and internal “sources” of energy, including the “time allowance” requirements for managing change, and the technology balance concerns the efficiency, usefulness and effectiveness of the whole unit and its subsystems. These two “parameters” are interrelated, and caring for them is a matter of the survival and prosperity of any complex and dynamically evolving entirety, whether it is a specific person, a team, or a more powerful human system. Thus, “independence, self-sufficiency”, the ability to program, design one’s development and environment, search and create information and resources, create knowledge and methods (technological procedures) in the process, the inner place of “control” and realistic dialectical pragmatics in solving situations and problems internal and external nature.

The effect of the practice of systemic leadership at the individual level is mental mobility, the ability

to distinguish between governance, insertion, administration and maintenance of “order” and leadership, and the ability to act consciously in fulfilling one’s purpose and order the whole organisational environment, achieving proposed goals. The systemic leader has a natural ethic manifesting itself as humanity and compassion, constantly cultivating his mental mobility and cognitive literacy. It is characterised by mental mobility, real dialectics or quasi-rationality (Hammond, 2000) for cognition, reasoning, decision-making, and action from the perspective of thinking.

The effect of systemic leadership at the system level is the ability to practically achieve the quality level of a mature, exceptional team. The characteristic features of an excellent team are reflected in the following areas:

- A living, consciously and as the whole acting, self-learning system (beyond static notions of a “living organism”). It is a living organisation of relationships, based on communication, creation of knowledge in the process, their communication and sharing.
- Self-organization in creating, maintaining and caring for the quality of relationships between the internal environment and the external environment. The self-organisation of relationships, language, conscious work with language, and shared values play an essential role.
- Ability to process substitution of relationships and functions (e.g. in the event of a reduction in the number of members) and maintain the whole concerning the mission.
- Process adaptation and “state” of the intelligent agent in the changing conditions of task situations and environmental circumstances (context). This effect often evokes the impression of “disobedience” or maladaptation, both individually and as a whole (team) in an organizationally “rigid”, primarily corporate environment.

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#### **ABSTRACT**

*The article presents selected aspects of modern sciences knowledge with application potential for people's and human systems' effective management, including their creation and development, in the context of the 21<sup>st</sup>-century changes and challenges. A proposal of essential characteristics of systemic leadership for leading people and human systems represents the science output.*

#### **KEYWORDS**

*Systemic Leadership, Human Resource Management, Human Systems.*

#### **JEL CLASSIFICATION**

*M 12; M 14*



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