



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

# European Forum of Entrepreneurship 2024

---

“Entrepreneurship, education  
and society development in the context  
of technological changes”

---

# Contents

7	Globalisation and electromobility – hope or dead end?
21	Risks and Opportunities of AI Textual Models, e.g., Chat GPT, in Education
39	Constant ethical challenge of ESG reporting in oil and gas industry
50	Forwarding, carriage of goods, operation of vehicle contracts in Czech Civil Law
64	Objectives and key results (OKR) as a key to continuous performance: Review of current concepts and theories
72	Relationship between mindset and job satisfaction: Exploration in the managerial roles
83	Problematic aspects of the register of beneficial owners
92	Improvements in income inequality – latest empirical evidence
101	Understanding the circular economy adoption in companies of the construction industry in Slovakia
113	Strategy development: case of business practice
133	Implementation of crisis situations in a safe virtual reality environment
146	Podcasts – an effective part of company's communication?
159	Attitudes of selected Slovak companies to internal communication in a crisis
170	Competitive advantage of startups in business
184	Value determinants of the Russian threat in historical context
200	ESG reporting for small and medium-sized enterprises in the Czech Republic: a beneficial tool or just an additional administrative burden?
209	Employee benefits in the post-covid era in the Czech Republic: reality, expectations, challenges
221	Adjusting entries for receivables and foreign currency receivables from an accounting perspective
233	Authentic people leadership
251	Analysis of Risk Correlations among Stock Markets before and during the COVID-19 Pandemic
261	Fast fashion influence on the purchasing decisions of Generation Z customer behaviour

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

# European Forum of Entrepreneurship 2024

“Entrepreneurship, education  
and society development in the context  
of technological changes”

NEWTON College  
Prague, July 2024

## European Forum of Entrepreneurship 2024

19. 3. 2024

### Entrepreneurship, education and society development in the context of technological changes

All submitted scientific papers are subject to a double-blind peer review process.

#### SCIENTIFIC BOARD

Dr. hab. Agnieszka Alińska, prof. SGH., Kolegium Ekonomiczno-Społeczne, Polsko  
doc. PhDr. PaedDr. Eva Ambrozová, Ph.D., MBA, Vysoká škola NEWTON, Česká republika  
doc. Ing. Ivana Butoracová Šindleryová, Ph.D., Univerzita sv. Cyrila a Metoda v Trnavě, Slovensko  
prof. dr hab. Paweł Czarnecki, MBA, Dr.h.c., Collegium Humanum - Warsaw University of Management, Polsko  
Mgr. PhDr. Marián Děd, Ph.D, MBA, LL.M, Vysoká škola NEWTON, Česká republika  
Taghreed Abdel Aziz El Sayed Hassan Hassouba, Ph.D., Cairo University, Egypt  
prof. PaedDr. Ing. Roman Hrmo, PhD., MBA, Vysoká škola DTI, Slovensko  
Ing. Ludmila Hruban, Ph.D., MSc., Vysoká škola NEWTON, Česká republika  
Dalia A. S. Khalil, Ph.D., Cairo University, Egypt  
Dr. Agnieszka Knap-Stefaniuk, Ph.D., MBA, Institute of Political and Administrative Sciences Jesuit University  
in Krakow, Polsko  
prof. Ing. Alena Kocmanová, Ph.D., Vysoké učení technické Brno, Česká republika  
doc. Ing. Jiří Koleňák, Ph.D., MBA, LL.M, Vysoká škola NEWTON, Česká republika  
prof. PaedDr. Tomáš Lengyelfalussy, PhD., Vysoká škola DTI, Slovensko  
Ing. Zdeněk Mikulka, B.Th., Ph.D., Univerzita obrany v Brně, Česká republika  
PhDr. Jiří Nesiba, Ph.D., Vysoká škola NEWTON, Česká republika  
doc. Ing. Marie Pavláková Dočekalová, Ph.D., Vysoké učení technické Brno, Česká republika  
doc. RNDr. Aleš Ruda, Ph.D., Mendelova univerzita v Brně, Česká republika  
Prof. zw. dr hab. Wojciech Słomski, International School of Management Slovakia, Slovensko  
Ing. et Ing. Pavel Semerád, Ph.D., MBA, Vysoká škola NEWTON, Česká republika  
Ing. Jitka Sládková, Ph.D., Vysoká škola NEWTON, Česká republika  
doc. Ing. Zuzana Stoličná, Ph.D., Univerzita Komenského v Bratislavě, Slovensko  
doc. Ing. Iveta Šimberová, Ph.D., Vysoké učení technické Brno, Česká republika  
prof. RNDr. Ing. Ludomír Šlahor, CSc., Vysoká škola NEWTON, Česká republika  
prof. Mgr. Peter Štarchoň, Ph.D., Univerzita Komenského v Bratislavě, Slovensko  
prof. Ing. PhDr. Ing. Vladimír Tomšík, Ph.D. et Ph.D., Vysoká škola NEWTON, Česká republika

ISBN 978-80-87325-72-8

Publisher: NEWTON College, a.s., Politických vězňů 10, 110 00 Praha 1, Czech Republic

Published on July 2024.

© NEWTON College, a.s.

Publication was not subject to language check.



## *General info about Proceedings of the 17<sup>th</sup> International Scientific Conference*

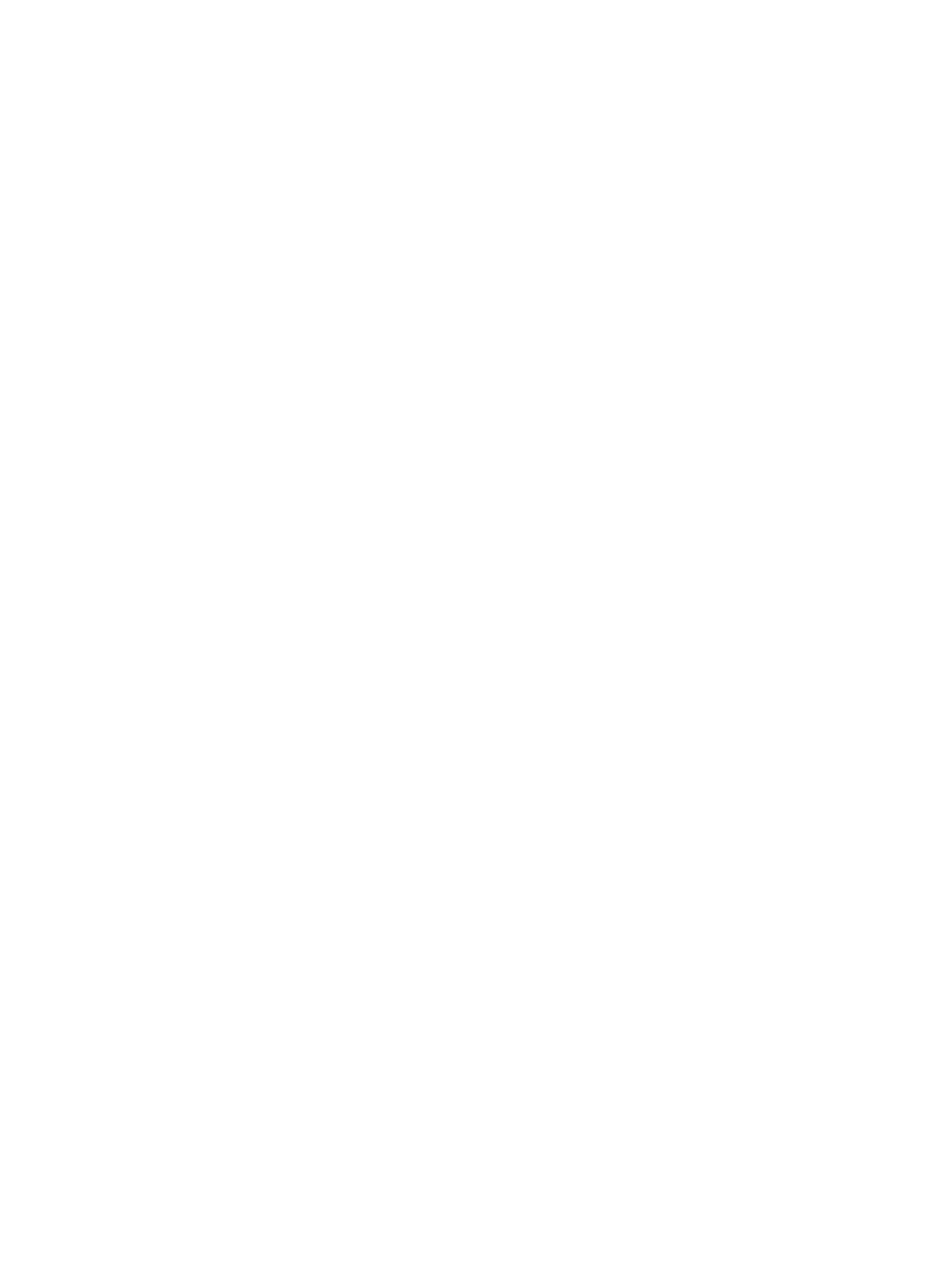
**European Forum of Entrepreneurship 2024 (19. 3. 2024)**  
**NEWTON University, Prague, Congress Centre**

**“Entrepreneurship, education and society development in the context of technological changes”**

The main conference theme is the business environment amid turbulent changes. The conference will provide a setting for highly competitive papers in plenary and panel sessions. Submitted papers will be evaluated blind. Authors of the best papers will be allowed to submit their revised papers to peer-reviewed journals.

The main objective of the current conference is to provide an expert platform for sharing the experiences and views of academics and practitioners in the context of the global changes affecting the business environment.

This objective will be achieved through multidisciplinary discussion on current issues.



# Globalisation and electromobility — hope or dead end?

- ▶ Kateřina Blažíčková » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: katerina.blazickova@newton.university
- ▶ Lukáš Valeš » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: lukas.vales@newton.university

## \* 1. Introduction

Electromobility is one of the key sectors that are set to make a significant contribution to both tackling climate change and the future development of the global economy. That is to say, the transition to fully electric vehicles, which should replace in the short-term cars with combustion engines, as a greener, more economical, and also more modern option. The European Union, as a supposed leader in this field, has even set a binding date of 2035, when the production of cars with internal combustion engines is to cease throughout the EU. As that date approaches, it turns out that the reality is not only greener, to use a classic phrase, but above all more complicated — from the technical to the economic problems associated with electric cars. Another fundamental problem — again, primarily European — is the fact that, instead of a substantive debate on the pros and cons of introducing full electromobility, the issue has become a ‘green ideology’ that is convinced of its truth and rules out any substantive democratic debate in advance.

A working team was therefore set up at NEWTON University to address this issue intensively. Its results are presented in this study. After detailed research, the authors are convinced that be-

fore electromobility can be declared the only right way forward, or a state that can be rationally, economically, and environmentally achieved, a number of issues need to be raised and, above all, resolved, without which the hasty introduction of 100% electromobility could create more problems than solutions. There is a consensus across many scientific disciplines that, among other things, the production of electric vehicles is in many ways a high-risk production whose problems — unlike those of conventional propulsion — are far from solved. These are a combination of technical, but also economic, political and safety issues. The following list is not and cannot be exhaustive. Its main purpose is to attempt a meaningful discussion where scientific arguments prevail over the ideological views so typical of totalitarian and undemocratic states.

The authors of this study used, among others, the empirical-analytical method, as well as the content analysis method, the heuristic method, and the comparative method. This brief list already indicates that this is a broad multidisciplinary issue, involving technical, economic, ecological, political, security, international political aspects, and others. This characteristic predetermines both the breadth of content and the involvement of differ-



ent disciplines with their specific methodological approaches.

## 2. Geopolitical issues

One of the often-cited reasons for the shift to electromobility is the high dependence of Western and Central European countries on unstable or security risk states. These countries are overwhelmingly governed by autocratic or outright totalitarian regimes. Many of them, moreover, pose a real or perceived risk to the West due to their foreign policy activities (Iran, Russia, etc.). The Russian Federation's attack on Ukraine on 24 February 2022, among other things, was a major impetus for stepping up support for electromobility, which significantly complicated the building of energy links in the area of fossil fuels between Russia and the EU countries, whose smooth and cheap imports had hitherto been the mainstay of the European economy. Reducing dependence on these imports — and not just from Russia — has thus become, at first sight, a logical reason to replace combustion engine cars with electric ones.

But experts soon showed the illusory nature of this view. For one thing, the numerous Western sanctions, and the refusal to import oil from Russia have not solved this dependence and have led to the tragicomic situation of importing Russian oil through a series of intermediaries (India, Malaysia, Saudi Arabia) who only maximize their profits as a result. On the one hand, it has exposed the countries of Western and Central Europe to the threat of a new dependence on a power that is even more risky in terms of the longer-term global outlook — namely China. It is China that currently has a de facto monopoly on the production of batteries for electric cars. *“China is leading the way in battery production, with battery factories estimated to have a maximum production capacity of around 1.1 terawatt hours per year by 2025, almost double that of the rest of the world.”* (CTK, 2023a). The economic daily E15 aptly titled its article on the subject with the words: *“Invincible China. Its electric car battery*

*makers rule the world markets.”* The article goes on to say, *“The global market for electric vehicle batteries is largely in the hands of Asian manufacturers, with the Chinese in particular leading the way. Two giants there hold the first and second positions as the world's largest suppliers. The first pure battery giant, Contemporary Amperex Technology (CATL), held 37 percent of the global battery market between January and August this year. Second-placed BYD, which among other things mines raw materials for batteries and makes electric vehicles, sixteen percent. Together, the Chinese duo accounted for most of the world's battery supply.”* (Liebreich, 2023).

Worse still, China controls in a fundamental way the production of many of the precious metals and earths that are necessary for this production. Europe will thus go from being dependent on one aggressive non-democracy to being even more dependent on an even more powerful and confident Chinese regime, which also makes no secret of its ambitions in international politics, including the use of military force (see the situation in Taiwan or the South China Sea). Lithium and cobalt are mainly used to produce batteries for electric cars, which are considered to be the metal of the future, but their extraction poses a certain environmental burden. China currently controls an estimated 75 per cent of the world's lithium and 50 per cent of cobalt processing capacity and is likely to maintain its leadership in battery production over the next five years, according to Bloomberg forecasts (ČTK, 2023a). It did not stay with hypothetical considerations. In response to US trade restrictions (export of advanced technologies to China, including chips) and as a result of the looming trade war between China and the EU over the dumping of Chinese electric cars sold on the European market, the Chinese government has significantly restricted (from December 2023) the free export of graphite from the country. *“China is the world's largest producer and exporter of graphite, which is used in batteries for electric vehicles.”* (ČTK, 2023b) This is not the first time that China has used (or abused)

its near-monopoly position as the owner of several valuable and essential raw materials needed for modern industry. In August 2023, it took a similar action when it restricted the development of two key metals for chip production – gallium and germanium (CTK, 2023b).

### 3. Technical problems

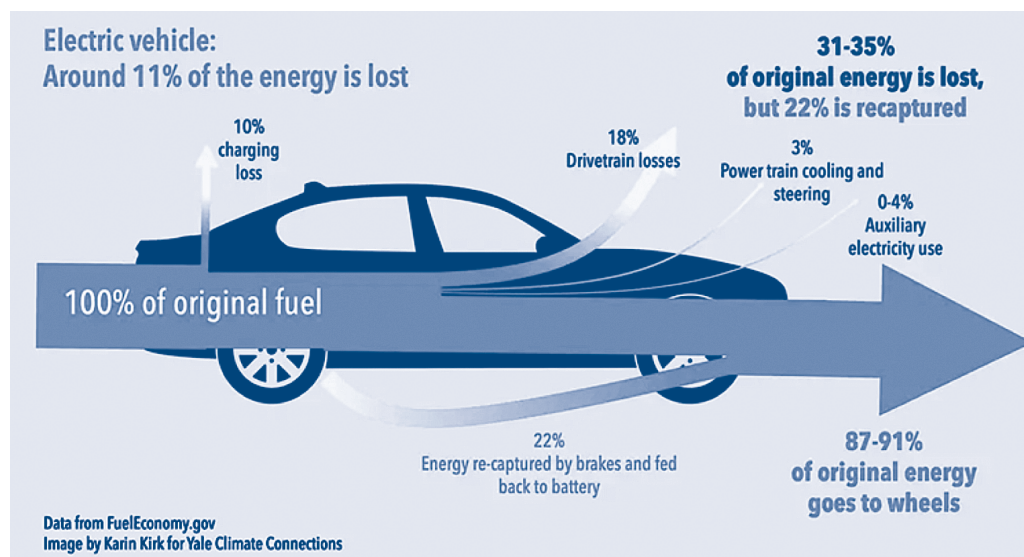
#### 3.1. The need for a larger quantity of electricity due to losses

Simplistically, before the energy is used to spin the wheels, it must go a long way through production, transport to the car, which then converts it into mechanical energy. Each part of this cycle takes its toll in the form of the loss of some of the energy transported (Schnidt, 2022). The grid indicates that up to 15% of the electrical energy generated goes away (Pacovský, 2022), followed by the transfer of energy to the electric car, where 10% of the energy is reported to be lost, 3% is lost by cooling the electric motor, 18% is lost to the propulsion system, and

0-4% is lost to auxiliary equipment. On the other hand, up to 22% can be recharged through energy recovery. As a result, 72-76% of the electricity produced is used to convert electrical energy into mechanical work (Schnidt, 2022).

The solution would be to shorten the distance between the point of power generation and the point of consumption as much as possible. This concept of decentralizing the grid already exists. Smart Grids, smart energy, is a decentralization system of electricity flow, where at the moment the energy flows only from the producer to the consumer, in a Smart Grids system the electricity will flow both ways according to the actual need and digital control will switch the different micro parts of the grid to avoid fluctuations and interference. With the use of artificial intelligence, there will then be more flexibility in evaluating and predicting power generation in a decentralized system that itself becomes a generating facility as well as a consumer, while at the same time the number of facilities that will need to be optimized increases. The harmony between surpluses and deficits will also

**Figure 1 » Energy losses of an electric vehicle**



Source: Schnidt (2022)

- have to be fine-tuned. For example, by making a household, for the moment only in the position of a consumer, generate its own energy, which is used without high losses for running the household or for charging an electric car, the problem of grid losses will be at least partially solved (Vojáček, 2021).

### *3.2 The limitation of driving by the occurrence of charging grids*

Despite the ever-improving situation with charging stations, there are areas where no charging stations are encountered or even considered. For a charging station, it is necessary to bring electricity to the location, and therefore many places on the planet find it all but impossible to charge their electric car. For example, in areas such as Alaska, there is no public EV charging option, drivers must rely on roadside assistance, and in remote areas, address mobility in ways other than EVs (Furchtgott-Roth, 2022). In Europe, the population density is higher and as a result this problem is hardly addressed, only the density of the charging station network is addressed, which even in Sweden for example was insufficient in the early days (MER, 2022).

### *3.3 A battery capacity reduction due to low temperatures*

Related to the previous problem is the reduction in battery capacity, due to the chemical and physical reactions that lead to the release of energy, with reduced temperature they become slower or even inhibited. In colder winter temperatures, electric cars need to heat the car cabin with an additional heating element, unlike conventional cars with an internal combustion engine where the engine itself generates a large amount of heat. However, this internal heater draws additional energy from the battery, which already has a reduced capacity due to inhibition or reduced reactivity of the reactions, further reducing the range of the car (Witt, 2022).

Automakers are trying to reduce the load on the battery with, for example, heated seat belts, introduced by ZF at the CES consumer electronics show in Las Vegas. At the same time, the advent of electric mobility will most likely mean a change in how the car interior is heated and when the main heating will take place. Today, in most cases, the most powerful heating takes place after the car has been started and the engine is the main heating element; in electric cars, the main interior warming takes place before the driver arrives and when the electric car is plugged in. The heating of the seat belts, steering wheel, and others such as the carpets, according to research, will make the driver and crew feel warmer and there will be no need to heat the interior to such a high temperature (Lažanský, 2023).

### *3.4 Lack of regulation and unification of charging stations in the EU*

There is no unified network of charging stations in the EU, so every driver is dependent on knowledge and sufficient preparation before travelling abroad, not to mention the availability of a mobile network, which is usually necessary for charging (Jánský, 2022). In short, the whole system works like this, to revive the charger a chip is required or to revive using an app, this chip is provided by the company owning the EV charger, for example in the Czech Republic PRE, CEZ and others. For each of these contracts there is a price per kWh, and it is generally a cheap option. Unfortunately, abroad, it is necessary to use a card or an application with one chip but operating on several charging providers, the so-called roaming, which allows the charger to be revived, but at prices negotiated by them, and here there is no guarantee of cheap charging and usually prices ranging from 7–45 CZK/kWh (Brocast, 2022).

### 3.5 High waste, energy, and production costs in a 100% transition to electromobility

The complexity of producing an electric vehicle is extreme, activists often equate the production of an electric motor and an internal combustion engine, however, the electric motor comes out of this equation as the clear winner. Unfortunately, it is no longer discussed that the electric motor is very low cost to produce, but the battery is very high cost to produce.

**The high weight of electric vehicles:** Traction batteries and energy storage is a problem in general, and another problem with this system is its high weight. The load capacity of parking houses, for example, will also be a big problem. This problem has come to light recently and will probably be behind the new rethink of load capacity standards and more for parking houses, as Chris Whapples of the British Association of Parking Operators says: *“If a vehicle is heavier than what the car park was originally designed for, there will be consequences. That’s why we’ve recommended that all older car parks should have a load check.”*

**Quiet operation:** Electric cars are clean, quiet, and “green”, this is how they are usually presented, very positive emotions are associated with these words, unfortunately the opposite is true. The silence of an electric car is undesirable in the case of transport and research has shown that an electric car has a thirty-seven percent higher chance, and for blind people this chance rises to ninety-three percent, of colliding with a pedestrian than a noisy car with an internal combustion engine, and this is not the only problem. That is why the European Union adopted Regulation 540/2014 which mandates the use of AVAS, short for Acoustic Vehicle Alerting System (Šidlák, 2019), which generates sound to raise awareness of an approaching electric vehicle. Many car companies create specific sound recordings for, for example, a certain model or model class (Continental, 2019).

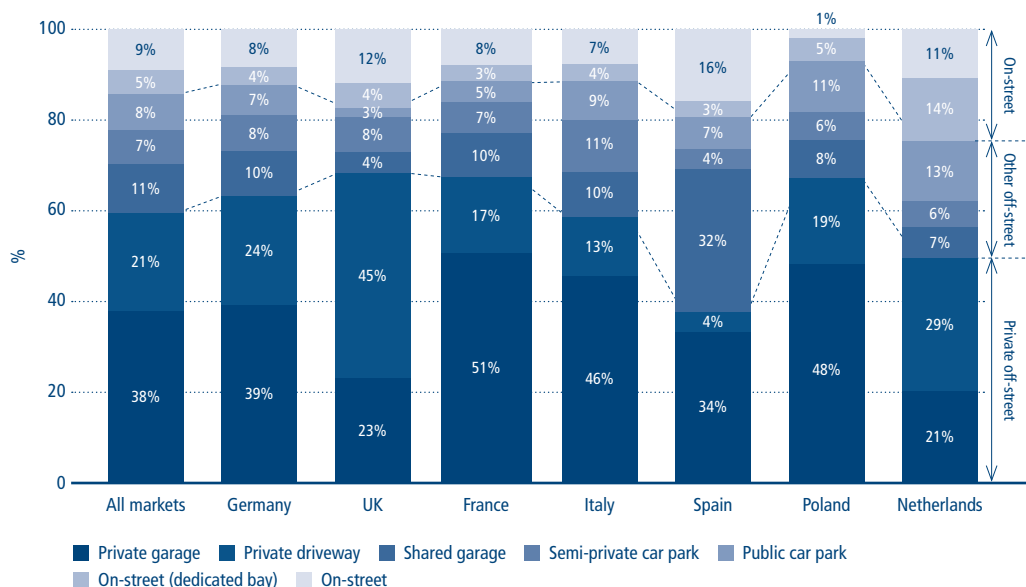
**Battery wear and tear:** Battery wear and tear is a bogeyman for many reasons when mobile

phones, the battery is often the first link why just need to be replaced with another newer model. Range decreases with age, and warranties are usually contingent on seventy percent battery capacity, which corresponds to a one-third reduction in range (Morkus, Macek, 2021). The theory now states that the end of life is at eighty percent of the original capacity, so with a ten percent reduction in capacity we are already at mid-life. From research conducted by Silver Power Systems (SPS), a company specialized in analyzing the battery condition of electric vehicles, this reduction is reached by the average electric vehicle in six and a half years (Bednář, 2022). At the same time, it also depends on the driving style, where a more dynamic driving style, as they say, with a “*heavier foot on the gas*”, will see the battery show more wear and tear faster (Morkus, Macek, 2021).

The concept of battery lending, where we do not own the battery in the car, but only borrow it, such as a propane-butane bomb at a gas station or for a period of several years, could provide a solution. For example, the BaaS concept, which stands for Battery as a Service, works with this system, which relies on replacing the battery instead of waiting for the cell to be charged at the petrol station. This means that the selling price of the battery would be lowered, and drivers or customers would then just rent batteries (Smart, 2022).

**The imperfection of Li-ion battery recycling (Tesla 75%):** Li-ion traction batteries are a very complex system, and their chemical disposal is both energetically and technically challenging, as they are hazardous waste and therefore subject to a very demanding process administratively, legally, and practically, not to mention the environmental burden. In theory, there are several types of recycling: in the first one, using high temperatures, the elements are gradually separated, in the second one, using acids and other compounds, the metals are dissolved and then precipitated from solution, this method is only theoretical at the moment and others (Morkus, Macek, 2021). In the European Union there is only one traction battery →

➔ **Figure 2 » Public charging infrastructure does not limit demand for BEVs today, but deployment should keep up with sales**



Source: Element Energy (2022)

recycling site so far one factory was opened in 2022 in Schwarzheide, Germany by Basf, unfortunately the capacity is insufficient for the whole EU (Russova, 2022).

**Unavailability of charging:** According to the research, charging and its availability today does not affect potential customers as much as other aspects of the purchase process. In the future, people's decision making is set to change and charging, and its availability will play a key role in their decision making. Therefore, if the development and innovation of charging infrastructure does not keep pace with the development and volume of EVs, charging will become a serious decision-making issue. People who do not have access to home charging will be twelve per cent less likely to purchase an EV (Element Energy, 2022). Fortunately, in Europe, according to Figure 2 Public charging infrastructure does not limit demand for BEVs today, but deployment should keep up with saleslack of parking solutions even for electric cars. The only

problem could arise in countries like Spain, where on-street parking accounts for sixteen percent of the total (Element Energy, 2022).

**Ageing cars due to high prices of electric cars:** Indirectly related to electromobility is the ageing of the car fleet, which is caused by many factors, such as rising inflation, rising interest rates, a crisis mood in society or just the emergence of electromobility on the scene. At the beginning of 2022, the average age of cars was fifteen whole years, three years higher than the European average (Elsnic, 2022). By the end of 2022, the average had increased by six months to fifteen whole nine years, indicating a lower number of cars sold (Svaz dovozců automobilů. 2023). The main reason, already discussed, for the phenomenon of increasing CO2 emissions in recent years is precisely the ageing of the fleet (Elsnic, 2022) and also the higher share of SUVs in the total number of registered cars (CTK, 2023c).

**Li-ion traction battery safety:** Today's Li-ion



batteries are generally regarded as the weak point of electric mobility, whether we are talking about their high flammability, reactivity, weight or the possibility of overheating. With the advent of electro-mobility, countless changes have been and are required to the safety infrastructure around highways or major haul roads, while at the same time it is necessary to equip and train, for example, fire-fighters or other forces on how to behave and handle electric vehicles if they are in any danger. Fire departments are already equipped with thermal imaging cameras, for example, which can check the condition of a high-voltage module. The fire department has issued a methodology that should guide all placement of charging points, traction batteries and electric vehicles, handling or even the necessary requirements in case of a flare-up. For example, it draws attention to the necessity of traction batteries to be stored in a maximum of ten units per unit or fire zone, the manual also recommends storage outside the premises of buildings with a surrounding zone of five meters (HZS ČR, 2022).

**The monopoly of certain countries and the increasing cost of materials:** As discussed in the chapter Batteries for electric cars, the traction battery is composed of several important elements. Lithium, cobalt, nickel, and others, but these elements are highly debated due to their non-environmental mining, high energy consumption to produce these elements and unethically, for example (Střechovský, 2022). Ninety-eight percent of cobalt is mined in the Democratic Republic of Congo and China, whose mining standards do not include safety measures to secure, for example, mine shafts, toxic fumes in mines, and the inability to grow crops around mining (California Insider, 2022). According to Střechovský (2022), “... [The Washington Post] has been looking into the ways cobalt is mined in the Democratic Republic of Congo [note: two-thirds of the cobalt is mined in the DRC, but then it is still taken as ore to China, where it is processed (Palaščáková, 2021)] and what it has found is in no way defensible. Not only are the

miners not protected in any way and deaths are commonplace, but according to a 2012 UNICEF survey, there were an estimated 40,000 child workers in the mines...” But the unethically does not stop at the conditions, the purchase price is severely substandard and there is no other option to sell thanks to the monopoly buying from the big companies (Střechovský, 2022).

Other important elements are mined in Indonesia, the Philippines, Peru, Chile, and Australia and bought up in bulk by Chinese companies, which then process them. Thus, the People’s Republic of China is a superpower in the production of batteries, which are essential for every electric car. The only company that is not dependent on Chinese exports is Tesla, which secures the entire supply chain itself, including contracts with Australian nickel and lithium producers (Palaščáková, 2021). But even Tesla cannot prepare for a scenario where the price of lithium, cobalt and nickel continue to rise. Nickel and lithium are rising strongly in price, with lithium at an extreme three hundred times (Palaščáková, 2021).

## 4. Security and economic issues

### 4.1. Security

There are several new safety risks associated with electric cars, for which even existing institutions are often unprepared — fire departments, auto repair shops, underground parking garages, etc. These include the risk of fire, which is significantly different from conventionally powered cars, with worse consequences and, above all, a much more complicated and costly way of extinguishing the fire. This is due, among other things, to the characteristics of the batteries, which form a crucial part of the car. The expert of Czech Technical University (ČVUT) Dr Pavel Hrzina says: “If a fire starts, the energy stored in the battery in the form of electrochemical energy separated by a thin separator starts to be released. Once the battery becomes damaged, it can cause a fire repeatedly. In addi-



tion, the battery's perfectly tight casing, which protects it from damage, can explode. The oxygen contained in the battery electrolyte is bound and at temperatures above 200 to 300 °C it starts to release and promote combustion. If the battery is at this temperature, it can burn even under water. The only solution is cooling, i.e. extinguishing with more water." (Hrzina, 2021). This therefore implies a completely different and much longer procedure for extinguishing, which also counts on significantly superior equipment for firefighters and other involved forces. Let us emphasise again – the battery also burns underwater, causes repeated fires (Hrzina, 2021) and the possibilities to extinguish it are significantly limited. The problems do not end even after the fire itself is extinguished: "What to do with an electric car after a fire? One option is to place it in a water container where it is safely stored. However, the container cannot be transported, it must stand for about two days, then the contaminated water has to be pumped out and the car removed by crane and transported. Here is another gap in preparedness for expanding electromobility: towing services are not equipped to transport electric cars, and car repair shops are not structurally prepared to repair such cars, with the exception of branded garages." (Hrzina, 2021)

These difficulties with the disposal of electric car fires were succinctly expressed by the Director General of the Czech Fire Rescue Service, Lieutenant General Vladimír Vlček, based on the concrete practice of Czech firefighters: "We can say that we cannot extinguish electric cars", and according to his information, this also applies to foreign fire brigades. In fact, based on the experience of firefighters, a fire in an electric car is different from a fire in an internal combustion car. When batteries burn, very high temperatures and toxic smoke are produced. "The car is very difficult to handle, you need to dampen the flaming combustion, and then get it

out as quickly as possible and submerge it. But even immersion in water for 48 or 72 hours does not guarantee that there will not be a reaction again," said Daniel Miklós, deputy of the Fire and Rescue Service, on the subject." (Blažek, 2024)

## 4.2. Economic

The price of electric cars is very high currently and is not expected to decrease in the near future. The production of an electric car is costly and with the price of materials increasing due to the ever-increasing demand, the price of lithium, as an essential component of the traction battery and its mechanism, doubling year on year, the car company, like any other business entity, has to be concerned with profitability.<sup>1</sup> BMW's CEO has also warned of this phenomenon, warning that betting on only one source and one technology without the existence of supported alternatives is risky and Europe is not ready or has sufficient financial reserves to go down this path (Zachariah, 2022).

The price of EVs, as mentioned above, is not expected to decrease, but only penalties will be imposed on cars with internal combustion engines,<sup>2</sup> and therefore the price is expected to level out in 2025-2027 by class, as can be seen in Figure 3 (Transport and Environment, 2021). It illustrates that the prices of internal combustion engine cars and mid-range EVs will equalize in 2026, and also shows the slightly rising price of fossil fuel cars most likely due to inflation and natural phenomena. However, the rising price curve for combustion engine cars does not consider the sanctions that the European Union wants to impose on traditional cars to make their purchase less attractive.<sup>3</sup>

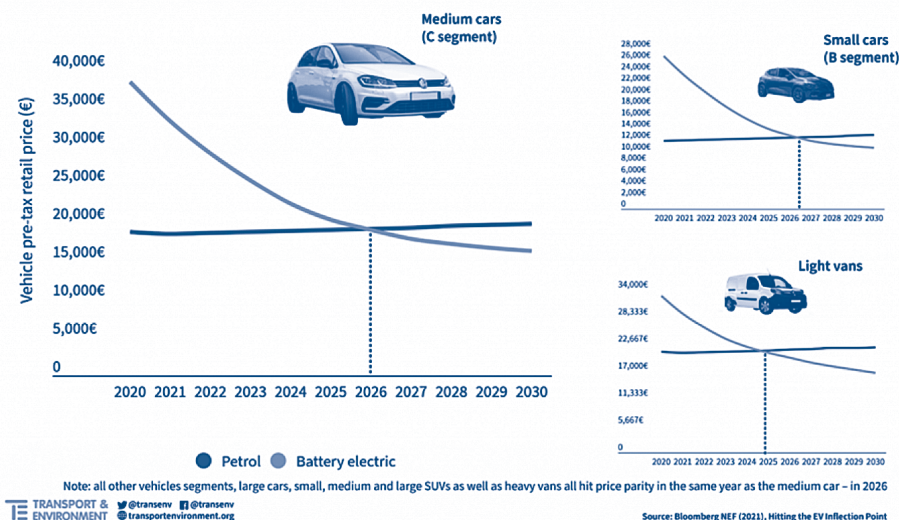
Unfortunately, this move will result in an ageing car fleet, as the low-income and, dare I say it, middle-income population will not be able to afford to buy a new car and will be forced to keep an ageing,

<sup>1</sup> Personal archive of Kateřina Blažíčková. Interview with Ing. Miroslav Holan. Praha, 8.11.2022.

<sup>2</sup> Personal archive of Kateřina Blažíčková. Interview with Ing. Miroslav Holan. Praha, 8. 11.2022.

<sup>3</sup> Personal archive of Kateřina Blažíčková. Interview with Ing. Miroslav Holan. Praha, 8. 11.2022.

**Figure 3 » EVs will be cheaper than fossil-fuel vehicles in Europe by 2025–2027**



Source: Transport and Environment (2021)

higher-polluting car. Another issue is the subsidization or state aid for the purchase of an electric car, which, in addition to my deduction, will cause capital to flow from the state coffers to the private sector coffers, thus accumulating capital and wealth in fewer individuals and impoverishing the state.<sup>4</sup>

There is also a fundamental problem with the very source of the energy of these cars – electricity, and in particular, electricity from so-called renewable sources. According to the European Union, the phenomenon of the green future is renewable energy, because of its renewability and inexhaustibility, it is considered to be omnipresent. The European initiative for a greener future envisages all energy produced in the future from renewable sources and therefore to be locally emission-free. Furthermore, according to Deutsche Umwelthilfe, emission neutrality can only be achieved if fossil fuels are completely replaced by electricity generated by renewable electricity

sources (Deutsche Umwelthilfe, 2017).

Within the European Union a wide range of types of renewable energy sources are used, besides conventional hydroelectric power plants contributing 33%, photovoltaic plants occupying 14%, wind power plants generating 36%, the largest share of renewable energy, and biofuels contributing 8% in the EU we can also find geothermal plants and others. Among the countries with the highest share of electricity from renewable sources are Austria with 78% and Sweden with 70%. On the other hand, countries such as the Czech Republic with 15% or Malta with 9.5% are at the other end of the scale with the lowest share of electricity from renewable sources. The overall EU score for the share of renewables in total electricity consumption at the end of 2021 is 37.5% (Eurostat, 2022).

On the other hand, from the logic of the matter and according to engineer Pacovský, member of the board of directors of Pražská plynárna, one of the viable scenarios for an emission-free society in

<sup>4</sup> Personal archive of Kateřina Blažicková. Interview with Ing. Miroslav Holan. Praha, 8. 11. 2022.

*Lithium and cobalt are mainly used to produce batteries for electric cars, which are considered to be the metal of the future, but their extraction poses a certain environmental burden. China currently controls an estimated 75 per cent of the world's lithium and 50 per cent of cobalt processing capacity and is likely to maintain its leadership in battery production over the next five years.*

2050 is to balance the amount of energy from renewable sources and nuclear power plants. And he adds that natural gas will always have a place in the energy mix because we don't yet have a replacement, and none is expected to come in the near future. Behind every photovoltaic plant there must be a gas-fired plant, or some other source of, for example, small modular nuclear plants, to fill the energy gap when renewables are not generating electricity. Gas consumption is still expected to grow until 2040 (Pacovský, 2022). While the idea of 100% renewables is beautiful, the truth is that it depends on the location and wealth of the country in which we are trying to address this issue; Iceland or Norway, which both have 100% renewables, have different options, and Slovakia, for example, which, try as it might, does not have the potential to generate enough electricity from renewables (Netflix, 2021).

A key economic problem is the fact that a large number of customers reject electric cars — among other things because of their short range, too high purchase price, short battery life, rising electricity prices, etc. And much of their demand is driven only by government incentives and subsidies — once they end, interest in them will drop off significantly. Not to mention another issue — government and EU promoters of electro-mobility have no real knowledge of either the technical and other problems of electric cars, or the needs of customers, let alone the real workings of the car industry. “It turns out that most people who talk about the battery or hydrogen future of cars do not understand the automotive environment at all. They don't know how everything works. The vision of

clean, emission-free transport in the form of electric mobility by 2035 has nothing at all to do with the automotive world as such. There are many other laws that apply there, and technology plays a role in this as just one of the fourteen parameters. The other things are also extremely important, and if a car brand is able to do them well, only then does it create demand. And that makes the difference. Not some kind of direction setting in the form of subsidies and fines. These will pass, and if customers don't want the product, then they will inevitably look for another way (this is what has now happened in Germany: after government subsidies reduced the price of electric cars, sales have now gone down significantly, ed.)” (Černohlávek, 2023).

## 5. Conclusion

This study has attempted to show at least the main pitfalls in the application of electromobility. Without solving these problems, the massive introduction of electric vehicles — especially in Western markets — cannot be considered to replace the current internal combustion engines. If this is even possible. The ideal would be free market competition between different types of cars. The market, the customer (according to his wishes and needs), and economic efficiency should be the fundamental and decisive factor. Meanwhile, the struggle between different types of car powertrains is certainly not a novelty — on the contrary, it was at the very beginning of the massive development of the automobile. As historians Petr Křivský and Aleš Skřivan rightly note, “Around 1900, the future of the automobile was far from decided.” (Křivský,

Skřivan, 2004, p. 23) At that time, fossil fuel, steam and electricity engines were competing. Those with internal combustion engines won out – they were the most economically efficient and best met the required price/performance ratio. The authors of this study believe that what is most needed is a return to sound market principles and free individual consumer choice, which can of course include technical, economic, or environmental motives or a mix of both.

In any case, it is time to radically curb the ideological view of electric cars, which generally sees them as the only possible and only correct way. Unfortunately, this is matched by massive state support from public funds, which fundamentally destroys and cripples the free-market environment and the possibility of free individual consumer choice. It is a sad fact that even the car manufacturers themselves are subject to these ideological pressures, including the world's most important brands such as the German Volkswagen concern. It is not surprising, then, that theories are emerging in the public arena that, instead of electromobility facilitating both the solution of pressing environmental problems and providing a much-needed modernizing impetus for the development of the national economy, its consistent application will only lead to further social tensions in society, as only the rich can buy electric cars and this will significantly limit the possibilities of everyday mobility for the broadest social strata: *"In essence, these efforts will deprive not only poorer citizens but also middle-class citizens of mobility. Note the subterfuge: no one will forbid you to travel. You will just*

*be prevented from having something to travel with. All under the ideological banner of 'reducing CO2 emissions'. If we also consider the concepts of the so-called 15-minute cities, we reach a level of totalitarianism that we did not experience even under the communists"* (Šrámek, 2023). This includes critical voices that rightly point out its shortcomings and problems.

We will conclude our study with the words of the eminent British artist, but also car lover, original great supporter of electro-mobility and trained electrical engineer Rowan Atkinson: *"Volvo has published a study ahead of the COP26 climate conference in Glasgow showing that the greenhouse gas emissions of electric cars are almost 70% higher than those of petrol cars. How is this possible? The problem lies with the lithium-ion batteries that almost all electric cars are currently equipped with: they are too heavy, require huge amounts of energy to produce and are estimated to last only around ten years..."*<sup>5</sup> *Environmentally-minded friends often ask me, as a motorist, whether they should buy an electric car. I tell them that if their car is an old diesel and they drive a lot in the city center, they should consider changing. But otherwise, hold off for now. Electric propulsion will one day be a real global environmental benefit, but that time hasn't come yet."* (Jemelka, 2023)

### Acknowledgement

The authors dedicate this study to Mgr. Petr Kraus, founder of NEWTON University, and his wonderful mother.

### REFERENCES

- [1] BLAŽEK, J.: 2024. *Hašení elektromobilu je komplikované aneb na každém mýtu je pravdy trochu*. [online]. [cit. 2024-01-17]. Available at: <https://www.autosalon.tv/novinky/ridicuv-chleba/komentar-haseni-elektromobilu-je-komplikovane-aneb-na-kazdem-myту-je-pravdy-trochu>
- [2] BLAŽÍČKOVÁ, K.: 2022. *Personal archive – Interview with Ing. Miroslav Holan*. Praha.

<sup>5</sup> "As the technology for new batteries is on its way, it won't be usable for years. A renowned comedian, counted among the most intelligent people on the planet, sees the optimal solution in exploring alternative paths. For instance, in hydrogen or in emission-free synthetic fuel, which is already being developed and prepared for automotive racing." (Jemelka, 2023)



- [3] BEDNÁŘ, M.: 2023. *Poslední bugatti s motorem W16 vydraženo za rekordní částku*. [online]. [cit. 2023-02-09]. Available at: <https://www.novinky.cz/clanek/auto-posledni-bugatti-s-motorem-w16-vydrazeno-za-rekordni-castku-40421865>
- [4] BROADCAST.: 2022. *Josef Vrtal je zpět!* [online] [cit. 2023-1-23]. Available at: <https://podcasts.apple.com/cz/podcast/broadcast/id1440652207?i=1000553554417>
- [5] CALIFORNIA INSIDER.: 2022. *Is California's mission to reach zero-emissions possible?* [online]. [cit. 2023-1-08]. Available at: <https://www.youtube.com/watch?v=4sa5JkeerRo>.
- [6] CONTINENTAL.: 2019. *Acoustic Vehicle Alerting System (AVAS)*. [online]. [cit. 2023-01-23]. Available at: <https://conti-engineering.com/components/acoustic-vehicle-alerting-system-avas/>
- [7] ČERNOHLÁVEK, L.: 2023. *Ideologie vládné nad prověřenými zákony trhu, říká šéf Toyoty Peleška*. [online]. [cit. 2024-01-16]. Available at: [https://www.idnes.cz/auto/zpravodajstvi/elektromobil-green-deal-martin-peleska-technologie-emise.A231114\\_200322\\_xman-rozhovory\\_albe](https://www.idnes.cz/auto/zpravodajstvi/elektromobil-green-deal-martin-peleska-technologie-emise.A231114_200322_xman-rozhovory_albe)
- [8] ČTK.: 2023a. *Baterie do elektromobilů vyrábí hlavně Čína, investuje i do továren v Evropě*. [online]. [cit. 2024-01-16]. Available at: <https://oenergetice.cz/elektromobilita/baterie-do-elektromobilu-vyrabi-hlavne-cina-investuje-i-do-tovaren-v-evrope>
- [9] ČTK.: 2023b. *Čína od prosince omezí vývoz grafitu, důležité suroviny pro baterie*. [online]. [cit. 2024-01-16]. Available at: <https://www.novinky.cz/clanek/ekonomika-cina-od-prosince-omezi-vyvoz-grafitu-dulezite-suroviny-pro-baterie-40447712>
- [10] ČTK.: 2023c. *Průměrné emise CO<sub>2</sub> u nových aut loni stouply o 1,5 procenta*. [online]. [cit. 2023-01-31]. Available at: <https://www.novinky.cz/clanek/auto-prumerne-emise-co2-u-novych-aut-loni-stouply-o-15-procenta-40420151>
- [11] DEUTSCHE UMWELTHILFE.: 2017. *Using electricity for heating and transport to protect the climate*. [online]. [cit. 2022-11-21]. Available at: [https://www.duh.de/fileadmin/user\\_upload/download/Projektinformation/Erneuerbare\\_Energien/Sektorkopplung/DUH\\_Background\\_paper\\_Sector\\_coupling\\_2017\\_WEB.pdf](https://www.duh.de/fileadmin/user_upload/download/Projektinformation/Erneuerbare_Energien/Sektorkopplung/DUH_Background_paper_Sector_coupling_2017_WEB.pdf)
- [12] ELEMENT ENERGY.: 2022. *Electric mobility: Inevitable, or not? A Report for the platform for electromobility*. [online]. [cit. 2022-11-07]. Available at: [https://www.platformelectromobility.eu/wp-content/uploads/2022/01/20220110\\_InevitableEV\\_Final.pdf](https://www.platformelectromobility.eu/wp-content/uploads/2022/01/20220110_InevitableEV_Final.pdf)
- [13] ELSNIC, M.: 2022. *Pátí nejhorší. Z Česka je vrakoviště Evropy, lidé na nová auta nemají*. [online]. [cit. 2023-01-31]. Available at: <https://www.denik.cz/ekonomika/stari-vozidel-cesko-evropa.html>
- [14] EUROSTAT.: 2022. *Renewable energy on the rise: 37% of EU's electricity*. [online]. [cit. 2022-11-22]. Available at: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220126-1>
- [15] FURCHTGOTT-ROTH, D.: 2022. *Tax dollars are wasted on Alaska's EV charging stations*. [online]. [cit. 2023-01-18]. Available at: <https://www.forbes.com/sites/dianafurchtgott-roth/2022/10/25/tax-dollars-are-wasted-on-alaskas-ev-charging-stations/?sh=11a01a7e33a1>
- [16] HASIČSKÝ ZÁCHRANNÝ SBOR ČESKÉ REPUBLIKY (HZS ČR): 2022. *Metodické doporučení: elektromobilita a požární bezpečnost staveb*. [online]. [cit. 2023-02-01]. Available at: <https://www.hzscr.cz/soubor/metodicke-doporuceni-elektromobilita-pdf.aspx>
- [17] HRZINA, P.: 2021. *Jaká rizika mají elektromobily z hlediska požární bezpečnosti*. [online]. [cit. 2024-01-16]. Available at: <https://www.tzb-info.cz/pozarni-bezpecnost-staveb/23004-rozhovor-jaka-rizika-maji-elektromobily-z-hlediska-pozarni-bezpecnosti>
- [18] JÁNSKÝ, M.: 2022. *Dojezd přes 1 000 kilometrů a pohodlné doplnění za pár minut: Nissan vymyslel inovativní hybrid*. [online]. [cit. 2023-01-08]. Available at: <https://www.garaz.cz/clanek/testy-prvni>

- dojmy-dojezd-pres-1-000-kilometru-a-pohodlne-doplneni-za-par-minut-nissan-vymyslel-inovativni-hybrid-21008580
- [19] JEMELKA, P.: 2023. *Fiala odletěl do Dubaje řečnit o ochraně klimatu. Že Evropa vsadila na špatné koně, asi nepřízná.* [online]. [cit. 2023-12-1]. Available at: <https://denik.to/fiala-odletel-do-dubaje-recnit-o-ochrane-klimatu-ze-evropa-vsadila-na-spatne-kone-asi-neprizna/>
  - [20] KŘIVSKÝ, P., SKŘIVAN, A.: 2004. *Století odchází. Světla a stíny „belle époque“.* Praha: Nakladatelství Aleš Skřivan ml.
  - [21] LAŽANSKÝ, M.: 2023. *Elektromobily mohou dostat vyhřívání bezpečnostní pásy, aby nemusely vytápnout interiér.* [online]. [cit. 2023-01-22]. Available at: <https://www.novinky.cz/clanek/auto-elektromobily-mohou-dostat-vyhrevane-bezpecnostni-pasy-aby-nemusely-vytapet-interier-40419156>
  - [22] LIEBREJCH, J.: 2023. *Nepřemožitelná Čína. Tamní výrobci baterií do elektromobilů vládou světovým trhům.* [online]. [cit. 2024-01-16]. Available at: <https://www.e15.cz/byznys/prumysl-a-energetika/nepremozitelna-cina-tamni-vyrobc-baterii-do-elektromobilu-vladnou-svetovym-trhum-1411049>
  - [23] MER.: 2022. *A look into Sweden's EV charging infrastructure.* [online]. [cit. 2022-11-20]. Available at: <https://uk.mer.eco/news/sweden-ev-charging-infrastructure/>
  - [24] MORKUS, J., MACEK, J.: 2021. *Kam kráčíš, elektromobilito?* [online]. [cit. 2023-01-23]. Available at: <https://www.fs.cvut.cz/verejnost/pr-media/pribehy-z-ustavu/kam-kracis-elektromobilito/>
  - [25] NETFLIX.: 2021. *Down to the Earth with Zac Efron: Iceland.* [online]. [cit. 2022-11-22]. Available at: <https://www.netflix.com/watch/80230581>
  - [26] PACOVSKÝ, M.: 2022. *Energetická bezpečnost České republiky.* [online]. [cit. 2022-11-22]. Available at: <https://www.ceskatelevize.cz/porady/10095426857-interview-ct24/222411058041115/>
  - [27] PALAŠČÁKOVÁ, P.: 2021. *Přechod k elektromobilitě drhne. Hlad po niklu, kobaltu a lithiu přesáhne možnosti těžby.* [online]. [cit. 2023-02-01]. Available at: <https://www.e15.cz/byznys/prumysl-a-energetika/prechod-k-elektromobilite-drhne-hlad-po-niklu-kobaltu-a-lithiu-presahne-moznosti-tezby-1385593>
  - [28] RUSSOVÁ, A.: 2022. *V Německu bude otevřena velká továrna na recyklaci baterií z elektromobilů. Ročně tam zrecyklují tisíce tun baterií.* [online]. [cit. 2023-01-24]. Available at: <https://auto-mania.cz/v-nemecku-bude-otevrena-velka-tovarna-na-recyklaci-baterii-z-elektromobilu-rocne-tam-zrecykluji-tisice-tun-baterii/>
  - [29] SCHNIDT, B.: 2022. *How much does charging an EV really cost, and do they save on emissions?* [online]. [cit. 2023-01-16]. Available at: <https://thedriven.io/2022/08/15/how-much-does-does-charging-an-ev-really-cost-and-do-they-save-on-emissions/>
  - [30] SMART, J.: 2022. *The resurgence of Battery-as-a-Service (BaaS).* [online]. [cit. 2023-01-23]. Available at: <https://www.shoosmiths.co.uk/insights/legal-updates/battery-as-a-service-an-underexplored-opportunity-the-resurgence-of-baas>
  - [31] STŘECHOVSKÝ, F.: 2022. *Pravda o elektromobilech, bez cenzury a na rovinu: Jak jsou skutečně ekologické a co je nám živě prezentováno?* [online]. [cit. 2023-02-01]. Available at: <https://www.autozive.cz/elektromobil-vyroba-baterie-a-energie/>
  - [32] SVAZ DOVOZCŮ AUTOMOBILŮ.: 2023. *Výrazné zvyšování průměrného stáří osobních automobilů v ČR stále pokračuje.* [online]. [cit. 2023-01-31]. Available at: <https://portal.sda-cia.cz/clanek.php?id=7012&v=m>
  - [33] ŠIDLÁK, M.: 2019. *Tichá hrozba. Elektromobily budou muset povinně vydávat hluk.* [online]. [cit. 2023-01-23]. Available at: [https://www.idnes.cz/auto/zpravodajstvi/elektromobily-hluk-elektromotor.A190306\\_111628\\_automoto\\_taj](https://www.idnes.cz/auto/zpravodajstvi/elektromobily-hluk-elektromotor.A190306_111628_automoto_taj)



- [34] ŠRÁMEK, I.: 2023. *Cílem EU není nahradit spalovací motory elektroauty. Jde o omezení mobility obecně.* [online]. [cit. 2023-11-13]. Available at: <https://denik.to/cilem-eu-neni-nahradit-spalovaci-motory-elektroauty-jde-o-omezeni-mobility-obecne/>
- [35] TRANSPORT AND ENVIRONMENT.: 2021. *Evs will be cheaper than petrol cars in all segments by 2027, BNEF analysis finds.* [online]. [cit. 2022-11-09]. Available at: <https://www.transportenvironment.org/discover/evs-will-be-cheaper-than-petrol-cars-in-all-segments-by-2027-bnef-analysis-finds/>
- [36] VOJÁČEK, A.: 2021. *Smart City v energetice: Chytrá energetika.* [online]. [cit. 2023-01-16]. Available at: <https://automatizace.hw.cz/smart-city-v-energetice.html>
- [37] WITT, J.: 2022. *Winter & Cold Weather EV Range Loss in 7,000 Cars.* [online]. [cit. 2023-01-18]. Available at: <https://www.recurrentauto.com/research/winter-ev-range-loss>
- [38] ZACHARIAH, B.: 2022. *The world isn't ready to go fully electric, BMW and Bosch CEOs warn.* [online]. [cit. 2022-11-09]. Available at: <https://www.drive.com.au/news/the-world-isnt-ready-to-go-electric-bmw-bosch-warn/>

## Globalisation and electromobility — hope or dead end?

### ABSTRACT

*The subject of this study is the extremely topical issue of electromobility. The aim is to assess, using scientific methods (mainly empirical-analytical, comparative, etc.), to what extent the world economy is already ready for the transition from combustion to electric cars and whether the key technical problems that would prevent this have already been overcome. After a thorough analysis, the authors came to two conclusions. Firstly, the current technical state of electric mobility, including several other aspects (international political, safety, economic, but paradoxically also environmental) does not yet allow the full use of electric cars as a full-fledged replacement for combustion engine cars. Secondly, they warn against underestimating the significance of these real obstacles and framing the whole debate in ideological rather than realistic terms.*

### KEYWORDS

*electromobility; globalisation; THE EU; CHINA; USA*

### JEL CLASSIFICATION

*O14; O18; O31; O33; P18; P28; P48; Q57; R41; L94*





# Risks and Opportunities of AI Textual Models, e.g., Chat GPT, in Education

- ▶ **Renáta Pakšiová** » University of Economics in Bratislava, Faculty of Economic Informatics, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovakia; NEWTON University, Centre of Economic Disciplines, 5. května 1640/65, 140 00 Praha, Czech Republic; email: renata.paksiova@gmail.com
- ▶ **Dagmar Palatová** » NEWTON University, Centre of Economic Disciplines, 5. května 1640/65, 140 00 Praha, Czech Republic; email: dagmar.palatova@newton.university
- ▶ **Renáta Stanley** » University of Economics in Bratislava, Faculty of Economic Informatics, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovakia; email: renata.stanley@euba.sk
- ▶ **Karina Benetti** » Technical University of Liberec, Faculty of Economics, Voroněžská 13, 460 01 Liberec, Czech Republic; email: karina.benetti@tul.cz
- ▶ **Markéta Šebestová** » NEWTON University, Centre of Economic Disciplines, 5. května 1640/65, 140 00 Praha, Czech Republic; email: marketa.sebestova@newton.university
- ▶ **Pavel Semerád** » Sting Academy, Rašínova 103/2, 602 00 Brno, Czech Republic; email: pavel.semerad@atlas.cz
- ▶ **Oldřich Rejnuš** » Brno University of Technology, Faculty of Business and Management, Antonínská, 548/1, 601 90 Brno, Czech Republic; email: rejnus@vutbr.cz

## \* 1. Introduction

In the rapidly evolving learning environment, Artificial Intelligence (AI) has become an important force, changing, and revolutionizing teaching methods and reshaping the academic environment, particularly within higher education institutions. The significance of integrating AI into the educational process cannot be underestimated, which raises the need for a thorough examination of its role as an innovative tool for improving pedagogical practices, especially in university settings.

This article addresses the current challenges faced by universities and higher education institutions in the implementation of AI tools into the educational framework. Based on an initial literature review, the article aims to contribute valuable insights to the ongoing discussion on the effective-

ness of AI applications in education, existing risks, and the potential need for regulatory frameworks.

In textual (language) AI models, it is essential to closely monitor the communication potential and the accuracy and correctness of the answers provided. The amount of information generated by these models is also inherently confusing and can cause problems in understanding the contexts and interrelationships of individual topics. The use of these models is often time-consuming, inefficient, and even counterproductive if the communication with the AI model in question does not proceed correctly. On the other hand, the great potential of these models can be emphasized in their appropriate application both in the teaching process of students and in the practice of economic disciplines. Their correct use will allow time savings and support the fulfillment of the personified needs of



→ their users as compilers as well as users of information in decision-making. The question of their proper use is increasingly debated at a technical, scientific, and political level, but it is clear that AI tools have been used, are being used, and will continue to be used. It is, therefore, necessary to approach this specific area of education in such a way that all living generations today can use the potential of AI tools with an awareness of their risks and learn procedures to eliminate the negative effects of their use. In this sense, the application of critical thinking will be of fundamental importance throughout society and, undoubtedly, in the professions that several researchers have identified as among those most affected by the use of AI tools. Especially at the stage of education of students, and future graduates working in economic and managerial professions, it is therefore important to ensure that there is no distortion of basic knowledge, which will be the basic building block throughout their professional learning path in their lifelong career.

As part of the paper, we will focus on the realities that the application of artificial intelligence tools in education in specific and professional topics can influence, both in a positive and negative sense. We will focus primarily on GPT Chat, as currently the most frequent tool of language AI, provided in both Slovak and Czech language modes.

As a foundational step, the introductory section of the paper provides an overview of the goals and methodology that underpin the subsequent analysis. Utilizing documented examples and the critical evaluation of experiences from various university educators across institutions in the Czech Republic and Slovakia, the article aims to present their understanding of the current situation and a balance of risks and opportunities associated with the use of these tools in education.

## *2. The Aim and Methodology*

The paper aims to investigate potential risks and opportunities associated with the utilization of AI

text models in the realm of education while offering partial recommendations for improving their application. Grounded in an extensive review of relevant literature and the authors' firsthand experiences employing AI tools, the analysis employs experiments and inductive reasoning to extract and delineate their positive aspects, drawbacks, and identified obstacles. The proposed approaches aim to address these challenges, fostering a comprehensive understanding of the intricate environment of AI in higher education. This exploration synthesizes collective insights from existing scholarly works and the authors' encounters, contributing to a nuanced discussion that elucidates the advantages and disadvantages of incorporating AI into educational practices within higher education.

This critical examination provides a crucial overview of existing barriers to the effective utilization of AI in education, predominantly at a theoretical level, supported by a literature review and concise concluding remarks for further research and practical applications in the domain of education employing AI text (language) models.

The authors present their perspectives through a logical and inductive reasoning approach, drawing upon a foundational research context to support their opinions. This context is created through validation and testing, exploring the user environment of text-based AI models such as Chat GPT. The potential of these models to reshape educational experiences, including personalized assistance, support for self-determined learning, enhancement of student well-being, and improvement of learning outcomes, is discussed in line with prior research (Khan et al., 2023; Firat, 2023; Abdullah, 2023; Baskara, 2023; Hakiki, 2023). Concerns related to ethics, academic integrity, and research misconduct arise when utilizing AI models like Chat GPT (Rosyanafi, 2023), or issues such as information distortion, asymmetry, inaccuracy, misuse of information, and security breaches have been identified (Kim, 2023). Research risks and opportunities in various aspects while finding barriers to using AI textual models correctly is an im-

portant first step to improving the user comfort and credibility of these models.

It is important to know the risks and opportunities of using AI text tools in education to find the optimal balance and way to support the quality of education with acceptance of the application of AI tools in the higher education environment. The research discussion analyses alternatives to support the positive aspects of using AI to promote the quality and effectiveness of teaching.

In presenting their findings, the authors draw on their experiential insights gained through practical experimentation with AI tools, such as Chat GPT, Bard, and Bing. The methodology involves the application of AI tools, particularly GPT 3.5 Chat, up until November 2023. The authors support their experiential insights by incorporating the presentation of responses and the GPT Chat itself (<https://thechatgpt.ai/sk/chat, 10/11/2023>).

### 3. Research of literature

The new generation of AI, a generative model of artificial intelligence is a crucial concept in computer science and artificial intelligence. This model focuses on creating new data based on existing data and probability distributions. One of the most well-known approaches to generative models is the use of Generative Adversarial Networks (GANs), which enable the creation of new data samples through competition between two models – generative and discriminative (Creswell et al., 2018). These models can generate new data that is indistinguishable from real data. This approach is significant in the field of artificial intelligence as it allows the generation of new data applicable to various applications, such as the development of new artworks, generating photorealistic images, or synthesizing spoken words.

This approach is commonly utilized in machine learning and deep learning, where the goal is to generate new data with similar properties to the input data. Generative models of artificial intelligence find broad applications in various indus-

tries, including healthcare and even in the legal environment (Balog & Hercko, 2020; Gunning & Aha, 2019). There is also ongoing discussion about the relationship between general artificial intelligence and Industry 4.0, and whether they mutually require each other (Kumpulainen & Terziyan, 2022) in the context of space as well (Semerad, 2023). These discussions highlight the crucial role artificial intelligence plays in modern industrial systems and the potential for a synergistic relationship between artificial intelligence and Industry 4.0, which is important for future learning policy as well.

In the field of artificial intelligence research, innovative approaches are emerging, such as explainable artificial intelligence and the integration of human knowledge into artificial intelligence for complex and unstructured problems (Johnson et al., 2022). There is currently a great deal of emphasis on the ethical and legal aspects of the use of AI, particularly in healthcare and nursing. These aspects include the legal personhood of artificial intelligence, protection of personal data, and civil liability for harm caused by artificial intelligence (Bakošová, 2020). It is also important to note that in the field of international law, creating rules is time-consuming and may not adequately respond to the rapid development of artificial intelligence technologies (Klučka, 2021).

The generative model of artificial intelligence represents a valuable tool in the field of artificial intelligence with applications in various industries and is associated with numerous ethical, legal, and technological aspects (Balog & Hercko, 2020; Gunning & Aha, 2019; Johnson et al., 2022). As of the end of 2023, the most widely used artificial intelligence model is Chat GPT. Generative artificial intelligence (AI) models have high potential in the field of higher education. These models can be used to personalize learning content, enhance teaching, and provide individually tailored learning approaches and experiences. Higher education institutions are increasingly striving to integrate AI into their educational programs to enhance stu-



dent outcomes and streamline teaching practices. Higher education institutions are increasingly striving to integrate AI into their educational programs to enhance student outcomes and streamline teaching practices (Zawacki-Richter et al., 2019).

Studies have examined the impact of artificial intelligence on teaching and learning, with a focus on personalization and profiling, as well as the role of AI in higher education (Zawacki-Richter et al., 2019; Popenici & Kerr, 2017). Additionally, research has explored the development of effective AI models for education (Xiao & Yi, 2020). The potential of artificial intelligence to fundamentally transform the management and internal architecture of universities has also been recognized (Tomar & Verma, 2021). Research indicates that AI can support innovative teaching methods and personalized education (Mynbayeva et al., 2018). It enables the creation of effective teaching models tailored to the individual needs of students, leading to improved learning outcomes (Liu & Wang, 2021). AI can also assist teachers and provide personalized training in a higher education setting (Deng et al., 2022).

Furthermore, there is an indication that artificial intelligence contributes to positively influencing student success, emphasizing its role in enhancing their educational experiences (Khare et al., 2018).

The utilization of AI in education is not limited to specific fields, but finds application in a variety of areas including English language teaching reform, music education, and the identification of

learning styles. (Ruan, 2022; Dai, 2021; Bajaj & Sharma, 2018). Research has delved into the future of higher education in the context of artificial intelligence transformations, emphasizing the need to comprehend the potential impacts of artificial intelligence on higher education institutions and to adapt to them (Aldosari, 2020). The application of AI in education has been recognized in the Chinese education system, indicating a global awareness of the value of AI in education (Zheng & Badarch, 2022). The incorporation of artificial intelligence strategies into various sectors, including education, has been identified as a significant shift, suggesting a growing recognition of the potential of artificial intelligence in higher education (AL-Ghamdi et al., 2022).

It is crucial to emphasize that AI has the potential to alter the way university students are educated. The integration of AI into higher education can lead to the development of intelligent textbooks and educational robots that assist teachers and provide students with new forms of educational support (Timms, 2016).

In the context of AI research in higher education, there is a high need for testing emerging tools and systematic evaluation of the impact of AI on education. Bibliometric studies can offer a comprehensive overview of the impact of artificial intelligence in higher education and identify trends in this field (Hinojo-Lucena et al., 2019). These studies can be instrumental in shaping strategies for the effective utilization of artificial intelligence in the higher education environment.

*There is currently a great deal of emphasis on the ethical and legal aspects of the use of AI, particularly in healthcare and nursing. These aspects include the legal personhood of artificial intelligence, protection of personal data, and civil liability for harm caused by artificial intelligence. It is also important to note that in the field of international law, creating rules is time-consuming and may not adequately respond to the rapid development of artificial intelligence technologies.*

The very close link between the need for education in the use of artificial intelligence and the new education curriculum also results from expected microeconomic and macroeconomic factors linked to the labour market and the need for qualified employees in the future. AI can transform the productivity and GDP potential of the global economy. To achieve this, strategic investments in different types of AI technologies are needed (PWC B, 2024). We can wait to change in capital markets as well (Plottova, et al., 2023).

PwC's study on the global impact of artificial intelligence (AI) on the economy, business, and society highlights the following (PWC A, 2024):

- Improving labour productivity will drive initial GDP gains as firms seek to “increase” the productivity of their workforce using AI technologies and automate some tasks and roles.
- AI could contribute up to \$15.7 trillion to the global economy by 2030, more than the current output of China and India combined.
- AI could increase labour productivity and create new and better products and services that would stimulate consumer demand. About 45% of total economic gains by 2030 could come from product improvements. This could be due to AI supporting more product diversity, with more personalization, attractiveness, and affordability over time.
- The biggest economic gains from AI could be made in China (26% GDP growth by 2030) and North America (14.5% growth), in total \$10.7 trillion; equivalent for almost 70% of global economic impact.

AI cannot be overlooked in current or future educational processes, necessitating an exploration of its role as an innovative tool in teaching, including within university settings. This article addresses some of the current challenges at the end of 2023, faced by higher education institutions in the implementation of AI tools in the educational process. Its objective is to contribute to the discussion regarding the benefits of their usage and the question of their regulation. The article systematically

covers the goals and methodology of the contribution, the results of a literature review on the examined topic, and the critical evaluation of experiences from various university teachers at different institutions in the Czech Republic and the Slovak Republic. It draws upon documented examples and the personal experiences of the authors. The conclusion provides a selection of recommendations for the effective utilization of AI tools to enhance the quality of education in higher education institutions through innovative methods.

## 4. Results and Discussion

### 4.1 Risks and opportunities of using AI in education

Text-based Artificial Intelligence (AI) models, such as Chat GPT, are increasingly being integrated into a variety of learning environments, presenting both risks and opportunities. These models have shown potential in reshaping medical education (Khan et al., 2023), transforming autodidactic experiences and open education (Firat, 2023), enhancing student well-being in smart education environments (Abdullah, 2023), and improving student learning outcomes in technology learning (Hakiki, 2023). However, the integration of Chat GPT in education also presents challenges such as the potential lack of critical thinking, ambiguity, limitations in accessing information, dependence on AI outputs, and ethical concerns (Javed, 2023).

This chapter provides an analysis of the experiences and contemplations concerning the integration of AI in education, specifically within the context of observed aspects.

Table 1 serves as a comparative analysis, delineating the associated risks and opportunities inherent in the application of AI within higher education settings based on some of the authors' significant experiences and reflections. It is important to emphasize that some risks can be minimized by appropriate measures and oversight, while opportunities can be fully exploited with an



→ **Table 1 » Risks and opportunities of AI in education**

Risks	Aspect	Opportunities
<b>Risk of insufficient interaction between students and teachers.</b>	Expanded access to education	Online learning for remote locations. Flexibility in access to education.
<b>Unethical acquisition of information and data. Discrimination of students with insufficient technical equipment and user skills.</b>	Personalized teaching	Improving the effectiveness of teaching. Individually adapted learning speed. Quick identification of weak points. Increasing the success of education.
<b>Risk of obsolescence of curriculum and technologies in the field of AI. Insufficient preparation of teachers for the new curriculum.</b>	Curriculum adaptation	Flexibility in adapting the curriculum to the changing needs of the labour market. Dynamic updating of learning programs based on new knowledge.
<b>Risk of incorrectly chosen personalization.</b>	Support for students with special needs	Personalized support. Removing barriers to education. Creating an inclusive environment.
<b>The risk of dishonesty and cheating in the educational environment. Inappropriate use of collaboration and AI collaboration.</b>	Cooperation between students	Online platforms enable effective collaboration on projects and tasks. Expanded possibility of international cooperation.
<b>Lack of human contact, personal relationships, and interaction. Over-reliance on AI to solve problems. Incorrect application of critical thinking.</b>	Development of soft skills	Students learn to cooperate with AI systems, which strengthens communication and soft skills. An opportunity to develop creativity and innovative thinking when using AI.
<b>Responding to the individual needs of students requires building new abilities and skills for both teachers and students. Disappearance of some jobs. The emergence of new job duties for employees.</b>	Career opportunities (teachers and students)	Gaining AI skills for the future. Competitiveness in the labour market. An opportunity to develop new technologies. Speeding up and streamlining some types of work. Creation of new jobs. The emergence of new job duties for employees.

Source: Own processing based on authors' experiences and analysis

emphasis on the ethical and effective use of AI in a flexibly developed educational environment. Table 1 is followed by a discussion of the conclusions of several researchers who examined the role of AI in education from various aspects.

The use of Chat GPT in education has been explored in various contexts, including language teaching (Amin, 2023; Wei, 2023), self-determined learning in higher education (Baskara, 2023), and science learning processes (Saragih, 2023; Prananta, 2023).

It has been found to support personalized language learning, real-time language practice, and examination techniques (Amin, 2023), as well as enhance student competencies needed in the 21st century (Prananta, 2023). Additionally, Chat GPT has been advocated for effective English language learning among Thai students Song-siengchai (2023) and has been recognized for its potential to improve student achievements through rubric assessment (Rizki, 2023).

AI models such as Chat GPT can contribute to enhancing student independence, improving learning experiences, and increasing access to information for students (Murcahyanto, 2023; Kanwal, 2023; Balasubramanian, 2023). Other hand the benefits such as quick access to information and personalized assistance (Kanwal, 2023), concerns have been raised regarding algorithmic flaws and the need to address ethical issues (Edyko, 2023). The impact of Chat GPT on student attitudes, learning motivation, and independence has been studied (Yilmaz, 2023; Siregar et al., 2023), highlighting the importance of understanding how these AI tools influence educational experiences.

A comparative examination of risks and opportunities based on the authors' experience with the tested functionality of AI models such as Chat GPT aims to clarify the nuances of AI in education, guiding stakeholders toward informed decisions that balance technological advancements with ethical considerations in the pursuit of enhanced educational outcomes.

When communicating with a language AI adhering to generally accepted definitions and requests for explanations of universal and basic concepts, it can be observed that Chat GPT provides semantically correct, accurate, and well-formulated responses. For instance, when asked to explain critical thinking on November 20, 2023, Chat GPT provided the following response: "Critical thinking is the ability to systematically analyse, evaluate, and synthesize information and arguments to arrive at rationally justified conclusions. It is an essential intellectual skill that enables individuals to better understand the world around them, solve problems, make informed decisions, and effectively communicate with others."

Universal text (language) AI models like GPT Chat fail in professional questions and specific tasks even in general economic base subjects where some relationships, terms, and links have been misidentified and explained in detail (Pakšiová et al., 2023). In recent months, however, the answers on these topics have been gradually im-

proving. Which indicates the ability of these tools to learn gradually. However, they still contain unreal, fabricated information and hallucinations, which reduces the relevance of the answers to the initial user trying to primarily learn new information through AI in the topic being studied. It is also important to know the method of entering prompts in communication with AI for the relevance of the answers. However, for this, the user's knowledge of the topic at a sufficient level is necessary for communication to be beneficial and trustworthy.

Currently, attention is being directed towards explainable artificial intelligence, where humanity is striving to understand and explain the decisions and conclusions of AI models. This approach is crucial to ensure the credibility and transparency of AI models, which is key to their broader acceptance and utilization in various fields such as medicine, finance, or legal systems (Gunning & Aha, 2019). Lastly, there is also ongoing discussion about the development of artificial general intelligence (AGI), which should have the ability to perform tasks typical of human intelligence. This development could have significant consequences across various industries, including manufacturing, commerce, education, and others (Chao, 2022).

In summary, generative models of artificial intelligence represent an important tool for creating new data patterns. Additionally, artificial intelligence is gaining attention in various industries, including Industry 4.0, and the development of artificial general intelligence has the potential to change how we understand and utilize intelligence in the modern world. Higher education plays a crucial role in preparing professionals for the responsible and effective use of artificial intelligence tools, aiming to maximize its positives and minimize its negatives.

#### *4.2 Barriers to the correct use of AI text models*

AI text-based models are a separate category of AI tools that have boomed in their testing and use →



over the past year. Therefore, continuous research and improvement are important to overcome barriers and make full use of their potential. As part of the research, we tested Chat GPT on several questions and communications, and the findings are presented below.

When asked “What are the barriers to proper use of GPT Chat” in GPT 3.5 itself – chatbot (<https://thechatgpt.ai/sk/chat, 10/10/2023>), which is a free service without the need to register and has a capacity of 2 questions whether separate chat threads per day, the following facts were mentioned:

Proper use of chat AI like GPT can be associated with various barriers. Some of the most important barriers include:

1. *Linguistic limitations:*

- Characteristics: AI models such as GPT may have limited linguistic range and difficulty properly understanding slang terms, colloquial speech, and regional dialects.
- Explanation: This limitation may lead to inaccurate answers, as the model may not correctly interpret informal language conventions.

2. *Lack of knowledge of the current context:*

- Characteristic: GPT models provide answers based on previous words in the input, but cannot actively track and understand the current context.
- Explanation: This can confuse or provide incomplete answers, as the model cannot dynamically adapt to the changing context.

3. *Bias:*

- Characteristics: AI chat models may contain an entrenched bias towards certain groups of people or opinions because they are learned from existing texts.
- Explanation: Models can reproduce this bias when answering questions or providing information, which can negatively affect the objectivity and fairness of answers.

4. *Misunderstanding of ethics:*

- Characteristics: GPT and similar models lack moral or ethical knowledge, which can lead

to the provision of inappropriate, radical, or unethical information.

- Explanation: The absence of moral knowledge may risk giving inappropriate advice or information if the model is not adequately treated.

5. *Importance of verifying information:*

- Characteristics: AI chat models cannot verify the veracity of information, which requires prudence and independent verification of information from the user.
- Explanation: Users must be proactive in verifying information obtained from models to prevent the spread of false or erroneous information.

6. *Lack of grammatical correctness:*

- Characteristics: Despite a good understanding of the language, GPT models may contain grammatical errors.
- Explanation: Grammar errors can affect the readability of answers and reduce their professional character.

7. *Inconsistency of responses:*

- Characteristic: GPT models can give inconsistent answers to the same question in different situations.
- Explanation: Inconsistency can cause user confusion and affect the credibility of the model.

8. *Lack of sympathy or emotion:*

- Characteristics: AI chat models cannot show sympathy or emotion, which can limit the quality of user interaction.
- Explanation: Models cannot express empathy, which can affect the humanity of interactions.

9. *Answering manipulative questions:*

- Characteristic: GPT models can be vulnerable to manipulation through misleading questions or attempts to obtain inappropriate information.
- Explanation: Models should be able to recognize manipulative questions and answer with caution.



10. *Failure to provide evidence or sources:*

- Characteristic: GPT models cannot identify specific evidence or provide citations to support their answers.
- Explanation: The absence of the ability to provide evidence may reduce the credibility of the information provided by the model.

11. *Inaccuracy in technical topics:*

- Characteristic: GPT models may not have accurate knowledge in professional areas or may provide incomplete and inaccurate information.
- Explanation: Models should be used with caution in professional discussions, as they do not have deep professional specialization.

12. *Lack of noise control:*

- Characteristic: Chat AIs can produce unnecessary noise or redundant information that is not beneficial to the user.
- Explanation: The presence of excess noise can complicate communication and affect the effectiveness of the model.

13. *Meaningless or absurd answers:*

- Characteristic: GPT models can sometimes produce answers that are not related to the question or are meaningless.
- Explanation: This can lead to misunderstanding and diminish the credibility of the model.

14. *Lack of control over speaking styles:*

- Characteristic: GPT models cannot accurately imitate or adapt to specific speaking styles, which can be a problem in certain situations.
- Explanation: Models may have limited possibilities to adapt to the user's communication style.

15. *Incompatibility with multilingual conversations:*

- Characteristic: GPT models may have limited ability to work with multilingual conversations or be difficult to deal with multiple languages at once.

- Explanation: Incompatibility can lead to problems in situations where the ability to handle multiple languages at the same time is required.

16. *Lack of understanding of unspoken intentions:*

- Characteristic: GPT models may have difficulty understanding hidden intents behind questions or requests that are not directly expressed in the text.
- Explanation: Models may misunderstand hidden intents, which can lead to inadequate responses.

17. *Inability to control the length of responses:*

- Characteristic: GPT models can generate too long responses, which can be inefficient and difficult to read.
- Explanation: Too long answers can be impractical and difficult to process for the user.

18. *Delay in response:*

- Characteristic: GPT models get into limits when processing high traffic, which can cause delays in responding.
- Explanation: Delays can be problematic, especially in situations where an immediate response is needed.

19. *Replies containing personal data:*

- Characteristic: Chat AIs can unintentionally reveal or request personal information from a user, which can pose a risk to privacy.
- Explanation: Without caution, unintentional disclosure of sensitive information may occur.

20. *Dependence on input quality:*

- Characteristic: GPT models depend on the quality and context of the inputs provided, which can affect the quality of responses.
- Explanation: The quality of input is a key factor for accurate and relevant model responses.

The AI chat model itself concluded by pointing out that when using chat AI like Chat GPT, it is important to keep these barriers in mind and think critically about the responses and outputs from these tools. As academics, we can confirm almost



→ all of these barriers from previous practice and our experience.

We can support identified barriers to using AI textual models correctly can stem from various challenges identified in the literature. One significant barrier is the need to augment large language models with information from both textual and non-textual sources for multi-turn dialogue, as highlighted by (Sundar & Heck, 2023). This requirement poses a challenge in ensuring that AI models can effectively process and integrate information from diverse sources to enhance conversational capabilities. Moreover, the black-box nature of some AI models, as discussed by (Zhang et al., 2022), presents another obstacle. The lack of transparency in how these models arrive at decisions can hinder the correct interpretation and application of AI textual models, especially in critical domains like healthcare where decisions need to be explainable and trustworthy.

Furthermore, the complexity of AI models and the need for extensive computational resources, as highlighted by (Mao, 2021), can be a barrier. The execution of AI models may face challenges due to the high computational overhead, which can affect the correct deployment and utilization of AI textual models, particularly in resource-constrained environments.

The availability of sensitive patient datasets due to data protection regulations, as noted by (Maassen et al., 2021), poses a challenge in the healthcare sector. Ensuring compliance with regulations while utilizing AI for text analysis in healthcare settings requires careful handling of data, which can impede the correct implementation of AI textual models. This barrier is applicable in education system analysis as well.

#### *4.3 Authors' experiences and recommendations*

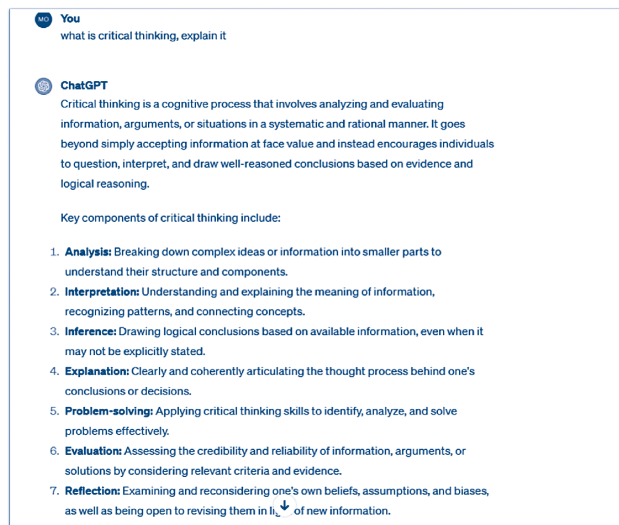
The effective implementation of AI in education faces several barriers that need to be addressed to maximize its benefits. Several key barriers to using

AI in education have been identified in the literature. One significant barrier is the lack of skills among educators and stakeholders to effectively utilize AI in educational settings (Ahmad et al., 2022). This includes a shortage of AI education programs tailored to the needs of educators, hindering the development and implementation of AI-assisted applications in education (Iqbal, 2022). Additionally, the need for technical infrastructure, training for teachers, ensuring data privacy and security, and addressing ethical considerations pose challenges to the implementation of AI in education is important (Mahligawati, 2023).

Moreover, ethical considerations related to the unethical use of data, lack of trust, and concerns about transparency and comprehensibility of AI-driven systems are significant barriers to the adoption of AI in education (Gupta, 2019; Abgaryan et al., 2023). The multifactorial and highly situational nature of ethical issues can limit the use of AI in certain educational contexts, especially in sensitive areas like medical education or GDPR (Chan & Zary, 2019).

The current experience of authors-academics in communicating with AI text (language) tools on professional topics of the taught management and finance subjects results in finding several incorrect answers, using inaccurate terms and definitions, and providing false information without substantiated sources or evidence. Verification in primary sources had to be used to detect them, so the following claim can be made. To make the user of an AI tool, e.g. GPT chat in different versions, he could fully use his help, he must have sufficient background knowledge of the given issue to be able to filter and correct the listed errors and inaccuracies into correct concepts and relationships. Sometimes such proofreading of inaccuracies is more time-consuming and knowledge-consuming than independent processing of the issue at the level of one's knowledge base with its gradual expansion through relevant primary literary sources and generally accepted and verified knowledge bases.

Figure 1 » *Explanation of critical thinking*



Source: Chat GPT 3.5 (14. 1. 2024)

If this rule is not followed, if students rely on such information and acquire it in the learning process, there will be significant misrepresentation and misunderstanding of information, inaccuracies, and even inaccuracies in follow-up activities, education, and processes, which is the greatest risk of massive and unregulated use of AI tools in education. It is not in the capacity of the teacher to monitor the complete individual communication of all students and the continuous filtering of incorrect information, so as not to distort the content of the acquired knowledge of individual students, where each of them may have completely different reinforced acquired incorrectness or inaccuracy incorporated into their knowledge base, which results from individually guided communication of students with AI tools. It is important, that AI tools be used, according to the possibilities of the subject, for example, for part of a lesson on a relevant issue, where joint communication with the AI tool would be conducted and coordinated centrally by the teacher. When applied in student group work, discussion using critical thinking would be conducted centrally towards as-

sessing the relevance of the answers provided and searching for primary sources confirming the accuracy of the information that would be verified, if any. Only in this case will students be able to acquire the skills of applying critical thinking when using AI tools and thus their correct use in all spheres of their development. In this situation, the role of the teacher as the moderator of this discussion will be even more important since it is not possible to fully prepare in advance for specific contexts when applying open communication with AI in the classroom. Therefore, the difficulty and importance of pedagogical work will increase and reach a different level than we have been used to so far. The growth of the importance of qualified teachers with a broad knowledge base in various contexts and broader contexts, not only in the area of primary focus of teachers with the ability to direct students to apply critical thinking in various situations, will grow in direct proportion with the growth of the amount of free information, AI tools with an unclear training base of data for providing solutions and answers to various questions and problems.



In general, it can be emphasized that to eliminate the identified barriers, it is essential to consistently use elements of critical thinking, as directly explained (Figure 1) by Chat GPT 3.5 (14.1.2024).

The use of critical thinking is crucial in the current and future context for processing and effectively utilizing relevant information. It is essential for students and teachers to quickly acquaint themselves with its consistent application in various domains and assess the effectiveness of appropriate methods through practical exercises. To achieve this goal, sufficient space, and suitable methods should be provided within the educational process, not only at higher education institutions but also at lower levels of education. Regarding the development of artificial intelligence tools for practical use, it is necessary to eliminate inaccuracies and misunderstandings in communication.

The greatest potential for the benefits of using AI is seen by several authors in a personalized approach to learning, which can lead to better student outcomes and increased student satisfaction (Zhao & Kuh, 2004). AI can provide real-time feedback and support to students, allowing them to track their progress and adjust their learning strategies (Cao & Zhu, 2022). In addition, AI can increase student engagement in higher education. AI can also facilitate communication and collaboration between students, allowing them to collaborate on projects and tasks (Zhao & Kuh, 2004). By incorporating AI technologies such as virtual reality and intelligent collaborative learning assistance, students can have more interactive, engaging, and possibly interesting learning experiences (Simhadri & Swamy, 2023). The importance of integrated student support systems, 24/7 learning environments, and effective collaboration inside and outside educational institutions has been emphasized, aligning with the potential of AI to contribute to personalized and innovative learning in higher education (Vindača & Lubkina, 2021).

The study by Hinojo-Lucena et al. (2019) pre-

dicts the implementation of AI in higher education within a period of four to five years, indicating the global relevance and impact of AI in the scientific literature. To create an effective artificial intelligence (AI) model for personalized higher education, it is essential to consider the impact of AI on teaching and learning in higher education (Popenici & Kerr, 2017). AI techniques, with their ability to imitate human reasoning and decision-making processes, can contribute to the development of adaptive educational systems within e-learning platforms, thus improving individual learning and increasing student achievement (Colchester et al., 2016). The implementation of AI in higher education opens new possibilities and challenges for teaching and learning, emphasizing the importance of declaring the limits of AI and technology to establish a proper learning path (Slimi, 2022).

The use of AI and ML in education has been recognized as an essential tool, emphasizing the possibilities of AI and ML in improving the workability of both teachers and students (Dziatkovskii, 2023). The potential of AI and machine learning (ML) in e-learning and higher education institutions has been highlighted, indicating their great potential to enhance student achievement (Kuleto et al., 2021).

AI offers great opportunities, but also manageable risks. There is a need to build trust in AI, audit algorithms, integrate cybersecurity, ensure human control of sensitive processes, and adopt responsible AI that benefits society (PWC B, 2024).

Crucially, the discussion underscores the potential mitigation of certain risks through diligent measures and oversight, coupled with the maximization of opportunities through an ethical and effective utilization of AI within a dynamically evolving learning environment.

Research in the field of the use of tools and evolving AI tools must be conducted in the area of potential risks and opportunities, the current state and potential of their application, as well as part of the educational process at all levels of schools. Only by harnessing the potential of AI with risk

elimination can a company move forward towards the goal of the well-being of everyone in the society following the principles of sustainable growth in the context of the 2030 Agenda.

## 5. Conclusion

Integrating Artificial Intelligence (AI) into higher education is undergoing a transformative paradigm shift, utilizing generative models to enrich and revolutionize traditional forms of education. Despite the numerous opportunities presented by artificial intelligence, it is crucial to address challenges, particularly in gaining a better understanding of the field's current state and identifying directions for future research in multimodal machine learning.

The abundance of information generated by generative artificial intelligence language models is inherently useless and can pose challenges in comprehending contexts and interconnections between various topics when communication is imprecise. The use of these models can be time-consuming and counterproductive if communication with the respective AI model is not conducted properly. However, it is essential to highlight the significant potential of these models when appropriately applied, both in the practical application of economic disciplines and in the educational process for students.

Research and insights from authors underscore the need to tailor teaching based on available data. Researchers discuss the creation of an effective artificial intelligence model for personalized higher education. This approach could be pivotal in en-

hancing individual learning and increasing student success.

Proper utilization of these models can save time and support meeting the personalized needs of users, both as creators and consumers of information in decision-making. The question of their correct use is increasingly discussed on professional, scientific, and political levels. However, it is evident that AI tools have been, are being, and will continue to be utilized. Therefore, all generations need to harness the potential of AI tools with an awareness of their risks and learned methods for mitigating their negative effects.

In this regard, the application of critical thinking will gain paramount importance across society and undoubtedly in economic professions, such as management, accounting, and auditing, which are identified by various studies as being most affected by using AI tools.

In conclusion, while AI holds great promise for transforming education, addressing barriers such as skills gaps, ethical concerns, and data-related challenges is essential to harnessing the full potential of AI in educational settings. By overcoming these barriers through targeted training, ethical guidelines, and organizational readiness, educators can leverage AI effectively to enhance teaching and learning experiences. In the realm of education, the most crucial skill for graduates is the ability to adapt to the ever-changing work environment. Educational processes should be designed to assist professionals in the economic field in preparing effectively for the widespread use of AI tools and identifying and mitigating risks that could distort the economic environment.

## REFERENCES

- [1] ABDILLAH, H.: Enhancing student well-being through ai chat GPT in the smart education university learning environment: a preliminary review of research literature. *E3s Web of Conferences*, 2023, 440, 05005. 10.1051/e3sconf/202344005005
- [2] ABGARYAN, H., ASATRYAN, S., MATEVOSYAN, A.: Revolutionary changes in higher education with artificial intelligence. *Main Issues of Pedagogy and Psychology*, 2023, 10(1), 76–86. 10.24234/miopap.v10i1.454



- [3] AHMAD, M., HUSIN, N., AHMAD, A., ABDULLAH, H., WEI, C., NAWI, M.: Digital transformation: an exploring barriers and challenges practice of artificial intelligence in manufacturing firms in Malaysia. *Journal of Advanced Research in Applied Sciences and Engineering Technology*, 2022, 29(1), 110–117. 10.37934/araset.29.1.110117
- [4] ALGHAITHI, A.K.A, SLIMI, Z., KALBANI, K.A., MOHAMED, A.B: Artificial intelligence implementation in Omani higher education; logistics studies, IMCOI as a case study. *Journal of University of Shanghai for Science and Technology*, 2022, 24(02), 116–146. 10.51201/jusst/22/0154
- [5] AL-GHAMDI, A., RAGAB, M., SABIR, M.: Enhanced artificial intelligence-based cybersecurity intrusion detection for higher education institutions. *Computers Materials & Continua*, 2022, 72(2), 2895–2907. 10.32604/cmc.2022.026405
- [6] ALDOSARI, S.: The future of higher education in the light of artificial intelligence transformations. *International Journal of Higher Education*, 2020, 9(3), 145. 10.5430/ijhe.v9n3p145
- [7] AMIN, M.: AI and Chat GPT in language teaching: enhancing EFL classroom support and transforming assessment techniques. *International Journal of Higher Education Pedagogies*, 2023, 4(4), 1–15. 10.33422/ijhep.v4i4.554
- [8] BASKARA, F.: The promises and pitfalls of using chat GPT for self-determined learning in higher education: an argumentative review. *Prosiding Seminar Nasional Fakultas Tarbiyah Dan Ilmu Keguruan Iain Sinjai*, 2023, 2, 95–101. 10.47435/sentikjar.v2i0.1825
- [9] BAJAJ, R., SHARMA, V.: Smart education with artificial intelligence-based determination of learning styles. *Procedia Computer Science*, 2018, 132, 834–842. 10.1016/j.procs.2018.05.095
- [10] BAKOŠOVÁ, L.: Ethical and legal aspects of the use of artificial intelligence in health and nursing care. *Studia Iuridica Casoviensia*, 2020, 8(2). 10.33542/sic2020-2-01
- [11] BALASUBRAMANIAN, K.: Transforming autodidactic experiences with chatgpt – new challenges in teaching-learning. *Thiagarajar College of Preceptors Edu Spectra*, 2023, 5(S1), 62–66. 10.34293/eduspectra.v5is1-may23.011
- [12] BALOG, M., HERCKO, J.: Industry 4.0 – technological priorities in the Slovakia. *Prognostické Práce – Pp (Foresight Analysis and Recommendations – Far)*, 2020, 12(1). 10.31577/ppfar.2020.12.001
- [13] CAO, L., ZHU, S.: Analysis of the factors influencing the adaptability of college English learning based on artificial intelligence teaching assistance. *Mathematical Problems in Engineering*, 2022, 1–9. 10.1155/2022/8543492
- [14] CHAN, K., ZARY, N.: Applications and challenges of implementing artificial intelligence in medical education: integrative review. *JMIR Medical Education*, 2019, 5(1), e13930. 10.2196/13930
- [15] CHAO, M.: Generated artificial general intelligence-the philosophical principle of artificial general intelligence and give an example. 2022. *Research Square*. 10.21203/rs.3.rs-1938334/v1
- [16] Chat GPT 3.5: “What are the barriers to proper use of GPT Chat?” and “What is critical thinking?” – chatbot (<https://thechatgpt.ai/sk/chat>, 10/10/2023,14.1.2024)
- [17] COLCHESTER, K., HAGRAS, H., ALGHAZZAWI, D., ALDABBAGH, G.: A survey of artificial intelligence techniques employed for adaptive educational systems within e-learning platforms. *Journal of Artificial Intelligence and Soft Computing Research*, 2016, 7(1), 47–64. 10.1515/jaiscr-2017-0004
- [18] CRESWELL, A., WHITE, T., DUMOULIN, V., ARULKUMARAN, K., SENGUPTA, B., BHARATH, A.: Generative adversarial networks: an overview. *IEEE Signal Processing Magazine*, 2018, 35(1), 53–65. 10.1109/msp.2017.2765202
- [19] DAI, D.: Artificial intelligence technology assisted music teaching design. *Scientific Programming*, 2021, 1–10. 10.1155/2021/9141339

- [20] DENG, H., JIA, W., CHAI, D.: Discussion on innovative methods of higher teacher education and training based on new artificial intelligence. *Security and Communication Networks*, 2022, 1–10. <https://doi.org/10.1155/2022/3899413>
- [21] DZIATKOVSKII, A. (2023). The ergonomic effect of AI & ML in education. *Research Forum 2023*, 2023, 10.46916/26042023-1-978-5-00174-960-8
- [22] EDYKO, K.: Utilizing artificial intelligence tools using the GPT chatbot in medicine – a review of flaws, advantages, and limitations. *Journal of Education Health and Sport*, 2023, 46(1), 122–133. 10.12775/jehs.2023.46.01.008
- [23] FIRAT, M.: *How Chat GPT can transform autodidactic experiences and open education?* 2023, 1–5. 10.31219/osf.io/9ge8m
- [24] GUNNING, D., AHA, D.: Darpa's explainable artificial intelligence program. *AI Magazine*, 2019, 40(2), 44–58. 10.1609/aimag.v40i2.2850
- [25] GUPTA, K. Artificial intelligence for governance in India: prioritizing the challenges using analytic hierarchy process (ahp). *International Journal of Recent Technology and Engineering*, 2019, 9(2), 3756–3762. 10.35940/ijrte.b3392.078219
- [26] HAKIKI, M.: Exploring the impact of using chat-GPT on student learning outcomes in technology learning: the comprehensive experiment. *Advances in Mobile Learning Educational Research*, 2023, 3(2), 859–872. 10.25082/amler.2023.02.013
- [27] HINOJO-LUCENA, F., DÍAZ, I., CÁCERES-RECHE, M., RODRÍGUEZ, J.: Artificial Intelligence in higher education: a bibliometric study on its impact in the scientific literature. *Education Sciences*, 2019, 9(1), 51. 10.3390/educsci9010051
- [28] IQBAL, S. Are medical educators primed to adopt artificial intelligence in healthcare system and medical education? *Health Professions Educator Journal*, 2022, 5(1), 7–8. 10.53708/hpej.v5i1.1707
- [29] JAVED, K. Exploring perspectives of medical faculty and undergraduate medical students on Chat-GPT in medical education. *Pakistan Postgraduate Medical Journal*, 2023, 34(04), 197–202. 10.51642/ppmj.v34i04.642
- [30] JOHNSON, M., ALBIZRI, A., HARFOUCHE, A., FOSSO-WAMBA, S.: Integrating human knowledge into artificial intelligence for complex and ill-structured problems: informed artificial intelligence. *International Journal of Information Management*, 2022, 64, 102479. 10.1016/j.ijinfomgt.2022.102479
- [31] KANWAL, A.: An investigation into how university-level teachers perceive Chat-GPT impact upon student learning. *Gomal University Journal of Research*, 2023, 39(03), 250–265. 10.51380/gujr-39-03-001
- [32] KIM, K.: Study on artificial intelligence(ai) and chat GPT, corruption. *The Korea Association for Corruption Studies*, 2023, 28(2), 85–105. 10.52663/kcsr.2023.28.2.85
- [33] KHAN, R., JAWAID, M., KHAN, A., SAJJAD, M.: Chatgpt – reshaping medical education and clinical management. *Pakistan Journal of Medical Sciences*, 2023, 39(2). 10.12669/pjms.39.2.7653
- [34] KHARE, K., STEWART, B., KHARE, A.: Artificial intelligence and the student experience: an institutional perspective. *Iafor Journal of Education*, 2018, 6(3), 63–78. 10.22492/ije.6.3.04
- [35] KLUČKA, J.: Medzinárodné právo, umelá inteligencia a vice versa. *Časopis Pro Právni Vědu a Praxi*, 2021, 29(3), 551–572. 10.5817/cpv2021-3-4
- [36] KULETO, V., ILIĆ, M., DUMANGIU, M., RANKOVIĆ, M., MARTINS, O., PĂUN, D., ... MIHOREANU, L.: Exploring opportunities and challenges of artificial intelligence and machine learning in higher education institutions. *Sustainability*, 2021, 13(18), 10424. 10.3390/su131810424
- [37] KUMPULAINEN, S., TERZIYAN, V.: Artificial General Intelligence vs. Industry 4.0: do they need each other? *Procedia Computer Science*, 200, 2022, 140–150. 10.1016/j.procs.2022.01.213





- [38] LIU, S., WANG, J.: Ice and snow talent training based on construction and analysis of artificial intelligence education informatization teaching model. *Journal of Intelligent & Fuzzy Systems*, 2021, 40(2), 3421–3431. 10.3233/jifs-189380
- [39] MAASSEN, O., FRITSCH, S., PALM, J., DEFFGE, S., KUNZE, J., MARX, G., ... BICKENBACH, J.: Future medical artificial intelligence application requirements and expectations of physicians in German university hospitals: web-based survey. *Journal of Medical Internet Research*, 2021. 23(3), e26646. 10.2196/26646
- [40] MAHLIGAWATI, F.: Artificial intelligence in physics education: a comprehensive literature review. *Journal of Physics Conference Series*, 2023, 2596(1), 012080. 10.1088/1742-6596/2596/1/012080
- [41] MAO, B.: AI based service management for 6g green communications. *Networking and Internet Architecture*, 2021. 10.48550/arxiv.2101.01588
- [42] MURCAHYANTO, H.: Penerapan media chat gpt pada pembelajaran manajemen pendidikan terhadap kemandirian mahasiswa. *Edumatic Jurnal Pendidikan Informatika*, 2023, 7(1), 115–122. 10.29408/edumatic.v7i1.14073
- [43] MYNBAYEVA, A., SADVAKASSOVA, Z.: Pedagogy of the twenty-first century: innovative teaching methods. In: *New Pedagogical Challenges in the 21st Century – Contributions of Research in Education*. InTech., 2018. 10.5772/intechopen.72341
- [44] PAKŠIOVÁ, R., BRAUNER, R., SEMERÁD, P.: AI a jej miesto vo vzdelávaní = AI and its Place in Education. In: *Inovácie v univerzitnom vzdelávaní – Medzinárodné vedecké kolokvium*, Bratislava, 2023, 54–64. 10.61544/mnk/WCAF3145
- [45] PRANANTA, A.: Chat GPT artificial intelligence integration in science learning media: systematic literature review. *Jurnal Penelitian Pendidikan Ipa*, 2023, 9(7), 315–321. 10.29303/jppipa.v9i7.4386
- [46] PLOTTOVA, S., BRAUNER, R., HERALECKY, T., ZIMCIK, P.: Macroeconomic factors of IPO implementation in the CEE region. *AD ALTA – Journal of Interdisciplinary Research*, 2023, 13 (1), 216–221.
- [47] POPENICI, S., KERR, S.: Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning*, 2017, 12(1). 10.1186/s41039-017-0062-8
- [48] PWC (A): *Sizing the prize. PwC's Global Artificial Intelligence Study: Exploiting the AI Revolution. What's the real value of AI for your business and how can you capitalise?* [online] [cit. 2024-01-09]. Available at: <https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html>
- [49] PWC (B): *Artificial intelligence solutions and insights: PwC*. [online] [cit. 2024-01-09], Available at: <https://www.pwc.com/gx/en/issues/data-and-analytics/artificial-intelligence.html>
- [50] RIZKI, M.: Gpt ai chat: revolutionizing education for civil engineering student performance. *Academia Open*, 2023, 8(1). 10.21070/acopen.8.2023.6397
- [51] ROSYANAFI, R.: The dark side of innovation: understanding research misconduct with Chat GPT in nonformal education studies at Universitas Negeri Surabaya. *Jurnal Review Pendidikan Dasar Jurnal Kajian Pendidikan Dan Hasil Penelitian*, 2023, 9(3), 220–228. 10.26740/jrpd.v9n3.p220-228
- [52] RUAN, Y.: Special-purpose English teaching reform and model design in the era of artificial intelligence. *Mathematical Problems in Engineering*, 2022, 1–12. 10.1155/2022/3068136
- [53] SARAGIH, Y.: Chat GPT for the future of science learning: a systematic literature review. *Jurnal Penelitian Pendidikan IPA*, 9 (Special Issue), 2023, 143–149. 10.29303/jppipa.v9ispecialissue.6232
- [54] SEMERÁD, P.: Asteroid Mining Tax as a Tool to Keep Peace in Outer Space. *Space Policy*, 2023, 65 (101555). 10.1016/j.spacepol.2023.101555



- [55] SIMHADRI, N., SWANY, T.N.V.R.: Awareness among teaching on AI and ML applications based on fuzzy in education sector at USA. *Soft Computing*, 2023. 10.1007/s00500-023-08329-z
- [56] SIREGAR, F., HASMAYNI, B., LUBIS, A.: The analysis of chat GPT usage impact on learning motivation among scout students. *International Journal of Research and Review*, 2023, 10(7), 632–638. 10.52403/ijrr.20230774
- [57] SONGSIENGCHAI, S.: Leveraging artificial intelligence (ai): chat GPT for effective English language learning among Thai students. *English Language Teaching*, 2023, 16(11), 68. 10.5539/elt.v16n11p68
- [58] SUNDAR, A., HECK, L.: Ctbl: augmenting large language models for conversational tables. *Computation and Language*, 2023. 10.48550/arxiv.2303.12024
- [59] TIMMS, M.: Letting artificial intelligence in education out of the box: educational cobots and smart classrooms. *International Journal of Artificial Intelligence in Education*, 2016, 26(2), 701–712. 10.1007/s40593-016-0095-y
- [60] TOMAR, P., VERMA, S.: Impact and role of AI technologies in teaching, learning, and research in higher education., *Impact of AI Technologies on Teaching, Learning, and Research in Higher Education*, 2021, 190–203. 10.4018/978-1-7998-4763-2.ch012
- [61] VINDAČA, O., LUBKINA, V.: Renewed trends in higher education following COVID-19. *Society Integration Education Proceedings of the International Scientific Conference*, 2021, 1, 755–765. 10.17770/sie2021vol1.6322
- [62] WEI, Q.: Changes in English language education and strategies for coping against chat gpt's effects. *Advances in Education Humanities and Social Science Research*, 2023, 6(1), 471. 10.56028/aehtsr.6.1.471.2023
- [63] XIAO, M., YI, H.: Building an efficient artificial intelligence model for personalized training in colleges and universities. *Computer Applications in Engineering Education*, 2020, 29(2), 350–358. 10.1002/cae.22235
- [64] YILMAZ, H.: Student attitudes towards chat gpt: a technology acceptance model survey. *International Educational Review*, 2023, 1(1), 57–83. 10.58693/ier.114
- [65] ZAWACKI-RICHTER, O., MARÍN, V., BOND, M., GOUVERNEUR, F.: Systematic review of research on artificial intelligence applications in higher education – where are the educators? *International Journal of Educational Technology in Higher Education*, 2019, 16(1). 10.1186/s41239-019-0171-0
- [66] ZHAO, C., KUH, G.: Adding value: learning communities and student engagement. *Research in Higher Education*, 2004, 45(2), 115–138. 10.1023/b:rihe.0000015692.88534.de
- [67] ZHANG, Y., WENG, Y., LUND, J.: Applications of explainable artificial intelligence in diagnosis and surgery. *Diagnostics*, 2022, 12(2), 237. 10.3390/diagnostics12020237
- [68] ZHENG, R., BADARCH, T.: Research on applications of artificial intelligence in education. *American Journal of Computer Science and Technology*, 2022, 5(2), 72. 10.11648/j.ajcst.20220502

## Risks and Opportunities of AI Textual Models, e.g., Chat GPT, in Education

### ABSTRACT

Textual (language) AI models such as Chat GPT are becoming a new key tool in education, both in online and traditional learning environments. This paper aims to identify potential risks and opportunities when using AI text models in education with partial recommendations for better application. Based on literary review and analysis of the authors' practical experience with the use of AI tools, using experiments and induction implication, their positives, negatives and identified barriers are derived and suggested approaches to



→ *their use. On the one hand, text-based AI models offer several benefits, such as personalized support for teachers and students, increased availability of educational content, and streamlining of the teaching process. On the other hand, there are concerns about ethics, privacy, and abuse of these models. The risks of inaccurate information and misconceptions that can arise if students are unable to effectively identify, filter, and correct errors in answers provided by AI are currently the most serious problems of its use. To actively support the development of students' critical thinking skills, it is appropriate for teachers to play an active role in managing students' communication with AI and assessing the accuracy and verification of information with application of deep critical thinking and primary scepticism. While AI holds great promise for transforming education, addressing barriers such as skills gaps, ethical concerns, and data-related challenges is essential to harnessing the full potential of AI in educational settings. By overcoming these barriers through targeted training, ethical guidelines, and organizational readiness, educators can leverage AI effectively to enhance teaching and learning experiences. In the realm of education, the most crucial skill for graduates is the ability to adapt to the ever-changing work environment. Educational processes should be designed to assist professionals in the economic field in preparing effectively for the widespread use of AI tools and identifying and mitigating risks that could distort the economic environment.*

**KEYWORDS**

*Artificial Intelligence; Chat GPT; Education; Risks; Opportunities*

**JEL CLASSIFICATION**

*A20; C88; L86*



# Constant ethical challenge of ESG reporting in oil and gas industry

- ▶ **Lenka Mrkvíčková** » Mendel University in Brno, Zemědělská 1665/1, 613 00 Brno, Czech Republic;  
email: lenka.mrkvickova@mendelu.cz
- ▶ **Jiří Nesiba** » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: jiri.nesiba@newton.university

## \* 1. Introduction

The concept of ESG (*Environmental, Social and Governance*) is based on the requirements for higher ethical responsibility of corporations, which is examined by non-financial reporting based on quantitative comparison of organisational indicators (Elliot, 2012; Sachs, 2015). The original purpose of ESG reporting was to provide a comprehensive overview when analysing the decision-making of investors who, in the early 21st century, became interested in whether organisations were also focusing on a broader concept of responsibility in their management – not only economic responsibility, but also social and managerial responsibility (e.g. Fatemi et al., 2018; Subramian et al., 2019; Pollman, 2022). A broader concept of responsibility was indicative of the implementation of long-term strategies for organisational development. ESG is a relatively new instrument for measuring corporate responsibility, which is a continuation of a broad current of demands for a new type of management in line with the concept of Corporate Social Responsibility (CSR) that emerged in response to the increasing risks of a globally connected world in the late 20th century (e.g. Purvis et al., 2019; Gillan et al., 2021).

In the EU, ESG has become mandatory instrument for organisations to report on their sustainability performance from 2024. The present paper therefore examines how ESG rating is statistically measurable in relation to investment rating in the period 2020-2022, when it was still a voluntary instrument. The sector where the research has been conducted is a group of the current largest global oil and gas companies, which have long been perceived by the public as one of the main drivers of global climate change. The sector is considered an ethically risky industry (Hove van den et al., 2002; Rogers et al., 2012; Gupta, 2017). The research result showed a statistically very low relationship between ESG and investment ratings. Therefore, the authors call the current situation in this sector as a constant ethical challenge.

## 2. The importance of ESG in the current concept of corporate responsibility

In 2004, UN Secretary-General Kofi Annan launched the Who Cares Wins initiative under the auspices of the Global Compact, with the aim of reaching out to 55 CEOs of the world's leading financial institutions to join in responsible corporate governance with respect to conservation and social re-



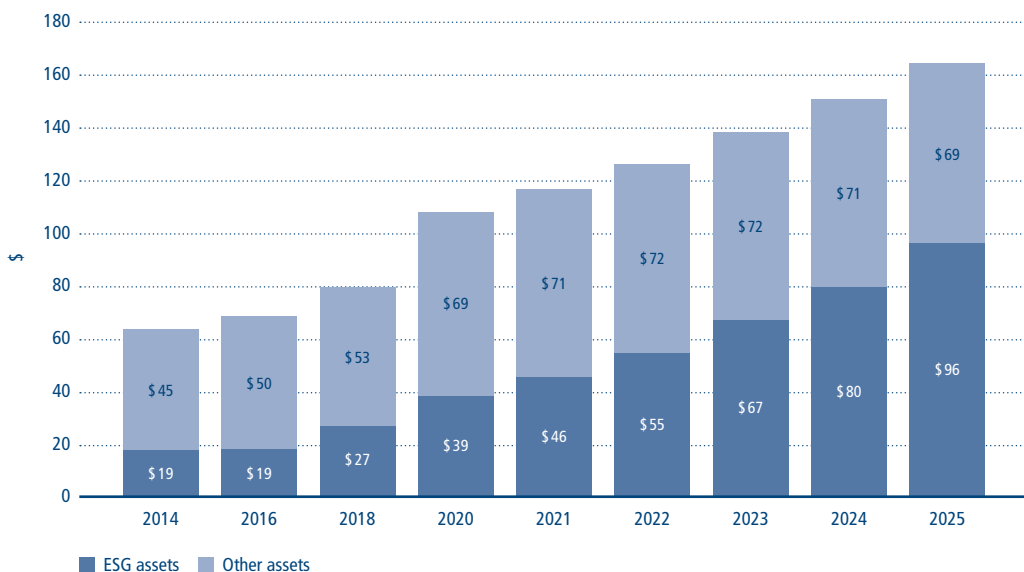
sponsibility. This initiative subsequently gave rise to the terminology of Environmental, Social and Governance (ESG). ESG built on the triple bottom line concepts of CSR by seeking a balance between the three fundamental factors (balance between economic, environmental and social responsibility). Unlike theoretical CSR approaches, ESG creates a quantitative framework of accountability measurement methodologies to evaluate an organization's performance on the investment front (Berg et al., 2021; Palacios, 2021; Pollman, 2022). Sustainability, according to ESG, can be expressed through a performance evaluation index in three independent areas that give management new tools (Edmans, 2023). ESG forms an instrument in which sustainability and longevity of investments can be evaluated. By improving and fulfilling each area, a company becomes competitive in the long run. If a company examines its ESG values, it demonstrates to investors its future sustainability and responsibility. These factors make the firm more

attractive and desirable (Ahmad et al., 2023; Fu and Li, 2023; Chen et al., 2023).

Measurability of value and quantitative comparisons between companies is now becoming a fundamental requirement of ethics. A growing number of companies are increasingly implementing methods to measure the environmental impact of their activities. These first steps are also being taken by companies that will not be affected by mandatory regulations for the time being, but see them as an advantage in terms of investment and better allocation of their own resources. For example, carbon footprints, greenhouse gas emissions or energy consumption can be measured, not only at the end production site but also in the supply chain (Lawton, 2023). There is pressure to control the supply chain in the energy and power industry (S&P Global, 2023).

ESG is therefore a useful instrument that compares organisations, institutions and companies in three fields (environment, social and governance),

**Graph 1 » Model development of ESG assets**



Source: own elaboration, data from Taylor and Collins, 2023.

**Table 1 » ESG areas**

Environmental	Social	Governance
climate mitigation measures taken and associated risks	transparency and accountability at the social level	transparency of accounting and financial procedures
developing activities with sustainable aspects and respect for the environment	protection of health and safety in the workplace	avoidance of corruption
transparency environmental responsibility	responsible behaviour in developing countries	structure of internal audits
amount of waste and unwanted substances produced	respects for human rights within the company and across the supply chain	standards in executive remuneration
adoption of rules and regulations on environmental issues	public relations	diversity in the company's management structure

Source: Greene, 2021

for all different areas. Even investments in ESG accounted for one-third of all professionally managed assets in 2022. However, there is still much debate around ESG as to whether ESG really has that much impact and influence on investor behaviour or whether it is just a new form of pretend ethics to improve corporate public image (*greenwashing*, see Pollman, 2022). Graph 1 shows a possible increasing trend towards investing in more sustainable investments. It shows the evolution of ESG assets by year and the projection that by 2024, ESG mandated assets could account for half of all professionally managed assets worldwide.

In each of the areas, basic categories are specified, which are then evaluated in terms of how the company performs in the ESG area. It is therefore a specific assessment of each area, where attention is focused on the specific features of each area.

The European Union has gradually brought these general rules to the forefront with a series of mandatory taxonomies and reporting associated with them (Bloomberg, 2022). This trend is related to the defined taxonomy of renewable resources and sustainable behaviour. The European Commission and the European Parliament have developed directives to encourage the receipt of finance

into more sustainable economic activities based on mandatory compliance (European Parliament, 2022). In 2014, the basis for non-financial reporting was established when the European Union adopted the *Non-Financial Reporting Directive* (NFRD), which came into force in 2017. The NFRD has so far only covered certain types of companies (such as banks, insurance companies and listed companies with more than 500 employees). However, a new *Corporate Sustainability Reporting Directive* (CSRD) was adopted in 2023, replacing the NFRD. The directive was created to modernise and strengthen the rules on sustainability, environmental and social responsibility issues. The directive also includes ESG reporting, so-called non-financial reporting, which was only voluntary until the adoption of this directive. Until 2025, this directive and the associated reporting will, for the time being, only apply to companies already covered by the NFRD. However, from 2025, non-financial reporting will also apply to all small, medium and large companies trading their securities on a stock exchange (European Commission, 2023). Although this is a directive within the framework of a European Union regulation, mandatory reporting will also affect companies outside the EU, but



→ **Table 2 » NFRD — CSRD timeline**



Source: own processing

which, for example, have a subsidiary in its territory or list their securities on EU regulated markets (Viñes Fiestas, 2023).

Following the sustainable taxonomy of the NFRD followed by the CSRD, a proposal was also developed in conjunction with sustainable finance. The proposal was a regulation on disclosure of information related to sustainable investments and sustainability risks. This created a follow-on directive called the *Sustainable Finance Disclosure Regulation* (SFDR). The SFDR empowers the EU Commission to adopt delegated and implementing acts to specify how competent authorities and market participants shall comply with the obligations laid down in the directive.

### 3. ESG rating

In the context of the taxonomy, the NFRD and CSRD guidelines, a methodology was developed to process ESG reporting. The ESG rating is the basic rating system for each ESG area. This rating is the basis for a number of scientific researches as well as for investment professionals who see practical use in this rating. Ratings are produced by different agencies, with different evaluation criteria. Each rating agency uses different methods to assess sustainability. The principle of generating ratings from each agency is to collect data from the three basic categories (i.e. environmental, social and governance) and use this to produce a compre-

hensive overall rating of the company (Pricewaterhouse Coopers, 2023).

Each of the agencies creates its own rating system and there is no legally anchored standard on what exactly the ratings should look like. While most agencies agree on what activities to include in ESG ratings, the subsequent evaluation and scoring is done by each agency individually. The most well-known internationally recognised ESG rating agencies include the traditional rating agencies (e.g. S&P Global, CDP, Moody's Corp, FTSE Russell, Bloomberg and MSCI, see for Kroeger, 2023), but more recently specialized departments have been emerging that primarily address ESG ratings (e.g. Refinitiv, S&P Trucost and RobecoSam, Sustainalytics, ISS ESG, MSCI ESG, Vigeo Eiris, EcoVadis, Minerva Analytics). The importance of ESG rating agencies is increasing in their potential growing influence on individual national policies, both in Europe (Rogge, Ohnesorge, 2022) and in other parts of the world, e.g. China (Li et al., 2022).

ESG ratings are intended to help address issues related to the reliability, consistency and overall quality of individual firms and corporations. The rating is thought to influence up to 82% of investors in their investment decision making process. The value of a firm lies not only in its financial aspect but also in other non-financial measures (Barranga and Tanea, 2022).

The ESG rating is inspired by the rating in the investment grade areas of an organisation's quality

assessment. Among the many types of ratings in the investment field, credit rating is the most important. Credit ratings support the development and better functioning of capital markets. They represent the ability of individual companies or countries to meet their future financial obligations. These ratings are created by credit agencies, which include companies such as Standard and Poor's, Moody's and Fitch (Bannier and Hirsch, 2010).

The importance of ratings and company assessments is particularly relevant for investment and lending purposes. Ratings help investors develop a comprehensive view of a company's financial stability and strength and support overall stability in financial markets (Fitch Ratings, 2023). A higher rating allows a company a better chance of raising

the capital it needs and gives investors greater certainty of a return on their investment. Interest rates can also be affected by the rating, as they decrease with better credit ratings. Disclosure and ratings are also often requested by individual companies, which then have the credibility to meet their obligations. The credit rating of listed organisations is a standard tool. ESG rating is new and its importance in the EU is growing as it becomes a mandatory tool, creating controversy. Mandatory rating in the EU is likely to change the entire global ESG rating industry. The question is whether the inspiration from credit rating is transferable to corporate social responsibility through ESG, where ethical issues are difficult to quantitatively define. At the same time, suitability relative to firm size is not

**Table 3 » Comparison of ESG and investment grade ratings**

	S&P	Moody's	Fitch	
Investment grade	AAA	Aaa	AAA	Credit risk ↓
	AA	Aa	AA	
	A	A	A	
	BBB	Baa	BBB	
Speculative grade	BB	Ba	BB	
	B	B	B	
	CCC	Caa	CCC	
	CC	Ca	CC	
	C	C	C	
	D	D	D	

CCC

B

BB

BBB

A

AA

AAA

**LAGGARD**  
A company lagging its industry based on its high exposure and failure to manage significant ESG risks

**AVERAGE**  
A company with a mixed or unexceptional track record of managing the most significant ESG risks and opportunities relative to industry peers

**LEADER**  
A company leading its industry in managing the most significant ESG risks and opportunities

Source: MSCI, 2023; Wall Street Prep, 2023; own processing.

→ clearly addressed. For corporations, ESG is important as a control mechanism, even for SMEs, the question is whether it is an effective sustainability instrument or whether it unnecessarily increases costs and disclosures affect unfair competition.

4. Research methodology

The research focused on a comparison of ESG and investment grade ratings in a selected area of the economy. The present research is related to the current development of ESG rating analyses with a different pre-selected area (defined by geography or sector of the economy, e.g. Wang et al., 2024). For this paper, the oil and gas industry was selected. Here, a strong focus on ESG initiatives can be observed (Ramírez-Orellana et al., 2023). This perspective has traditionally focused on environmental aspects, but more recently also on the social environment (impact on stakeholders, see for Rush-ton, 2021).

MSCI rating was chosen for clarity and the greatest availability of data on the selected sector. MSCI ratings on ESG are specific and widely used, primarily because of the consideration of sector type in the final rating. Each of the companies producing an ESG rating uses a different value scale for the rating. MSCI ratings are based on a scale of

letters denoting the quality of a given aspect of ESG. The second data source used is Fitch’s credit rating database. The reason for choosing this company’s database was the easy availability of data and simple expedient processing of information. The overall reliability of the agency in the global rating investment environment also plays a role. Company credit rating. Fitch’s credit rating is the same as MSCI’s. Both are rated on an A-D scale. A coding scheme has been developed for each of the ratings to ensure accuracy and preserve the data structure. The following Table 4 shows the exact transformation and the substitution of each letter with a number.

The 32 global top companies for which complete ESG data is available for each of the years 2020, 2021 and 2022 have been included. Data prior to 2020 is not available. The processed 2020-2022 dataset can be obtained in open access form and verified with both Fitch and MSCI. Both lists include a range of more than 40 companies operating in the global upstream, midstream and downstream oil and gas markets. Only the 32 largest companies were selected for research because all data can be ascertained. The list below includes the following corporations in their entirety: Shell PLC, Orlen spolka akcyjna, Thai Oil Public Company Limited, China Petroleum & Chemical Corpora-

Table 4 » Transforming ratings into a numeric code

ESG rating — MSCI		Credit rating Fitch	
CCC	1	C	1
B	2	CC	2
BB	3	CCC	3
BBB	4	B	4
A	5	BB	5
AA	6	BBB	6
AAA	7	A	7
		AA	8
		AAA	9

Source: own processing



*Measurability of value and quantitative comparisons between companies is now becoming a fundamental requirement of ethics. A growing number of companies are increasingly implementing methods to measure the environmental impact of their activities. These first steps are also being taken by companies that will not be affected by mandatory regulations for the time being, but see them as an advantage in terms of investment and better allocation of their own resources.*

tion, TotalEnergies SE, Petroleo Brasileiro S.A. (Petrobras), Empresas Copec S.A., S-Oil Corporation, Tourmaline Oil corporation, Marathon Oil, Indian oil corporation, Saudi Arabian Oil Company, Chevron corporation, PetroChina Company Limited, BP P.L.C., Valero energy, Repsol S.A., Turkiye petrol rafinerileri anonim sirketi, Hindustan petroleum, Bharat petroleum corporation, Petronas Dagangan Berhad, Oil and Natural gas corporation, OMV Aktiengesellschaft, Woodside energy group, Cenovus Energy Inc., Enbridge Inc., Petronas Gas Berhad, APA group, AltaGas Ltd., Neste Oyj, Engies SA, Eni S.P.A).

The aim of the research was to determine whether there is a statistical relationship between ESG ratings and credit ratings. Correlation and regression analysis is used to establish the stated objective. The research is expected to provide insight into whether ESG scores can also influence the credit rating of companies in the selected sector. The research question has been set to determine whether there is a statistically significant relationship between ESG score and credit rating for companies in the oil and gas industry? The research involves the null hypothesis (H0) that there is no statistically significant relationship between the two ratings. In addition to this, an alternative hypothesis (H1) that higher ESG rating scores lead to higher credit rating scores was also developed. In order to verify the calculation correctly, a two-stage analysis was used. First, a correlation coefficient was used to determine the strength of the dependence and the direction of the dependence,

followed by a regression analysis to analyse the interdependence of the ratings more deeply and precisely.

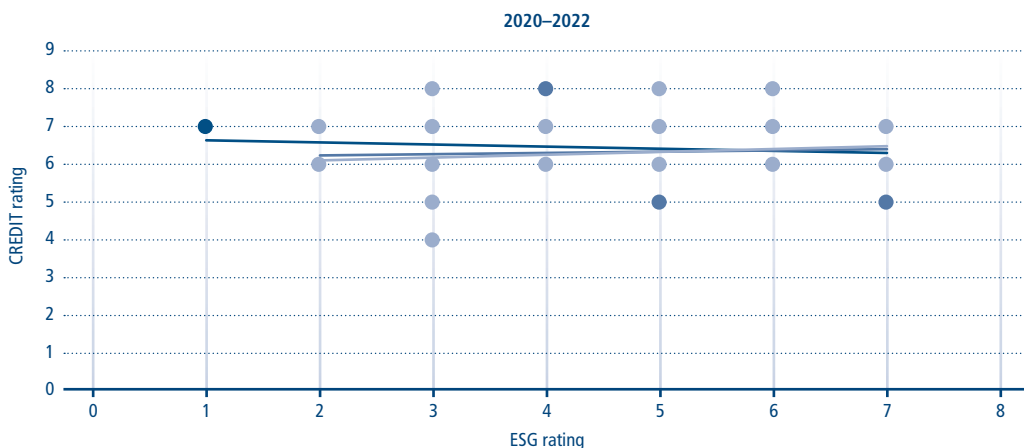
#### 4.1. Research results

After using the correlation function, the correlation coefficient in each year for the credit and ESG rating was found. Year 2020: correlation coefficient: -0.09, coefficient of determination:  $R^2 = 0.0037 = 0.37\%$ . Year 2021: correlation coefficient: 0.042, coefficient of determination:  $R^2 = 0.0044 = 0.44\%$ . Year 2022: correlation coefficient: 0.094, coefficient of determination:  $R^2 = 0.0283 = 2.83\%$ . Overall, however, all values are very close to 0 and the correlation between ESG rating and credit rating of the sample is very weak according to the correlation coefficients. Thus, the result, even after checking the regression analysis and evaluating the coefficient of determination, is that less than 3% of the variability of credit ratings in all years can be explained by a linear relationship with ESG ratings. The dot plot and the linear trend line (Graph 2) also provide verification for the very low dependence between the two ratings.

The results revealed a positive but very weak correlation between the ratings. Therefore, the hypotheses that were part of the introductory chapter of the research part could not be 100% refuted or confirmed. However, the results of the research are more closely aligned with the null hypothesis (H0) where it was rather confirmed that there is no statistically significant relationship between the two



→ **Graph 1 » Model development of ESG assets**



Source: own elaboration, data from Taylor and Collins, 2023.

ratings. However, the alternative hypothesis (H1), which stated that a higher ESG rating score leads to a higher credit rating score, cannot be completely discarded either. Thus, to a limited extent, this positive relationship can be confirmed.

The positive but at the same time very weak results suggest that ESG factors play a role in determining firms' creditworthiness. However, from this research, limited to a certain number of companies, it can currently be concluded that it is a very insignificant factor affecting credit ratings. However, the future assumption could be different. Given the pressure being created on oil and gas companies, ESG ratings could play a much larger role in the future in determining credit ratings, financial capability, and most importantly, risk stability.

After performing validation analyses in the form of correlation coefficient and subsequent regression analysis, the result is a very weak statistical relationship of ESG rating to credit rating. Since the values in all three survey years were minimal, the relationship between the independent and dependent variable is negligible and statistically insignificant. Despite the finding of a positive effect of ESG factors, the conclusive results are in very

small numbers and the conclusiveness of the relationship here is very limited. Neither the research question nor any of the hypotheses (H0, H1) were confirmed in the affirmative.

There may be several reasons for finding such a weak dependency. One possibility is offered by ESG ratings, which may not be constructed adequately for each sector. Individual aspects of ESG may be difficult to measure. Therefore is difficult to include in a credit rating, which is different for each industry. The implementation of ESG elements is a long-term issue within an organisation and the results of ESG implementation are seen over a longer time horizon. The research has been done in the period 2020-2022 due to the availability of data and so the impact on the internal management of companies may be weak. The sector under study itself may also be an issue as the oil and gas industry is perceived by the public as a risky industry. This means that despite a good sustainability rating on environmental and social aspects, a company's credibility on financial issues may not be as telling. Uncertainty in the global oil and gas stock markets caused by global political events (e.g. war on the Ukraine-Russia border from 2022, political disputes between the US and Iran)

may be causing inertia in investment ratings from before the introduction of ESG reporting in the EU.

## 5. Conclusion

The industrial sector associated with the extraction of fossil fuels, especially oil and gas, is perceived as an ethically risky sector. Non-financial reporting assessment methods such as ESG aim to present the extent to which organisational management is aligned with the sustainability philosophy. Originally, ESG served the purposes of stock market investors. This voluntary concept has recently become mandatory reporting, with companies having to report on their ESG policy within the EU. A number of tools have therefore recently been developed that offer a methodology to report objectively on ESG in a quantifiable form. Among competing models, the model from MSCI was selected

for research due to its open data access. The authors analysed ESG with investment grade ratings of the largest companies in the oil and oilfield services industry from Fitch over the period 2020–2022. The research focused on the correlation between ESG and investment grade ratings. The authors observed a low level of correlation over the period measured. ESG and investment rating are not highly correlated with each other. In interpreting this fact, the authors come up with the view that the implementation of ESG in the real investment environment takes a longer time than the relatively short period of ESG rating's existence allows. A number of other parameters enter into the investors' assessment (the tensions of global energy policy and the uncertain development of the petrochemical industry). Therefore, the authors argue that there is a situation that can be assessed as a constant ethical challenge.

## REFERENCES

- [1] AHMAD, H. et al.: Environmental-, social-, and governance-related factors for business investment and sustainability: a scientometric review of global trends, *Environment, Development and Sustainability*, 2023, 26, 2965–2987. 10.1007/s10668-023-02921-x
- [2] BANNIER, C. E., HIRSCH C.W.: The economic function of credit rating agencies – What does the watchlist tell us? *Journal of Banking & Finance*, 2010, 34(12), 3037–3049. 10.1016/j.jbankfin.2010.07.002
- [3] BARANGA, L. P., TANEJA, E. I.: Introducing the ESG reporting – benefits and challenges. *Journal of Financial Studies*, 2022, 7(13), 174–181. 10.55654/JFS.2022.7.13.14
- [4] BERG, F. et al.: *Is History Repeating Itself? The (Un)Predictable Past of ESG Ratings*. European Corporate Governance Institute – Finance Working Paper, 2021, 1–59.
- [5] BLOOMBERG: *The relationships between SFDR, NFRD and EU taxonomy*. 2022. [online]. [cit. 2024-01-22]. Available at: <https://www.bloomberg.com/professional/blog/the-relationships-between-sfdr-nfrd-and-eu-taxonomy>
- [6] CHEN, S. et al.: Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance. *Journal of Environmental Management*, 2023, 345, 1–15. 10.1016/j.jenvman.2023.118829
- [7] EDMANS, A.: Applying Economics–Not Gut Feel–to ESG. *Financial Analysts Journal*, 2023, 79(4), 16–29. 10.1080/0015198X.2023.2242758
- [8] ELLIOT, J. A.: *An introduction to sustainable development*. Routledge, 2012. ISBN 9780415590730
- [9] EUROPEAN COMMISSION: *Corporate sustainability*. 2023. [online]. [cit. 2024-01-22]. Available at: [https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting\\_en](https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en)



- [10] EUROPEAN PARLIAMENT: *Green deal: Key to a climate-neutral and sustainable EU*. 2022. [online]. [cit. 2024-01-17]. Available at: <https://www.europarl.europa.eu/topics/en/article/20200618STO81513/green-deal-key-to-a-climate-neutral-and-sustainable-eu>
- [11] FATEMI, A. et al.: ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal*, 2018, 38, 45–64. 10.1016/j.gfj.2017.03.001
- [12] FITCH RATINGS: *Rating definitions*. 2023. [online]. [cit. 2024-01-22]. Available at: <https://www.fitchratings.com/products/rating-definitions#about-rating-definitions>
- [13] FU, T., LI, J.: An empirical analysis of the impact of ESG on financial performance: the moderating role of digital transformation. *Frontiers in Environmental Science*, 2023, 11, 1–11. 10.3389/fenvs.2023.1256052
- [14] GILLAN, L. S. et al.: Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance*, 2021, 66, 1–16. 10.1016/j.jcorpfin.2021.101889
- [15] GREENE, J. M.: *Environmental, social and corporate governance (ESG)*. 2021, 1–4. [online]. [cit. 2024-01-18]. Available at: <https://www.kennesaw.edu/coles/docs/esg-greene-2021.pdf>
- [16] GUPTA, K.: Are oil and gas firms more likely to engage in unethical practices than other firms? *Energy Policy*, 2017, 100, 101–112. 10.1016/j.enpol.2016.10.009
- [17] HOVE van den, S. et al.: The oil industry and climate change: strategies and ethical dilemmas. *Climate Policy*, 2002, 2(1), 3–18. 10.3763/cpol.2002.0202.
- [18] KROEGER, T. I. I.: *9 best ESG Rating Agencies – who gets to grade?* 2023. [online]. [cit. 2024-01-22]. Available at: <https://theimpactinvestor.com/esg-rating-agencies>
- [19] LAWTON, G.: *10 key ESG and sustainability trends, ideas for companies*. 2023. [online]. [cit. 2024-01-20]. Available at: <https://www.techtarget.com/searchcio/feature/10-key-ESG-and-sustainability-trends-for-business-IT>
- [20] LI, S. et al.: Evaluation of ESG Ratings for Chinese Listed Companies From the Perspective of Stock Price Crash Risk. *Frontiers in Environmental Science*, 2022, 10, 1–12. 10.3389/fenvs.2022.933639
- [21] MSCI: *ESG rating*. 2023. [online]. [cit. 2024-01-22]. Available at: <https://www.msci.com/our-solutions/esg-investing/esg-ratings>
- [22] PALACIOS, L.: *The impact of ESG on National oil companies*. 2021. [online]. [cit. 2024-01-22]. Available at: <https://www.energypolicy.columbia.edu/publications/impact-esg-national-oil-companies/>
- [23] POLLMAN, E.: The Making and Meaning of ESG. *University of Pennsylvania, Institute for Law & Econ Research Paper*, 2022, (22-23), 1–53. [online]. [cit. 2024-01-23]. Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4219857](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4219857)
- [24] PRICEWATERHOUSE COOPERS: *ESG rating*. 2023. [online]. [cit. 2024-01-08]. Available at: <https://www.pwc.com/cz/en/sluzby/sustainability/esg-rating.html>
- [25] PURVIS, B. et al.: Three pillars of sustainability: in search of conceptual origins. *Sustain Science*, 2019, 14, 681–695. 10.1007/s11625-018-0627-5
- [26] RAMÍREZ-ORELLANA, A. et al.: Is the corporate financial strategy in the oil and gas sector affected by ESG dimensions? *Resources Policy*, 2023 81(C), 1–12. 10.1016/j.resourpol.2023.103303
- [27] ROGERS, V. C. et al.: *Ethical and Environmental Disclosures: an Analysis of the Oil and Gas Industry*. 2012. [online]. [cit. 2024-01-22]. Available at: [http://scholarworks.sfasu.edu/accounting\\_faculty-pubs/5](http://scholarworks.sfasu.edu/accounting_faculty-pubs/5)
- [28] ROGGE E., OHNESORGE L.: The role of ESG Rating Agencies and market efficiency in Europe's climate policy. *Hastings Environmental Law Journal*, 2022, 28(2), 113–147.

- [29] RUSHTON, L.: *ESG: How it applies to the oil & gas industry and why it matters*. 2021. [online]. [cit. 2024-01-23]. Available at: <https://www.womblebondnickinson.com/us/insights/articles-and-briefings/esg-how-it-applies-oil-gas-industry-and-why-it-matters>
- [30] S&P GLOBAL: *Key sustainability trends that will drive decision-making in 2023*. 2023. [online]. [cit. 2024-01-19]. Available at: <https://www.spglobal.com/esg/insights/featured/special-editorial/key-sustainability-trends-that-will-drive-decision-making-in-2023>
- [31] SACHS, J.: *The Age of Sustainable Development*. Columbia University Press, 2015.
- [32] SUBRAMANIAN, S., KABRA, M., CHOPRA, S., YEO, J., STRZELINSKA, P., HUANG, L.: *ESG matters—Global. ESG from A to Z: A global primer*. Bank of America Merrill Lynch, 2019.
- [33] TAYLOR, T. L., COLLINS, S.: *ESG investing and Sustainability*. Deloitte Insights, 2023.
- [34] VIÑES FIESTAS, H.: The EU Taxonomy: Financing the Transition through Sustainable Investing. *Informacion Comercial Espanola Revista de Economia*, 2023, (932), 63–79. 10.32796/ice.2023.932.7658
- [35] WALL STREET PREP: *Credit rating*. 2023. [online]. [cit. 2024-01-24]. Available at: <https://www.wallstreetprep.com/knowledge/credit-rating/>
- [36] WANG, J. et. al.: ESG rating disagreement and stock returns. Evidence from China. *International Review of Financial Analysis*, 2024, 91, 1–11. 10.1016/j.irfa.2023.103043

## Constant ethical challenge of ESG reporting in oil and gas industry

### ABSTRACT

The article focuses on the methodology of non-financial reporting Environment, Social and Governance (ESG), which is becoming mandatory for companies in the EU. The authors examined the recent status of voluntary ESG reporting with investor interest in a selected industry sector. The research investigated whether, in a pre-mandatory voluntary reporting period, investor interest in ESG was evident in the global oil and gas industry. The authors researched ESG reporting by MSCI and investment grade ratings by Fitch from 2020–2022. Data for the research was collected from 32 global corporations that are considered major ethical risk areas with respect to sustainability. A regression linear analysis method was used to determine the stated objective. The research results showed a small statistical relationship between ESG and credit rating. The research was interpreted in theoretical terms as a constant ethical challenge.

### KEYWORDS

ESG; CSRD; Oil Industry; Gas Industry; Corporate Social Responsibility

### JEL CLASSIFICATION

L71; Q30; Q50



# Forwarding, carriage of goods, operation of vehicle contracts in Czech Civil Law

- ▶ **Martin Janků** » Czech University of Life Sciences Prague, Faculty of Economics and Management, Kamýcká 129, 165 00 Praha-Suchbát, Czech Republic; email: jankum@pef.czu.cz
- ▶ **Karel Marek** » University of Defence, Faculty of Military Leadership, Kounicova 65, 662 10 Brno, Czech Republic; email: k.marek@centrum.cz

## \* 1. Introduction

With the development of trade as a dominant human activity and the evolution of society, contracts for transportation are gaining in importance and significance and their development is very dynamic. Another important factor influencing this area of *ius privatorum* and, to some extent, *ius publicum* is that goods are increasingly transported over greater and greater distances, where their transport is carried out by several different operators and is often not confined to the territory of a single State or even a single continent. National laws, not excluding Czech law, must respond to the dynamics of trade development and provide carriers and their contractual partners with an appropriate flexible legal framework, taking into account the above mentioned and other specifics, such as the fact that these contracts cannot be separated in practice from private international law and international trade law, where transport contracts are widely used. (Kraft, Vančura, 2010)

Multiplication of means of transportation and the quantity of goods transported has led to the fact that contracts governing the area of transport have become, especially since the beginning of the 21st century, the most common and widely used

ones. The most frequently used one is contract on the carriage of goods, forwarding contract and often also contract on operating a means of transportation. (Rodrigue et al., 2006)

We follow up on earlier publications. When, among other things, discussing (even after almost ten years of the effectiveness of the new Civil Code, i.e. Act No 89/2012 Coll.) the issue, we will assess whether the current legislation corresponds to the legislation in other countries. (Marek, 2008; Marek, Janků, 2016) It has an effect on the use of this legislation and that on its economic benefit (Eliáš, 2003).

## 2. Methodology and results

### 2.1 Goals of the paper and methods employed

The goal of the paper is to discuss the main types of transport contracts as they follow from the provisions of the 2012 Czech Civil Code. In the framework of the analysis of the contract of carriage of goods, it also focuses on the regulation of transport regulations. Within the part devoted to the regulation of the (freight) forwarding contract, this paper then focuses on the General Freight For-

warding Conditions issued by the International Federation of Freight Forwarding Associations FIATA.

The paper main objective is to analyse the principal provisions of contracts in transport as ruled by the 2012 Civil Code, focus on the legal aspects of the development of Czech private law regulation in overcoming the legal dualism existing between 1991 and 2012 and possible shortcomings of the new regulation. The study has been performed by using general theoretical scientific methods. The use of the analytical method is complemented by the historical method in comparing the rules taken from the former 1991 Czech Commercial Code and their impact on the 2012 CivC. The comparative method is used to highlight the emergence of the new content of contracts and its formation.

In addition to the characteristics of the relevant contract types and the evaluation of the rights and obligations of the contracting parties, the respective parts aim at the means of ensuring the protection for the ordering party. The protection instruments provided to the latter in the different types of freight forwarding contracts will be analysed, again by means of the comparative method. The paper concludes by identification and assessment of suitability of the legal methods employed for the protection of customers in transport contracts and, if necessary, to propose a change in the legal regulation that would lead to an improvement of this protection.

## 2.2 Forwarding contract

The development of the freight forwarding industry, i.e. the industry involved in the operation of procurement activities in the field of transport of goods (consignments), is linked to the development of trade and transport. Freight forwarding contract (as the procurement of transport) has been separated from the direct carriage of goods. In practice, however, the distinction between freight forwarding and carriage of goods (see next chapter) is sometimes not precisely defined and

confusion between these activities occurs, with possible negative consequences. (Marek, 2009). Some court decisions have addressed this issue, identifying differences in the practical construction of the relationship between the parties and the mutual rights and obligations as they arise from the statutory provisions for the relevant contract types (e.g. judgment of the Supreme Court of the Czech Republic 31 Cdo 488/2010 of 10 October 2012).

Under a forwarding contract, the freight forwarder undertakes to procure for the principal, on his own behalf and for his own account, the transportation of the consignment from a particular place to another particular place, or to procure or perform acts in connection with the transportation, and the principal undertakes to pay the freight forwarder a fee. Where it is agreed that the freight forwarder shall procure for the principal the receipt of funds from the consignee of the consignment or perform any other collection operation before he has delivered the consignment or the document enabling the consignment to be disposed of to the consignee, the provisions on documentary collection shall apply *mutatis mutandis*.

Forwarding (carriage of goods) is a subtype of consignment contract. In its regulation, the 2012 Civil Code (CivC) in section 2471 et seq. largely transposed the provisions of section 601 et seq. of the former 1991 Commercial Code (Dědič et al., 2002).

The development of trade and transport went hand in hand with the development of forwarding (shipping) — a field whose subject is the operation of the procurement activities in the field of transportation of goods (consignments). There has been a separation of freight forwarding as the procurement of transportation from the direct execution of the latter. In practice, however, the distinction between transport and freight forwarding is sometimes not well defined and confusion between these activities occurs, with possible negative consequences. Moreover, due to the increasing demands of clients in the field of logistics,





→ freight forwarding agencies adapt their services and try to provide a more comprehensive range of services. The freight forwarding contract is often combined with other contracts, such as a cooperation agreement, a framework agreement, a contract for the transport of goods and other untitled contracts (Hrádek, 2017)

When examining this type of contract, we see that it is a type of procurement contract, a special type of commission contract. It is significant that the freight forwarder acts on his own behalf and on the account of the principal. It is a contract for consideration. Not exceptional will be the cases where the contract will be concluded in writing, for example in order to document the agreed content, including the amount of remuneration.

According to the provisions of the forwarding contract, the freight forwarder is responsible to the principal in particular for the timely arrangement of the transportation, for giving the correct dispositions for the execution of the transportation (e.g. for loading the goods, for the use of a suitable vehicle, for the date of transportation, for ensuring unloading), and for the correct handling of the consignment. The freight forwarder is obliged to report to the principal as soon as he becomes aware of any damage to the consignment. If he fails to do so, he shall compensate the principal for the damage caused by his failure to notify the latter. If damage occurs to the consignment received in the course of procuring carriage, the freight forwarder shall compensate for it unless he proves that he could not have avoided it.

It is assumed by the CivC that the freight forwarder is a person who is very familiar with the issue of freight forwarding. In particular, given his subject of business, he should have an appropriate level of professional competence. The freight forwarder is also expected to act with due professional care. However, the Czech Trade Licensing Act does not seem to correspond to this assumption. The Trade Licensing Act previously classified 'domestic freight forwarding' as a concession trade. It did not mention 'international freight forward-

ing', which is a more professionally demanding activity, in its annexes at all. Thus, this business was a free trade, for the exercise of which it was sufficient to make a declaration to the competent trade licensing authority. The amendment to the Trade Licensing Act ten years ago 'removed' domestic freight forwarding from the concession trade, and freight forwarding is a free trade as a whole, for which no special professional qualifications are required under the Trade Licensing Act, only compliance with the general conditions for the exercise of the trade under the Act. This may certainly cause problems in practice in some cases, as even business entities with less expertise are now engaged in the freight forwarding trade in our country.

We may compare this regulation e.g. with the legal rules of Austrian law. Here, forwarding is a business under trade license, the operation of which requires, according to the Trade Licensing Act, the granting of a permit by the administrative authority if following conditions are met: the operator, after completing a four-year apprenticeship in the freight forwarding trade, has successfully passed an examination with a freight forwarder's certificate if the trade is carried on personally; the manager of the freight forwarder, in the case of a legal person, must fulfil the same condition as if he were carrying on the freight forwarding business personally; or the operator or manager of the freight forwarding company must have graduated from a vocational secondary school or university specializing in transport and freight forwarding. (Zehetbauer, Motter, 2016)

Professional organizations are trying to develop professional skills in freight forwarding. Freight forwarders in the Czech Republic have associated themselves in the Freight Forwarding and Logistics Association of the Czech Republic (founded under the original name of the Freight Forwarding and Warehousing Association of the Czech Republic), which has been a full member of the International Federation of Freight Forwarding Associations FIATA since 1992. It is a standard for FIATA members



to use the General Freight Forwarding Conditions, internal statute issued by them.

It seems, however, that the application of the above General Conditions will not suffice for special consignments. Quite specific requirements and demands on both the forwarder and the carrier arise especially in the case of transportation of higher value cargo or when special technical conditions are required (e.g. anti-static environment). Abroad, this type of transportation is called „High-Tech Transport“. For such consignments it will be necessary to conclude a contract taking into account the individual characteristics of such transportation.

At present, more and more traders are approaching professional freight forwarding companies, which guarantee transportation in the shortest possible time while taking over the necessary formalities associated with the consignment. With the professionalism of their employees and technological know-how (which, among other things, allows them to monitor data on the entire movement of the consignment from the addressee to the recipient), they provide quality services and therefore become everyday freight forwarders of many consignments requiring speed of delivery, gentle handling or prompt customs clearance. In today's modern concept, the professional freight forwarder no longer acts as a mere procurer of transportation, but is able to provide a wider range of necessary assistance. Such a position of the freight forwarder is becoming particularly important in international shipments of goods, which are both organizationally and professionally demanding and where the carrier can no longer provide adequate service to the shipper due to its specialization. (Suchoža et al., 2011)

The task of the carrier is to transport the goods, while the task of the freight forwarder may be to ensure that the consignment gets from the consignor to the consignee through the transport chain. There is a growing trend towards 'turnkey transport of goods', where the above-mentioned complex logistics solutions enable manufacturers

or sellers of goods to concentrate fully on their business and leave all activities related to the flow of goods to the freight forwarder.

If the contract is not concluded in writing, the freight forwarder has the right to request from the principal the provision of an order for carriage (forwarding order). The forwarding order should specify the goods and the place of dispatch and destination. If the principal fails to provide the freight forwarder with correct information about the contents of the consignment and all the facts necessary for the conclusion of the contract of carriage, he shall compensate the freight forwarder for any damage caused by the breach of this obligation. However, the forwarding order shall not be necessary for the formation of a contract, even if it is customary. For the sake of completeness, it should be added that the forwarding order is not a security (Štenglová et al., 2005).

When deciding on the type of contract for carriage, it is necessary to distinguish whether the freight forwarder undertakes to procure the carriage of the goods or undertakes to transport the goods. In the former case, he concludes a forwarding contract, in the latter case a contract for the carriage of the goods (see below). It is not decisive whether or not the carrier will transport the goods using his own or someone else's means of transport.

In connection with the proper determination of the contract and the content of the contract, it should be noted that the situation is similar for the issuance of a forwarding order. If such an order is inaccurately labelled (we can frequently see labelling such as 'transport order' or 'carriage order'), the content of the order is decisive. "A 'transport order' or 'carriage order' will be a 'forwarding order' only if it implies the procurement of transportation as the object of the contract to be concluded. If this is not clear, the different designation of the order may, on the contrary, serve as a means of arguing that the intention of the principal was not to give a 'forwarding order' but to conclude a contract of carriage." (Pohůnek, 1997)



→ Situation may occur where the freight forwarder not only does not carry out the transport (which is not the purpose of the forwarding contract), but uses another person – another freight forwarder (called as intermediary forwarder) – also to procure the transport itself. In such a case, however, the freight forwarder is liable for the obligations under the contract as if he had arranged for the transportation by himself. The use of an additional freight forwarder may be an option particularly in the case of multiple subsequent modes of transportation and in the case of shipments to foreign destinations. The classic form of use of the services of an intermediate forwarder by the (main) freight forwarder occurs in connection with the provision of a ‘pick-up service’. This intermediate forwarder, as a contractual partner of the (main) freight forwarder, undertakes to carry out certain activities on behalf of the former, e.g. arranging the collection and distribution of goods from a terminal abroad, etc.

If not contrary to the contract or if the principal does not prohibit it – before the commencement of the transportation at the latest, the freight forwarder may the transportation to be procured carry out by himself. In that case, he shall also act as carrier. In carrying out the transportation, in such a case, the functional arrangement will be more straightforward. This procedure is known as ‘self-entry’. In the latter case, however, the transportation shall not involve obligations arising from the contract of forwarding, but from the contract for the carriage of the goods. (Kopáč, 1994)

The freight forwarder shall arrange the method and conditions of carriage with due care in order to suit the interests of the principal, which are known to the freight forwarder. The freight forwarder shall be obliged to insure the consignment only if this has been agreed. Accordingly, the freight forwarder is not obliged to insure the goods by law, but only if the contract so provides.

While maintaining due care, the freight forwarder submit all the sender's instructions to a detail analysis but just normally assess them with

due care required. Accordingly, the freight forwarder shall notify the principal if the errors of the latter are obvious. In the performance of the obligation, the freight forwarder shall exercise due care to arrange the manner and conditions of transportation in the best interests of the principal as they arise from the contract and/or as are otherwise known to the freight forwarder. The freight forwarder's expertise and specialization in the subject-matter concerned shall apply. The care required shall not only relate closely to the procurement activity itself but also to the goods. The freight forwarder is liable for damage to the consignment received which arises in the course of procuring the transportation, unless such damage could not have been prevented by the exercise of due care.

The freight forwarder should be a professionally qualified person to procure the transportation, but he need not have a good knowledge of the goods to be carried and its nature, although the opposite would be to his advantage. If he does not know all details of the consignment and its contents, in order to proceed correctly, he needs to obtain that information from the principal. Any possible mistake could lead to damage. The principal is therefore obliged to provide the freight forwarder with correct and complete information about the contents of the consignment and its nature, as well as other facts necessary for the conclusion of the forwarding contract. In the event of a breach of this obligation, the principal shall be liable for any damage suffered by the former. This applies in particular to hazardous goods and goods, which are only conditionally admitted for transportation if the conditions for the carriage of hazardous goods are complied with.

These conditions, as well as other conditions, are regulated, in addition to national regulations, by various international conventions (ADR for road transport, RID for rail transport, IMDG for sea transport).

The freight forwarder is obliged to report to the principal any damage to the consignment as soon

as he becomes aware of it; a breach of this obligation will result in liability for damage to the principal for failure to comply with it. This is a special provision in relation to the general preventive and reporting obligation under the regulation of damages. The damage concerned includes both substantial and non-substantial harm. The special provision deals with situations where there is imminent substantial damage to the consignment and there is no time to request instructions from the principal or the latter is delayed in giving such

al obligations, then it will be liable under the CivC general provisions on damages. If the recipient of the consignment knew or should have known of a claim of the freight forwarder under the freight forwarding contract against the principal, upon acceptance of the consignment he becomes a guarantor of that claim. This rule means a strengthening of the freight forwarder's rights and the creation of a statutory guarantee. However, this applies only if the recipient knew or should have known of the claim.

*The freight forwarder is obliged to report to the principal as soon as he becomes aware of any damage to the consignment. If he fails to do so, he shall compensate the principal for the damage caused by his failure to notify the latter. If damage occurs to the consignment received in the course of procuring carriage, the freight forwarder shall compensate for it unless he proves that he could not have avoided it.*

instructions. In such cases, the freight forwarder may sell the consignment in an appropriate manner at the expense of the principal, according to respective CivC provisions — section 2126 and 2127 CivC (Hrádek, 2017).

The freight forwarder does not generally bear the risk of damage to the consignment. He shall only be liable for damage to the consignment received which occurred during the time of procurement of the transportation. However, the above does not apply if he proves that he could not have prevented such damage. This is a special provision in addition to the general regulation of damage caused to goods taken over. However, the damage shall not be subject to reimbursement if the person who took over the goods can prove that the damage would have occurred otherwise. In this context, it should be noted that the freight forwarder is not liable for breach of contracts agreed with the carrier, i.e. it is not liable to the principal for damages incurred by the latter for breach of the forwarding contract by the carrier.

If the shipper breaches other legal or contractu-

The freight forwarder shall be entitled to the contractual consideration for the procurement of the transportation or, if no consideration has been agreed upon, the consideration customary for the procurement of similar transportation at the time the contract was concluded. In addition, the freight forwarder shall be entitled to reimbursement of the reasonable costs effectively incurred by him in the performance of his obligations.

Here it is important to note when the freight forwarder fulfils his contractual obligation. By a forwarding contract, the freight forwarder undertakes to the principal to procure on his own behalf and for his account the transportation of the goods from one particular location to another specified destination. The former shall make such procurement of transportation not only by finding a suitable carrier and a suitable means of transportation, but above all by concluding an appropriate contract for the carriage of the goods. In practice, it is debated whether the freight forwarder has fulfilled his basic obligation under the forwarding contract at the time of concluding the relevant contract with



→ the carrier and reporting this to the principal or only at the time of completion of the transportation, i.e. when the consignment is handed over to its recipient (Liška et al., 2021).

In our opinion, the principal should pay the fee and the costs incurred to the forwarder without undue delay after the latter arranged transportation by concluding the respective contracts with carriers, or intermediary forwarders, and notified the principal of this fact.

The forwarder is to monitor further “progress” of transportation and notify the principal with respect to the statutory preventive and notification duty (inter alia in the context of damages and the obligation for reimbursement). In addition to a detailed agreement on other contractual provisions, it is particularly appropriate to agree in the contract details on the remuneration, including, among others, the rules on accounting – invoicing and payment.

To secure his claims against the principal, the freight forwarder shall have a lien on the consignment for the time the latter is in the possession of the freight forwarder or of someone who holds it on his behalf, or the freight forwarder has documents authorizing him to dispose of the consignment. In this connection he may also turn to an intermediate forwarder whose services he has employed in the performance of his obligations under the contract. If he does so, the intermediate forwarder shall exercise all the rights to which the former is entitled under his lien. If the intermediate forwarder does so, those rights shall pass to him together with the lien securing them. It is therefore an assignment by operation of law.

In conclusion to this part, we may sum up, that the forwarding contract is in fact a special regulation with regard to the use of the commission contract (agency agreement) with necessary modifications. In the CivC, forwarding contract is regulated by sections 2471 to 2481 and in other issues concerned it refers to the use on consignment contract, sections 2455 to 2470, which apply *mutatis mutandis* (Švarc et al., 1996).

## 2.3 Carriage of goods

The fundamental CivC provision to this type of contract stipulate that by a contract for the carriage of goods, the carrier undertakes to the consignor to transport the goods as a consignment from one place (place of dispatch) to another (place of destination), and the consignor undertakes to pay the carrier the carriage fee. The contract is formed principally by agreement on the essential elements of the contract. The essential elements of the contract are as follows:

- identification of goods to carry,
- carrier's obligation to transport the goods,
- determination of the place of dispatch and the place of destination,
- consignor's obligation to pay remuneration.

A special method of termination of the contractual relationship is provided for in this legal regulation. If the consignor does not ask the carrier to take over the consignment within the agreed time and if it is not agreed within six months of the conclusion of the contract, then the rights and obligations under the contract shall be extinguished. However, in the case of relationships with of cross border nature, involving more national regulations, we will also have to follow the rules of international treaties, in particular those international conventions governing the carriage of goods:

- Convention concerning International Carriage by Rail [Cotif, 1980], with 1999 Protocol,
- Uniform Rules concerning the Contract of International Carriage of Goods by Rail [CIM, 2016],
- Convention On the Contract For the International Carriage of Goods by Road,
- Warsaw Convention [1929] modified by the 1955 Hague Protocol (for air transport),
- United Nations Convention on the Carriage of Goods by Sea [Hamburg, 1978] – its legal successor, the United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea [Rotterdam, 2008], is not in force yet;

- Budapest Convention on the Contract for the Carriage of Goods by Inland Waterway [2000].

These international conventions apply to international carriage. Some provisions of these conventions are not default (dispositive) but compulsory rules. In cases the conventions contain compulsory provisions for the parties to contracts of carriage, this means that the contracting parties cannot agree different arrangements between themselves (Marek, Janků, 2016).

As regards the application of the CMR to transactions involving a foreign element, attention should be drawn to one often forgotten provision of this most frequently used international treaty. The Convention states in its Article 1 that it applies to any contract for the carriage of goods for consideration by road vehicle if the place of receipt of the consignment and the intended place of delivery, as specified in the contract, are situated in two different States, at least one of which is a contracting State to the CMR Convention, irrespective of the place of residence and the nationality of the parties (Zbránek, Marek, 2007).

This provision applies regardless of the domicile and nationality of the parties. It therefore follows that the Convention applies to contracts for the carriage of goods between a Czech carrier and a Czech consignor, provided that the place of receipt of the consignment (e.g. the foreign branch of the consignor) and the supposed place of delivery are in two different states.

It follows from the above that if a Czech consignor concludes a contract with a Czech carrier, provided that the place of dispatch of the consignment lies outside the Czech Republic, e.g., in the Slovak Republic, and the place of receipt of the consignment in the Czech Republic, they conclude a contract for the carriage of goods under the CMR Convention, not under the Czech CivC. This circumstance is sometimes neglected in practice and a number of problems arise on the part of the consignor, carrier or consignee, e.g., in the event of complaints, claims for damages, etc. The CMR regulates the rights and obligations of the consignor,

carrier or consignee, their liability, and claims for damages in a different way than the CivC.

It should be noted that the NCC does not prescribe the written form as regards contracts for the carriage of goods. However, the carrier is entitled to require the consignor to confirm the requested carriage in the transport document and the consignor is entitled to require the carrier to confirm receipt of the consignment in writing. These confirmations therefore must be in writing.

If special documents are necessary for the carriage, the consignor is to hand them over to the carrier the latest when handing over the consignment for carriage. The consignor shall be liable for any damage caused to the carrier by failure to hand over such documents or their incorrectness.

The consignor is also obliged to provide the carrier with correct information about the contents and nature of the consignment. The same what applies to a breach of obligations in case of special documents applies also to a breach of this obligation.

In several matters, the regulation of securities is closely related to the performance of the transportation. The certificate of receipt may be replaced by the bill of lading. The bill of lading (as opposed to the forwarding order in the case of a forwarding contract, see above) is a security which conveys the right to require the carrier to deliver the consignment in accordance with the contents of the bill of lading. The bill of lading may be issued in the name, to the order or on the bearer. The fact that a bill of lading is a security implies that the carrier is not entitled to examine why the bill of lading is held by the person presenting it. If the bill of lading is a registered bill of lading and if the bill of lading does not state in whose name it is issued, it shall be deemed to be issued in the name of the consignor. The rights bound to a bill of lading to the order of the beneficiary may be assigned by a special or blank endorsement; rights bound to a bill of lading registered in somebody's name may be assigned to another party according to the provisions on the assignment of receivables. (Marek, Janků, 2016)



Because the Czech Republic is bound by international conventions and due to the use of other international rules (e.g. FIATA), the contractual practice of carriers is influenced by internationally established terminology. This is especially true for the term “bill of lading”. The term ‘bill of lading’ as used in the CivC should be further distinguished from the term “consignment note” as employed by the CMR Convention (Art- 34). The latter is a document accompanying the consignment, which confirms the conclusion of the contract of carriage.

The minimum content of the consignment note is stipulated by the law. The document shall provide as least the for the following:

- the name of the carrier and their residential address or place or registered office;
- the name of the consignor and their residential address or place or registered office;
- the designation, amount, weight or volume of the goods carried;
- the form of the consignment note; whether it was made out to somebody's name or to the order, and identification of the person to whose name or order it was made out;
- specification of the place of destination; and
- the place and date of issue of the consignment note and the carrier's signature.

If the consignment note is issued in several copies, the number of copies must be marked on each copy (cf. Kotásek, Pokorná, Raban, 2005). After the consignment note has been issued, only the person entitled thereunder may suspend the carriage. Only this person is entitled to receive the consignment. If several copies of the consignment note were issued, several each of them has to be presented. In the event of the destruction or loss of the consignment note, the carrier is obliged to issue a new consignment note to the consignor. As with respect to any security, the law imposes an obligation to indicate that a replacement note has been issued. In the event of misuse of the original consignment note, the consignor shall be liable to pay for the damage caused to the carrier.

The contents of the consignment note shall always be decisive for the carrier as regards the claims of the person entitled thereunder. The carrier may invoke the provisions of the contract concluded with the consignor against that person only if they are contained in the consignment note or if they are expressly referred to therein. Against the person entitled under the consignment note, the carrier may raise only objections arising from the contents of the latter or from the relationship of the carrier to the person entitled.

Similarly to the freight forwarder, the carrier has a lien on the consignment for as long as he can dispose of it to secure the debts arising from the contract. If several liens are attached to the consignment, the carrier's lien shall take precedence over the liens previously created. If the forwarder's claims under the forwarding contract and the carrier's claims under the contract for the carriage of goods should collide, the carrier's lien shall have precedence over the forwarder's lien.

The carrier is obliged to complete the transportation within the agreed period, otherwise without undue delay. Certain time limits are specified in the Transport Regulations. In case of doubt, the time limit begins to run on the day following the carrier's acceptance of the consignment. If the consignee of the consignment is known to the carrier, he shall be obliged to deliver the consignment to him. If, under the contract, the consignee is to collect the consignment at the place of destination, he shall notify him of the termination of the carriage. In addition, the CMR Convention mentions situations where no delivery period has been agreed and specifies the time limits after which an undelivered consignment is considered as lost. (Jesser, 1992)

Situations may occur in practice when a consignment is transported successively by several carriers, with each of them concluding a separate contract. This may be a combination of different modes of transport (e.g. by rail and then by road). In such cases, each carrier shall be liable separately. In many cases, however, transportation is ar-

ranged in such a way that a contract is concluded with only one carrier, who subsequently uses another carrier to fulfil the contract. In fact, the carrier may fulfil its obligation by using additional carriers. However, he is liable in the same way as if he had carried out the transport himself.

If the Transport Regulations limit the carrier's obligation to compensate damage to health, this shall not be taken into account. Limitations under the Regulations of the carrier's obligation to compensate harm, if any, shall not apply to harms caused intentionally or through gross negligence.

The obligation of carriers operating public carriage to compensate for damage or other injury may be limited by the Transport Regulations only in particularly justified cases where the need for such a limitation for domestic carriage necessarily follows from the principles applicable to international transportation.

The CivC, in its provisions concerning the contract for carriage of goods, contains provisions for delay in collecting the goods to be carried. If the person entitled to collect the consignment is in delay in collecting the goods for more than six months, the carrier may sell the goods at the expense of that person. If the item is of greater value and the carrier knows the address of that person, the latter shall give a prior notice of the intended sale and a reasonable additional period of time to collect the goods. A shorter period may be specified in the Transport Regulations in justified cases. This is particularly justified where the goods are of a dangerous nature or where the goods are perishable. Sale by self-help shall also be allowed for specified cases. The carrier may sell the consignment at the expense of the consignor if there is an imminent threat of substantial damage to the consignment, if there is no time to request instructions from the consignor or if the consignor is in delay (Marek, 2010).

The contract for carriage of goods is classified as a contract against consideration. In practice, the parties shall agree in particular on the application of the carrier's appropriate tariffs. The carrier shall

be entitled to the agreed consideration or, if no consideration has been agreed, to the consideration customary at the time of conclusion of the contract, taking into account the content of the carrier's obligation. The carrier shall be entitled to payment of the carriage fee when the carriage has been carried out to the place of destination, unless the contract provides that the latter is to be paid at a different time. The carrier shall be entitled to a pro rata part of the carriage fee, taking into account the carriage already effected, if he is unable to complete the carriage because of circumstances beyond his control.

The carrier shall be liable for any damage to the consignment which occurs after it has been taken over by the carrier and until it has been handed over to the consignee. According to the CivC (section 2566 para. 1), this does not apply if the carrier could not have prevented the damage by exercising his professional care. The carrier is not liable for damages to the consignment if he proves that they were caused (acc. to section 2566 paras 2 and 3):

- by the consignor, the consignee or the owner of the consignment;
- by a defect or the natural properties of the consignment, including normal loss, or
- by defective packaging of which the carrier informed the consignor when taking over the consignment for carriage and, if a freight bill or a bill of lading was issued, this defect in packaging was recorded therein; and
- by defective packaging, even if the carrier did not draw attention to the defect in the packaging, if the defect was not apparent on taking over of the goods.

The carrier has additional obligations in connection with damage to the consignment. The carrier is obliged to notify the consignor promptly of the damage to the consignment before it is handed over to the consignee. If, however, the consignee has acquired a right to take over the consignment, the carrier shall notify the latter to the consignee. The carrier shall be liable for damage caused to the consignor or the consignee by a breach of this ob-





ligation. This is a special type of notification obligation.

In the event of loss or destruction of the consignment, the carrier shall be obliged to compensate for the price the consignment was worth at the time it was handed over to the latter. In the event of damage or deterioration of the consignment, the carrier shall be obliged to compensate for the difference between the price the consignment was worth at the time of its receipt by the latter and the price the consignment would have been worth at that time if damaged or deteriorated.

With regard to the liability of the carrier for damage to the consignment, it is important to note the differences in the rules contained in the CMR Convention. Indeed, it is the compensation for damage to a lost or damaged consignment that is often the subject of disputes between the contracting parties. Article 17 of the CMR Convention sets out in detail the grounds for excluding the carrier's liability. According to that carrier shall be relieved of liability when the loss or damage arises from the special risks inherent in one more of the following circumstances:

- the use of open vehicles that are not insured, provided that this use has been expressly agreed and specified in the consignment note
- the absence or defective condition of the packaging in the case of goods which, due to their nature, are vulnerable to loss or damage when not packaged or not packaged correctly;
- the handling, loading, storage or unloading of the goods by the consignor, consignee or person acting on behalf the latter;
- the nature of certain goods which makes them particularly exposed to total or partial loss or damage, in particular by breakdown, rust, decomposition, drying out, leakage, normal decay or the action of pests;
- insufficient or inadequate marking or numbers on the packaging;

- transport of livestock.

Article 23 then sets out a limitation on the amount of compensation that the carrier is obliged to provide (for more details see Wyman, 2019).<sup>1</sup>

Individual modes of transportation have their important specifics. This is reflected in the regulation of certain issues in the Transport regulations adopted especially for transport by rail, air, road, inland waterway and sea. However, the regulation of individual issues must be regulated by the Transport Regulations within the framework defined by law.

## 2.4. Operation of a vehicle

The regulation of a vehicle as a contract type is contained in sections 2582 to 2585 of the CivC. The basic provision for this type of contract is that the contract for the operation of a vehicle obliges the provider of the means of transport (the operator) to undertake the carriage of the cargo specified by the client for the means of transport and, for that purpose, either to carry out one or more pre-specified trips with the means of transport or to carry out such trips as the client may specify during the agreed period, and the client undertakes to pay the consideration.

The obligations of the provider and the client in the basic provision determine the essential requirements of the contract. These requirements are as follows:

- the identification of the means of transport (vehicle),
- the designation of the operation, i.e. the designation of the trip, i.e. the journey (journeys) or the period of time for the performance thereof,
- the obligation of the provider to transport the cargo,
- the client's obligation to pay the consideration.

This type of contract is used primarily in the context of international trade transactions (in

<sup>1</sup> Acc. to Art. 23 (3) of the CMR Convention, the compensation shall not exceed 25 francs per kilogram of gross weight short. "Franc" means the gold franc weighing 10/31 of a gramme and being of millesimal fineness 900

the former Czech International Commercial Code there used to be a contract for the operation of ships). Domestically, it is mainly used for the operation of aircrafts; it can also be used in the field of so-called heavy transport (i.e. for the transport of turbines, bridge structures, fuel storage tanks, etc.).

In the practice of transportation, especially in maritime and air transportation, this contract is referred to as a charter (ships, aircraft). In the operation of a vehicle, the obligation is specified either

- as a voyage charter, i.e. specifying the itinerary of a trip to be performed by the means of transport (also called as trip charter), or
- as a time charter — specifying the period for which the means of transport is to carry the consignments.

The voyage (trip) charter is similar to a contract for the carriage of goods, whereas the time charter is similar to a lease contract, or a contract for the lease of a means of transport. However, a time charter may become the basis of a voyage charter or several voyage charters if the time charter client enters into another voyage charter (subcharter) with a third party.

The operator is obliged to ensure that the vehicle is capable as means of transport of the journeys covered by the contract and is operable for the carriage specified in the contract. The operator is also obliged to provide the vehicle with a competent crew and with the fuel and other necessities for the journeys under contract. If the means of transport is not capable, the operator shall indemnify the client against any damage resulting therefrom, unless he proves that he could not have foreseen such incapacity even with the necessary care.

If the operator accepts cargo for carriage, the provisions governing the contract of carriage shall apply *mutatis mutandis* to the identification of the rights and obligations of the parties, if the nature of the contract for the operation of the vehicle so permits. The customer may assign the right to demand the agreed operation of the vehicle to another person.

The provisions of the CivC on the contract for the operation of a vehicle are relatively brief, but in the ten years that the Code has been in force it has proved that it is not a dead letter law (Liška et al., 2021).

### 3. Conclusion

The transportation transactions are modernising and transforming segments of commercial life (for example, in practice it is not uncommon for more than one contract to be concluded for carriage for the same commercial transaction, either of the same or different contract types, e.g. a freight forwarding contract and a carriage of goods contract, or multiple carriage of goods contracts), however, their forms remain conservative and the legal rules corresponds to this.

Thus, the simplification of the regulation by the CivC — abolition of the former duality — has not brought any difficulties for the regulation of “commercial obligations in transport”, on the contrary, the guidance throughout the transport contractual area has been simplified. However, it should be pointed out again that the paragraph wording in the codification — apart from minor changes — remain true to the former rules governing these contracts in the repealed 1991 Commercial Code.

In the area of freight forwarding, the Civil Code introduced a new provision concerning the liability of the consignee of a consignment if it knew or should have known of a claim by the freight forwarder under the freight forwarding contract against the principal. It also provides for a new obligation on the part of the intermediate freight forwarder to assert, at the request of the former freight forwarders, any rights which they have under their lien.

Since most of the statutory provisions on contract in transportation in the new codification remained as “default rules”, the parties are free to contractually negotiate their rights and obligations differently. The contract may also make reference to the various terms and conditions or schedules of



carriage, which, given the general nature of the regulation of these contracts, specify the rights and obligations in relation to the needs of the different types of carriage.

As regards the amendments *de lege ferenda*, it would be useful to analyse more extensively non-statutory rules such as general terms and conditions or schedules of carriage. At the same time, it would be useful to follow the case law of the courts and their solutions in relation to practical cases.

This will link the issues in question with practical needs and show how the individual statutory provisions of the new regulation have stabilised in terms of application to real trade transactions. Finally, the analysis of Incoterms clauses can be considered as a useful area. Their importance has grown with globalisation and with the explicit possibility of their use in both international and domestic trade relations, and will continue to grow.

## REFERENCES

- [1] DĚDIČ, J. et al.: *Obchodní zákoník, komentář*. volume IV. Praha: Polygon, 2002.
- [2] ELIÁŠ, K.: *Kurz obchodního práva, Obchodní závazky*. 3rd ed. Praha: C. H. Beck, 2003.
- [3] HRÁDEK, J.: *Smlouvy o přepravě v občanském zákoníku*. Komentář § 2550–2585. Praha: C.H.Beck, 2017.
- [4] JESSER, I.: *Frachtführerhaftung nach der CMR: internationaler und nationaler Strassengütertransport*. 1992, Wien : Wirtschaftsverlag Orac.
- [5] KRAFT, S., VANČURA, M.: Transport concentration areas and their relations to the spatial organization – a case study of the Czech Republic. *Geografický časopis*, 2010, 62(4), 279–291.
- [6] KOPÁČ, L.: *Obchodní kontrakty*. volume II. Praha: Prospektrum, 1994.
- [7] KOTÁSEK, J., POKORNÁ, J., RABAN, P.: *Kurz obchodního práva, Právo cenných papírů*. 4th ed. Praha: C.H. Beck, 2005.
- [8] LIŠKA, P. et al.: *Meritum Obchodní závazky*. Praha: Wolters Kluwer ČR, 2021.
- [9] MAREK, K. *Smluvní obchodní právo, kontrakty*. 4th ed. Brno: Masarykova univerzita, 2008.
- [10] MAREK, K.: Zásilkatelství, přeprava a přepravní řády. *Právo pro podnikání a zaměstnání*, 2010, 19(10), 3-12.
- [11] MAREK, K., JANKŮ, M.: Smlouva zasilatelská a další smlouvy k přepravě. *Obchodní právo*, 2016, (5). ISSN: 1210-8278
- [12] MAREK, K.: Smlouvy k zajišťování přepravy a se vztahem k dopravním prostředkům: zasilatelská smlouva. *Právní rádce*, 2009, 17(5),
- [13] NEJVYŠŠÍ SOUD ČR.: *Rozsudek sp. zn. 31 Cdo 488/2010*. [online]. 2012. [cit. 2024-01-26]. Available at: [https://www.profpravo.cz/index.php?page=article&id\\_category=44&id\\_article=256440&csum=42570697](https://www.profpravo.cz/index.php?page=article&id_category=44&id_article=256440&csum=42570697)
- [14] POHŮNEK, M.: *Právní aspekty zasilatelství*. Praha: knižnice Svazu spedice a skladování ČR, 1997.
- [15] RODRIGUE, J.-P., COMTOIS, C., SLACK, B.: *The geography of transport systems*. New York: Routledge, 2006.
- [16] SUCHOŽA, J., HUSÁR, J., MAREK, K., RABAN, P.: *Česko-slovenské kontexty obchodního práva*. Praha: Wolters Kluwer ČR, 2011.
- [17] ŠTENGLOVA, I., PLÍVA, S., TOMSA, M.: *Obchodní zákoník*. Komentář. 10th ed. Praha: C. H. Beck, 2005.
- [18] ŠVARC, Z. et al.: *Úplné znění zákona č.513/1991 Sb., obchodní zákoník, s výkladem*. Ekonomický a právní poradce podnikatele, 1996, No. 12–13.
- [19] WYMAN, B.: *Liabilities of the Carrier for Loss of Goods*. Exeter: Forgotten Books, 2019.

- [20] ZBRÁNEK, M., MAREK, K.: Smlouva o přepravě věci. *Právní rádce*, 2007, 15(6), 71–74.
- [21] ZEHETBAUER, M., MOTTER, W.: *Nationales und Internationales Transportrecht*. Wien: Verlag Österreich GmbH, 2016.

## Forwarding, carriage of goods, operation of a vehicle contracts in Czech Civil law

### ABSTRACT

*The development of trade in the modern economy has brought about an increased importance of transportation. Multiplication of means of transportation and the quantity of goods transported has led to the fact that contracts governing the area of carriage have become, especially since the beginning of the 21st century, the most common and widely used ones. The most frequently used ones are the contract on the carriage of goods, the freight forwarding contract and the contract on operation of a vehicle.*

*In practice there are often situations when more than one of the contracts on transportations are used within one and the same trade transaction (e.g. a forwarding contract and a contract on the carriage of goods), although comprehensive logistic solutions either under a forwarding contract or under the so called innominate contract have recently been increasingly required by contracting parties.*

*The paper aims at analysing of selected issues of contracts in transport in context of the relatively new Civil Code, focusing on their significant aspects, as well as to highlight the potential weaknesses in the regulation. The text was prepared on the basis of general theoretical scientific methods. The use of analytic method is accompanied by the historical method when comparing the rules taken over from the former Commercial Code. Comparative method is employed in the highlighting of the origin of the new content of contracts and its formation.*

### KEY WORDS

*contracts of carriage; forwarding contract; contract for the carriage of goods; contract for the operation of a vehicle*

### JEL CLASSIFICATION

K7



# Objectives and key results (OKR) as a key to continuous performance: Review of current concepts and theories

- ▶ Lucie Stárková » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: Lucie.Starkova@seznam.cz
- ▶ Alexandra Zhereb » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: zherebalexandra@gmail.com
- ▶ Vladimír Borský » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: vladimir.borsky@is.newton.university
- ▶ Lukáš Mazánek » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: lukas.mazanek@newton.university

## \* 1. Introduction

In today's dynamic times, corporations face an extraordinary stream of rapid changes and transformative influences such as the covid-19 crisis, climate change, the war conflict in Europe and the accompanying energy crisis. These changes are calling for reconsideration on how competitiveness and a favourable market position in the business environment can be sustained. In response to relentless external pressure, businesses must invest considerable effort in making strategic decisions and demonstrating courage in their implementation. They face the imperative to respond, adapt, and potentially transform their strategies to remain competitive. In recent years, there has been a growing surge of interest in innovating employee performance management for its significant role, linking strategy and the overall direction of enterprises.

OKR is a model integrally connecting goals of corporation teams and individuals with the strategy of the organization to drive agile performance. The objective of the article is to provide background for the planned primary research and to present the overview of the current concepts and theories on both Continuous Performance management and OKR framework. Literature review and synthesis of the most important aspects in the field of continuous performance development were chosen as research methods. The authors focus on the description on how the Continuous Performance management and OKR can work together, their interconnection and compatibility.

## 2. Corporate Strategy and Performance Management

To explain the relationship between corporate strategy and performance management, it is im-

portant to define the meaning of both terms. Hunger and Wheelen classifies strategy into three segments: corporate strategy, business strategy, and functional strategy. Corporate strategy encompasses the highest-level strategy, a broad strategy covering the perspective of the entire organization. In the middle of this model is a business strategy which pertains to individual business units and is determined by specific areas of interest. Functional strategy, also called operational strategy, resides at the lowest level of this hierarchical model, and is designed to individual organizational departments, such as HR Strategy, IT Strategy, Innovation Strategy, and so on. The authors describe corporate strategy as a comprehensive plan that provides guidance on how a corporation can achieve its goals and mission by establishing a shared overall direction (Hunger, Wheelen, 2013).

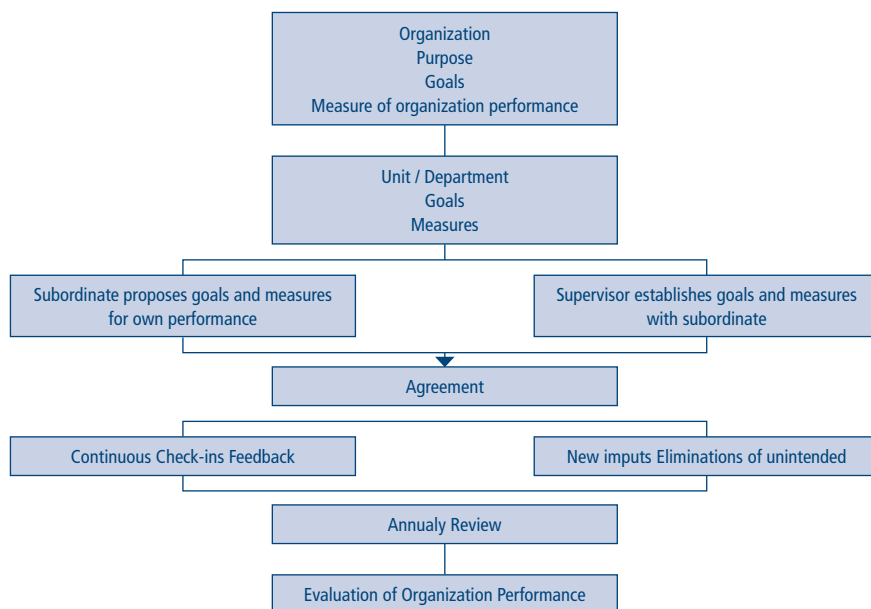
In his 2023 article, David Burnie (2023) builds upon the foundational model of strategy levels and discusses corporate strategy as a distinct long-term

plan aimed at attaining a competitive advantage by delivering on company objectives while simultaneously meeting the commitments of both customers and stakeholders. Burnie asserts that an effective corporate strategy extends beyond merely describing the company's vision and mission. He identifies several components of corporate strategy that play a crucial role in its successful implementation. Within the context of this paper, the component most relevant to mention is the area dedicated to performance management. Burnie refers to this component as *"key elements of performance management to track the execution journey"*. He emphasizes the importance of clearly defined objectives and key performance indicators to ensure proper control and monitoring.

### 3. Continuous Performance Management

Performance management is the process of continuous feedback and communication between man-

**Figure 1 » Performance Continuous Review Model**



Source: Wagnerová (Wagnerová, 2008)



agers and their employees to ensure the achievement of the strategic objectives of the organization. Irena Wagnerová depicts performance management to be an ongoing and adaptable process that typically is executed in the annual cycle. This cycle begins with goal setting, continues with ongoing reviews and feedback on performance, and concludes with an evaluation. Wagnerová describes three stages of performance review within this cycle. The first stage involves providing feedback immediately after the completion of a project or task. The second stage proposes conducting reviews on a quarterly and mid-yearly basis, while the annual review is considered to be a minimum requirement (Wagnerová, 2008).

Johnson, Scholes and Whittington emphasize the need for regular performance review and appraisal. They highlight that performance management is a continuous process that requires constant monitoring, reviewing, and adapting. By doing so, organizations can ensure their alignment with strategic objectives and can adapt to changing circumstances and market conditions (Johnson, Scholes, Whittington, 2009).

Moreover, Wagnerová (2008) emphasizes that performance management is an extension of effective managerial practices. It serves as a framework that enables the attainment of organization goals. This framework and guiding philosophy can only create the foundation for a governance system if managers accept it as their own.

#### *4. Implementation of Continuous Performance Management*

Ian White implies that business leaders can attain their goals by exploiting the three C's model of performance management – continuous, contextual, and cultural. He spotlights performance management as a key organizational pillar for attracting, retaining, and cultivating talent. Despite that, only 8% percent of global organizations report that their performance management strategy generates high levels of worth, for managers and employees.

White reckons that it is critical for leaders to understand their employee's data. It helps them to create conditions in the organization for establishment of enhanced, more continuous performance management processes (White, 2022). This approach of considering the three "C's" dimensions increases the ability of the organization to understand their people more comprehensively. It allows to make the process more powerful. The implementation of continuous performance management, as opposed to traditional performance management approaches, requires a need for change acceptance within the organization. Hodges talks about the nature of change and that it is necessary for leadership to think about what the change requires from the company to make it happen. Hodges deals with change based on this concept and sorts change according to a variety of shapes and sizes – incremental, transformational, a mix of both, as well as proactive or reactive, planned, or emergent. The aim of this chapter is not to describe all of them. But which one does relate to implementation of continuous performance management? Hodges depicts attributes of incremental change also called operational being constant, evolving, and cumulative and results to achieve improvements. Most changes in organizations are estimated to be incremental (Hodges, 2021). The main feature of this type of change is constructed on what has been already accomplished and is close to the continuous improvement cycle defined by William Deming (1986). While the transformational change requires a metamorphosis from one state to another. It literally means abandoning the existing norm and transforming it to a newly formatted norm of a different nature. Hodges argues that a transformational change mostly occurs as a response to the environmental trend, and it is fundamentally characterized by the necessity of organizational strategy revision typically demanding amendment of internal structures, systems, and processes. In fact, these are all elements of the organizational culture that determines a direction of the business. Essentially, only the changes in these



structures can ensure a new direction of the business. *“Since a transformation involves a paradigm shift and completely new behaviors, it means doing things differently rather than doing things better”* (Hodges, 2021).

The typical approach for implementation of continuous performance management is the use of a mix of these two types of changes introduced above, commonly known as a punctuated equilibrium. This change oscillates between incremental long periods of stability and transformational short blasts that fundamentally change an organization. “The inspiration for this approach arose from two sources: first from Stephen Gould who, as a natural historian with an interest in Charles Darwin’s theory of evolution, argues that there is evidence pointing to a world punctuated with periods of mass extinction and rapid origination among long stretches of relative tranquility; and second from the research of Connie Gersick, who defines the punctuated equilibrium as relatively long periods of stability (equilibrium) punctuated by brief periods of intense and pervasive transformational change that leads first to the formulation on new missions and then to the initiation of new periods of equilibrium”. Hodge refers to Eric Abrahamson and states that to determine the right timing, pace and level is crucial for successful implementation of this mixed approach (Hodges, 2021).

Brooks places significant emphasis on the acceptance of change by employees as a crucial factor in creating opportunities for successful change implementation while using a consultative approach with lower levels of employees. In addition, sharing the context of the planned change and explanation of its benefits determines the level of employee’s engagement and contribution. Pluralistic leadership of change is particularly effective. Indeed, a leadership network can capture multiple necessary dimensions. Brooks talks about these dimensions: aesthetic — ways of communicating change, political — establishment of policies, ethical — frame of morale norms appropriate to the na-

ture of change, actionable — converting new ideas into practice and formative — new source of legitimacy within organization. All of these have their importance. Change driven collectively has a significantly increased chance of acceptance in the company (Brooks, 2003).

## 5. Continuous Performance Management and OKRs

Grove realized that the old way of goal setting with the model of MBO (Management by Objectives) was not satisfactory. Grove, drawing on his understanding of behaviour science and cognitive psychology, and based on existing MBO, he redesigned the technique by assigning key results to objectives and shortened the feedback review cycle from annual to quarterly. He achieved very positive results with this method and the OKRs were born. Andy Grove is recognized for his progress principle (tracking and seeing progress) which is critical for fostering inner work life. Recent studies performed by Amabile and Kramer in 2011 show how Grove was ahead of his time (Haak, 2021)

**OKRs acronym means:** O = Objectives, K = Key and R = Results. It is a model integrally connecting goals of teams and individuals with the strategy of the organization to drive agile performance. The definition of OKRs by authors of the book Objectives and Key Results; Driving Focus, Alignment and Engagement with OKRs: *“OKRs is a critical thinking framework and ongoing discipline that seeks to ensure employees work together, focusing their efforts to make measurable contributions that drive the company forward”* (Niven, Lamorte, 2016). The authors highlight the significance of effectively communicating and defining the model to team members. They stress the need for a clear and concise explanation of what the model entails and its purpose. By providing specific details and explanations, teams can develop a shared understanding of the model and its objectives. They recommend using consistent definitions for OKRs to avoid any misleading of the intent.



➔ **Critical-thinking framework:** Just monitoring numbers is not sufficient. You need to get behind the numbers and dig deeper into what they are telling you. It can be a challenge in the beginning, but you learn to ask the right questions when you think about performance as this approach should result in acceleration of performance.

**Ongoing discipline:** It is all about your commitment to what should be done and about putting energy, time capacity and overall efforts efficiently to this goal. It means your goal setting means a benefit for you. Use of this model entails modification of OKRs each quarter based on your up-to-date achieved results carefully select strategy to deliver desired results in the next quarter or in a defined cadence.

**Ensure employees work together:** to establish a cross-functional collaboration in a structured manner to maximize alignment. To collaborate with transparency become an inherent part of the game and OKRs should be shared broadly with collaborating teams so that everyone from top to bottom can see the objectives and key results.

**Focusing their efforts:** OKRs are a checklist of tasks. OKRs aims to identify critical business objectives, and such should gauge accountability through quantitative results. The essential principle is to focus on what to do and not on what not to do.

**Make measurable contributions:** The enormous tendency is to avoid any subjectivity in measuring results. This is the main reason why typically results are measured in quantitative nature. Whenever possible, the intent is to ensure having precisely measured objectives with elimination of subjective elements.

**Drive the company forward:** the ultimate success is attainment of your goals. *“An objective is a concise statement outlining a broad qualitative goal designed to propel the organization forward in a desired direction”* (Niven, Lamorte, 2016). The objective needs to be time-bound, feasible in the quarter, and well-formulated to provide a clear message. In contrast, a key result comprises quantitative measures of achievement of a set objective. Niven, Lamorte advise to use the auxiliary questions that helps employee in creation of OKRs. To set objectives, employee asks: *“What do we want to do?”* For key results, employee asks: *“How will we know if we have met our Objectives”* (Niven, Lamorte, 2016)?

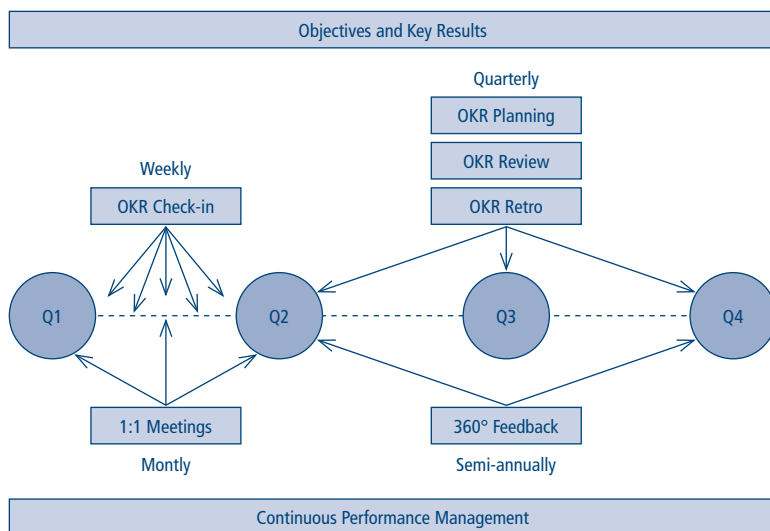
Mooncamp GmbH online article profoundly explains how OKRs work together with Performance Management. *“Performance Management is the process of ensuring that a set of activities and outcomes achieve an organization’s goals in an effective and efficient manner. Performance management can focus on the performance of an*

**Table 1 » Two Concepts Comparison**

Text	Performance Appraisal	Continuous Performance Management
Meaning	Analysis of an employee’s performance and potential for future development	People-centered approach to continuous employee development
Nature	Rigid	Agile
Type of tools	Operational	Strategic
Responsible	Human Resources	Managers
Execution	Annual	Continuous
Focus	Quantitative Aspects	Qualitative Aspects
Corrections	Retrospective	Prospective

Source: Mooncamp Website (Mooncamp GmbH, 2021)

**Figure 2 » OKRs and Continuous Performance Management**



Source: Mooncamp Website (Mooncamp GmbH, 2021)

organization, a department, an employee, or the processes used to accomplish specific tasks" (Mooncamp GmbH, 2021). It is appropriate to remember the two concepts of performance management. Recently many companies have left the traditional performance management concept and transitioned to the modern and agile concept of continuous performance management. The table on the next page provides an overview of the essential differences between the two concepts – traditional performance management and continuous performance management.

According to the article published by Mooncamp GmbH, continuous performance management creates a trusting workplace, where people actively control their own development. The typical attribute of this concept is a culture, in which employees support each other and are collaborative much more than competitive. The agile people-centric approach enables to drive, assess, and improve employee performance. OKRs, and this agile concept of performance management utterly fit together. Continuous performance management

characterises these elementary features: ongoing recognition and appreciation, regular debates about goals, skill development and learnings initiatives, feedback provided in constructive way, continual frequent check-ins, and discussions. OKRs involve team level performance and continuous performance management comprises focus on individuals and their development goals. "Of course, the attainment of Key Results may be included in conversations around performance and development. However, it is crucial to make it unmistakably clear that the goals are not hardwired to compensation and performance evaluations of employees" (Mooncamp GmbH, 2021). OKRs and continuous performance management can mutually boost each other if they are successfully integrated into processes. It is also necessary to use a suitable dedicated software to embed OKRs in the organization. The following diagram visualizes the compatibility of these two concepts. One focuses on teamwork and the other on an individual and his/ her development.

Niven, Lamorte in their book Objectives and



→ Key Results talk about the fact that regular, and structured performance reviews have become a part of the operating rhythm, and corporate culture. They add that the discipline, and way of review conduction increased to upper level to be able to execute successfully in today still changing world. They mention: “You need fresh current data points throughout the quarter that can be transformed into useful knowledge to be deployed throughout the enterprise (Niven, Lamorte, 2016). They suggest a three-stages approach: Monday meetings, mid-quarter check-ins, and end-of-quarter reviews.

## 6. Conclusion

The article presents the concepts of corporate strategy, performance management, and continuous performance management based on the literature overview. The authors clarified the intricate relationship between corporate strategy and performance management in an organization and discuss the essential role of the performance management process as an organisational tool for the implementation of corporate strategy. The need to continuously review and evaluate the performance management process was also emphasized as it has become a pivotal part of the process.

*This approach of considering the three “C’s” dimensions increases the ability of the organization to understand their people more comprehensively. It allows to make the process more powerful. The implementation of continuous performance management, as opposed to traditional performance management approaches, requires a need for change acceptance within the organization.*

## REFERENCES

- [1] BROOKS, I.: 2003. *Firemní kultura. Jedinci, skupiny, organizace a jejich chování*. Brno: Computer Press, 296 p. ISBN 80-7226-763-9.
- [2] BURNIE, D.: 2023. *Good corporate strategy – Everything you need to know*. [online]. [cit. 2023-02-10]. Available at: <https://burniegroupp.com/good-corporate-strategy/>
- [3] DEMING, W. E.: 1986. *Out of the crisis*. Cambridge, MA: MIT, Center for Advanced Engineering Study.
- [4] HAAK, B. den.: 2021. *Moving the needle with lean OKRs: Setting objectives and key results to reach your most ambitious goal*. New York: Business Expert Press. 295 p. ISBN 978-1-6374-2115-4.
- [5] HODGES, J.: 2021. *Managing and leading people through organizational change: The theory and practice of sustaining change through people*. London: Kogan Page. 368 p. ISBN 978-1789667974.
- [6] HUNGER, D., WHEELEN, T.: 2013. *Essentials of strategic management*. Pearson 192 p. ISBN 978-1-2920-2090-7.
- [7] JOHNSON, G., SCHOLES, K., WHITTINGTON, R.: 2009. *Exploring corporate strategy. Text and cases*. Harlow: Pearson Education Prentice Hall. 878 p. ISBN 978-0-2737-1192-6.
- [8] MOONCAMP GmbH.: 2021. *OKR and Performance Management: How they work together*. [online]. [cit. 2023-03-12]. Available from: <https://mooncamp.com/blog/okr-performance-management/>
- [9] NIVEN, P. R., LAMORTE, B.: 2016. *Objectives and key results: Driving focus, alignment, and engagement with OKRs*. New Jersey. John Wiley & Sons. 224 p. ISBN 978-11-1925-239-9.
- [10] WAGNEROVÁ, I.: 2008. *Hodnocení a řízení výkonnosti*. Praha: Grada Publishing, 128 p. ISBN 978-80-247-2361-7.

- [11] WHITE, I.: 2022. The three C's of effective performance management. *People matters*. [online]. [cit. 2023-02-18]. Available at: <https://www.peoplematters.in/article/leadership/the-three-cs-of-effective-performance-management-34546>

## Objectives and key Results (OKR) as a key to Continuous performance: Review of Current Concepts and Theories

### ABSTRACT

*In today's dynamic times, corporations face an extraordinary stream of rapid changes and transformative influences such as the covid-19 crisis, climate change, the war conflict in Europe and the accompanying energy crisis. Facing these changes companies need ensure that they achieve their goals in a most efficient and comprehensive way.*

*The objective of this article is to present the overview of the main perceptions on both Continuous Performance management and OKR framework, the two concepts that in combination can help organizations boost their employees' performance, align the employees' and organizations' objectives and goals and achieve the strategic goals of the organization.*

*Authors provide the background for the planned primary research and present the overview of the current concepts and theories on both Continuous Performance management and OKR framework. Literature review and synthesis of the most important aspects in the field of continuous performance development were chosen as research methods. The authors focus on the description on how the Continuous Performance management and OKR can work together, their interconnection and compatibility.*

### KEYWORDS

*performance management; OKR; corporate strategy; continuous performance management; corporate goals; employee performance goals*

### JEL CLASSIFICATION

*K20; M14; M50; M20*



# Relationship between mindset and job satisfaction: Exploration in the managerial roles

- ▶ **Barbora Bělová** » Oslavany, Czech Republic; email: [bbcoaching@barabelova.cz](mailto:bbcoaching@barabelova.cz)
- ▶ **Barbora Pánková** » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic; email: [barbora.pankova@newton.univesity](mailto:barbora.pankova@newton.univesity) / Charles University, Faculty of Education, Magdalény Rettigové 4, 116 39 Praha 1, Czech Republic; email: [barbora.pankova@pedf.cuni.cz](mailto:barbora.pankova@pedf.cuni.cz)

## \* 1. Introduction

This article explores the intersection of Carol Dweck's fixed and growth mindset model with job satisfaction among managerial and leadership roles in a remote customer support organization, diploma thesis research run in 2023 in a multinational environment. The study investigated the potential correlation between mindset and job satisfaction, aiming to shed light on whether fostering a growth mindset could positively influence employee satisfaction. The theoretical framework encompassed an extensive literature review on mindset, motivation, self-actualization, job satisfaction, personal development, and current educational trends. In the practical segment, the article presented the findings of the data analysis. The author contends that managers embracing the importance of personal development may experience higher satisfaction, a hypothesis explored specifically in the context of job satisfaction. This study also touched on the philosophical dimension of continuous development amid the rapid changes in today's work environment, emphasizing the significance of employee satisfaction. Based on the outcomes, the author proposed a strategic approach for employee development within the or-

ganization, incorporating the most preferred methods among managers. The article suggests that, especially in an era emphasizing adaptability, understanding the factors influencing job satisfaction in relation to mindset is crucial. As organizations strive for cost-effective employee development strategies, this research seeks to contribute insights that can motivate employees and enhance their overall satisfaction and retention within the company.

## 2. Mindset paradigms

Dweck's research is pivotal, introducing the concepts of fixed and growth mindsets. A fixed mindset assumes that our intelligence and abilities are static, while a growth mindset believes in the potential for fundamental development. Mindset theory is based on two basic motivational research, attribution theory and achievement goal theory, a theory about how we react to failure and challenges. However, according to Dweck, mindset is not all or nothing, a person can be on different parts of the spectrum from growth to fixed mindset at different times. (Yeager, Dweck, 2020)

Attribution theory introduced by Fritz Heider, this theory explores how we interpret others' be-

haviors based on internal and external factors (Heider in Hopper, 2020); according to Heider, behavior is a product of our judgment and motivation. How we attribute the meaning of another person's behavior has been the subject of research in social psychology: we interpret the behavior of another through his personality or the situation in which we observe the person. In this context, Heider mentions situational (external) attribution and dispositional (internal) attribution.

On the other hand, Achievement Goal Theory investigates how individuals react to challenges and failures, highlighting the role of performance and earning goals in motivating students, research lead by Dweck (1999). Focusing on Power, Influence and Goal Achievement, Dweck subscribes to the psychological premise, beliefs about oneself influence our goals and achievements. The mindset influences the use of personal power and impacts behavior in leadership and management contexts. Social impact of power, the way individuals can influence society and groups based on their status and the concept of conformity in relation to the managerial practice according to Výrost and Slaměník (2008) follows the belief that having power means changing behavior of others but also oneself (Nakonečný, 1996).

Bedrnová (2009) highlights proactive approach over reactive to solving problem situations, differentiates mainly between conscious response and reaction depending on physical and social environment, external circumstances and our reaction to feeling or other conditions.

## 2.1 Carol Dweck's Model

Carol Dweck from Stanford University was first to draw attention to the power of mindset in relation to success in life. Research shows that we can decide who we become and how we achieve what matters to us. Dweck (2017) herself uses the label fixed and growth mindsets, hereinafter referred to as two mindsets. Sternberg (2020) follows Binet, who objected to the claim that intelligence cannot

be changed. He claimed that through practice, education and methodical approach memory, judgment and attention can be influenced and at the same time become more intelligent. Sternberg (2020) sees intelligence as the most important psychological construct we try to understand.

### 2.1.1 Fixed mindset

The belief that our characteristics are fixed once and for all is often referred to as a fixed mindset. A person with this attitude has an urgent need to constantly prove something, because if his intelligence, personality and moral profile is only one, it is necessary to try very hard not to lose it. Many people with a fixed mindset feel that the world around them needs to change, not them. They themselves may feel superior because those around them do not see their unique abilities (Dweck, 2017).

Kučírek (2017) comments on the topic of self-knowledge, according to him self-knowledge is the basis of personal management. It is an important factor in the success of an individual, but also has an effect on the interest group or the way we lead teams. According to him, positive values in leadership have an impact mainly on behavior and actions (to a large extent on motivation).

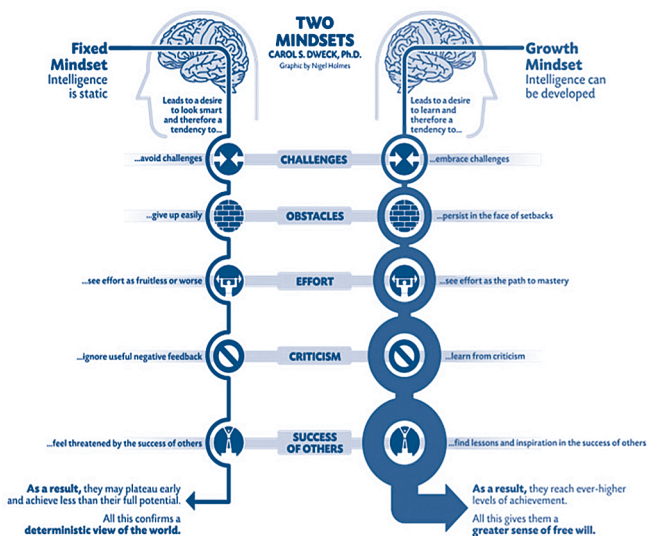
### 2.1.2 Growth mindset

For people with a growth mindset, challenges are important, they even thrive on them. The bigger the challenge, the harder they try. Dweck (2017) states that leaders who have a growth mindset see the world through possibilities, are full of energy and excitement. They find fixed way of thinking limiting and replace everything with a culture of growth and teamwork. Leaders believe in human potential and development, both their own and that of others. Warren Bennis (Dweck, 2017) adds to this that many leaders have motivation, and even manage, but they lack direction. On the other hand leader with a growth mindset, see his leadership journey full of learning and fun. Bandura's Theory of Self-Efficacy (Výrost, Slaměník, 1998,





Figure 1 » Nigel Holmes Graphics of Two Mindsets



Source: Nigel Holmes in Dweck, 2017

2008) emphasizes the importance of belief in one's capabilities as a driver of motivation and behavior. According to Bandura, how we focus on achieving a goal is similar to the aspirational level, but it is not exhausted, so it is a much more complex phenomenon than motivation. More to be explained and found in the graphics of Nigel Holmes, used in Dweck (2017).

## 2.2 Dweck's model in Management

One of the studies conducted by Robert Wood and colleagues (Dweck, 2017) examined how groups work together on tasks; divided the participants into two groups. The first group consisted of those whose thinking was fixed and who believed that people have their managerial abilities given and cannot be changed much. The second group with a growth mindset, on the other hand, believed that people are capable of substantially changing their skills needed to lead people. Both groups then had to work together on a complex task and discuss

their decisions. Although the beginning of the experiment was the same, the group with a growth mindset, gradually due to the fact that the participants were able to learn from their own mistakes and feedback, was more successful. However, it is worth mentioning the way of cooperation in the group as the most interesting. The group with a growth mindset communicated their opinions and expressed disagreement much more openly, this did not happen in the group with a fixed mindset because of the fear of the assessment of intelligence (smart-stupid) or because of the fear that my opinion will be rejected, therefore the discussion was not productive and appeared with groupthink.

Groupthink (Hayes, 2021) can cause a group to close itself off from outside information and make decisions that can have disastrous consequences. According to Hayes, groupthink occurs when group members are pressured to conform to the opinion of the majority.

Bandura's theory of perceived self-actualization in the work sphere perceives work not only as an

individual matter, but also structures part of social relations, and collective self-actualization can then be perceived as joint abilities to achieve results. However, according to Bandura, differences are visible in perceived self-actualization, both in their belief to achieve a goal and in their performance motive (Výrost, Slaměnk, 2008).

### 3. Job satisfaction

According to Armstrong (2015), the term job satisfaction is connected with the attitudes and feelings that people have towards their work. Put simply, positive and favourable attitudes and feelings signal job satisfaction, while negative attitudes and feelings signal dissatisfaction.

Rymeš (in Štikar, 2003) connects the theory of job satisfaction with the degree of fulfilment of our goals, needs and expectations. In examining the psychological category, Kolárik (1986, in Štikar, 2003) makes a semantic distinction between job satisfaction, which refers to the worker's personality and general conditions in the organization, and then job satisfaction, a content narrower concept related to the performance of a specific activity, with demands for psyche, work regime and social evaluation. However, many experts perceive job satisfaction as a synonym for work attitudes, as a sum of opinions, enjoyments and tendencies to act (Campbell in Štikar, 2003).

#### 3.1 Motivation in the work environment

Psychologists and theoreticians of human behaviour have been dealing with questions of motivation since the middle of the last century, the first theories of human and, by extension, work motivation were formulated. Maslow sees motivation as a process that leads to the satisfaction of an individual's needs and desires, and at the same time he says that the process of motivation affects how we achieve the development of our own personality and self-realization (Maslow, 2021).

There are several theories of motivation that

differ in how they explain human behaviour and what factors influence motivation. One way to distinguish these theories is whether they focus on a one-dimensional or two-dimensional view of human motivation. Managers need theories of motivation to better understand why people behave the way they do, but there is no universally acceptable explanation of human behaviour. They distinguish between content-oriented theories (what causes and maintains certain behaviours in the work environment) and process-oriented theories (how the desired behaviour is achieved, how this behaviour is managed, maintained, and terminated).

Theories focused on content and process represent a two-dimensional view. A one-dimensional view is rather represented by stimulation or activation theories, which are based on the idea that behaviour is influenced by certain influences that are logically assumed consequences of behaviour (Donnelly et al., 1997).

#### 3.2 One-dimensional motivation model

Armstrong's discussion on instrumentality theory and human motivation aligns with the broader concept of extrinsic motivation, which is influenced by external factors such as rewards and punishments. This theory is rooted in scientific management, or Taylorism, emphasizing efficiency and productivity through rewards and penalties. This theory is also called the law of cause and effect. Currently, this theory is still widely used and can sometimes be successful. However, its functioning is based on a control system and other human needs are not taken into account (Armstrong, 2007). Štikar's perspective on job satisfaction, suggests that he views it through the lens of one-dimensionality, considering it as an extreme state on a single dimension, with satisfaction and dissatisfaction as supporting parameters. In his view, sufficient satisfaction arises from the absence of dissatisfaction. This aligns with one-factor theories of motivation, which encompass approaches by theorists like Maslow and Vroom (with his Expectation



→ Theory) as well as Stogdilly. These theories tend to view job satisfaction in a more singular dimension, focusing on key factors or needs that drive satisfaction or the lack thereof. (Štikar, 2003)

### 3.3 Two-dimensional motivation model

However, modern motivational theories have evolved to recognize a range of motivational factors, both intrinsic and extrinsic. Intrinsic motivation originates from internal factors like personal interests, desires, or needs. This concept is heavily influenced by humanistic psychology, which focuses on individual experiences and inner personality factors in understanding human behavior. Abraham Maslow's hierarchy of needs is a prominent theory in this domain. It categorizes human needs into five levels: physiological, safety, social, esteem, and self-actualization (Maslow, 2021).

While widely recognized, Maslow's theory has faced criticism for its applicability across different cultures, functions, or companies. Although not a universal tool for employee motivation, it provides foundational insights into influencing human behavior. This perspective, highlighted by Donnelly and others, underscores the theory's enduring relevance in management and psychology despite its limitations (Donnelly et al., 1997).

Štikar et al. (2003) understands a two-dimensional view of job satisfaction through Herzberg's two-factor model. Herzberg distinguishes two groups of factors affecting job satisfaction – motivational and hygienic. Fulfilment of motivational factors (internal aspects) will affect employee satisfaction, while for the second group (external aspects), hygiene factors, non-fulfilment will affect dissatisfaction.

### 3.4 Factors affecting job satisfaction

According to Rymeš (in Štikar, 2003), the factors and the order of importance influencing job satisfaction depend on the circumstances, which are given by the specifics of the area of social practice

(differences in healthcare, metallurgy), the specifics of the environment and the profession, and then also the specifics of personal preferences. However, a significant part is made up of external factors, independent of the worker, and these include financial evaluation, independent work, work progress (career), leadership style (managers and management), work group (team and colleagues) and working conditions.

Spector (1985), on the other hand, elaborates influencing factors into several groups (salary, career advancement opportunities, direct supervisor, benefits, continuous evaluation, working conditions, co-workers, nature of work and communication).

## 4. Methodology

The practical aspect of the work involved the analysis of anonymized interviews, focusing on the correlation between mindset and job satisfaction. This study aimed to contribute valuable insights to the underexplored link between personal development, mindset, and job satisfaction. For the purposes of the thesis, a quantitative approach was chosen in the form of a questionnaire survey. Taking into account the time possibilities of the examined sample, a non-standardized questionnaire was created, since the absolute number of people in the examined sample was 145, a simple questionnaire was prepared, which took about 7 minutes to fill out. The research was held in a multinational environment, in 4 locations of the organization, where respondents had leadership responsibilities (shift leaders, managers, trainers). The questionnaire consisted of 4 parts, Demographic section (gender, location, role, length in position), Mindset section (standard growth mindset scale, available on Stanford University (2023) SPARQ-tools – 5 questions, 6 point scale), Job satisfaction section, based on Štikar (2003), who summarizes 6 external factors that influence job satisfaction: independent work, career, leadership style, work group (team, colleagues) and working conditions.

For the purpose of the understanding the terminology used was as follows: (job content, job condition, salary and recognition, career opportunities, leadership, peers and colleagues). Communication in the organization, as a topic, was added from foreign sources (Spector, 1997). At this section, the evaluation was held also at 6 point scale (from extremely satisfied to extremely dissatisfied). The last section focused on the personal development and the methods that are being used and preferred by individuals. The last questions was free text about all the factors that are contributing to the dissatisfaction, if any. (the part of the learning method research had not been used for this article) An applied quantitative research method was chosen, which, by its nature, enabled the necessary information to be obtained, measured and meaningfully evaluated. Methods that had been used to evaluate data:

Shapiro-Wilk test was used to check the condition of the data from a normal distribution. To monitor the reliability of the data Cronbach's alpha was used to evaluate the internal consistency of the questionnaire. To measure the tightness of linear dependence, the Pearson's correlation coefficient

is used as a parametric test under the condition of data normality. The latter can reach values in the interval  $<-1;1>$ , where the extreme values determine the absolute dependence. As a parametric analysis of variance test, ANOVA compares the mean values of quantitative variables in multiple groups. Kruskal-Wallis test for multiple independent sample, a non-parametric test was used for comparing several groups (samples) The test criterion U is the number of all cases where the values of one selection precede the values of the other selection. In this case, the hypothesis is verified by comparing the resulting P-value of the significance test with the significance level, which is usually chosen as  $\alpha = 5\%$ . However, if the P-value would exceed the established level of significance, the tested hypothesis of the same level in the groups cannot be rejected. However, if the value was exceeded, i.e. in the opposite case, then the hypothesis is rejected and the dependence of the level on the observed factor would be so (Pecáková, 2011).

**Table 1 » Mindset**

	6	5	4	3	2	1	Diameter
You have a certain amount of intelligence, and you can't really do much to change it.	12 (18.5%)	10 (15.4%)	22 (33.8%)	6 (9.2%)	9 (13.8%)	6 (9.2%)	3.88
Your intelligence is something about you that you can't change very much.	11 (16.9%)	17 (26.2%)	17 (26.2%)	8 (12.3%)	7 (10.8%)	5 (7.7%)	4.03
You can learn new things, but you can't really change your basic intelligence.	13 (20%)	13 (20%)	13 (20%)	7 (10.8%)	12 (18.5%)	7 (10.8%)	3.80
People have a certain fixed amount of management ability and they cannot do much to change it.	21 (32.3%)	11 (16.9%)	20 (30.8%)	2 (3.1%)	10 (15.4%)	1 (1.5%)	4.43
People can always substantially change their basic skills for managing other people. *	1 (1.5%)	3 (4.6%)	1 (1.5%)	22 (33.8%)	14 (21.5%)	24 (36.9%)	4.80
Scoring: strongly disagree = 6, mostly disagree = 5, disagree = 4, agree = 3, mostly agree, strongly agree = 1 *For the last question, the scoring is reversed (strongly disagree = 1, ..., strongly agree = 6).							

Source: Own research



→ 4.1 Research analysis

In total 65 respondents provided the input (44,82% of the total 145), out of the sample a fifth were woman, three quarters men and 3 preferred not to state their gender. Majority of the respondents were in management position (78,5%). Almost all of the respondents were in the position for more than a year (90,8%). The distribution of answers in the filled of mindset is shown in the table 1, where a higher score meant higher growth mindset with exception for question 5, where it was opposite. Overall, the indicated sample shown a high level of growth mindset.

The job satisfaction score is shown in table 2, as well it shown a significantly high level of satisfaction with the lowest score in Communication area. Each item was explained to the response group:

- Job content: the way you can perform your job with a certain level of autonomy

- Job conditions: working space, equipment, environment
- Salary and recognition: financial and non-financial benefits and rewards
- Career opportunities: career growth options and future in the organization, development
- Leadership: direct supervisor or manager
- Peers and colleagues: team or working group, coworkers
- Communication: the way we can speak openly and share the information, provide feedback, and are listened to

To monitor reliability, Cronbach's alpha was used, which was calculated for questions from the mindset area and also from the satisfaction area. Cronbach's alpha for determining the internal consistency of five questions from the mindset area is 0.713 and for 8 questions from the satisfaction area, 0.773, i.e., even considering the small number of questions in both cases, a relatively good data reliability result. Tables 3 and 4 provide an

Table 2 » Job satisfaction

	1	2	3	4	5	6	Diameter
Job content	0 (0%)	2 (3.1%)	0 (0%)	37 (56.9%)	15 (23.1%)	11 (16.9%)	4.51
Job conditions	0 (0%)	8 (12.3%)	3 (4.6%)	26 (40%)	13 (20%)	15 (23.1%)	4.37
Salary and recognition	0 (0%)	4 (6.2%)	0 (0%)	25 (38.5%)	19 (29.2%)	17 (26.2%)	4.69
Career opportunities	0 (0%)	7 (10.8%)	5 (7.7%)	26 (40%)	17 (26.2%)	10 (15.4%)	4.28
Leadership	1 (1.5%)	3 (4.6%)	1 (1.5%)	23 (35.4%)	13 (20%)	24 (36.9%)	4.78
Peers and colleagues	1 (1.5%)	0 (0%)	0 (0%)	32 (49.2%)	15 (23.1%)	17 (26.2%)	4.71
Communication	1 (1.5%)	5 (7.7%)	5 (7.7%)	31 (47.7%)	13 (20%)	10 (15.4%)	4.23
How satisfied are you with the job overall?	0 (0%)	2 (3.1%)	0 (0%)	34 (52.3%)	18 (27.7%)	11 (16.9%)	4.55
Scoring: extremely dissatisfied = 1, mostly dissatisfied = 2, dissatisfied = 3, satisfied = 4, mostly satisfied = 5, extremely satisfied = 6							

Source: Own research

**Table 3 » Mindset Cronbach's Alpha**

	Cronbach's Alpha
mindset	0.713
m1	0.549
m2	0.615
m3	0.571
m4	0.750
m5	0.762

Source: Own research

**Table 4 » Job satisfaction Cronbach's Alpha**

	Cronbach's Alpha
satisfaction	0.773
s1	0.769
s2	0.713
s3	0.738
s4	0.773
s5	0.712
s6	0.784
s7	0.730
s8	0.755

Source: Own research

**Table 5 » Correlation dependence between mindset and job satisfaction**

	Sig. (Test of Normality*)	Diameter	Direction. deviation	Median	Mode	Pearson Correlation**	Sig. (2-tailed)
mindset	0.054	4.19	1.009	4.0	4.0	0.135	0.284
satisfaction	0.461	4.52	0.668	4.5	more		
*Shapiro-Wilk normality test							
**Pearson correlation coefficient							

Source: Own research

overview of how the value of Cronbach's alpha would change if a given item were omitted. If the new alpha exceeds the original value, it is advisable to remove this item from the questionnaire. When evaluating the mindset area, there would be an increase in the data reliability coefficient if questions 4 and 5 were omitted. However, the increase is a maximum of 0.05, therefore the omission of the given item is not essential for increasing the reliability of the overall questionnaire. In the area of satisfaction, there would be an increase only if question 6 was omitted, but only by 0.011, so the omission of this question is not significant.

After establishing the internal consistency of the data of both areas, it was possible to average their results and consider the resulting values as a good representative of the given area. The mean value of mindset was 4.19 with a standard deviation of 1.009 and both the median (the middle value of the ordered set) and the mode (the most frequent value) are 4. The mean for the area of job satisfaction is 4.52 with a direction. with a deviation of 0.668 and a median of 4.5 or more modes. Both quantities were tested to meet the condition of normal data distribution, when this assumption applies to both (P-value of significance >0.05, so we do not reject normality) and it was possible to





*The belief that our characteristics are fixed once and for all is often referred to as a fixed mindset. A person with this attitude has an urgent need to constantly prove something, because if his intelligence, personality and moral profile is only one, it is necessary to try very hard not to lose it. Many people with a fixed mindset feel that the world around them needs to change, not them. They themselves may feel superior because those around them do not see their unique abilities.*

apply parametric tests to them. To determine the correlation dependence between them, the Pearson correlation coefficient (detailed in table 5) was used, which came out to be 0.135, which is a positive but very weak degree of correlation. According to Cohen's interpretation of the substantive significance of the coefficient, this value is in the range indicating low significance. Moreover, the coefficient is not statistically significant according to the P-value of significance ( $0.284 > 0.05$ ). So, at this point, another research question can be answered: What correlation exists between mindset and job satisfaction? There was no statistically significant correlation between mindset and job satisfaction.

## 5. Discussion

The discussion around mindset and job satisfaction reveals varied findings. While Dweck (2017) found a correlation between mindset and life achievements among students from lower-income backgrounds, no significant link was observed between mindset and job satisfaction in the business environment. This raises questions about the broader applicability of her model, especially in a multinational context like AT&T. The author's research, focusing on a voluntary sample from a multinational organization, indicates a predominant growth mindset among respondents. However, nationality factors were not considered, which could influence the results considering Dweck's research was primarily in an American context. In managerial work, mindset-related questions were

not significant for assessing job satisfaction. Instead, job satisfaction itself, influenced by areas such as communication, work content, and management, emerged as more crucial. An increase in workload is hard to modify, but improvements in communication and leadership could benefit both individuals and the organization. A 2022 study at the University of Gdańsk examined the relationship between mindset, life and work satisfaction, stress perception, and self-assessment among white-collar workers. It found a connection between mindset and satisfaction, but this weakened when stress was factored in, and increased with higher self-efficacy (Kondratowicz, Godlewska-Werner, 2022). Another study run by School of Economics and Management in China investigated the relationship of employee growth mindset and innovative behaviour, 244 employees in diverse Chinese organizations provided inputs. Even though similar scale for Mindset measure was used, there were additional aspects that contributed to positive results that proven direct interlink between mindset, strength base leadership, strengths used and innovative behaviour. The correlation between growth mindset and innovative behaviour can on the other hand encourage organization to foster and promote growth mindset among employee population. Folwarczná (2010) highlighted a shift in managerial development towards interpersonal skills training, with a global trend leaning towards on-the-job education like coaching, mentoring, and 360° feedback. This trend is expected to continue, emphasizing group



learning projects and the increasing role of HR professionals as facilitators. Finally, Vodák and Kucharčíková (2011) discussed education during economic crises, noting a trend towards cautious investment in education. They emphasized the need for personal involvement in professional growth, efficient process optimization, and improved internal communication within organizations to navigate through challenging times effectively.

## 6. Conclusion

The study provided intriguing insights into the relationship between employee mindset and job satisfaction. Contrary to initial expectations, the research found no significant correlation between

the two. However, the organization's strong growth mindset culture could stand out as a positive aspect in creating a robust and resilient work environment. Notably, despite the demanding nature of the work in the multinational company, involving shifts, rotations, and high attrition rates, employees reported high levels of job satisfaction. This indicates that factors beyond mindset significantly contribute to job contentment in challenging work environments.

The study highlights the complex interplay between mindset, job conditions, and satisfaction. It suggests that while mindset is important, other elements like organizational culture, leadership, and work environment play a crucial role in determining job satisfaction.

## REFERENCES

- [1] ARMSTRONG, M.: 2015. *Řízení lidských zdrojů: moderní pojetí a postupy*. Praha: Grada Publishing.
- [2] BEDRNOVÁ, E.: 2009. *Management osobního rozvoje: duševní hygiena, sebeřízení a efektivní životní styl*. Praha: Management Press.
- [3] DONNELLY, J. H., GIBSON, J. L., IVANCEVICH, J. M.: 1997. *Management*. Praha: Grada Publishing.
- [4] DWECK, C. S.: 2017. *Nastavení mysli: nová psychologie úspěchu, aneb naučte se využít svůj potenciál*. Brno: Jan Melvil Publishing.
- [5] DWECK, C. S.: 1999. *Self-theories: Their role in motivation, personality, and development*. Philadelphia: Psychology Press.
- [6] FOLWARCZNÁ, I.: 2010. *Rozvoj a vzdělávání manažerů*. Praha: Grada Publishing.
- [7] HAYES, N.: 2021. *Základy sociální psychologie*. Praha: Portál.
- [8] HOPPER, E.: 2020. *Attribution theory: The psychology of interpreting behavior*. [online]. [cit. 2023-12-16]. Available at: [thoughtco.com/attribution-theory-4174631](https://thoughtco.com/attribution-theory-4174631).
- [9] KONDRATOWICZ, B., GODLEWSKA-WERNER, D.: 2022. Growth mindset and life and job satisfaction: the mediatory role of stress and self-efficacy. *Health Psychology Report*, 11(2), 98–107. 10.5114/hpr/152158
- [10] KUČÍREK, J.: 2017. *Aplikovaná psychologie: vybraná témata: teleworking, leadership, sociálně psychologický výcvik*. Praha: Grada Publishing.
- [11] MASLOW, A. H.: 2021. *Motivace a osobnost*. Praha: Portál.
- [12] NAKONEČNÝ, M.: 1996. *Motivace lidského chování*. Praha: Academia.
- [13] PECÁKOVÁ, I.: 2011. *Statistika v terénních průzkumech*. Praha: Professional Publishing.
- [14] SPECTOR, P. E.: 1985. *Job satisfaction: Application, assessment, causes, and consequences*. Thousand Oaks, CA: Sage Publications.
- [15] STANFORD SPARQ.: 2023. *Growth mindset scale*. [online]. [cit. 2023-01-19]. Available at: <https://sparqtools.org/mobility-measure/growth-mindset-scale>



- [16] STERNBERG, R. J.: 2020. *Human intelligence: An introduction*. Cambridge, Cambridge University Press.
- [17] ŠTIKAR, J.: 2003. *Psychologie ve světě práce*. Praha: Nakladatelství Karolinum.
- [18] VODÁK, J., KUCHARČÍKOVÁ, A.: 2011. *Efektivní vzdělávání zaměstnanců*. Praha: Grada Publishing.
- [19] VÝROST, J., SLAMĚNÍK, I.: 1998. *Aplikovaná sociální psychologie I*. Praha: Portál.
- [20] VÝROST, J., SLAMĚNÍK, I.: 2008. *Sociální psychologie*. Praha: Grada Publishing.
- [21] YEAGER, D., DWECK, C.: 2020. What can be learned from growth mindset controversies? *American Psychologist*, 2020, 75(9), 1269–1284. 10.1037/amp0000794

## Relationship between Mindset and Job Satisfaction: Exploration in the Managerial Roles

### ABSTRACT

*This article investigates the relationship between employee mindsets (fixed and growth) and job satisfaction, with a focus on managerial roles in a remote customer support organization. Grounded in Carol Dweck's mindset theory, it adopts a quantitative methodology via survey, building on existing literature on mindset, job satisfaction, and motivation. Despite being set in a multinational context, the study presented in the article finds no significant correlation between mindset and job satisfaction, challenging assumptions that mindset alone significantly influences job contentment. Despite high job satisfaction in a demanding environment, the findings suggest that a growth mindset could foster a resilient work culture. Insights from a 2022 University of Gdańsk survey show a nuanced relationship between mindset, satisfaction, and stress, highlighting the need for a holistic view on job satisfaction. The article advocates for leadership that emphasizes adaptability, collaboration, and a human-centric approach to HR, urging organizations to focus on developing a supportive work environment and recognizing the intrinsic value of employee satisfaction for future success.*

### KEYWORDS

*Mindset; job satisfaction; self-efficacy; employee development*

### JEL CLASSIFICATION

*I31; J23; J24; M12; M53*



# Problematic aspects of the register of beneficial owners

- **Martin Pelikán** » AK Pelikán & Schelle, Černého 48, 63500 Brno, Czech Republic; email: martin.pelikan@schelle.cz
- **Andrea Pelikánová Schelle** » AK Pelikán & Schelle, Černého 48, 63500 Brno, Czech Republic; email: andrea.pelikanova@schelle.cz

## \* 1. Introduction

The aim of the following contribution is to point out selected problematic aspects of the current legislation on the registration of beneficial owners, in the context of recent decision-making practice. The method of interpretation of relevant legal regulations, practice, as well as related jurisprudence will be used. The authors here also drew on their experience with the legal regulation of the register of real owners from the past five years, when they provide legal advice in this area and at the same time continuously train the professional public, especially officials of state administrative bodies. The article is logically divided according to the individual identified problem areas.

## 2. Basic framework of the register of beneficial owners

As a part of the global fight against money laundering and terrorist financing, the European legal framework has introduced the so-called **register of beneficial ownership**, which has affected all private legal entities, as well as trusts and certain other types of legal arrangements.

In Czech law, the measures introduced in Euro-

pean framework, were dealt with Act No. 253/2008 Coll., on Certain Measures against the Legalization of Proceeds from Criminal activity and Terrorist Financing (“**AML Act**”). The AML Act has been dealing with the concept of *beneficial owner* since its entry into force on September 1<sup>st</sup> 2008. The concept of *beneficial owner* there corresponded (and still corresponds) to the meaning it has, for example in Article 4(4) of the AML Act (it is since 1<sup>st</sup> January 2018). Currently, the concept of beneficial owner under the AML Act is even broader than under RBOA (Act No. 37/2021 Coll.), as it should always include the natural person for whom the transaction is carried out.

The introduction of the **register of beneficial owners** happened with the Act No. 368/2016 Coll., amending Act No. 253/2008 Coll., on Certain Measures against the Legalization of Proceeds from Criminal activity and Terrorist Financing, as amended, and other related laws, (it is since 1<sup>st</sup> January 2018) which implemented Directive (EU) 2015/849 of the European Parliament and of the Council of 20 May 2015 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, amending Regulation (EU) No. 648/2012 of the European Parliament and of the Council, and repealing Di-



rective 2005/60/EC of the European Parliament and of the Council and Commission Directive 2006/70/EC (**“the Fourth AML Directive”**). On this basis, substantial changes have been made in the AML Act and the register of beneficial owners has been established, as provided in the new Section 118b et seq. of Act No. 304/2013 Coll., on the Public Registers of Legal and Natural Persons and on the Registration of Trusts (the **“Public Registers Act”**).

However, the definition of the beneficial owner in conjunction with the regulation of the register of beneficial owners in the Public Registers Act was not sufficient to meet the requirements of the Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU (**“the Fifth AML Directive”**). Therefore, the existing conflicting legislation has been repealed and replaced by Act No. 37/2021 Coll., on the register of beneficial owners (**“RBOA”**) in effect since June 1<sup>st</sup> 2021, which unified the substantive and procedural aspects of the registration of beneficial owners in a single piece of legislation.

The European Commission considered the Czech implementation of the beneficial owner definition (as well as some related issues) to be insufficient. Therefore, after a number of oscillations, Act No. 245/2022 Coll. (**“Amendment to RBOA”**), effective since 1<sup>st</sup> October 2022, introduced another substantial change in the definition of beneficial owner. The result was that for many (not only legal) persons arose obligations linked to the register again in a very short period of time. Whether or not we know who is to be considered a beneficial owner, the penalties for failure to comply with these obligations cannot be taken lightly.

This brief history of the register is a critique of this curious institution in its own merit. The original purpose seems sensible — it was supposed to be one of the instruments ensuring maximum

transparency of legal persons (and other legal constructs), behind which criminals often hid (and certainly continue to hide). But let us ask. Is it not excessive to demand revelation (not only) of the ownership structure from everyone? Would this not infringe privacy rights, the principle of the presumption of innocence applied throughout criminal law and other principles on which European legal systems are built? In the following text, we take a critical look at several aspects of the register of beneficial ownership, both from a broader perspective and we will also cover some selected issues.

### 3. Objectives of the directive legislation

The Fourth AML Directive proclaims in its preamble that (§ 1) *“Money laundering, terrorism financing and organised crime remain significant problems which should be addressed at Union level. In addition to further developing the criminal law approach at Union level, targeted and proportionate prevention of the use of the financial system for the purposes of money laundering and terrorist financing is indispensable and can produce complementary results.”*

While the First AML Directive defined money laundering in the context of drug-related offences and imposed obligations only on the financial sector, the Second AML Directive has broadened the scope in terms of the offences concerned and the range of professions and activities. In June 2003, the Financial Action Task Force revised its recommendations to cover terrorist financing as well. The revised recommendations also set out more detailed requirements for customer identification and verification — situations where a higher risk of money laundering or terrorist financing may justify enhanced measures, and situations where a reduced risk may justify less rigorous controls (the Third AML Directive) (preamble of fourth AML, § 3).

In its Preamble, the Fifth AML Directive emphasised the fight against terrorism, inter alia in the context of the convergence of organised crime and

terrorism. However, in the regulation of the register of beneficial owners, the Fifth AML Directive does not address this issue at all. The Directive was mainly reflected in the need to introduce sanctions for breaches of related obligations by obliged persons.

It is evident from the above-mentioned directive regulations that their essence was to combat organised criminal organisations (including terrorist ones), which seek, to legalise their substantial profits through various ‘legal’ companies, other types of legal entities and legal constructs. We do not dispute here that these activities cannot be combated by traditional criminal law means alone. However, let us briefly consider whether the register of beneficial owners constitutes an effective and, with regard to the interests of the ‘innocent’ persons concerned, proportionate means of achieving the objective.

According to Transparency International data, a total of 691 403 legal entities were subject to registration in 2022, out of a total of 782 863 entities (Transparency International, 2022a). The number of registered and unregistered trusts was missing from this analysis. Nevertheless, a well to do insight into the number of affected entities can be made. Of the number of obliged persons, 108 429 did not fulfil their legal obligation to register, of which more than half (about 57 thousand) were associations (where more than half of the total number of associations did not fulfil their registration obligation). Much of the rest of the unregistered persons were limited liability companies (about 43 thousand unfulfilled registration obligations. The number represented only 8.5% of the total number of this type of legal entity).

Exceptions from the registration obligation were available until 30<sup>th</sup> September 2022 (Section 7 of the RBOA before Amendment No. 245/2022 Coll.). For example, for trade unions, associations of housing unit owners, political parties and movements, or churches and religious organisations. However, in the opinion of the European Commission, this was too broad a scope that would remain

uncharted in the fight against criminal structures. But would anyone really launder the proceeds of crime through a housing unit-owners’ association? And even if they did (indeed, in many respects this could be imagined for political parties or trade unions), how would the data have collected help in the fight against crime? And at what cost? Is it really worth it?

Nearly eight hundred thousand Czech legal entities had to analyse, first at the end of 2017 (i.e. before 1<sup>st</sup> January 2018), then before 1<sup>st</sup> June 2021 and finally before 1<sup>st</sup> October 2022, whether the registration obligation in terms of the relevant legislation governing the registration of beneficial owners applies to them at all. Already considerable sums of money have had to be spent on legal services (and repeatedly in a very short period of time!). In the end, there were less than seven hundred thousand subjects left who were subject to the obligation to register. The numbers given, have of course varied in the light of changing legislation. The initial 800 thousand persons had to check repeatedly whether they were newly affected by these changes. Approximately 700 thousand obliged persons had to spend (often repeatedly) additional funds – both for legal services (in order of thousands to lower tens of thousands of CZK) and for court fees (typically around CZK 4 thousand).

The expenditure of funds for legal services is not often necessary. The registrant (or his/her statutory representative) could, of course, familiarise himself/herself with the relevant legal provisions. However, the legislation is relatively complicated and even a person with a law degree would have difficulty in getting an overview. The constant changes are also certainly not conducive to avoiding the intensive use of the lawyer services. However, we must point out, this is a cost that may or may not be incurred.

On the other hand, what could not have been avoided (and still cannot be avoided for some types of persons) are the mentioned court fees. These are paid, for example, in connection with



→ the establishment of a certain legal entity, which has its logic. Persons with an interest in the creation of a given legal entity pay for the administrative services of the state (and the services of other entities – for example, a notary) in connection with the establishment and creation of what they wish to will into existence. The result is usually registration in one of the public registers. But why should these founders (or entities deriving from them or otherwise related to them) pay fees to fulfil obligations that have nothing to do with their interests? If I am fulfilling registration obligations in relation to the register of beneficial owners, then in the context of the objectives of the AML Directives, I am helping the state fight organised crime. In this context, I often must spend time and money (on the aforementioned legal services) to fulfil the obligations. And on top of that, I have to pay a fee to the state? Shouldn't the state compensate me for these costs I incur? After all, the state fails here if it is unable to identify criminal structures among hundreds of thousands of honest (legal) persons.

Preserving the anonymity of the owners of certain types of legal entities, especially in the case of companies, has its importance as well as a long history. In fact, public limited companies are referred to as “*anonymous*” (e.g., *Sociedad Anónima* in Spain or *Società Anonima* in the Italian-speaking Swiss cantons, etc.) companies in many jurisdictions. The anonymous nature does not always imply an attempt to conceal some kind of unfair activity. The aim may be, for example, the fear of blackmail (including kidnapping) in the case of individuals who are owners of well-established companies. Should the interest in combating organised crime take precedence over the anonymity of persons with a certain degree of wealth? The Fifth AML Directive proclaims in its fifth Preamble paragraph that the fundamental right to the protection of personal data is to be considered when respecting and applying the principle of proportionality. This would perhaps make sense if access to the data in the register of beneficial owners were not publicly available. However, although it is not a so-

called public register (within the meaning of the Public Registers Act), anyone can access a partial extract from the register of beneficial owners via the [esm.justice.cz](http://esm.justice.cz) website, which has already been rejected by the CJEU as contrary to EU law.

In its judgment of 22<sup>nd</sup> November 2022 in the joined cases C 37/20 and C 601/20, the Court stated that public access to (even partial) extracts from the register of beneficial owners contravenes the General Data Protection Regulation (GDPR) and the Charter of Fundamental Rights of the EU. The decision has been criticized also by Transparency International, which is trying to negate it, among other things, through the forthcoming Sixth AML Directive (Transparency International, 2022b). Despite this clear conclusion, the Czech Republic has not yet reacted in any way – by changing the provisions of Section 14 of the RBOA, or by preventing access to the general public via the web portal of the register of beneficial owners. This is, with a high degree of probability, a violation of EU law, which could give rise to a potential claim for compensation for the harm caused to the persons concerned (in particular their right to privacy).

However, even if not everyone, but only a person with a so-called legitimate interest (existence of which the CJEU already admits in its decisions) would have access to the register of beneficial owners, and full access would thus be left only to a list of authorities, it would still contain 19 authorities. Furthermore, the list is only exemplary. Section 16(2) of the RBOA lists for example, courts or insolvency administrators for the purposes of (any!) legal proceedings, intelligence services, the Supreme Audit Office, public financial support providers, paying agencies, as well as anyone else the law provides for. In the latter category we can include, for example, contracting authorities for public procurement or the Office for the Protection of Competition within the meaning of Act No. 134/2016 Coll., on Public Procurement (hereinafter referred to as the “PPA”).

However long these lists of authorities/entities may be, what is important is primarily the range of

real persons who have access to the data on the beneficial owner of any given person. And there must be almost as many of them, as there are obliged (registering) persons in the Czech Republic. That is considering the number of nearly 500 thousand state employees. And here again we ignore the fact that the data is currently available to almost anyone.

One of the measures in the fight against money laundering and terrorism financing is to be, according to the Fourth and Fifth AML Directives, the register of beneficial owners. By doing so, the EU Member States have imposed quite complex obligations on their citizens operating within or through a certain legal entity or legal arrangement (in the Czech Republic, most often a trust fund), for the fulfilment of which these citizens must pay (often repeatedly) a court fee to the Member States. In this way, they reveal their sometimes well-hidden anonymity. The law-abiding citizen may still say to himself, “*So be it, it is for a higher purpose.*” But who will we be able to identify thanks to the register of beneficial owners?

#### 4. Definition of the beneficial owner

The concept of beneficial owner has undergone a complex development in the Czech legal environment. Let us set the past aside for now. The effective legislation as of January 2024 provides that a beneficial owner is “*any natural person who ultimately owns or controls a legal person or a legal arrangement (...)*” (Section 2/c RBOA). According to the explanatory memorandum to the latest amendment of the RBOA, this is the so-called substantive concept of a beneficial owner (Government of Czech Republic, 2022). The name could lead us to the conclusion that a person with real influence on the activities of a given entity, or with other decisive characteristics, will be identified. This is not the case, because the general objective is not to investigate the existence of a beneficial owner as a specific individual, but to identify a broader set of persons in a close relationship with the entity

being investigated (Hexner, 2022). This is the only way to make sense of the generally irrebuttable legal presumptions that define who is to be regarded as the beneficial owner in different types of entities and legal arrangements.

Under section 4(1) of the RBOA, for example, a corporation is ultimately owned or controlled by any natural person who, directly or indirectly through another person or legal arrangement (a) has an interest in the corporation or a share of the voting rights of more than 25%, (b) has a right to a share of profits, other resources or the liquidation balance of more than 25%, (c) exercises a determining influence in the corporation or corporations which individually or jointly have an interest in the corporation of more than 25%, or (d) exercises a determining influence in the corporation by other means. In practice, there may be a relatively large number of such persons, without necessarily having a major influence on the activities of the person in question.

The contrast between the above substantive definition of beneficial owner and the legal presumption (again of an irrebuttable nature) in the case of trusts (generally legal arrangements) will be even more pronounced. Here, the beneficial owner is always also any natural person who is its settlor, trustee, person entitled to supervise the administration of the legal arrangement and who may appoint or remove the trustee or his ward, as well as the persons in whose main interest the legal arrangement was established or is administered, if there is no ward (Section 6(3) RBOA). This is similar, for example, in the case of foundations (foundations and endowment funds). Is every person in the group of those in whose interest the trust fund is established really to be registered? For instance, if the trust fund is serving the needs of the children’s home, should we register every child at risk? Given the absurd questions that have been asked in the past about the registration of beneficial owners, it should be noted that this would not be one of the most bizarre (e.g. the question of whether a municipality has a real owner — mayor,





→ council, councillor- had to be addressed in all seriousness by experts).

The RBOA also provides that in certain cases the person of the “*beneficial owner*” should not be entered in the register, instead the “*substitute beneficial owner*” should be evidenced. It is so in the case of corporations, where no beneficial owner can be identified even after making all reasonable efforts that can be required of the registering person, and second, where a legal entity that does not have a beneficial owner under the RBOA exercises decisive influence in the corporation (Section 5(1) RBOA). Persons in top management, i.e., for example, in the case of a limited liability company, its executive officers, will be recorded. However, what is the purpose and use of such data in practice?

Doubts about the meaningfulness of entering data on beneficial owners are also raised by the legal regulation of automatic data entry into the database. Pursuant to the provisions of Section 38(4) of the RBOA as a beneficial owner of an association, a branch association, a foreign branch association, a legal persons’ interest association, an international non-governmental organisation, a community of housing unit owners, a trade union, an employers’ organisation, a district and regional chambers regulated by other statutes or a housing or social cooperative, will be automatically listed a natural person who has been entered into the public register as a member of their statutory body, a person in a similar position or a person representing a legal person in that body. Thus, in the case of such persons, the legislator considers that the most common “*beneficial owner*” of such persons are the members of their statutory body. The same presumption should be the case for other types of legal persons (See section 38(5) RBOA). Question arises, because the listed persons and information on them are already visible from the public registers. Why should the public be given the largely incomprehensible information that they are the “*beneficial owners*”?

We can conclude that the evidence of persons — the so-called beneficial owners — does not, in most

cases, lead to the identification of persons who would control the entity or legal arrangement or have other major influence. In fact, the whole concept is erroneous in itself, because if someone wants to hide something, they will simply ignore the obligations under the RBOA (and related legislation). They will make use of the so-called white horses in their place. We will hardly ever learn from the register that Pablo Escobar or Osama bin Laden is the real owner of a certain company doing business in the Czech Republic.

### 5. Sanctions under the RBO Act

In the event of non-compliance with the obligations arising from RBOA, sanctions must be mentioned. We should distinguish between public and private law sanctions. Let us start with the first category of public law sanctions.

According to the provisions of Sections 55 et seq. of the RBOA, the registering person commits an offence if they fail to ensure that any data is entered in the register of beneficial owners even within a reasonable time period as set by the court. Person also commits an offence when within 15 days of the legal validity of a decision under Section 48 of the RBOA, no new data is entered in the register of beneficial owners if the court has deleted incorrect data without replacement. Thus, to avoid incurring an offence liability, the registrant has a fairly wide time window to make corrections. The beneficial owner himself or another person through whom the legal person or legal arrangement is owned or controlled is in a slightly more difficult situation, where an offence is committed by mere failure to cooperate. That is if the court confirms so (Section 55 RBOA).

It should be noted that each of these offences is punishable by a fine of up to a maximum of CZK 500 thousand. For normally operating legal entities (especially those of a non-business nature), this is a fundamental threat that more than motivates statutory representatives to take action. However, without much doubt, it will not be a substan-

tial motivation for an entity concealing a „laundry” of dirty money originating, for example, from drug crime. Perhaps for these reasons, the legislator also introduced private sanctions. We will now leave aside sanctions of a mixed nature, which could include, for example, the obligation of the contracting authority to exclude a participant in a public procurement procedure who does not have his details entered in the register of beneficial owners, or the possibility for the contracting authority to ter-

garded as unjust enrichment within the meaning of the relevant provisions of the Civil Code. It is therefore easy to imagine, for example, a situation where a new purchaser of a share in a business corporation discovers an incorrect registration before the transaction itself (usually in the context of a prior legal audit — so-called *due diligence*), from which it will claim reimbursement of all profit shares paid out for the last up to three years after the transfer (general limitation period). This will

*On the other hand, what could not have been avoided (and still cannot be avoided for some types of persons) are the mentioned court fees. These are paid, for example, in connection with the establishment of a certain legal entity, which has its logic. Persons with an interest in the creation of a given legal entity pay for the administrative services of the state (and the services of other entities — for example, a notary) in connection with the establishment and creation of what they wish to will into existence.*

minate the public procurement contract prematurely in such cases (Sections 122 and 223 of PPA).

Let us move on to private law sanctions. Rights and obligations arising from legal acts which aim at concealing the person of the beneficial owner and which arose at a time when the beneficial owner was not registered in the register of beneficial owners, cannot be enforced (Section 52 of PPA). Nothing can be objected against these consequences. However, if the beneficial owner of a business corporation is not entered in the register of beneficial owners, that business corporation may not pay out a share of the profits, other own resources or liquidation balance to him or to a legal person or legal arrangement of which he is also the beneficial owner. The right to a share of the profits or other own resources which has not been paid out by the end of the accounting period in which the decision to pay it was taken shall be terminated (Section 53(1) and (3) RBOA).

From the above mentioned it follows, that payment of a share of profits to an unregistered, or incorrectly registered, beneficial owner must be re-

be a quite sympathetic additional “discount” on the price of the shareholding, which can often exceed this price.

Furthermore, if the beneficial owner of a business corporation is not registered in the register of beneficial owners, neither he nor a legal person or somebody who acts on behalf of a legal arrangement of which he is also the beneficial owner may exercise voting rights or make decisions as its sole shareholder in the decision-making of the supreme body of the business corporation (section 54(1) RBOA). In practice, the provision may be feared by the business partners of anyone who has failed to properly register, as major transactions (e.g., transfer of part of a plant, etc.) are usually subject to the approval of the supreme body of the business corporation. We have encountered that when concluding a contract, the joint stock company was warned about a possible incorrect entry in the register of beneficial owners (which did not correspond to the situation after the last amendment), and the deal was put on hold until this situation was corrected. This was a mere formality, which,



however, complicated an important transaction in a significant way.

The private-law sanctions resulting from Sections 52 et seq. of the RBOA therefore represent considerable complications for commercial corporations, which will be difficult to respond to in practice and therefore at a considerable cost. As the explanatory memorandum to the RBOA itself admits, this is an unusual solution in Europe. Other jurisdictions have generally made do with public law sanctions in the form of misdemeanours and criminal liability (Pihera, Ronovská, 2021).

## 6. Conclusion

The beneficial ownership registration legislation has burdened a significant number of persons with obligations that they will not be able to cope with without proper legal advice. This in turn entails the need to spend funds, further increased by the associated legal fees. The obligation to register is

not in the private interest but in the public interest. We therefore ask whether there should not be a blanket exemption from the mentioned fees for all registrants. The current definition of beneficial owner suffers from certain shortcomings, with which the authors of the legislation in question are familiar. The identification of certain types of persons as '*beneficial*' owners, especially in the case of trusts or foundations, does not make much sense. However, it follows from the directive legislation, which will probably be amended first with the intended Sixth AML Directive. Where the Czech legislator should intervene as soon as possible, is Section 14 of the AML Law, which allows access to data on beneficial owners to the general public. This contradicts the current decision-making practice of the CJEU. In the extreme cases, this contradiction with EU law could lead to claims for damages by all persons concerned for the harm caused to their privacy.

## REFERENCES

- [1] BASTLOVÁ, M., VAŠKOVÁ, A.: 2023. *Zákon o evidence skutečných majitelů (37/2021 Sb.). Praktický komentář*. Wolters Kluwer.
- [2] GOVERNMENT OF CZECH REPUBLIC.: 2020. *Důvodová zpráva (volební období 2017-2021) – 886/0 Vládní návrh zákona o evidence skutečných majitelů*.
- [3] GOVERNMENT OF CZECH REPUBLIC.: 2022. *Důvodová zpráva (volební období 2021-2025) – 248/0 Vládní návrh zákona, kterým se mění zákon o evidenci skutečných majitelů*.
- [4] HAMPEL, P, WALDER, I.: 2023. *Zákon o veřejných rejstřících právnických a fyzických osob a o evidence svěřenských fondů*. Wolters Kluwer.
- [5] HAVEL, B, ŠTENGLOVÁ, I. et al.: 2015. *Zákon o veřejných rejstřících právnických a fyzických osob, Komentář*. Praha: C.H.Beck.
- [6] HEXNER, A.: 2022. Praktický úvod do novely zákona o evidence skutečných majitelů. *Bulletin Komory daňových poradců České republiky*, (3), 46–54.
- [7] HLAVINOVÁ, M., PILÍKOVÁ, J., KUBEŠ, V.: 2022. *Zákon o některých opatřeních proti legalizaci výnosů z trestné činnosti a financování terorismu. Komentář*. Praha: C.H.Beck.
- [8] KATOLICKÁ, M., BĚREŠ, J., HLADKÁ, M.: 2021. *Zákon o některých opatřeních proti legalizaci výnosů z trestné činnosti a financování terorismu. Komentář*. Wolters Kluwer.
- [9] KRAUS, L.: 2021. *Zákon o evidence skutečných majitelů: Krok směrem k větší transparentnosti příjemců veřejných peněz*. [online]. [cit. 2021-06-30]. Available at: <https://www.pravniprostor.cz/clanky/obchodni-pravo/zakon-o-evidenci-skutecných-majitelu-krok-smerem-k-větší-transparentnosti-prijemcu-veřejných-penez>
- [10] KOSOVÁ, A.: 2021. *Zákon o evidence skutečných majitelů. Právní prostor*, [online]. [cit. 2021-06-03].

- Available at: <https://www.pravni prostor.cz/clanky/obchodni-pravo/evidence-skutecných-majitelů-zakon>
- [11] KRUPOVÁ, T.: 2021. *Nový zákon o evidence skutečných majitelů – základní přehled změn a novinek*. [online]. [cit. 2021-06-14]. Available at: <https://www.daneprolidi.cz/clanek/novy-zakon-o-evidenci-skutecných-majitelů-zakladni-prehled-zmen-a-novinek.htm>
  - [12] LAVICKÝ, P. et al.: 2015. *Zákon o zvláštních řízeních soudních. Zákon o veřejných rejstřících. Řízení nesporné – praktický komentář*. Wolters Kluwer.
  - [13] MINISTERSTVO SPRAVEDLNOSTI ČR, FINANČNÍ ANALYTICKÝ ÚTVAR.: 2023. Příručka evidování skutečných majitelů. [online]. [cit. 2023-10-13]. Available at: <https://esm.justice.cz/ias/issm/download/PriruckaSM%20k%201.7.2023.pdf>
  - [14] MOKRÝ, M.: 2021. *Hrozí nové sankce, když nezapíšete firmu do evidence*. [online]. [cit. 2021-04-30]. Available at: <https://portal.pohoda.cz/zakon-a-pravo/legislativa-pro-podnikatele/bez-zapisu-firmy-v-evidenci-skutecných-majitelů-hr/>
  - [15] PIHERA, V., RONOVSÁ, K.: 2021. Rozpaky nad evidencí skutečných majitelů. *Bulletin advokacie*, (5), 21–25.
  - [16] ROTA, I.: 2022. *Velká novella zákona č. 37/2021 Sb., o evidence skutečných majitelů*. [online]. [cit. 2022-10-13]. Available at: <https://www.ucetni-portal.cz/clanky/velka-novela-zakona-c-37-2021-sb-o-evidenci-skutecných-majitelů-2082>
  - [17] The judgment CJEU from 22nd November 2022 in the joined cases C 37/20 and C 601/20.
  - [18] TRANSPARENCY INTERNATIONAL.: 2022a. *Přes 100 tisíc právnických osob neuvádí skutečného majitele, porušuje tím zákon*. [online]. [cit. 2023-11-13]. Available at: <https://www.transparency.cz/pres-100-tisic-pravnickych-osob-neuvadi-skutecneho-majitele-porusuje-tim-zakon/>.
  - [19] TRANSPARENCY INTERNATIONAL.: 2022b. *Soudní dvůr EU zasadil ránu transparentnosti týkající se skutečných vlastníků*. [online]. [cit. 2023-11-13]. Available at: <https://www.transparency.cz/soudni-dvur-eu-zasadi-ranu-transparentnosti-tykajici-se-skutecných-vlastniků/>.

## Problematic aspects of the register of beneficial owners

### ABSTRACT

*In 2018, based on the Fourth AML Directive, a register of beneficial owners was introduced into the Czech legal system with the aim of combating the legalization of proceeds from crime and terrorist financing. The authors of the article question whether this is being done while infringing too broadly on the data protection and privacy rights of a wide range of individuals. The paper also discusses some other problematic issues of beneficial ownership registration, such as the nature of the definition of beneficial ownership for different types of legal entities and legal arrangements, the public nature of registration, as well as the conflict of the current law on beneficial ownership registration with the law of the European Union or the case law of the Court of Justice of the EU.*

### KEYWORDS

*Register of beneficial owners; registering person; beneficial owner; public register; public administration information system.*

### JEL CLASSIFICATION

*K12; K14; K32; K38; Q18*

# Improvements in income inequality — latest empirical evidence

► Petr Zimčík » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: petr.zimcik@newton.university

## 1. Introduction

★

Income inequality remains a pressing issue in the present world due to its economic, social, and political implications. Addressing this issue is crucial for fostering a more equitable and sustainable society in the modern world. Income inequality remains a crucial topic for several reasons. It's a matter of fairness and justice in a society together with equal opportunity. When a small portion of the population holds a significant portion of the overall wealth, it can lead to disparities in living standards, access to resources, and opportunities.

Extreme levels of income inequality can even negatively affect economic growth. When a big portion of the population has limited purchasing power, it can constrain aggregate demand, which is essential for economic growth. Unequal distribution of income can also lead to social issues and instability, which can further disrupt economic activities due to crime and civil unrest. Income inequality is also closely linked to disparities in health outcomes and the population's overall well-being. People with lower incomes often have limited access to education, health services, and other necessary services, leading to poorer health and reduced life expectancy compared to people with higher incomes.

The topic of income inequality is important today due to rapid technological and development changes in the world economy. Technological advancements and automation have the potential to deepen income inequality by quickening structural changes in the economy. This may displace certain types of jobs while creating opportunities for those with specialized skills. Income inequality is not just a single-nation issue but rather a global one. Differences in wealth and income between countries can lead to issues such as migration, possible conflicts, and global instability.

Hence, governments should take an active role in improving the current situation regarding income inequality. Government bodies around the world have various tools at their disposal to address income inequality. One of the options is to implement progressive taxation systems where higher-income individuals are taxed at higher rates. This can help redistribute income by collecting more revenue from those who can afford to pay more and use these financial means to fund social programs that can benefit the lowest-income individuals and families. Furthermore, implementing robust social welfare programs such as universal healthcare, education subsidies, and unemployment benefits can help reduce income inequality by providing support to those in need. For exam-

ple, Wilkinson and Pickett (2009) show a correlation between income inequality and health and social problems.

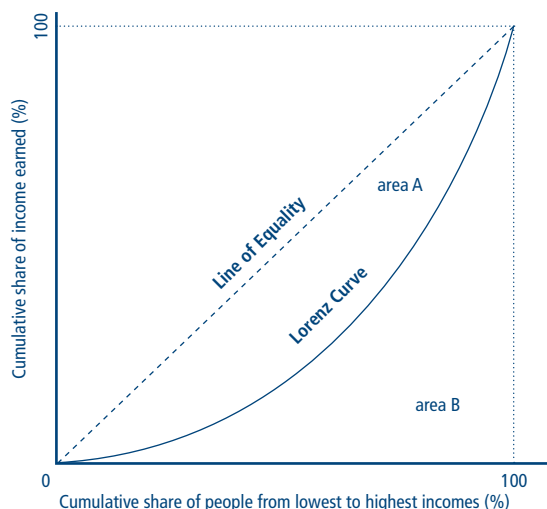
The government can also implement policies that promote equal opportunity for individuals to pursue higher incomes. Investing in education, particularly for marginalized communities, can help reduce income inequality by providing individuals with the skills and knowledge they need to access higher-paying jobs. Implementing affordable housing policies to ensure access to affordable housing can help mitigate income inequality by reducing housing costs as a proportion of income, particularly for low-income or middle-income households. Active support of job creation and provision of job training and retraining programs can downplay the labour market situation to help individuals to acquire a decent salary.

This article aims to examine the current situation regarding income inequality for both market and disposable income. It will also provide the latest empirical evidence, on how governments can help reduce income inequality using progressive taxation and social expenditures.

## 2. Measuring income inequality

To properly address the issue regarding income inequality, we need to be able to measure this phenomenon. The most used measurement is the Gini coefficient. This key indication developed by Corrado Gini, the Italian demographer and statistician, is derived from the Lorenz curve. The Lorenz curve, developed by American economist Max Otto Lorenz, is a simple and convenient method to show the distribution of income in the population based on the rank cumulative distribution of income and the number of individuals – recipients of income (Siddiq et al., 2023). The Lorenz curve constitutes a graphical representation method of income or wealth inequality that plots the cumulative percentage of total income received against the cumulative percentage of the corresponding individuals ranked in ascending order. The Gini coefficient then quantifies the level of inequality based on the ratio of the area between the Lorenz curve and the line which illustrates the perfect equality. An illustration of the Lorenz curve can be seen in Figure 1.

**Figure 1 » Illustration of the Lorenz curve**



Source: own modifications based on Siddiq et al. (2023)



The Gini coefficient is hence determined with the equation 1:

$$\text{Gini} = \frac{\text{area A}}{(\text{area A} + \text{area B})} \quad (1)$$

The Gini coefficient can take values from 0 to 1. Zero is for a hypothetical situation in which all individuals in the economy have the same income. The Lorenz curve is then identical to the line of equality. Area A is therefore zero, meaning that the Gini coefficient is zero as well. The Gini coefficient of one is for a hypothetical situation of absolute income inequality meaning that all individuals in the economy do not have any income except one individual who has an absolute income in the economy. The Lorenz curve then follows the x-axis to the right. In this situation, area B is zero and the Gini coefficient is quantified as one. For more information regarding the estimation of the Lorenz curve (Sitthiyot, Holasut, 2021).

We can distinguish two different Lorenz curves. One is for market income and the second one is for disposable income. Market income means the primary income one individual gets for his work without any deductions in the form of income tax or social security contribution. Disposable income is in simplicity a net salary. You get disposable income from market income after tax deduction and adding transfers (Kliková and Kotlán, 2019).

Based on these two Lorenz curves, we can calculate two separate Gini coefficients — one for market income and one for after-tax and transfer (dis-

posable) income. The numerical value of the difference between these two coefficients shows the impact of government policies lowering the income inequality among the population. This can be seen in Hasell (2023). This approach of two Gini coefficients is used in this study to measure government policies in pursuit of better income equality.

### 3. Current development concerning income inequality

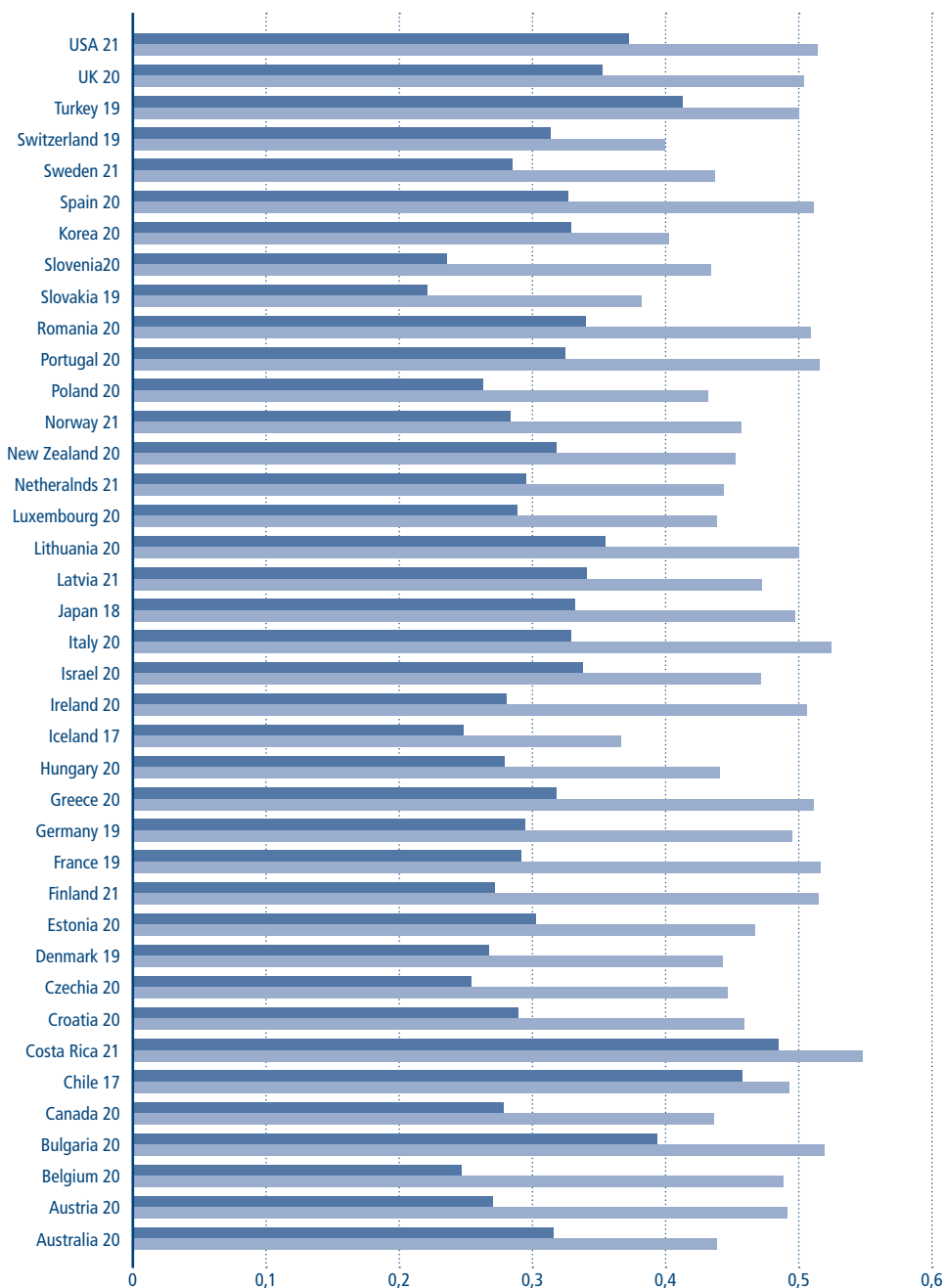
There are several reasons why income inequality is an ongoing issue, which should be addressed. We can find in the scientific literature that there are significant implications for society as the population experiences severe income inequality. Even for the most developed economies, this is still the case. Oishi et al. (2011) examined the relationship between happiness and income inequality in the USA in years from 1972 to 2008. They found that the general population was on average less happy in years with higher income inequality. Income inequality can affect even the biggest economy. Figure 2 shows the development in the USA for the last forty years.

As you can see, there is a clear trend as both indicators significantly rose for this period with slight improvement only in recent years. But income inequality is not only an issue in the USA. 35 developed countries are examined in this article. Focus is set on the current situation rather than

*To properly address the issue regarding income inequality, we need to be able to measure this phenomenon. The most used measurement is the Gini coefficient. This key indication developed by Corrado Gini, the Italian demographer and statistician, is derived from the Lorenz curve. The Lorenz curve, developed by American economist Max Otto Lorenz, is a simple and convenient method to show the distribution of income in the population based on the rank cumulative distribution of income and the number of individuals — recipients of income.*



**Figure 2 » Gini index percentage change in the USA (1972–2021)**

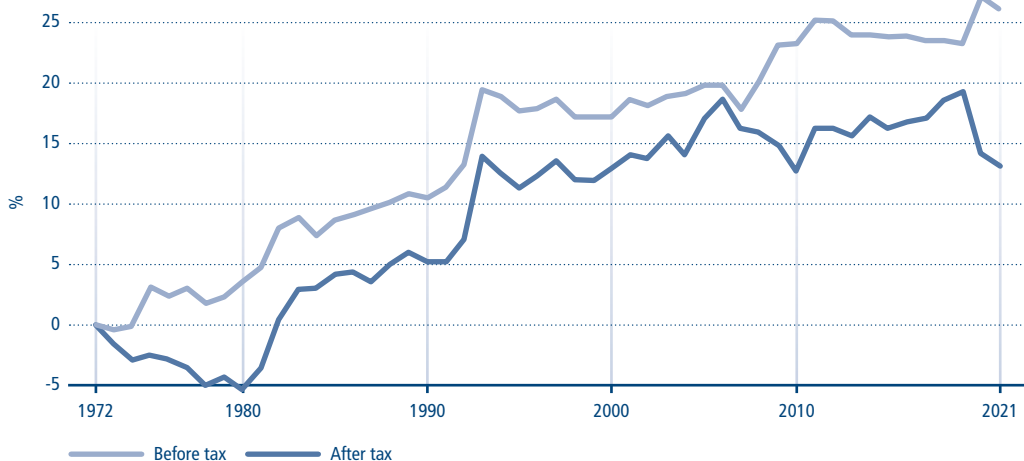


Source: Hasell (2023)

■ Gini after ■ Gini market



**Figure 3 » Gini coefficients for 35 observed economies (the specific year for these values is listed next to country designation)**



Source: Luxembourg Income Study (2023), own modification

previous development. A dataset from the Luxembourg Income Study (2023) was used to capture the current state in followed economies. Figure 3 shows Gini coefficients for market income and disposable income after taxation and transfers.

Many economies have a Gini coefficient for market income of around 0.5. Most countries affected with higher coefficients for market income have significantly lower the Gini coefficient for disposable income. This is mostly visible in Belgium, Finland, France, and Ireland (coefficient difference up to 0.245).

Countries such as Chile, Costa Rica, and South Korea are on different end of this spectrum as the difference between both coefficients is only minimal (Chile has the lowest coefficient difference, only 0.035). This study aims to find empirical evidence causing this disparity among the countries. Two main fiscal factors are checked – tax progressivity and social expenditures.

#### 4. Data and methodology

Empirical research in this article is conducted using a cross-sectional regression for 35 observed economies. A list of the economies can be found in Figure 3 and the dataset originates from the Luxembourg Income Study (2023). The dependent variable will be the difference between both Gini coefficients. This represents the impact of government policies lowering inequality from a market income perspective.

Two proxies for main government policies considered for lowering income inequality are used. Tax progressivity is quantified using the tax wedge indicator for different wage levels. The tax wedge is defined by OECD (2017): „It is the ratio between the amount of taxes paid by an average single worker (a single person at 100% of average earnings) without children and the corresponding total labour cost for the employer.”

Data for the tax wedge indicator is from OECD Statistics. To proxy income tax progressivity, the maximum available span ranges from 50 percent ( $TW_{50}$ ) to 250 percent of average earnings ( $TW_{250}$ ),

respectively. This may not capture global progressivity in each economy, but most of the population has labour income within this range. Independent variable “PROG” is then a share between these two tax wedges for different income levels, see equation 2. A similar proxy for tax progressivity is used in Zimčík (2019). Higher values for PROG mean a higher progressive scheme of income taxation.

$$\text{PROG} = \frac{TW_{250}}{TW_{50}} \quad (2)$$

The second independent variable is a proxy regarding the level of social expenditures for the population. As the Gini coefficient for disposable income (Gini after) should be also determined by the volume of transfer payments to the population, we approximate this with the share of social expenditures to GDP. This is a simplification that enables a comparison among observed economies, as real economies have transfer payments with different

attributes such as size, conditions, etc. Data for the share of social expenditures is retrieved from OECD Statistics.

Above is listed summary and explanation regarding variables used in this research. To give you an even more detailed overview of data, Table 1 contains descriptive statistics for each variable.

The next chapter contains the empirical results of the ordinary least squares (OLS) regression which was conducted with the Gretl software.

## 5. Empirical results

Before the results of the econometric analysis itself are shown, we should discuss the expected results. Empirical estimation should reveal the average effect of each of the government policies on income inequality. This study contains data from 35 developed economies. These economies differ significantly in their respective fiscal policies. The reason

**Table 1 » Descriptive statistics**

Variable	Mean	Min	Max	Label
Difference between Gini coefficients	0.162	0.035 (Chile)	0.245 (Finland)	GINI
Proxy for income tax progressivity	1.609	1.000 (Hungary)	3.402 (Israel)	PROG
Share of social expenditures to GDP	22.758	11.478 (Chile)	32.628 (Italy)	SOC

Source: Author

**Table 2 » OLS regression<sup>1</sup>**

Variable	Coefficient	t-statistics	p-value
Constant	0.0168	0.6501	0.5203
PROG	-0.0030	-0.2832	0.7789
SOC	0.0066***	5.6780	0.0000
R <sup>2</sup>		0.6117	
Cross-section units		35	

Source: Author's estimation

<sup>1</sup> GINI is the dependent variable for this regression. The number of stars next to the coefficient represents the significance level: (\*) 10%, (\*\*) 5%, and (\*\*\*) 1%. All coefficients are rounded to four decimal points. Heteroskedasticity-consistent standard errors are used to allow the fitting of a model that does contain heteroskedastic residuals.

→ for this econometric estimation is to gain more recent empirical evidence, which can be generalized for a whole spectrum of countries. The current situation is unique in each country, but we can expect that both policies (progressive income taxation and higher social expenditures) should lower income inequality.

As a dependent variable in the difference between the Gini coefficient for market income and the Gini coefficient for disposable income, we can expect a positive coefficient for both policies. A higher value for the dependent variable GINI means that there is a bigger impact on income equality. The results of the econometric estimation are presented in Table 2.

Only one estimate is statistically significant in Table 2. Variable SOC which represents social expenditures is positive and significant. Value for its coefficient can be interpreted such that economies with one percentage point higher share of social expenditures to GDP have on average the difference between both Gini coefficients higher by 0.0066. This may not seem like much but bear in mind country with the smallest difference in Gini coefficients has a value for this difference of only 0.035. Social expenditures can be considered an effective tool to lower income inequality based on this result.

The estimation result for the independent variable PROG is negative but not statistically significant with a p-value much higher than 0.10. This is a rather surprising result as income tax progressivity is supposed to have a positive effect on income inequality, such as SOC variable. An inconclusive outcome can have several explanations.

The first possible explanation is that the PROG variable is not a good proxy for income tax progressivity. There are other possible alternatives to measure tax progressivity such as the Kakwani index. Mantovani et al. (2020) showed the computation of this index for income distributions in the real world. The second explanation is also connected with the use of a tax wedge as a proxy for tax progressivity. Numerical data for the tax wedge

used was only for a single person without any children. Income tax progressivity would then be better captured with a tax wedge for the whole household (married couple with child or children) rather than only a single person. The third possible explanation is the selection of observed economies, as they may provide ambiguous results when considering averaging the impact of their respective progressive schemes of income taxation. R-squared for the estimation is 0.61 meaning that independent variables explain 61 percent of the variability in the dependent variable. This means that almost 40 percent of variability was not captured by our independent variables. This may present a challenge for future research to add other possible relevant factors that may contribute to better income equality.

## 6. Conclusion

The presented article is an empirical research paper to examine the current situation regarding income inequality and provide the latest empirical evidence, on how governments can help reduce income inequality. The latest trend regarding income inequality was observed using 35 developed economies. Many countries exhibit issues regarding market income inequality measured with the Gini coefficient.

Income inequality is a natural phenomenon as individuals have different backgrounds, skill sets, opportunities, and access to higher-paying jobs. However excess income inequality may be problematic as it creates social tension, instability, and limitations to economic processes in each country. Governments should have mechanisms in place to partly minimize the impacts of unequal incomes in the economy. Two main tools are considered in this article – income taxation progressivity and social expenditures. Both these tools of fiscal policy should in theory minimize inequality in the disposable income of individuals.

This was tested using an econometric approach. OLS regression was performed on proxies for the

two main government policies to check their impact on lowering income inequality in selected economies. Social expenditures showed a positive and statistically significant effect, which should effectively lower income inequality. Proxy for labour income progressivity used tax wedge indicator for two very different income levels (50 and 250 percent of average gross earnings). No statistically significant effect was found for this proxy. The previous chapter offers three separate possible explanations for this inconclusive result.

The topic of income inequality is rather complex, but it is still very much a current topic. Even the most developed economies have issues regarding this socio-economic phenomenon. The approach and results of this empirical study can be used as the baseline for future research to check the ability of government policies to successfully improve disposable income equality among the population.

## REFERENCES

- [1] HASELL, J.: 2023. *Income inequality before and after taxes: How much do countries redistribute income?* [online] Available at: <https://ourworldindata.org/income-inequality-before-and-after-taxes>
- [2] KLIKOVÁ, C., KOTLÁN, I.: 2019. *Hospodářská a sociální politika*. 5. vyd. Ostrava: Vysoká škola sociálně správní. 388 s. ISBN 978-80-87291-23-8
- [3] LUXEMBOURG INCOME STUDY (LIS): 1967-2021. *Database*. [online] Available at: <http://www.lis-datacenter.org>
- [4] MANTOVANI, D., PELLEGRINO, S., VERNIZZI, A.: 2020. A note on the maximum value of the Kakwani index. *Empirical Economics*, 58(2), 869–874.
- [5] OECD.: 2017. *Taxing Wages 2017*. OECD Publishing, Paris. 10.1787/tax\_wages-2017-en
- [6] OISHI, S., KESEBIR, S., DIENER, E.: 2011. Income inequality and happiness. *Psychological Science*, 22(9), 1095–1100. 10.1177/0956797611417262
- [7] SITTHIYOT, T., HOLASUT, K.: 2021. A simple method for estimating the Lorenz curve. *Humanities and Social Sciences Communications*, 8(1), 1–9.
- [8] SIDDIQ, F. K., KLYMENTIEVA, H., LEE, T. J. C.: 2023. Applying the Lorenz Curve and Gini coefficient to measure the population distribution. *International Advances in Economic Research*, 29(3), 177–192. 10.1007/s11294-023-09874-x
- [9] WILKINSON, R. G., PICKETT, K. E.: 2009. Income inequality and social dysfunction. *Annual Review of Sociology*, 35, 493–511.
- [10] ZIMČÍK, P.: 2019. Tax wedge in labour market. Proceedings of the *International Scientific Conference Economic and Social Policy: Economic and Social Challenges for European Economy*. Ostrava: Vysoká škola PRIGO, 583–593. ISBN 978-80-87291-25-2.

## Improvements in income inequality – latest empirical evidence

### ABSTRACT

*This paper aims to provide additional empirical evidence on the topic of income inequality. More specifically, to estimate how two main government policies can help to reduce income inequality. A set of cross-sectional data from 35 developed economies is used for estimation using the ordinary least squares regression. The focus is set on a comparison between Gini coefficients for market income (before taxes and transfers) and Gini coefficients for disposable income (after taxes and transfers). The main result shows the positive effect of social expenditures decreasing income inequality measured with Gini coefficients. One percentage*



- point higher share of social expenditures to GDP is on average accompanied by a 0.0066 increase gap between both Gini coefficients, effectively lowering income inequality in surveyed economies. Furthermore, based on the empirical estimation, no statistically significant impact of income tax progressivity was found. Several possible explanations for this inconclusive result are discussed in this research paper.

**KEYWORDS**

*Fiscal Policy; Gini Coefficient; Income inequality, Progressive Taxation, Social Expenditures*

**JEL CLASSIFICATION**

*C21; E25; H20; O11*



# Understanding the circular economy adoption in companies of the construction industry in Slovakia

- Patrik Richnák » Faculty of Business Management, University of Economics in Bratislava, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovakia; email: patrik.richnak@euba.sk
- Eva Hanuláková » Faculty of Commerce, University of Economics in Bratislava, Dolnozemska cesta 1, 852 35 Bratislava 5, Slovakia; email: eva.hanulakova@euba.sk

## \* 1. Introduction

The construction industry has contributed significantly to economic growth. However, the adverse environmental and social effects of construction activities have become an increasing concern in recent years. Due to the production of building materials and the direct or indirect energy used during the stages of construction, operation, and end-of-life, the construction industry is one of the main causes of environmental degradation. The construction industry is responsible for more than 39 % of global carbon emissions each year (Ansah et al., 2021; Radhi and Sharples, 2013). 50 % of emissions contributing to global warming originate from EU member states (Dimoudi and Tompa, 2008).

Since the concept of the circular economy has emerged at various levels, namely the governments, industries, and academia, resource-efficient construction has become increasingly debated globally due to the growing demand for construction materials, shortage of material supply, and growing environmental concern (Hossain et al., 2020).

In the first part of the paper, attention was paid to a comparative analysis of 33 foreign views on

the circular economy. Subsequently, in the next part of the paper, a descriptive analysis was used to present the current state of adoption of the circular economy in 63 enterprises of the construction industry in Slovakia, which represents the promotion of systemic changes of change towards a more sustainable construction environment.

## 2. Review of the Literature

Sustainability issues are highly topical and important for organisations' current and future development and competitiveness (Fidlerová et al., 2022). Particularly important and noteworthy new school of thinking in the realm of sustainable development is the circular economy. According to Murray et al. (2017), the circular economy is an economic model that maximises ecosystem functioning and human well-being through the design and management of both process and output in planning, sourcing, procurement, production, and remanufacturing.

Korhonen et al. (2018) emphasise that the circular economy is an initiative focused on sustainable development, aiming to reduce the linear flow of materials and energy in societal production-consumption systems. Murray et al. describe the circu-





lar economy as an economic model that optimises planning, resourcing, procurement, production, and reprocessing to enhance ecosystem functioning and human well-being (Murray et al., 2017). Geissdoerfer et al. (2017) characterize the circular economy as a regenerative system that minimises resource input and waste, emissions, and energy leakage by slowing, closing, and narrowing material and energy loops.

According to Gupta et al. (2019), the idea of a circular economy signifies a paradigm shift in corporate management. This idea evolved to replace the conventional “produce, use, and dispose” linear model with a more regenerative and sustainable strategy (Blomsma et al. 2019). Closed manufacturing systems are the main goal of a circular economy. Actually, waste is reduced and recycled continuously, and resources are used effectively (Ghisellini et al. 2016).

The concept of the circular economy has evolved into a major paradigm change in the way that human society interacts with the natural environment, according to Geissdoerfer et al. (2017). The circular model cannot be realised without circular and regenerative environmental innovation in the ways that society produces, consumes, and makes laws. The four emerging components of sustainability are (Kristensen and Mosgaard, 2020): reusing energy and resources; minimising resource demand; recovering value from waste (i.e., reuse, reduce, and recycle); the need for a multi-level (micro, meso, and macro) approach; and its significance as a means of achieving sustainable development.

The circular economy concept was first described as an industrial system that is restorative or regenerative by intention and design by the Ellen MacArthur Foundation, and it was later expanded to include a new way to design, make, and use things within planetary boundaries (Ellen MacArthur Foundation, 2015). The linear economy model, or make-use-dispose, must give way to a circular economy model since the former is linked to mass production and resource consumption with-

out consideration for the physical limits of resources.

An economic model that aims to minimise waste, retain long-term value, reduce the use of primary resources, and create closed loops for products, product parts, and materials while maintaining environmental protection and socio-economic benefits is known as a circular economy. While distancing economic growth from the detrimental effects of resource depletion and environmental degradation, the circular economy has the ability to promote sustainable development (Babbitt et al., 2018; Hofmann, 2019).

According to Prieto-Sandoval et al. (2018), the circular economy is changing the conventional linear business model to a circular one that uses the reduce, reuse, and recycle principles for design, procurement, production, consumption, and recovery. Unlike the linear economy model, which is predicated on the take-make-consume-throw principles, the circular economy is a model of production and consumption that incorporates the reuse, repair, renewal, and recycling of materials as much as feasible, hence extending these materials' life cycle. Reusing and recycling materials to create extra value keeps them in the economy, hence in practice the circular economy minimises waste (Morseletto, 2020).

According to Chauhan et al. (2022) and Martínez Leal et al. (2020), the circular economy is a mode of production and consumption that follows the four essential principles of reduction, reuse, recycling, and recovery of existing resources and products. Therefore, a regenerative economy that harvests resources for subsequent use in order to reduce waste and recycle it back into production processes is what is meant to be understood by the circular economy (Mazur-Wierzbicka, 2021; Ritzén and Sandström, 2017).

According to Lazarevic and Valve (2017), the goal of the circular economy is to create complete circles of slow material flows, encourage a shift in focus from consumers to users, and make it possible to separate resource use and environmental im-

pect from economic growth. In line with this, circular business models aim to lower expenses, boost profits, control risks, and open up opportunities for the financial industry to support the shift to sustainability (Ellen MacArthur Foundation, 2020).

Three fundamental design-driven concepts must be implemented in order to become a circular economy: Maintain and improve natural capital by regulating limited supplies and achieving equilibrium in the flow of renewable resources. Maximise resource yields by keeping goods, parts, and materials in circulation that are always most useful in both technical and biological cycles. Enable system efficacy by identifying and eliminating detrimental externalities (Ellen Macarthur Foundation, 2015).

The construction industry plays a key role in the transition to a circular economy due to its high resource intensity. The construction industry is one that has a big impact on the economy and the environment (Zuo and Zhao, 2014). This industry, which also meets people's needs for infrastructure and buildings and generates 18 million direct jobs in the EU in addition to indirect employment opportunities, contributes approximately 9 % of the GDP of the EU (Zhao et al., 2018). According to Al-louhi et al. (2016), this industry is responsible for 39 % of emissions connected to energy-related and acid rain-related processes and agents. If greenhouse gas emissions continue at their current rate, problematic situations will surely occur. As a result, this sector ought to play a significant role in

any programmes related to global climate change and greener manufacturing (Geng et al., 2017; Wu et al., 2014).

### 3. Methodology

The aim of the paper is to present how to transform the construction industry in Slovakia through a circular economy to become more sustainable from a social, economic and especially environmental point of view. The paper deals not only with theoretical concepts regarding the circular economy but also with the evaluation of quantitative research conducted among construction industry companies in Slovakia.

In the construction of the conceptual framework, the analysis, synthesis, and comparison of the conceptual framework from foreign scientific sources from recent years, which are in international databases, were used. Interpretation of the researched theme from the practical perspective was realised on the basis of the evaluation of the questionnaire survey. Data collection was carried out in the period during the year 2023 by using an electronic standardised questionnaire. The questionnaire was distributed among construction managers through email addresses.

The companies have been categorised according to size on the basis of the European Commission Directive 2003/361/EC, which classifies micro companies (1–9 employees), small companies (10–49 employees), medium-sized companies (50–249 employees) and large companies ( $\geq 250$

*The circular economy concept was first described as an industrial system that is restorative or regenerative by intention and design by the Ellen MacArthur Foundation, and it was later expanded to include a new way to design, make, and use things within planetary boundaries. The linear economy model, or make-use-dispose, must give way to a circular economy model since the former is linked to mass production and resource consumption without consideration for the physical limits of resources.*

employees). The subject of the research in the present paper were 63 construction companies located in the Slovak Republic.

The questionnaire study involved 61.90 % of medium-sized companies, 20.64 % of large companies, 12.70 % of small companies and 4.76 % of micro companies. According to the legal form of business, construction companies in Slovakia were almost evenly distributed in the research. The companies which indicated the legal form of a joint stock company obtained a share of 50.79 % and the companies which indicated the legal form of a limited liability company obtained a share of 49.21 %. According to the geographical location, construction companies in the Bratislava Region were represented with a significant percentage share (47.62 %). The participation of companies from the Nitra Region was at the level of 14.29 %. The construction companies from the Žilina Region were represented with a share of 11.11 %. The questioned companies were further represented in the following order: Košice Region (9.52 %), Trenčín Region (7.94 %), Banská Bystrica Region (4.76 %), Trnava Region (3.17 %). The lowest num-

ber of respondents participated from the Prešov Region. This region was represented in the research by construction enterprises with a share of 1.59 %.

#### 4. Findings

This part of the paper evaluates selected key findings related to the implementation of the circular economy in the construction industry in Slovakia. The results of the analysis are presented through frequency analysis. From the responses we came to know that 52.38 % of the respondents have fairly good awareness about circular economy. 26.98 % of construction industry enterprises in Slovakia have little awareness about circular economy. Respondents with 17.46 % said that they have a very good awareness of the circular economy. Only 3.17 % of the respondent enterprises expressed that they have no awareness of circular economy.

Respondents' answers revealed that 49.21 % of the companies surveyed apply circular economy principles at a moderate level. 36.51 % of the companies surveyed apply circular economy principles

**Table 1 » Level of awareness of the circular economy**

Possibility	Absolute Frequency	Relative Frequency
Very good awareness of the circular economy	11	17.46 %
Fairly good awareness of the circular economy	33	52.38 %
Little awareness of the circular economy	17	26.98 %
No awareness of circular economy	2	3.17 %

Source: own elaboration

**Table 2 » Opinion on the application of the principles of the circular economy**

Possibility	Absolute Frequency	Relative Frequency
At a very good level	7	11.11 %
At a good level	23	36.51 %
At a moderate level	31	49.21 %
We do not plan to implement	2	3.17 %

Source: own elaboration

**Table 3 » Barriers to the implementation of circular economy principles**

Possibility	Absolute Frequency	Relative Frequency
Lack of information on the benefits of implementing circular economy principles in the company	17	26.98 %
Not enough time to implement circular economy principles in the company	11	17.46 %
Company processes to be changed on the basis of circular economy principles are not defined	14	22.22 %
There is no budget to implement circular economy principles in the company	21	33.33 %

Source: own elaboration

**Table 4 » Willingness to participate in collaborative initiatives with other construction industry participants to promote the principles of the circular economy**

Possibility	Absolute Frequency	Relative Frequency
Very willing	9	14.29 %
Willing	29	46.03 %
Moderately willing to participate	21	33.33 %
Not willing to participate	4	6.35 %

Source: own elaboration

at a good level in the construction industry. In the construction industry companies in Slovakia, 11.11 % respondents apply circular economy principles at a very good level. Only 3.17 % of the companies surveyed do not plan to implement any circular economy principles.

We asked the sample of respondents what barriers they had encountered in implementing circular economy principles. With the highest percentage (33.33 %), respondents were inclined to the view that there is no budget available to implement circular economy principles in the company. A high percentage (26.98 %) for construction companies in Slovakia also had the opinion that there is a lack of information on the benefits of implementing circular economy principles in the company. The construction companies with a share of 22.22 % pointed out that there is no defined processes in the company to be changed based on circular economy principles. Lack of time to implement cir-

cular economy principles in the construction company was indicated by 17.46 % of the respondents.

The frequency analysis shows that 46.03 % of respondents are willing to participate in collaborative initiatives with other construction industry participants to promote circular economy principles. The results summarised in Table 4 show that 33.33 % of construction companies in Slovakia are moderately willing to participate in collaborative initiatives with other construction industry participants to promote circular economy principles. 14.29 % of construction companies are very willing to cooperate with each other to develop a circular economy. The data summarised in the table shows that only 6.35 % of the companies surveyed are not willing to participate in the development of cooperation to promote the circular economy.

Table 5 summarises the results of the frequency analysis regarding the benefits of implementing circular economy principles in the companies of



**Table 5 » Benefits from implementing circular economy principles**

Possibility	Absolute Frequency	Relative Frequency
Reducing the amount of waste produced	10	15.87 %
Reduction of costs through efficient use of resources	14	22.23 %
Improving the environmental performance of the company	6	9.52 %
Extends the life of building materials and components	11	17.46 %
Development of new construction technologies, materials and methods	13	20.63 %
Incorporating renewable or recycled materials can increase a company's resilience to supply chain disruptions	9	14.29 %

Source: own elaboration

**Table 6 » Key priorities for the development of circular economy principles**

Possibility	Absolute Frequency	Relative Frequency
Increase investment in research and development of circular technologies and materials in construction	8	12.70 %
Strengthening collaboration with suppliers and partners across the construction supply chain	10	15.87 %
Tax incentives for the use of recycled materials	15	23.81 %
Development and promotion of standards and certification systems for circular construction practices	12	19.05 %
Subsidies for construction projects based on circular economy principles	18	28.57 %

Source: own elaboration

the construction industry in Slovakia. The most preferred benefit (22.23 %) for the respondents is cost reduction due to efficient use of resources. Respondents also prefer the development of new construction technologies, materials and methods as a benefit with a high proportion (20.63 %). Extending the life of building materials and components is a benefit for 17.46 % of respondents. For 15.87 % of the participants, the benefit of introducing circular economy principles is the reduction of the amount of waste produced. Companies from the construction industry in Slovakia consider that the least important benefit of incorporating renewable or recycled materials can make the company more resilient to supply chain disruptions (14.29 %) and

improve the company's environmental performance (9.52 %).

The most preferred key priority for the development of circular economy principles among respondents was subsidies for construction projects based on circular economy principles (28.57 %). A high percentage (23.81 %) was also recorded for tax incentives for the use of recycled materials. The development and promotion of standards and certification systems for circular construction practices was considered a key priority by 19.05 % of the companies surveyed. Respondents indicated that strengthening collaboration with suppliers and partners throughout the construction supply chain is key for them with a share of 15.87 %. The

lowest number of respondents (12.70 %) consider it key to increase investment in research and development of circular technologies and materials in the construction industry.

Subsequently, through a non-parametric Spearman's correlation test, we tested the relationship between strengthening collaboration with suppliers and partners across the construction supply chain and incorporating renewable or recycled materials can increase a company's resilience to supply chain disruptions.

The results of the test are presented in Table 7. Based on the summary of the testing, we find that there is a moderately significant relationship between strengthening collaboration with suppliers and partners across the construction supply chain and incorporating renewable or recycled materials by which a company can increase its resilience to supply chain disruption ( $r = 0.321$ ;  $p < 0.05$ ).

We also examined, through a non-parametric

**Table 7 » Evaluation of Spearman's correlation test**

Spearman's rho	Strengthening collaboration with suppliers and partners across the construction supply chain	Incorporating renewable or recycled materials can increase a company's resilience to supply chain disruptions
Strengthening collaboration with suppliers and partners across the construction supply chain	Correlation Coefficient	1.000
	Sig. (2-tailed)	.
	N	63
Incorporating renewable or recycled materials can increase a company's resilience to supply chain disruptions	Correlation Coefficient	0.321
	Sig. (2-tailed)	0.010
	N	63

Source: own elaboration

**Table 8 » Evaluation of Pearson Chi-Square test**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	52.601	36	0.036
Likelihood Ratio	53.792	36	0.029
Linear-by-Linear Association	4.924	1	0.026
N of Valid Cases	63		

Source: own elaboration

**Table 9 » Evaluating the strength of association through coefficients**

Symmetric Measures		Value	Approx. Sig
Nominal by Nominal	Phi	0.914	0.036
	Cramer's V	0.373	0.036
N of Valid Cases		63	

Source: own elaboration



→ Pearson Chi-Square test, the relationship between the increase in investment in research and development of circular technologies and materials in the construction and the development of new construction technologies, materials and methods. The test results in Table 8 showed that the tested relationship was confirmed at the significance level of  $\alpha = 0.05$  ( $\chi^2(36) = 52.601$ ;  $p = 0.036$ ).

Subsequently, the strength of association was performed through Phi and Cramer's coefficient. The results are presented in Table 9. From the results, we conclude that Phi coefficient indicates a strong relationship (0.914) and the Cramer's coefficient indicates a moderately strong relationship (0.373).

## 5. Discussion and Conclusions

The construction industry plays a key role in the transition to a circular economy due to its high resource intensity. The construction industry is responsible for more than 30 % of natural resource extraction as well as 25 % of the solid waste generated in the world. In recent years, there has been a paradigm shift in the construction industry as a whole, with the adoption of a circular economy model that aims to keep materials in a closed cycle to retain their maximum value, and therefore with greater potential to reduce waste generation and resource extraction for the entire construction industry (Fritz Benachio et al., 2020).

Pasquale (2019) suggests the following innovative approaches to help the construction industry become more circular. He includes:

- New materials: the use of concrete in construction is very polluting. New, less toxic and more easily recyclable substitutes need to be designed. Various biodegradable materials such as hemp and mycelium are currently being tested. The same applies to other unsustainable building materials such as sand.
- New Building Design: Designing buildings using natural, biodegradable resources such as straw, soil and bamboo as base materials will al-

low the construction industry to move away from unsustainable materials such as concrete.

- New construction methods: New construction methods that use modular building elements that can be reused multiple times will allow easier reuse and reduce energy consumption during construction.
- New ways of managing waste: Separation, logistical management and recycling of materials can be streamlined and improved with technology designed to facilitate access to on-demand collection and clear waste diversion indicators at all stages of the construction or demolition process.
- New legislation: the government needs to start creating new laws that encourage and subsidise these innovations.

The following paragraph the primary benefits of the circular economy for the building industry:

- Environmental: Reusing and recycling garbage restricts the amount of natural resources used, minimises disturbance of the landscape and habitats, prevents the loss of biological variety, and lowers annual CO<sub>2</sub> emissions (Kra and Mahler, 2020).
- Diminished reliance on raw materials: Some EU nations are reliant on imports due to the restricted availability of vital raw commodities. Raw material recycling lowers supply-side concerns.
- Diminution of greenhouse gas emissions: One of the most economical approaches to reduce greenhouse gas emissions is to decarbonise the building industry. Zero emissions are achievable with energy-efficient structures. Reducing the carbon footprint of buildings and construction requires addressing carbon emissions associated with construction (Norouzi et al., 2021).

Within the selected aggregated responses regarding the understanding of the adoption of the circular economy in companies in the construction industry in Slovakia, we found that the largest percentage of medium-sized companies participated in the research. According to the legal form of the



enterprise, joint stock companies were the most represented. According to the territorial division of the Slovak Republic, companies from the Bratislava Region dominated. More than half of the respondents have a fairly good awareness of the circular economy. Almost half of the companies surveyed in the construction industry in Slovakia implement the principles of the circular economy at a moderate level. With the highest percentage, respondents were inclined to the view that there is no budget available to implement circular economy principles in the company. Almost half of the respondents are willing to participate in collaborative initiatives with other construction industry players to promote circular economy principles. The most preferred key priority for the development of circular economy principles among respondents was subsidies for construction projects based on circular economy principles. Through the non-parametric Spearman's correlation test, the relationship between strengthening collaboration with suppliers and partners across the construction supply chain and incorporating renewable or recycled materials by which a company can increase its resilience to supply chain disruption.

Through a non-parametric Pearson's Chi-Square test, the relationship between the increase in investment in research and development of circular technologies and materials in construction and the development of new construction technologies, materials and methods was confirmed.

Based on the conceptual framework and quantitative research, we can conclude that the introduction of the circular economy in the construction industry in Slovakia holds great promise for promoting sustainable development and mitigating environmental degradation. By rethinking traditional linear practices such as take-make-dispose and adopting the principles of reduce, reuse and recycle, stakeholders in the construction sector can not only minimise waste generation but also unlock significant economic opportunities.

### Acknowledgement

The paper is a partial output of VEGA No. 1/0354/22 research project titled "Consumer Neuroscience – Innovative Approach to Optimizing Sustainable Business and Marketing Performance Based on Modern Intelligent Systems".

### REFERENCES

- [1] ALLOUHI, A., EL FOUHI, Y., KOUSKSOU, T., JAMIL, A., ZERAOULI, Y., MOURAD, Y.: 2015. Energy consumption and efficiency in buildings: current status and future trends. *Journal of Cleaner Production*, 109, 118–130. 10.1016/j.jclepro.2015.05.139
- [2] ANSAH, M. K., CHEN, X., YANG, H., LU, L., LAM, P. T.I.: 2021. Developing an automated BIM-based life cycle assessment approach for modularly designed high-rise buildings. *Environmental Impact Assessment Review*, 90, 1–16. 10.1016/j.eiar.2021.106618
- [3] BABBITT, C. W., GAUSTAD, G., FISHER, A., CHEN, W.-Q., LIU, G.: 2018. Closing the loop on circular economy research: From theory to practice and back again. *Resources, Conservation and Recycling*, 135, 1–2. 10.1016/j.resconrec.2018.04.012
- [4] BLOMSMA, F., PIERONI, M., KRAVCHENKO, M., PIGOSSO, D. C. A., HILDENBRAND, J., KRISTINS-DOTTIR, A. R., KRISTOFFERSEN, E., SHAHBAZI, S., NIELSEN, K. D., JÖNBRINK, A.-K., LI, J., WIIK, C., MCALOONE, T. C.: 2019. Developing a circular strategies framework for manufacturing companies to support circular economy-oriented innovation. *Journal of Cleaner Production*, 241, 1–17. 10.1016/j.jclepro.2019.118271
- [5] CHAUHAN, CH., PARIDA, V., DHIR, A.: 2022. Linking circular economy and digitalisation technologies: A systematic literature review of past achievements and future promises. *Technological Forecasting and Social Change*, 177, 1–18. 10.1016/j.techfore.2022.121508



- [6] DIMOUDI, A., TOMPA, C.: 2008. Energy and environmental indicators related to construction of office buildings. *Resources, Conservation and Recycling*, 53(1–2), 86–95. 10.1016/j.resconrec.2008.09.008
- [7] Ellen MacArthur Foundation.: 2020. *Strategic partners*. [online]. [cit. 2024-02-06]. Available at: <https://www.ellenmacarthurfoundation.org/our-story/our-network>
- [8] Ellen MacArthur Foundation.: 2015. *Delivering the circular economy – a toolkit for policy makers*. [online]. [cit. 2024-02-06]. Available at: <https://www.ellenmacarthurfoundation.org/a-toolkit-for-policy-makers>
- [9] FIDLEROVÁ, H., STAREČEK, A., VRAŇAKOVÁ, N., BULUT, C., KEANEY, M.: 2022. Sustainable entrepreneurship for business opportunity recognition: Analysis of an awareness questionnaire among organisations. *Energies*, 15(3), 1–15. 10.3390/en15030849
- [10] FRITZ BENACHIO, G. L., FREITAS, M. do C. D., TAVARES, S. F.: 2020. Circular economy in the construction industry: A systematic literature review. *Journal of Cleaner Production*, 260, 1–17. 10.1016/j.jclepro.2020.121046
- [11] GEISSDOERFER, M., SAVAGET, P., BOCKEN, N. M. P., HULTINK, E. J.: 2017. The Circular Economy – a New Sustainability paradigm? *Journal of Cleaner Production*, 143(143), 757–768. 10.1016/j.jclepro.2016.12.048
- [12] GENG, S., WANG, Y., ZUO, J., ZHOU, Z., DU, H., MAO, G.: 2017. Building life cycle assessment research: A review by bibliometric analysis. *Renewable and Sustainable Energy Reviews*, 76, 176–184. 10.1016/j.rser.2017.03.068
- [13] GHISELLINI, P., CIALANI, C., ULGIATI, S.: 2016. A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner Production*, 114, 11–32. 10.1016/j.jclepro.2015.09.007
- [14] GUPTA, S., CHEN, H., HAZEN, B. T., KAUR, S., SANTIBÁÑEZ GONZALEZ, E. D. R.: 2019. Circular economy and big data analytics: A stakeholder perspective. *Technological Forecasting and Social Change*, 144, 466–474. 10.1016/j.techfore.2018.06.030
- [15] HOFMANN, F.: 2019. Circular business models: Business approach as driver or obstructer of sustainability transitions? *Journal of Cleaner Production*, 224, 361–374. 10.1016/j.jclepro.2019.03.115
- [16] HOSSAIN, Md. U., NG, S. T., ANTWI-AFARI, P., AMOR, B.: 2020. Circular economy and the construction industry: Existing trends, challenges and prospective framework for sustainable construction. *Renewable and Sustainable Energy Reviews*, 130, 1–15. 10.1016/j.rser.2020.109948
- [17] KORHONEN, J., HONKASALO, A., SEPPÄLÄ, J.: 2018. Circular economy: The concept and its limitations. *Ecological Economics*, 143(1), 37–46. 10.1016/j.ecolecon.2017.06.041
- [18] KRA, N., MAHLER, C. F.: 2020. Comparison of construction and demolition waste management between Brazil, European Union and USA. *Waste Management & Research*, 38(4), 415–422. 10.1177/0734242x20902814
- [19] KRISTENSEN, H. S., MOSGAARD, M. A.: 2020. A review of micro level indicators for a circular economy – moving away from the three dimensions of sustainability? *Journal of Cleaner Production*, 243, 1–20. 10.1016/j.jclepro.2019.118531
- [20] LAZAREVIC, D., VALVE, H.: 2017. Narrating expectations for the circular economy: Towards a common and contested European transition. *Energy Research & Social Science*, 31, 60–69. 10.1016/j.erss.2017.05.006.
- [21] MARTÍNEZ LEAL, J., POMPIDOU, S., CHARBUILLET, C., PERRY, N.: 2020. Design for and from recycling: A circular ecodesign approach to improve the circular economy. *Sustainability*, 12(23), 1–30. 10.3390/su12239861

- [22] MAZUR-WIERZBICKA, E.: 2021. Towards circular economy – A comparative analysis of the countries of the European Union. *Resources*, 10(5), 1–25. 10.3390/resources10050049
- [23] MORSELETTI, P.: 2020. Targets for a circular economy. *Resources, Conservation and Recycling*, 153, 1–12. 10.1016/j.resconrec.2019.104553
- [24] MURRAY, A., SKENE, K., HAYNES, K.: 2017. The circular economy: An interdisciplinary exploration of the concept and application in a global context. *Journal of Business Ethics*, 140(3), 369–380. 10.1007/s10551-015-2693-2
- [25] NOROUZI, M., CHÄFER, M., CABEZA, L. F., JIMÉNEZ, L., BOER, D.: 2021. Circular economy in the building and construction sector: A scientific evolution analysis. *Journal of Building Engineering*, 44(1), 1–18. <https://doi.org/10.1016/j.job.2021.102704>
- [26] PASQUALE, A.: 2019. *Creating a circular economy for the construction industry*. [online]. [cit. 2024-02-06]. Available at: <https://www.greenbuildingadvisor.com/article/creating-a-circular-economy-for-the-construction-industry>
- [27] PRIETO-SANDOVAL, V., JACA, C., ORMAZABAL, M.: 2018. Towards a consensus on the circular economy. *Journal of Cleaner Production*, 179, 605–615. 10.1016/j.jclepro.2017.12.224
- [28] RADHI, H., SHARPLES, S.: 2013. Global warming implications of facade parameters: A life cycle assessment of residential buildings in Bahrain. *Environmental Impact Assessment Review*, 38, 99–108. 10.1016/j.eiar.2012.06.009
- [29] RITZÉN, S., SANDSTRÖM, G. Ö.: 2017. Barriers to the Circular Economy – Integration of Perspectives and Domains. *Procedia CIRP*, 64, 7–12. 10.1016/j.procir.2017.03.005
- [30] WU, P., XIA, B., ZHAO, X.: 2014. The importance of use and end-of-life phases to the life cycle greenhouse gas (GHG) emissions of concrete – A review. *Renewable and Sustainable Energy Reviews*, 37, 360–369. 10.1016/j.rser.2014.04.070
- [31] ZHAO, X., ZUO, J., WU, G., HUANG, C.: 2018. A bibliometric review of green building research 2000–2016. *Architectural Science Review*, 62(1), 74–88. 10.1080/00038628.2018.1485548
- [32] ZUO, J., ZHAO, Z.-Y.: 2014. Green building research–current status and future agenda: A review. *Renewable and Sustainable Energy Reviews*, 30(1), 271–281. 10.1016/j.rser.2013.10.021

## Understanding the Circular Economy Adoption in Companies of the Construction Industry in Slovakia

### ABSTRACT

The paper presents a thorough examination of the adoption of the circular economy in the construction industry in Slovakia. Against the background of global sustainability imperatives, the role of the construction industry in resource consumption and waste generation is becoming paramount. The intention of the paper will be to provide an insight into the transformation of the construction industry in Slovakia through the circular economy to make it more sustainable from a social, economic and especially environmental perspective. The object of the research was 63 companies in the construction industry from Slovakia. The following research methods were used in the preparation of the paper: literature review, comparative analysis, system analysis, frequency analysis and research conducted through a questionnaire. The paper examines the state of awareness of the circular economy of construction companies. Also, whether construction companies implement the principles of circular economy. At the same time, the paper identifies the barriers, benefits and key priorities for the development of circular economy principles in the construction industry in Slovakia. Furthermore, whether construction companies in Slovakia are willing to participate in collaborative initia-



→ *tives with other construction industry actors to promote circular economy principles. In essence, embracing the circular economy principles offers a transformative pathway for the construction industry to reconcile economic growth with environmental stewardship.*

**KEYWORDS**

*Circular economy; Sustainability; Sustainable development; Construction*

**JEL CLASSIFICATION**

*L70; M21; O13; Q55*



# Strategy development: case of business practice

- ▶ **Martin Cenek** » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic; email: martin.cenek@newton.university
- ▶ **Petr Mikuš** » Department of Business Management, Faculty of Economics and Administration, Masaryk University, Lipová 507/41a, 602 00 Brno, Czech Republic; mail: pierre@seznam.cz
- ▶ **Jaroslav Dugas** » Department of Economics and Management, Faculty of Business Economics of the University of Economics in Bratislava with seat in Košice, Tajovského 13, 041 30 Košice, Slovakia; email: jaroslavdugas@gmail.com

## \* 1. Introduction

The business environment places ever new demands on strategic case solvers in the form of the need to deal with new problems, answer previously unasked questions and deal with often highly dynamic impulses. In this respect, strategic management is the most challenging and cyclical process that needs to be managed responsibly in an enterprise. Somewhat paradoxically then, it may seem that the top management of domestic companies is very often not adequately equipped for strategic management (for a closer look see Jirásek, 2003; Wright, 2013, Johnson, 2014), whether it is the level of knowledge attained or the application of appropriate tools compatible with the current conditions.

The application of game theory to strategic management of the firm is a long-standing topic, whether it is: to formulate overarching approaches (Amason, Ward, 2020) firmly implemented in the strategy formulation process and/or to address sub-issues in the context of specific strategic cases, e.g., to frame the interactions between the market leader and followers (Stein, 2023), to determine an appropriate strategy for sharing additional costs

within the stakeholder network of industrial firms (Yazan et al, 2020), the development of a systemic cooperative game theory approach to value analysis (Granstrand, 2024), or the design of a theory of “collectively desirable” value according to an agent-based model of synthesizing the perspectives of enterprise stakeholders (e.g. Rindova and Martins, 2023).

In the application of game theory in strategic enterprise management, this researcher is commonly concerned with the concrete elaboration of applications related to real enterprise conditions (Částek, 2005), i.e., in the concept analogously applied in this paper. The subject of the methodological proposals are such facts as the decision maker's relationship to risk, information overload, problem framing, anchoring, value assignment, the status quo, estimates and forecasts (Švecová et al., 2012), while the specifics of strategic enterprise management provide a wide range of potential applications.

## 2. Methodology

The history of game theory can be defined as evolutionary rather than revolutionary. Aumann (2024) →

defines a particular development as consisting in an ever-increasing range of contexts that led to a reworking of the theory so that it could be applied to problems for which its application initially seemed inappropriate (e.g., Harsanyi's work on games with incomplete information, extensions from applications to perfect information to imperfect information, from strategic to extensive forms of play, from zero-sum to nonzero-sum, etc.). This paper contributes another tiny piece to the evolution of the great work of developing strategic management based on systematic reasoning using game theory.

The aim of the paper is to propose a methodology for solving key decision situations of strategic corporate management using game theory in the form of an applied tool, within the intersection of methodological, formal mathematical, and simulation approaches. The part consists of the validation of the developed methodology by way of practical application, while the following questions are addressed:

- How to apply the proposed inference methodology based on an abductive controlled trichotomy of methods to identify generic stakeholder groups as a starting point for structuring an open business environment system?
- How to approach the strategy case solving procedure from the perspective of a strategy conceptor?
- How to practically apply the proposed methodology in the context of solving a specific strate-

gy formulation within the narrow focus of the strategy case of optimizing the relationship with the owners through a strategic initiative of deploying a new product in an existing market with consideration of the competitive linkages for decisions on quantity, price, and promotion based on an extensive form of the strategy game with formalization of the payoff function depending on sequences of decision variants to determine the dominant strategy?

The solution is closely related to the previous sections (i) Strategy Development: the Doctrine of Pragmatism (Cenek et al., 2022); (ii) Strategy Development: the Ignoratio Elenchi Problem (Cenek, 2023). The essence is to provide a self-proposed solution to the strategic cases in the defined intentions, and the contribution is based on the epistemological foundations of pragmatism (for more details see Goodman, 2002; Bohman, 2002; Rockwell, 2003; Štědronský, Urbanec, 2013; Fajkus, 2005).

The established questions anticipate the structure of the elaboration in the form of a step-by-step solution of the key components of the topic in the form of (i) defining the essence of the application of game theory for corporate strategy development, (ii) determining the procedure of solving the strategic case in relation to the developed methodological background, (iii) applying abductive guided reasoning to determine the stakeholders of the company for structuring the open system of the business environment, (iv) elaborating a strategic

*However, in the above case of a typical game, there are several phenomena that do not, of course, show automatic compatibility with normal market realities. Identifying the optimal strategy for a firm in a way that also identifies the optimal strategy for a competitor may not be a desirable approach in conditions of intense competitive conflict aimed at the practical elimination of a competitor or at minimising its profit. Thus, the interests of the undertakings may be completely opposed and the result may not be the profitable 'cooperation' implied by the example given.*

case illustrating the practical application of the proposed methodology.

In its conceptual approach, the article follows the tradition of methodologically oriented papers that provide practical procedures for applying specific methods, techniques and tools to solve specific business problems (Shubik, 1955; Busu, 2018; Ross, 2018; Piraveenan, 2019; Bočková et al., 2015; Ozkan-Canbolat et al, 2016; Abedian, 2022; Brandenburger, Nalebuff, 2009; Peleckis, 2015; Hatfield, 2016; Eissa et al, 2021; Webster, 2014). It is also linked to the development of a systematization of data collection and evaluation in the concept of competitive intelligence (for more details see Bartes, 2022; Fleisher, Bensoussan, 2002; Molnár, 2012; Hohhof, 2010; Tyson, 2010; Waters, 2010).

In developing a methodology for applying game theory in strategic business management, decision theory (from the position of an umbrella concept) is used in multiple ways. This includes the implementation of systemic solutions to complex decision-making situations according to Maani (2017) and Grabisch (2016), mathematical models for managerial decision-making according to Gross and Dyntar (2015), decision-making under conditions of risk according to Hebák (2013), and economic and political game theory according to Dlouhý and Fiala (2015), including the application of intuition in decision-making according to Schautova (2016).

### 3. Game Theory in Strategic Business Management

Game theory is concerned with solving competitive and cooperative decision-making situations with multiple players. The firm as a player is free to make decisions in the context of given conditions (whether geographical, legal, or ethical) and its decision will undoubtedly influence the behaviour of other market actors. In such conflicting situations, it is the most advantageous strategy that needs to be found to achieve business success. If firm A wants to adopt a particular strategy X, then, in a

competitive environment, the success of this strategy will certainly depend on the concurrent adoption of strategy Y by firm B, which acts as a competitor. However, undertaking A is not familiar with strategy Y. However, it can use the information leaked from the environment grasped in a systems perspective (see Bartes, 2022 for more details) and view the situation from the perspective of competitor B. In this case, the optimal strategy of firm A is one that is in line with the optimal strategy of firm B, with both players maximizing their utility.

However, in the above case of a typical game, there are several phenomena that do not, of course, show automatic compatibility with normal market realities. Identifying the optimal strategy for a firm in a way that also identifies the optimal strategy for a competitor may not be a desirable approach in conditions of intense competitive conflict aimed at the practical elimination of a competitor or at minimising its profit. Thus, the interests of the undertakings may be completely opposed and the result may not be the profitable ‘cooperation’ implied by the example given. The imaginary ‘competitive agreement’ resulting from the solution of a mathematical equation with two unknowns represents, in a sense, a means of indirect communication. Mathematics, although it has become significant for game theory, is not an integral part of it. The mathematization of game theory did not occur until 1928, through an article by John von Neumann, which thus influenced the further development of the theory, escalating to the seminal work “Theory of Games and Economic Behavior”, which von Neumann created in collaboration with Oskar Morgenstern (Dlouhý, Fiala, 2015).

Contemporary trends, however, are moving in the opposite direction, where we can talk about the demathematization of game theory with an attempt to broaden its scope to different areas, e.g. with the application of game theory to the model of non-profit organizations or to everyday human decision-making (Chvoj, 2013). *“Mathematics clearly and unambiguously states the assumptions*





and rules of the game, thereby avoiding hidden assumptions and explaining the limitations of the theory. However, mathematics alone is not a sufficient tool. In certain cases, when analyzing conflict situations, we are at the border of psychology, cognitive science, biology and other disciplines. The combination of disciplines usually offers new impulses for the further development of knowledge, ensuring that game theory remains an interesting and inspiring field.” (Dlouhý, Fiala, 2015, p. 5).

The relation of a purely mathematical conception of decision-making stands out as oppositional to the accentuation of the influences of intuition and certain individual inclinations, thus creating a truly interesting problem. In addition to the rational side, one has to deal with one’s psychological side in decision-making, which influences rationality without, however, degrading it as such in its grasp of meaning. People still make rational decisions even if they are not fully rational. When the conceptor of the strategy of the enterprise in question, i.e. the decision-maker (from the position of an observer), is familiar with all the relevant facts, it is true that every decision made by another individual (within the framework of the issue at hand, most often acting as the conceptor of the strategy of a competing enterprise) is rational or rather rationalizable from the point of view of strategic management. If it does not appear rational, then it is merely lacking facts that would illuminate the decision. *“Intuition is the ability to put into a given situation everything we have seen, felt, perceived, known. Intuition is one of the specific tools of strategic management. However, the importance of intuition does not mean the rejection of analytical methods. On the contrary, performing analysis*

*(e.g. of factors influencing demand or scientific and technical knowledge) and combining analytical thinking with intuition yields the best results.”* (Souček, 2015, p. 78–79).

If the methodology of game theory is based solely on a mathematical representation of the individual that maximizes the achievable payoff, then human rationality is necessarily disconnected from the larger framework of the actual functioning of society. Similarly, the desired optimality is only valid if all the actors concerned (the payoff function) behave in a given way. This effect is already evident in the notorious Prisoner’s Dilemma as an example of a non-cooperative negative-sum game (in contrast to cooperative games, the adoption of individual maximizing behavior does not maximize the collective outcome) (Jurečka, 2013, p. 228).

The Prisoner’s Dilemma (see Table 1) illustrates that if the players cannot bargain (and the firm will not bargain with the competitor either in the transfer to market conditions), then each player chooses his optimal strategy, but this may not constitute the optimal outcome for him (Holman, 2016, p. 215). The mutually uncoordinated actions of self-interested actors can, using game theory, lead to a situation that, while optimal from the point of view of all participants, is at the same time disadvantageous for all (Tomšík, 2011, p. 44).

The ideal mathematically derived optimal action for every occasion simply does not exist, because it is not always worthwhile to act rationally, or rationality can only be overt and deliberately misleading. After all, what better way to mislead a competitor than by failing to follow an expected course of action, whether derived through game

**Table 1 » Payoff functions in the prisoner’s dilemma**

Player / Opponent	Scam (confession)	Cooperation (denial)
Scam (confession)	– 5 years for both	– 1 year for H; – 10 years for P
Cooperation (denial)	– 10 years for H; – 1 year for P	– 2 years for both

Source: Author

**Table 2 » Game theory model in the context of market conditions**

Game Theory	Fighting for the Market
<b>Game</b>	Competitive struggle and its means (the rules are not as clear as in the case of chess).
<b>Player</b>	Alpha, Beta...
<b>Space of strategies</b>	Production volume, product prices, marketing expenditure, etc.
<b>Cooperation</b>	In case of mutual benefit, cooperation between firms is possible unless prohibited by the antitrust authority.
<b>Payoff function</b>	Profit, loss.
<b>Type of conflict</b>	Antagonistic or non-antagonistic conflict, depending on the specific market situation.
<b>Information on rationality</b>	Players do not need to have all information about other players available; players are obviously maximizing their profits (payoffs), but they may have other goals.

Source: Author's own elaboration based on Dlouhý, Fiala (2015, p. 8–9)

theory or otherwise. One must also consider the very personality of the strategic case solver (in this concept, in the role of the strategy maker), who has a definite propensity for risk, experience and intuition backed by common sense. Thus, instead of the mathematical level of game theory, it is appropriate to adopt the methodology primarily as a way of thinking. Thus, common sense and creativity are more valuable in the application of game theory to strategic business management than the default mathematical apparatus, which may or may not be implemented as part of it. The term game itself, then, has a very general level of interpretation that grants game theory the ability to be applied to any competitive or cooperative situation between two or more participants (see Table 2). Players choose a strategy from the available space of strategies based on the values of the payoff function, which depends on the decisions of both the player and the teammates (Dlouhý and Fiala, 2015, pp. 7–8).

To determine the most favorable payoff function, the player's payoff must be determined for all possible combinations of all players' decisions. The optimal (equilibrium) strategy is then the one that provides the highest payoff function in accordance with the interests of the intelligent player seeking to maximize his utility (payoff function).

Game types can be distinguished in relation to the nature of the conflict:

- Antagonistic conflict – the interests of the players are in direct opposition, with one player gaining what the other loses, a win-lose situation typical of competitors.
- Non-antagonistic conflict (typical for stakeholders):
  - Cooperative non-antagonistic games – the possibility of making binding agreements to make choices before choosing strategies.
  - Non-cooperative non-antagonistic games – making binding agreements is not possible.

The solver of a strategic case must thus be able, within the outlined intentions of information security for strategy formation, to (i) identify the nature of the problem to be solved, (ii) determine the necessary facts to be obtained, and on the basis of these facts (iii) deduce the likely course of action and actions of an adversary in the position of a competitor representing an antagonistic conflict.

#### 4. The procedure for dealing with strategic cases

The methodology in the proposed concept (Cenek et al., 2022; Cenek, 2023) allows to solve any strategic cases. A strategic case is anything that con-



cerns strategic management and requires a solution in the form of extending current knowledge with new knowledge and discovering causal relationships. Strategy formation then represents a specific part of the (extensive) set of strategic cases in the context of building the firm as a network of stakeholder and competitor relationships. Each strategic case is unique and should be approached as such. Some studies can be mentioned (e.g. Částek, 2010, pp. 83–168), which have tried to inductively identify factors that can influence the importance of the stakeholder in general (from the position of a key participant in the strategic game in the advocated stakeholder conception of the firm based on a network of cooperative and competitive ties). However, as Ševčík (2018, p. 60) adds, “*Better than predicting the position of stakeholders on the basis of general characteristics is to analyze stakeholders in specific conditions.*” In common strategic practice, it is precisely a fundamental mistake to take generalized findings as a guide for strategy development. Knowledge derived from artificial systems may not be compatible with the realities of open systems and tempt one to adjust the facts to fit the case, instead of adjusting the case to fit the facts. By the proposed application of abductive reasoning, knowledge is given only probabilistic value when placed in context with a premise certain in the form of an acquired fact.

The facts are the input, the inductively obtained material, which must be worked with further to determine the very nature of the phenomenon (which corresponds to the essence of the analysis). In contrast, traditional tools of strategic analysis (e.g. SWOT matrix or Porter's five forces analysis) provide a description of the past (contrary to the

proclaimed analysis) and this description of the past, without further investigation, becomes the basis for creating a strategy according to pre-set templates that do not respect the aforementioned uniqueness of each company and its specific needs (for more on the problems of the current mainstream of strategic tools, see e.g. Wright et al., 2013; Vaitkevičius et al., 2006; Johnson, 2014; Magretta, 2012; Tyll, 2014). However, it is useful to combine both approaches and not to ‘throw away’ the information that some research generalizations can provide (albeit with a degree of caution). However, this information is not taken as indicative and forms only a subset in the proposed approach in the context of investigations in specific settings<sup>1</sup>.

A complete list of the various factors that should be addressed by the strategic case solver will never be available, nor is it desirable that it should be. The reasons are simple. If there is a strictly standardized methodology with no room for considering the specificities of the companies and the skills of the researcher, then the output is only data, available to all equally and indiscriminately. For example, technical financial analysis (with its remarkable exactitude), in an analogous concept, will always provide identical results, independent of the researcher, thus enclosing the enterprise in time and space in a closed, simplified system. In the context of strategic management, however, such an ‘extraction’ of the enterprise from reality is inappropriate due to the complexity of the solution. The researcher should work with the case in the knowledge that it is in an open system and the only fixed point are the facts, the acquisition and evaluation of which constitute the input material for strategy development. The question of “how”

<sup>1</sup> The role of the guessing instinct can be substituted (or stimulated) for less experienced researchers by a sum of expert knowledge from relevant sources linked to the individual areas of investigation. For example, when assessing the merits of a particular stakeholder relationship. The owner evaluates his utility drawn from the business positively, especially when maximizing return and minimizing risk (given adequate liquidity) (Freeman et al., 2010, p. 9). In addition to the financial aspect, however, owners also place emphasis on the opportunity to participate in management, compliance with the corporate culture (values, principles, code of ethics...), the degree of information asymmetry, etc. On the part of the company, the evaluation of the benefits of the relationship with a particular stakeholder usually depends on the usefulness of the capital, the know-how and information provided.

to investigate may thus take on greater importance than “what” to investigate. In a methodological approach to strategy development, a procedure can be devised<sup>2</sup>:

- Interview with company management (case identification and input facts).
- Gathering facts about the business (in relation to stakeholders and related facts reflecting the context of the business plan application).
- Collecting facts about competitors and the business environment (analysis from sector to macro level).
- Evaluation of facts (deductive inference).
- Creation of alternative solutions – variant strategies (application of game theory).
- Selection of the optimal variant and its implementation (decision tree).

The solver solves the case based on the facts he/she obtains (by providing them from the subject, by his/her own investigation, etc.). Before focusing on the actual analytical work, it is advisable to carry out an initial investigation to form initial hypotheses (the most common first step is to conduct an interview with management, followed by case identification). This procedure achieves the desired efficiency of the investigation in focusing more specifically on those areas where the problem is likely to occur. Gathering facts about the business involves defining the business, long-term objectives, internal specifics, as well as standard business management procedures such as quantifying performance metrics against the industry. Stakeholder analysis consists of specifying the stakeholders, expressing bargaining power on the basis of importance (indispensability to the enterprise) and substitutability (availability of alternative relationships in the markets). It is also necessary to identify the determinants of the relationship (factors conditioning and influencing the relationship between the enterprise and the stakeholder), the case and the development potential. This pro-

cess equips the researcher with a profile of key stakeholders and starts gathering facts about competitors and the overall business environment. When the facts are evaluated, the output is a prediction of the future development of the company, set in the context of the expected actions of competitors and the development of elements of the business environment. On this basis, variants of strategies are developed with a desirable use of game theory (reflecting the identified influences, including the inference of feedback effects) and the optimal strategy is determined as the most advantageous (according to the adopted criteria), the most robust variant to the consequences of deviations from the expected development.

### 5. Structuring an open enterprise economic system

Strategic cases are dealt with in an open system, which, due to its high complexity, requires the adoption of a certain structure for concretization. **The solver of a strategic case is thrown into an open system, into apparent chaos, where many combinations are possible, and forming a hypothesis is the only way to clarify the case** (for more details see Cenek et al., 2022). When developing a methodology (used to create a strategy and deal with the openness of the system by introducing structuration) the above also applies. The structure of the open system is formed in accordance with the nature of the business concept and its actors that determine the strategic cases:

- There is always someone in the system who shows an interest in the existence of the enterprise, thus establishing dominantly cooperative relationships.
- There is always someone in the system who shows an interest in gaining at the expense of the enterprise, hence establishing dominantly competitive relationships.

<sup>2</sup> The proposed approach is based on the experience of the author of the articles on the basis of many years of experience in creating corporate strategies for business entities from the position of a private expert consultant.

The enterprise is made up of a coalition of stakeholders or interest groups as sub-elements of the resulting organization. Stakeholders operate in the form of a set of dominantly cooperative acts within certain generic groups. The generalization of stakeholders into generic groups serves to distinguish the key characteristics of each group (e.g. the interests of owners are undoubtedly distinct from those of suppliers, although a unifying line of common interest in the long-term prosperity of the entity exists and justifies dependence on the enterprise). Of course, there may also be a significantly competitive link between stakeholders, i.e. a proportion of the competitive link within the relationship, but one that does not exhibit dominance. Thus, using abductive reasoning (see Cenek, 2023), it is possible to proceed to a syllogism structure to address the outlined case of relationship network structuring:

- Rule: Stakeholder relationship management positively influences performance.
- Fact: Every business has certain stakeholder groups.
- Case: Stakeholders are those who (directly) influence the HV of the business.

In a judgment, the rule is not certain, because a situation may arise that will disprove the rule. For example, we can find a company where stakeholder relationship management has a non-positive impact on performance. This is therefore an assumption, albeit one that is supported by numerous statistical surveys. The rule is both the output of induction with a probabilistic nature and the result of rational reasoning. In contrast, the fact is that in practice there is no enterprise that can do without stakeholders. It is difficult to imagine an entity that would carry out business activities without owners, employees, customers, etc. Although the representation of generic groups of stakeholders may differ (some entities can do without creditors, for example), the entity is always based on an established network of relationships (represented at an elementary level by the customer-supplier chain). Thus, the hypothesis developed applies a rule (as-

sumption) to a fact in order to extend knowledge by identifying generic stakeholder groups.

According to Clarkson (1995, pp. 95–117), the often vague and unbounded definition of stakeholders is a major obstacle to the resolution of strategic cases in practice. Too broad a definition may lead researchers astray by focusing on actors with relatively marginal relevance to the case. The stake, held by a stakeholder, is based precisely on a certain stake, which is associated with the expectation of gaining an appropriate return. The relationship between the company and the stakeholder is fixed, determined either by a contract (employment, supply, credit, etc.) or by a legal regulation (Labour Code, Corporations Act, etc.) (Blažek, 2016). We can therefore proceed to formulate the second judgment:

- Rule: Stakeholders of an enterprise are defined by contract or legislation.
- Fact: Every enterprise has certain groups of stakeholders.
- Case: Stakeholders are those who have a contractual or legislative stake in the enterprise relationship with the business.

If the purpose of the business is represented by the creation of value, then it is the stakeholders of the business who necessarily participate in this value, in the overall set of relationships. The positive link between stakeholder governance and firm performance (measured on the basis of profitability indicators) has been verified by Rais and Goegebeur (2009), Blažek and Částek (2009), De Bussy and Suprawan (2012), Berman (1999), among others. Meta-analyses of empirical investigations have also been contributed by Freeman (2010) and Částek and Cenek (2017).

The profit orientation of stakeholders is evident from the nature of playing win-win games with non-zero sum values. Stakeholders are interested in the welfare of the firm in order to gain satisfaction of their interests. The question of definitive definition of generic stakeholder groups according to their links to the bottom line was answered (Cenek, 2018) by applying linear regression

with a research sample of selected Czech companies.

There are six groups of stakeholders that directly contribute to the profit of the company and directly affect the bottom line. These stakeholders simultaneously exhibit an explicit underlying relationship. Owners have a legal and contractual regulation of the relationship, employees have an employment contract (and labour code, etc.), customers have a purchase contract and other arrangements, suppliers have a supplier contract, creditors have a credit contract, etc. The generic stakeholder groups are therefore owners, creditors, customers, suppliers, employees, and the state. Testing each sub-hypothesis by induction verified whether the specific individual cases agree with the hypothesis (each hypothesis must be capable of experimental verification (Peirce, 1958, p. 68). Using generalizations from the specific cases (in a case-conclusion-rule structure), the hypotheses were confirmed, and a deductive operation occurs:

- Rule: If the hypothesis identifying the stakeholders is verified, the stakeholders in question are stakeholders.
- Case: The hypothesis is confirmed.
- Conclusion: Those concerned are stakeholders (generic stakeholder groups).

The confirmation of the hypothesis leads to the fact that, by means of deduction, the conclusion from the premises follows necessarily as consequence of the rational and logical application of the proposed methodology of abductive reasoning based on Peirce's trichotomy of methods. The fundamental question of identifying generic stakeholder groups is answered and the strategic case solver gains valuable guidance for structuring an open system business environment.

## 6. *The practice of solving a strategic case*

The application of the proposed methodology to a strategic case is based on the interest to illustrate a

practical solution as a starting point for understanding similar cases. The essence is to offer insight into the issue within a real context based on an a priori modified strategic case study (for more details see Ochmana, 2019, pp. 44–45). The case is conceived in terms of a strategy conceceptor for illustrative purposes.

The solver meets with a representative of the company's management and obtains information about the case. A corporate strategy is to be developed for the enterprise, and during the interview, input facts related to individual stakeholders and the current situation of the enterprise are obtained under active questioning by the solver. In relation to the owners, they form the main facts:

- Owners are important to the business and there is an interest in retaining them because they provide valuable information and know-how (beyond capital input).
- In our experience, owners tend to be risk averse and seek profitable activities even at the cost of higher risk investment.
- Owners' capital strength is high and they have no problem to move capital even at higher transaction costs (taking into account the resulting profitability).

From the information obtained, it can be inductively inferred that owners are important to the firm beyond capital input, particularly for informational value. Owners strive for high profitability even at the cost of higher risk and do not weigh their investment activities on the importance of tradition (the tradition of a built relationship with the enterprise). Since profitability is an important relationship evaluation variable for owners from the information gathered, the researcher focuses on profitability assessment in gathering facts about the enterprise. The ROE is used in comparing the value obtained with the alternative of a relatively risk-free investment in government bonds and with the ROE for competing firms in the industry. Concluding that the appreciation is higher than that of long-term government bonds (the relatively safe alternative) but lower than that of com-



peting firms, this inductively obtained fact can be used in the construction of syllogisms:

- Premise: Owners are not loyal at lower than expected valuations.
- Conclusion (fact): Owners' valuation is low compared to competitors.
- Case: Owners are not loyal as a result of low appreciation.

The solver works with hypothesis testing in the upcoming stakeholder elicitation, which offers a specific focus and greater precision of analysis than if a simple standardized question were asked about the owners' satisfaction with the valuation of the investment in the business. Dissatisfaction with the valuation is assumed/verified according to the self-inquiry and the interest is therefore to determine the conditions under which the current relationship with the business by the owners would be sustainable, without losing reflection on the openness of the system in which the uncertainty effect on expectations is applied. In doing so, the researcher gains new insights that bring understanding of the relationships and interests of the participants. Only based on the knowledge with the necessary deductive inference is a prediction made on the basis of knowledge of the causal chain leading to the current situation.

The solution of the case in the summarization of the knowledge gained forms the input for the application of game theory and strategy generation. The extensive form of the game is formalized in the solution of a decision problem about the assessed benefits of cooperation or non-cooperation (see Table 3). Of course, the case can also run the other way around, where the solver obtains a fact about the low loyalty of owners who are consider-

ing leaving, and the cause of this needs to be identified on which to base a solution:

- Assumption: With lower than expected appreciation, owners are not loyal
- Conclusion (fact): Owners show low loyalty – they are considering leaving
- Case: Lower than expected appreciation is generated for owners

The researcher applies the above procedure to all stakeholder groups with variable relationship determinants that are reflected in the solution process. For example, for lenders, competitive ties within cooperative ties (Axelrod, 2006) are more emphasized with the need to deal with the cost of external resources (providers seeking to maximize income versus the firm seeking to minimize costs), risk (providers prioritizing the lowest debt while the firm prioritizing cost efficiency), etc. The decision on the amount of external resources is then related to the conflict of interests between owners and managers, with owners generally seeking to minimise costs with a preference for external resources (which are cheaper relative to their own resources and do not limit the share of management), while managers seek adequate riskiness in the implementation of the business plan (external resources are a cheaper form of financing, but riskier).

Based on the processed facts, the researcher, taking into account all related facts, creates a solution to the strategic case in the form of a proposal for a strategy implementing profit increase to retain the analyzed owners and maintain their loyalty. In the determination of the strategy, the profit increase represents a sub-strategic initiative to introduce a new product to the market. After estimating the impact of the strategic initiative options

**Table 3 » Normal form of the game**

	Stakeholder cooperates	Stakeholder does not cooperate
Enterprise cooperates	8,4	-1,-2
Enterprise does not cooperate	-2,-1	0,0

Source: Author



**Table 4 » The game of choosing the quantity produced and the price of the new product at  $Q < 10000$  pcs**

2_K	↓Q				↓Q			
3_P	↓P		↓P		↓P		↓P	
3_K	↓P	↓P	↓P	↓P	↓P	↓P	↓P	↓P
Zp	1460	1480	1560	1580	1680	1720	1510	1320
Zk	930	1040	940	1050	1010	1130	940	1250
ΣZ	2390	2520	2500	2630	2690	2850	2450	2570

Source: Author<sup>3</sup>

**Table 5 » The game of choosing the quantity produced and the price of the new product at  $Q < 10000$  pcs**

2_K	↓Q				↓Q			
3_P	↓P		↓P		↓P		↓P	
3_K	↓P	↓P	↓P	↓P	↓P	↓P	↓P	↓P
Zp	1843	1600	1620	1700	1300	1550	1540	1680
Zk	730	1000	810	1150	1200	1010	740	880
ΣZ	2573	2600	2430	2850	2500	2560	2280	1540

Source: Author

on the interests of the stakeholders, the strategic case solver defines the impacts on utility, satisfaction, loyalty, relevance and substitutability in reflection of the identified environmental influences (especially with respect to the predicted behavior of competitors) and the considered follow-up measures.

When introducing a new product into an existing market (and knowing its parameters), the initial decision problem is determining the quantity and price at which to sell the product. According to the results of the analysis, there is one highly relevant competitor on the customer market offering a similar product at a price of CZK 2 800. At the same time, the undertaking in question is considering a price higher or lower and a quantity higher or low-

er than 10 000 units. Both undertakings, as established by the application of competitive intelligence tools, have a market analysis prepared by the same agency, so their information on potential sales revenue per unit at different quantities produced and prices set is identical. An examination of the other facts obtained shows that the firms want to make a profit while not destabilizing the oligopoly.

The whole game has three stages with six subgames. First, the firm chooses the quantity to be produced in the specified variants  $Q < 10\,000$  pcs or  $Q > 10\,000$  pcs. In the second stage, a competitor reacts to this move and, depending on the firm's decision, takes the decision to produce a lower or higher quantity of output as well.

<sup>3</sup> 2\_K = the competitor's choice to produce a lower or higher quantity of output ( $Q < 10\,000$  units or  $Q > 10\,000$  units) in response to the choice made by the firm in the first sequence.

3\_P = choice of price per unit of product by the firm in question.

3\_K = the choice of the price per unit of product by the subject competitor.

ΣZ = Zp (profit of the firm in question) + Zk (profit of the competitor) = profit of both market players.

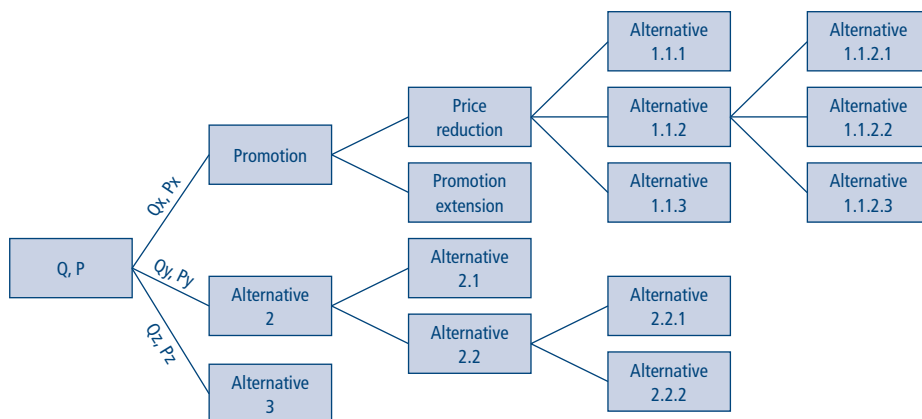
In the third stage, companies already know the quantity of output and choose the price. The decision on price is taken simultaneously by the enterprises, where the level of revenue per unit of output can be predicted based on their knowledge of the outputs of the market analysis, given different price movements in relation to the quantity produced. What is important for the decision-making process is that both undertakings want to maintain the current oligopoly:

- Determinant of decision-making in profit maximisation
  - Effort to maintain oligopoly (max.  $Z_p + Z_k$ ), if oligopoly did not matter then max.  $Z_p$ .
  - The competitor decides the volume of production (chooses the max  $\Sigma Z$  of the payoff function of the four subgames):
    - $(1580 ; 1050) \times (1720 ; 1130) \rightarrow \uparrow Q_k$  with  $Q < 10000$  pc
    - $(1700 ; 1150) \times (1550 ; 1010) \rightarrow \uparrow Q_k$  at  $Q > 10000$  pc
  - The firm decides the production volume (chooses the maximum  $Z_p$  from the payoff functions):
    - $(1700 ; 1150) \times (1550 ; 1010) \rightarrow Q < 10000$  pcs
- The maximization of the payoff function con-

sists of selecting a set of decisions from the lowest level of the decision tree. Thus, the profit of the firm will be CZK 1,720 per unit of output and CZK 1,130 for the competitor. At the same time, profit maximization also occurs in the relevant market within the oligopolistic structure. For the sake of clarity, the game is based only on a competitive relationship, but for the sake of completeness, it is necessary to add the dimension of cooperative relationships, i.e. defined relationships with stakeholders, which also determine the results achieved and the profitability of each variant. The full game approach fulfils the situation where companies compete through their stakeholders in their respective markets.

However, it is only the resolution of the input part of the complex decision tree, which anticipates the making of subsequent decisions that take into account the competitor's decision-making. In relation to the decision-making process common to a particular industry, a decision tree can be constructed that defines all the important decisions that the firm has to make (see Figure 1). In this case, the zero-order sequence consists of decisions on the quantity and price of output (thus branching the tree into alternatives at quantities and pric-

**Figure 1 » Decision Tree**



Source: Author

**Table 6 » First order sequence decision matrix**

[company; competitor]		competitor	
		do not promote	promote
Company	do not promote	40 ; 50	10 ; 60
	promote	55 ; 20	25 ; 30

Source: Author

es Qx, Px ; Qy, Py ; Qz, Pz). The unit-level sequence is represented by the downstream alternatives (at the chosen alternative Qx, Px), from which attention will be paid to the decision on whether or not to implement a promotional campaign. The second-level sequence will model the case of deciding to temporarily reduce prices as an incentive for buyers exposed to the promotion. As an alternative to lowering prices, the sequence will discuss the case of considering extending the promotion to a foreign market.

When deciding on promotional activities, the customers of the company in question are very sensitive to price and product promotion (with which the company is familiar based on the results of the analyses prepared by the researcher). The more the product is promoted, the more it is bought. However, promotion is a highly costly variable and its benefits can be reduced to a large extent by the promotion of a competitor with which the firm has long coexisted on the market. At the same time, undertakings will prefer to promote products rather than to reduce prices. The researcher provides this information to the downstream branches of the decision tree in the implementation of the next sequences. In doing so, the solver obtained the facts:

- The competitor's sales amount to approx. CZK 50 million if it does not advertise and CZK 80 million if it advertises.
  - Source from compulsorily published financial statements on the justice.cz portal (revenues included in the profit and loss statement, information on promotional activities included in the annual report).

- If a competitor advertises, it always uses the RA advertising agency. Therefore, if it advertises, it is very likely to use this agency again.
  - Source from marketing agency references on the website.
- Given the normal nature of promotional campaigns for the product, the competitor's cost of a promotional campaign can be estimated at 20 million CZK based on RA's price list.
  - Source from RA's publicly available price list.

According to the estimates from the marketing study, the company which markets can bring in 30 million CZK at the expense of a competitor. If both competitors market, the effect is zero. However, an enterprise can run a promotion campaign of comparable quality to a competitor for CZK 15 million. Estimated sales (according to currently available financial statements and market forecasts) point to sales of 40-50 million CZK for the company and the competitor in a situation where neither will advertise.

Thus, a total of four behavioral options (neither the firm nor the competitor will promote, the firm will promote and the competitor will not, the firm will not promote and the competitor will, both firms will promote) with different payoffs are offered. These are defined in the decision matrix under the conditions specified (see Table 6). On the basis of the results obtained, the dominant strategy can be defined as to promote, whatever the competitor's behavior (i.e. to promote or not to promote), since the promotion of the firm always results in higher revenues than in the case of not promoting. In the context of promotion, the deci-



sion matrix for the first sequence of the game applies. We now know that the subject firm will advertise. The two payoff functions 55 ; 20 (if the competitor did not promote) and 25 ; 30 (if the competitor did promote) stand out as the output of the sequence. This is the temporary status quo for the sequence to follow (alternatively, depending on the reaction time, the level of payoffs returns to the initial level of 40 ; 50 presenting the long-run equilibrium state.

In the second sequence, the competitor is already familiar with the firm's approach and, in addition, acts as a beneficiary of the effect on sales caused by this behavior in the defined relations. It is therefore necessary to anticipate the behavior in the form of a response to the situation induced. The experience of the competitor in relation to the promotional activities suggests two possible reactions, namely a reduction in output prices or an attempt to penetrate new markets abroad (and so far only the competitor's considerations have been evident). In the case of the price reduction option, the researcher concentrates on the facts:

- The competitor's discounting actions to date have amounted to a maximum discount of 10 % of current prices.
  - Source from the results of the sales department monitoring.
- Customers react to the discount incentive with an average effect of taking 30% of the competitor's sales by the subject firm.
  - Assessment from the market analysis carried out.
- The price reduction also stimulates the part of the demand that buys the product exclusively

when it is on discount, to the extent that it is derived from historical prices of approx. CZK 8 million at a 10 % discount.

- Source in available data on historical price and sales trends.

If the undertaking reduces the price, it will therefore take approx. 30 % of the competitor's sales (but with the necessary reduction of 10 % of the discount granted) and will receive 8 million CZK of the highly price-sensitive demand across the market. If both competitors were to reduce the price, then the effect of taking over part of the competitor's demand would be zero and both would only reduce their sales by 10 % (in line with the percentage of the discount granted being equal to the increase in the customer's utility from buying the output provided). The formulae for calculating the payoffs at each state can thus be established:

$$Tp \text{ at } \downarrow P = Tp + [(Tk * 0.3) * 0.9] + 8$$

(at  $\downarrow P$  by the firm and price maintenance by the competitor):

$$Tp = 25 + [(30 * 0.3) * 0.9] + 8 = 25 + [(10) * 0.9] + 8 = \mathbf{42 \text{ mil. CZK}}$$

where:

$Tp$  = the firm's sales

$Tk$  = competitor's sales

In the second sequence, in both initial states (depending on the competitor's behaviour in the previous sequence), the dominant strategy of the

**Table 7 » Game of price reduction in the second sequence at the initial condition of 25,30**

[company; competitor]		competitor	
		same price	reduced price
Company	same price	25 ; 30	16,7 ; 45,5
	reduced price	42 ; 20	22,5 ; 27

Source: Author

**Table 8 » The price reduction game in the second sequence at the starting point 55,20**

[company; competitor]		competitor	
		same price	reduced price
Company	same price	55 ; 20	36,7 ; 44,5
	reduced price	69 ; 13,3	49,5 ; 18

Source: Author based on own processing

**Table 9 » Game of the second sequence at 25.30, option 2: Promotional activities on the foreign market**

[company; competitor]		competitor	
		status quo	investment
Company	status quo	25 ; 30	25 ; 10
	investment	15 ; 30	15 ; 10

Source: Author

**Table 10 » Game of the second sequence at 55,20, option 2: Promotion on the foreign market**

[company; competitor]		competitor	
		status quo	investment
Company	status quo	55 ; 20	55 ; 40
	investment	45 ; 20	45 ; 60

Source: Author

subject firm is to lower the price, both by lowering the price and by maintaining it by the competitor. Such an approach ensures that the payoff function is maximised relative to the defined alternatives.

However, accepting a price reduction by a competitor is only one alternative course of action, where the extension of the competitor's promotional activities to the foreign market must also be taken into account on the basis of the facts obtained. The competitor is assuming a situation of sufficiently high foreign demand (over a certain period of the life cycle of the promotional activity) but on the other hand high investment requirements. Based on the calculations of data from the own investigation, marketing and sales departments, the likely revenues and costs for both companies can be identified:

- Revenues from the promotion of the penetrated foreign market in the estimated amount of 80 million CZK.
- Costs of promotion on the foreign market in the amount of twice the budget for the domestic market:
  - 30 million CZK for the company (2 \* CZK 15 million).
  - 40 million CZK for the competitor (2 \* CZK 20 million).
- Costs for infrastructure for comprehensive security of sales on the foreign market:
  - 60 mil. CZK 60 for both companies.

A potential profit of 80 million CZK carries with it a significant threat of only a one-off interest of customers from the position of novelty on the market, when at the same time the conditions of more



intense competition prevail on the foreign market, and therefore significant profits cannot be guaranteed in the long term even with adequate promotion.

The dominant strategy for both options in the second sequence is to maintain the status quo, which is associated with a higher payoff function for the subject company than in the case of expanding promotional activities beyond the domestic boundaries. This effect is at the same time reinforced by the knowledge of the potential threat of a drop in profits after the initial market demand and the implication of follow-up capital expenditure to counteract stronger foreign competitors. The strategic initiative under consideration in the context of the defined strategic case thus defines a dominant strategy anticipating key strategic decisions.

## 7. Conclusion

The presented article is closely related to previous contributions (Doctrine of Pragmatism, Ignoratio Elenchi Problem), where it is the realization of a long-term intention to contribute to the methodological, theoretical, and practical development of strategic management of the enterprise. The article defines the principles and assumptions underlying the methodology of applying game theory in strategic management of the enterprise, in the form of abductive reasoning, systematic work with facts, and the formation of hypotheses. For the strategic case solver, it is essential to create a set of factors

conditioning the goal fulfilment and at the same time a set of determinants influencing the development and position of these factors. Only then is it possible to place the created sets in a decision tree and position them against the action of the assumed forces in the different variants of decisions leading to the goal.

The outlined general decision-making process represents a pragmatic and rational approach to dealing with decision-making situations. If it is a serious decision with significant potential consequences (which is consistent with the nature of strategic business management, conditioning the existence of the business entity for many years to come), the process should be applied. The formulated methodology uses a sequential decision-making process with the application of game theory in relation to the enterprise's stakeholders (dominantly cooperative relationship) and competitors (dominantly competitive relationship). Practical application of the methodology by way of a processed solution of a strategic case of a real decision-making problem of strategic importance points to the usefulness of the application of the methodology and provides its verification in specific conditions of the corporate reality.

## Acknowledgments

The support of the Masaryk University internal grant No. MUNI/A/1182/2018 is gratefully acknowledged.

## REFERENCES

- [1] ABEDIAN, M., et al.: 2022. A game theory approach to selecting marketing-mix strategies. *Journal of Advances in Management Research*, 19(1), 139–158. 10.1108/JAMR-10-2020-0264
- [2] AMASON, A., WARD, A.: 2020. *Strategic management: From theory to practice*. Routledge.
- [3] AUMANN, R., J.: 2024. Irrationality in game theory in Irrationality in game theory (ed.). *Interactive epistemology*. The MIT Press, 335–350.
- [4] AXELROD, R. M.: 2006. *The evolution of cooperation*. Rev. ed. New York: Basic Books.
- [5] BARTES, F.: 2022. *Konkurenční zpravodajství. Tvorba podkladů pro strategické rozhodování podniku*. Praha: Grada Publishing.

- [6] BERMAN, S., L. et al.: 1999. Does stakeholder orientation matter? The relationship between stakeholder management models and firm financial performance. *The Academy of Management Journal*, 42(5), 488–506.
- [7] BLAŽEK, L., ČÁSTEK, O.: 2009. Stakeholder approach and the corporate financial performance. *Národohospodářský obzor*, 9(2), 90–106. 10.2478/v10135-009-0002-7
- [8] BLAŽEK, L.: 2016. Nový přístup k analýze podnikatelského prostředí in *Aktuálně problémy podnikové sféry* (ed.) Vydavatelstvo EKONÓM, 50–55.
- [9] BOČKOVÁ, K., H., SLÁVIKOVÁ, G., GABRHEL, J.: 2015. Game theory as a tool of project management. *Procedia-Social and Behavioral Sciences*, 213, 709–715. 10.1016/j.sbspro.2015.11.491
- [10] BOHMAN, J.: 2002. How to make a social science practical: pragmatism, critical social science and multiperspectival theory. *Millennium*, 31(3), 499–524. 10.1177/0305829802031003070
- [11] BRANDENBURGER, A., NALEBUFF, B., J.: 2009. Right game: Use game theory to shape strategy. *Harvard Business Review Press*.
- [12] BUSU, M.: 2018. Game theory in strategic management-dynamic games: theoretical and practical examples. *Management Dynamics in the Knowledge Economy*, 6.4(22), 645–654. 10.25019/MDKE/6.4.09
- [13] CENEK, M.: 2023. Strategy development: Ignoratio elenchi problem. In *European Forum of Entrepreneurship*, Newton College, 17–28.
- [14] CENEK, M., HOLÍK, R., PALATOVÁ, D.: 2022. Strategy development: Doctrine of pragmatism. In *European Forum of Entrepreneurship*, Newton College, 38–46.
- [15] CENEK, M.: 2018. The new model of strategic management: The structure and determination of the final number of stakeholders. In *Proceedings of IAC in Vienna (Management, Economics, Business and Marketing (IAC-MEBM))*, 175–180.
- [16] CLARKSON, M., E.: 1995. Stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review*, 1995, 20(1), 92–117. 10.2307/258888
- [17] ČÁSTEK, O., CENEK, M.: 2017. A Relationship between stakeholder management and business performance in the Czech Republic. *Managing Global Transitions: International Research Journal*, 15(2), 187–207. 10.26493/1854-6935.15.187-207
- [18] ČÁSTEK, O.: 2005. Teorie her jako nástroj pro strategické rozhodování. In *Nové trendy v podnikovém manažmente*, 26–31.
- [19] ČÁSTEK, O.: 2010. *Využití stakeholderského přístupu při strategické analýze podniku*. Masarykova univerzita.
- [20] DE BUSSY, N., M., SUPRAWAN, L.: 2012. Most valuable stakeholders: The impact of employee orientation on corporate financial performance. *Public Relations Review*, 38(2), 280–287. 10.1016/j.pubrev.2011.11.006
- [21] DLOUHÝ, M., FIALA, P.: 2015. *Teorie ekonomických a politických her*. Oeconomica.
- [22] EISSA, R., EID, M., S., ELBELTAGI, E.: 2021. Current applications of game theory in construction engineering and management research: A social network analysis approach. *Journal of construction engineering and management*, 2021, 147(7). 10.1061/(ASCE)CO.1943-7862.0002085
- [23] FAJKUS, B.: 2005. *Filosofie a metodologie vědy: vývoj, současnost a perspektivy*. Academia.
- [24] FLEISHER, C., S., BENSOUSSAN, B., E.: 2002. *Strategic and competitive analysis: methods and techniques for analyzing business competition*. Upper Saddle River: Prentice-Hall.
- [25] FREEMAN, R., E. et al.: 2010. *Stakeholder theory: The state of the art*. Cambridge University Press.
- [26] GOODMAN, R., B. (ed.): 2002. Pragmatism: A contemporary reader. *Millennium: Journal of International Studies*, 31(3), 499–524.





- [27] GRABISCH, M.: 2016. *Set functions, games and capacities in decision making*. Springer International Publishing.
- [28] GRANSTRAND, O.: 2024. A cooperative game theory systems approach to the value analysis of (innovation) ecosystems. *Technovation*, 130, 1–17. 10.1016/j.technovation.2023.102926
- [29] GROS, I., DYNTER, J.: 2015. *Matematické modely pro manažerské rozhodování*. Praha: Vysoká škola chemicko-technologická.
- [30] HATFIELD, M.: 2016. *Game theory in management: Modelling business decisions and their consequences*. Routledge, 2016.
- [31] HEBÁK, P.: 2013. *Rozhodování při riziku*. Informatorium.
- [32] HOHHOF, B. (ed.): 2010. *Competitive intelligence anthology*. Society of competitive intelligence professionals.
- [33] HOLMAN, R.: 2016. *Ekonomie*. Praha: C. H. Beck.
- [34] CHVOJ, M.: 2013. *Pokročilá teorie her ve světě kolem nás*. Praha: Grada Publishing.
- [35] JIRÁSEK, J.: 2003. *Strategie: umění podnikatelských vítězství*. Professional Publishing.
- [36] JOHNSON, G.: 2014. *Exploring strategy*. Harlow: Pearson.
- [37] JUREČKA, V.: 2013. *Mikroekonomie*. Praha: Grada Publishing.
- [38] MAANI, K.: 2017. *Multi-stakeholder decision making for complex problems: a systems thinking approach with cases*. World Scientific.
- [39] MAGRETTA, J.: 2012. *Michael Porter jasně a srozumitelně: o konkurenci a strategii*. Management Press.
- [40] MOLNÁR, Z.: 2012. *Competitive intelligence, aneb, Jak získat konkurenční výhodu*. Oeconomica, 2012.
- [41] OCHRANA, F.: 2019. *Metodologie, metody a metodika vědeckého výzkumu*. Praha: Karolinum.
- [42] OZKAN-CANBOLAT, E., BERAHA, A., BAS, A.: 2016. Application of evolutionary game theory to strategic innovation. *Procedia-Social and Behavioral Sciences*, 235, 685–693. 10.1016/j.sbspro.2016.11.069
- [43] PEIRCE, C., S.: 1958. Collected Papers of Charles Sanders Peirce, vols. 1–6, 1931–1935, Charles Hartshorne and Paul Weiss, eds., vols. 7–8, 1958, Arthur W. Burks, ed., Harvard University Press, Cambridge, MA.
- [44] PELECKIS, K., et al.: 2015. The use of game theory for making rational decisions in business negotiations: a conceptual model. *Entrepreneurial Business and Economics Review*, 3(4), 105–121. 10.15678/EBER.2015.030407
- [45] PIRAVEENAN, M.: 2019. Applications of game theory in project management: A structured review and analysis. *Mathematics*, 7(9), 1–31. 10.3390/math7090858
- [46] RAIS, S., GOEDEGEBUURE, R., V.: 2009. Stakeholder orientation and financial performance: Evidence from Indonesia. *Problems and Perspectives in Management*, 7(3), 62–75.
- [47] RINDOVA, V., P., MARTINS, L., L.: 2023. Moral imagination, the collective desirable, and strategic purpose. *Strategy Science*, 8(2), 121–321. 10.1287/stsc.2023.0190
- [48] ROCKWELL, T.: 2003. Rorty, Putnam, and the Pragmatist view of epistemology and metaphysics. *Education and Culture*, 19(1), 8–16.
- [49] ROSS, D., G.: 2018. Using cooperative game theory to contribute to strategy research. *Strategic Management Journal*, 39(11), 2859–2876. 10.1002/smj.2936
- [50] SHUBIK, M.: 1955. The uses of game theory in management science. *Management Science*, 2(1), 40–54.
- [51] SCHAUTOVÁ, N.: 2016. *Rozhodování a intuice: využijte plný potenciál intuice při rozhodování*. Praha: Portál.

- [52] SOUČEK, Z.: 2015. *Strategie úspěšného podniku: symbióza kreativity a disciplíny*. Praha: C.H. Beck, 2015.
- [53] STEIN, A., et al.: 2023. Stackelberg evolutionary game theory: how to manage evolving systems. *Philosophical Transactions of the Royal Society B*, 378(1876), 1–12. 10.1098/rstb.2021.0495
- [54] ŠEVČÍK, P.: 2018. *Tvorba strategie podniku s využitím stakeholderského přístupu*. Brno: Masarykova Univerzita.
- [55] ŠTĚDRONSKÝ, V., URBANEC, V.: 2013. *Dvě eseje o pragmatismu*. Montanex.
- [56] ŠVECOVÁ, L., FOTR, J., RENNER, P.: 2012. The influence of irrationality on the innovativeness of variants and the quality of decision making. *Procedia – Social and Behavioral Sciences*, 41, 570–576. 10.1016/j.sbspro.2012.04.069
- [57] TOMŠÍK, V.: 2011. *Ekonomie a zdravý rozum*. Fragment.
- [58] TYLL, L.: 2014. *Podniková strategie*. Praha: C. H. Beck.
- [59] TYSON, K. W. M.: 2010. *The complete guide to competitive intelligence*. 5th ed. Leading edge publications.
- [60] VAITKEVIČIUS, S., MERKYS, G., SAVANEVIČIENĖ, A.: 2006. Model of strategic analysis tools typology. *Engineering Economics*, 47(2), 99–109.
- [61] WATERS, T. J.: 2010. *Hyperformance: using competitive intelligence for better strategy and execution*. Jossey-Bass, a Wiley Imprint.
- [62] WEBSTER, T. J.: 2014. *Analyzing strategic behavior in business and economics: a game theory primer*. Lexington Books.
- [63] WRIGHT, R. P. S., PAROUTIS, P., BLETNER, D. P.: 2013. How useful are the strategic tools we teach in business schools? *Journal of Management Studies*, 50(1), 92–125. 10.1111/j.1467-6486.2012.01082.x
- [64] YAZAN, D. M., YAZDANPANAH, V., FRACCASCIA, L.: 2020. Learning strategic cooperative behavior in industrial symbiosis: A game-theoretic approach integrated with agent based simulation. *Business strategy and the environment*, 29(5), 2078–2091. 10.1002/bse.2488

## Strategy development: case of business practice

### ABSTRACT

Creating a strategy represents a significant challenge for the solver of a strategic case in the form of the need to systematically work with an open system of business reality. The subject of this article is to provide a contribution to the development of strategic management methods with a proposed methodology for the application of game theory in strategic management. The goal is to propose a methodology for the application of game theory in the strategic management of a company, in the conceptual form based on abductive reasoning, systematic work with facts, and the creation of hypotheses. The strategy conceceptor systematically creates a set of facts using the mentioned procedure which provides information background about relevant facts determining the achievement of strategic goals. These are the methodological starting points necessary for the application of game theory, in the presented concept of the sequential decision-making process, built on the company's relationship with stakeholders (dominantly cooperative relationship) and competitors (dominantly competitive relationship). The proposed methodology (including an initial consideration of the theoretical consequences of the use of game theory) is demonstrated by solving a real decision-making problem of strategic importance.



**KEYWORDS**

*Strategic management; cooperative strategies; stakeholder theory; game theory; pragmatism; abductive reasoning; explanatory hypothesis; risk decisions*

**JEL CLASSIFICATION**

*B40; D01; D21; D22; D23; D43; D81; D84*



# Implementation of crisis situations in a safe virtual reality environment

- Petr Urban » Deputy of Department of Applied Social Sciences and Humanities, Faculty of Military Leadership, University of Defence, Kounicova 65, 662 10 Brno, Czech Republic; email: petr.urban2@unob.cz
- Evžen Tondl » Department of Applied Social Sciences and Humanities, Faculty of Military Leadership, University of Defence, Kounicova 65, 662 10 Brno, Czech Republic; email: evzen.tondl@unob.cz

## \* 1. Introduction

Currently, as the world continuously faces new and complex challenges, preparedness for crisis situations plays an indispensable role in both the public and private sectors, as well as in the realm of security. In the case of an attack on the Czech Republic, the security sphere is represented by the Czech Army and domestically by the Integrated Rescue System, which ensures continuous readiness to receive notifications of extraordinary events, their evaluation, and immediate intervention. With the increasing use of digital technologies, a new era in training and preparation for special situations opens up through virtual reality (VR) or augmented reality (AR). This article focuses on the possibilities of using virtual or augmented reality in the Integrated Rescue System (IRS) and the Czech Army (ACR). It also addresses the implementation of realistic crisis scenarios in virtual and augmented reality's safe and controlled environment. The main goal is to provide users with an intensive and practical experience that will help them better prepare for real-life crises.

Education and readiness are fundamental systems of preparation for future professions in the ACR and IRS. The basic system includes overlap-

ping areas — education, upbringing, and training. These educational attributes are required, especially in command and staff positions and primarily in the executive branches. The virtual reality is close to present technology level and potential future part of almost every area in the society (businesses, government, wide audience).

This article provides a comprehensive overview of the possibilities of using virtual reality for emergency preparedness and emphasizes its potential as a tool for increasing safety and readiness.

## 2. Virtual reality and augmented reality

Virtual and augmented reality are revolutionary technologies that are changing how we perceive and interact with the digital world. VR immerses users in digital environments that provide entertainment, relaxation, and educational experiences. On the other hand, AR augments our physical world with digital elements, allowing users to see the real world enriched with virtual objects and information. Together, these technologies open up new possibilities in entertainment, healthcare, education, and industrial applications, indicating the beginning of a new era in our interaction with technology.



## 2.1 Virtual reality

Virtual reality is a technological concept whose primary goal is to create a simulated environment that immerses the user in an alternate reality often different from the real world (Lowood, 2023). It is a computer-generated experience that manifests itself in various multimedia elements such as graphics, sound, or even haptic feedback. The essential tool for experiencing virtual reality is special virtual reality goggles. When the user puts on these goggles, the displayed environment responds to their head movements, allowing a complementary view in all directions. In more advanced systems equipped with 6 degrees of freedom of movement, the user can even navigate through the virtual space and interact with objects within it. Virtual reality can be described by the English term immersive, i.e., the ability to immerse the user so profoundly in the experience that they temporarily forget about the surrounding natural world. Immersiveness is achieved through a combination of high-resolution graphics, spatial sound, and fast response to user movements.

One of the key elements of virtual reality is interactivity. Modern VR systems can be equipped with special controllers that allow the user to manipulate objects in the simulated environment, play games, or even simulate actual actions, such as a surgical operation. Virtual reality applications extend across many sectors – from the gaming industry to medicine, military, and education to engineering. Scientific research also shows that virtual reality can have therapeutic uses, such as treating phobias, rehabilitating patients after injuries, and training the army and integrated rescue systems in life-threatening crises (Lowood, 2023; Görner et al., 2023).

However, virtual reality also brings several challenges, including social isolationism, health risks such as motion sickness, and technical limitations in the need for high computing power and quality internet connection. Despite these challenges, virtual reality is considered one of today's

most promising and fastest-growing technological platforms.

Virtual reality is a fascinating combination of technology and human perception, offering new possibilities for training, entertainment, education, and communication.

## 2.2 Augmented reality

Augmented reality is an innovative technology that enhances our physical environment with digital information, such as text, graphics, sound, video, or even interactive elements that can dynamically change in real time (SAP Industry, 2023). Augmented reality involves the integration of digital content with the natural world in real-time, allowing users to interact with both forms of reality simultaneously. Augmented reality enables the blending of the digital and physical worlds so that digital information becomes an almost indispensable part of our everyday experience. One of the key aspects of augmented reality is its ability to provide users with contextually relevant information (Kaliraj and Thirupathi, 2022).

Overall, augmented reality offers a new perspective on understanding and interacting with the world around us in a very adaptable and user-friendly format. While there are specific technological and ethical challenges, the potential of augmented reality as a tool for expanding our perception and interaction with the surrounding world is enormous.

Challenges associated with augmented reality mainly include issues related to user interface, energy consumption, and privacy protection. Despite these challenges, AR technology has tremendous potential, representing a new era in the interaction between the digital and physical worlds.

## 2.3 The primary differences between virtual reality and augmented reality

The fundamental distinguishing feature between virtual and augmented reality primarily lies in in-

teracting with the surrounding world, hardware requirements, and usage in various applications. Both technologies interact with the physical world, but virtual reality completely immerses you in a virtual world and isolates you from the natural environment, whereas augmented reality, on the contrary, expands the real world with virtual elements and allows interaction with both. This directly relates to the experience. Virtual reality offers a profound experience where the user is transported to another world. Augmented reality provides a less immersive experience, as you are still in your physical environment.

Virtual reality typically requires more demanding specialized hardware, such as VR headsets and often various sensors and controllers for motion tracking. On the other hand, augmented reality can be run on more common devices, such as smartphones and tablets, although there are also specialized AR devices. Virtual reality uses specialized controllers and often haptic feedback. Augmented reality may utilize touch screens, gestures, and voice control. AR applications are usually more mobile because they do not require as much hardware and can be used in a typical, everyday environment. Virtual reality usually requires more space and setup. (VR Education, 2023; Greenwald, 2023)

The difference also lies in using both realities, where virtual reality is often used in entertainment, simulations, and training, where complete immersion is desirable. Augmented reality finds application in more practical applications, such as navigation, training, medicine, and mechanical maintenance. While augmented reality has broader industrial use and can be implemented into existing systems and processes, virtual reality is often more expensive to develop and deploy.

### *3. Effective training for crisis situations in a safe environment*

In today's unstable world, we increasingly encounter crisis situations that can severely impact socie-

ty and individuals. Therefore, it is crucial that people, especially those in key positions, are prepared to face these challenges effectively. Adequate preparation for crises is key to maintaining safety and protecting lives. Training in a safe environment allows individuals and teams to experience and analyze various scenarios without exposure to actual risk. Crisis simulations, whether through virtual or augmented reality, offer realistic and interactive experiences that strengthen skills and responses.

This approach helps develop technical skills and the ability to be psychologically resilient and quickly adapt to challenging situations. It enhances readiness for real-life crisis situations and provides valuable opportunities for learning and improving procedures, essential for ensuring efficiency and safety in critical moments. Simulations of natural disasters, terrorist attacks, and industrial accidents provide realistic experiences that are key to developing effective response strategies. Training in a safe environment thus ensures better preparedness and enhances safety in the real world.

#### *3.1 The need for effective training and the psychological impact of crisis situations*

Therefore, effective training in a safe environment, such as simulation or virtual and augmented reality, is essential. This type of training allows participants to practice responses to crisis situations, thereby improving their decision-making abilities, communication skills, and ability to adapt to changing conditions quickly. Training in a simulated environment can also help reduce anxiety and increase self-confidence, which is crucial for real-life crisis situations. Members of the Integrated Rescue System (IRS), the Army, and other crisis management workers thus gain essential tools for managing the emotional and psychological challenges associated with crises.

VR and AR technologies offer unprecedented opportunities for simulating complex, dangerous, and stressful scenarios in a controlled and safe environment. Successful implementation of crisis



scenarios requires advanced technological infrastructure and a carefully thought-out educational and psychological strategy. Developers and training experts must collaborate to create realistic yet educationally effective simulations. This effort involves developing interactive elements that mimic real-life crisis situations, including physical, visual, and auditory effects that enhance the sense of immersion and help users better understand and learn to manage crisis situations (Novák, 2023).

It is also essential to address the technological aspects of VR and AR, such as immersive graphics, interactive interfaces, and sensory feedback. These technologies must be optimized to provide users with a seamless and realistic experience that effectively simulates the physical, emotional, and cognitive challenges associated with crisis situations. Incorporating elements such as haptic feedback, 3D audio effects, and real-time environmental responses increases the effectiveness of the training by strengthening memory traces and improving the ability to make rapid decisions in critical moments (Dvořák, Svobodová, 2023).

Lastly, the psychological aspects of training in VR and AR must be considered. It is crucial to ensure that simulations are designed with potential psychological impacts on users in mind, including preventing adverse effects like cybersickness or traumatic stress reactions. Approaches based on gradually increasing difficulty and support during and after the simulation can help users better cope with the emotions and stresses of simulated crisis situations.

The psychological impact of crisis situations is profound and diverse, affecting individuals at many levels of their psychological and emotional lives. Crisis situations, such as natural disasters, terrorist attacks, war conflicts, or pandemics, can provoke a wide range of emotional responses, including fear, anxiety, sadness, anger, or a sense of helplessness. These reactions are natural and expected given the sudden and often uncontrollable nature of these events, which disrupt daily life and can threaten the safety, health, and well-being of

individuals and communities. One of the critical aspects of the psychological impact of crisis situations is trauma (Horák, 2022). Traumatic experiences can lead to the development of Post-Traumatic Stress Disorder (PTSD), a mental illness that can develop after experiencing or witnessing events perceived as highly threatening or stressful. Prevention, early intervention, and education are absolutely crucial. Ensuring users' psychological comfort and safety when creating incredibly realistic crisis scenarios must always be a priority.

### *3.2 Crisis scenarios suitable for simulation*

A wide array of scenarios are suitable for simulation using virtual or augmented reality. Among the most fundamental are:

- Natural disasters: earthquakes, floods, inundations, tornadoes, wildfires.
- These scenarios test the ability to respond to rapidly changing natural conditions and coordinate rescue and evacuation operations and reaction strategies.
- Terrorist attacks: simulations of attacks, such as bomb explosions or shootings.
- This scenario tests capabilities in areas of rapid response, evacuation of civilians, collaboration between the police, Integrated Rescue System, and possibly the Army, securing the scene, investigation, and mitigation of the attack's aftermath. Training also emphasizes communication with the public and coordination between various security forces.
- Industrial accidents: Leaks of hazardous chemicals, nuclear accidents.
- These simulations focus on managing crisis situations in industrial settings and protecting public health.
- Defense of secured areas: Scenarios requiring the protection of crucial state objects or areas from hostile forces. Training here involves strategic planning, defensive tactics, and strategic cooperation among responding forces.



### 3.3 Methodology of implementation

The methodology of implementing crisis situations into VR and AR thus represents a multidisciplinary challenge that requires collaboration between technology experts, psychologists, educators, and crisis management specialists. This collaboration is essential for creating simulations that are not only technologically advanced but also pedagogically thoughtful and psychologically appropriate for participants. The success of these simulations relies not only on their realism but also on their ability to stimulate effective learning and adaptation to crisis situations in a safe environment.

A key factor for successful implementation is continuous evaluation and user feedback. This feedback allows simulation creators to constantly improve and adapt scenarios to meet the needs and expectations of end-users best. Evaluation should include both quantitative and qualitative methods, including measuring training effectiveness, assessing user experience, and analyzing the psychological impact on participants (Ondrůšek, 2019). Another essential aspect is accessibility and inclusivity. Simulations should be designed to be accessible to a wide range of users, including those with various physical abilities and prior experiences with VR and AR technologies. This requires careful consideration of ergonomics, interface intuitiveness, and the ability to customize the simulation to individual users' needs.

Challenges associated with implementing crisis situations into virtual and augmented reality include technological barriers, such as hardware and software limitations, high computational power, and compatibility with various devices. Overcoming these barriers requires technological development and innovations in development tools and platforms that allow creators to create and distribute their simulations more quickly and efficiently (Reček, 2021).

The correct implementation methodology will ensure the safe functioning of the proposed VR

and AR simulations. And what should a systematic approach to solving specific problems in implementing crisis situations into VR and AR look like? It involves a set of principles, theories, procedures, rules, a collection of specific process models, and suitable methods, techniques, and tools to achieve the project's goal, thereby allowing for objective and reproducible results. It primarily involves the following steps:

- Conceptualization — here, defining the training objectives and determining which skills and responses need to be developed is crucial. Understanding the psychological impact of simulated scenarios on users is also important.
- Design — a detailed storyboard and simulation scenarios are created in this phase. The design must reflect realistic environments and situations, including sound and visual effects.
- Development and testing — programmers and designers create the virtual environment in this phase. Following development, testing verifies how well the scenarios simulate real situations and how users respond to the simulation.
- Integration of interactive elements — here, the focus is on incorporating elements that allow users to interact with the environment. This can include virtual tools, dialogue systems, or choices that influence scenario development.
- Analysis and selection of scenarios — select real-life crisis situations suitable for simulation based on training needs and objectives.
- Design of the interactive environment — create detailed 3D models of the environments where the scenarios will take place, emphasizing realism and detail.
- Programming of scenarios and interactions — coding the logic of the simulation, including possible paths of events and user interactions with the environment.
- Testing and optimization — verify the functionality and realism of the simulations, making adjustments based on feedback from test users.
- Involvement of real users and obtaining feedback — have actual users, such as soldiers or



rescuers, try out the simulations and get feedback for further improvements.

The implementation process is complex and requires close teamwork among experts in VR/AR technologies, crisis management, psychology, and user experience. Properly implementing crisis situation methodologies into virtual and augmented reality environments offers a range of key benefits that can significantly improve preparation and response to extraordinary events. These benefits apply to both individual users and entire organizations and communities. Here are some of the most significant advantages:

- Increased realism and immersion – The correct methodology ensures that crisis situation simulations in VR and AR environments are as realistic as possible. This helps users better understand the complexity and dynamics of real crisis situations. The immersive experience increases user engagement and supports deeper experiential learning, which is key for effective training (Martof, 2019).
- Safe training space – The methodology creates a safe environment where participants can experiment and learn without the risk of injury or damage. This is particularly important in cases where real-life training could be dangerous or impractical, such as firefighting or evacuating buildings during an earthquake (Univerzita obrany, 2018).
- Enhanced cognitive and emotional skills – Properly implemented simulations in VR and AR can help develop technical skills and cognitive and emotional abilities, such as rapid decision-making, problem-solving, stress resilience, and empathy. This comprehensive preparation better equips individuals to handle stress and uncertainty in real crisis situations.
- Customizability and scalability – The methodology enables the customization of training scenarios to the specific needs of users or organizations. Scenarios can be easily modified or scaled to reflect different difficulty levels, specific crisis situations, or new threats. This en-

sures that training remains relevant and effective over time.

- Improved crisis response capability – Ultimately, properly implementing the methodology leads to better preparedness of individuals and organizations for crisis situations. Simulated trainings increase confidence and the ability to effectively respond in critical situations, potentially reducing the risk of property damage and injuries or fatalities.
- Objective assessment and feedback – Integrating VR and AR technologies allows for the collection of performance data during training, enabling targeted and accurate feedback. This is invaluable for identifying areas that require

The future in this field promises not only more advanced and realistic simulations but also better preparedness for real-life crisis situations, which has the potential to save lives and minimize the impacts of disasters on society.

#### *4. The perspectives and experiences of virtual reality and augmented reality users*

Implementing crisis situations into the safe environment of VR/AR will rely not only on the experiences of experts/professionals in the field but also on the perspectives and practical experiences of VR/AR users. The authors conducted a minimal pilot survey on VR/AR users' views on implementing crisis situations in the safe environment of VR/AR. The following questions focus on personal and professional experiences with VR/AR, their potential to improve training programs, perception of crisis situations, training safety, and the impact on decision-making processes and psychological resilience. Highlighting the advantages and disadvantages of these technologies will allow us to understand their possibilities and limitations more deeply.

The pilot survey consisted of sending out a questionnaire with 10 questions, which was participated in by members of the Army and Integrated

Rescue System (IRS). The questionnaire was distributed to the Regional Directorates of the IRS and various command elements of the Army, and further distribution was requested to their subordinate units. A total of 57 filled-out questionnaires were returned in the pilot survey on implementing crisis situations in the safe environment of VR/AR. The first 8 questions were closed-ended with YES/NO answers. The remaining 2 questions were semi-closed with multiple-choice answers and the option to write their response.

### 1. Do you have experience using VR/AR personally or professionally?

Approximately 88 % of respondents answered that they already have some experience with VR/AR in their personal or professional lives. Only 7 out of the total 57 respondents responded negatively.

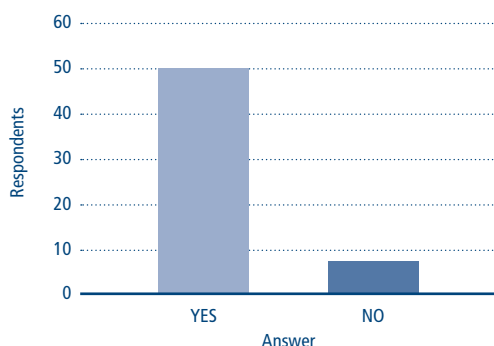
### 2. Do you consider it important to include VR/AR simulations in the standard training program?

Just under 95 % of respondents answered affirmatively, considering it important to include VR/AR simulations in the standard training program. Only slightly over 5 % of respondents answered negatively.

### 3. Can VR/AR simulations lead to a realistic perception of crisis situations?

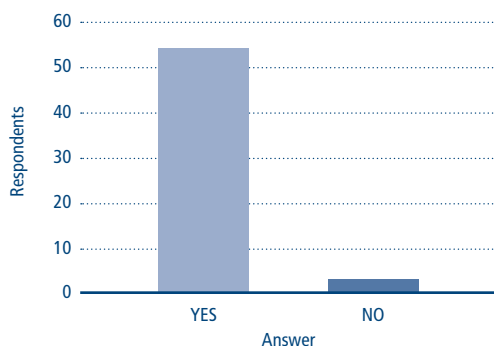
Regarding question No. 3, 75 % of respondents answered positively, and 14 answered negatively. Therefore, 25 % of respondents do not believe VR/AR simulations can lead to a realistic perception of crisis situations.

Graphs 1 » Question 1



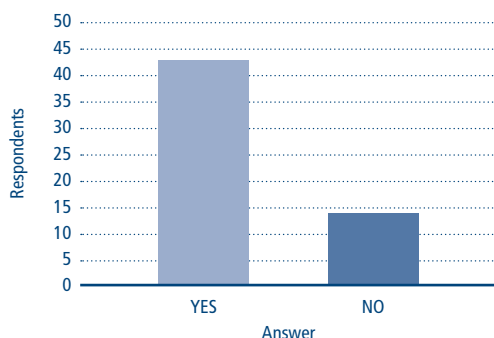
Source: Author's own work

Graphs 2 » Question 2



Source: Author's own work

Graphs 3 » Question 3



Source: Author's own work

#### 4. Should VR/AR training be complemented by traditional training?

All 57 respondents are convinced that VR/AR training should be complemented by traditional training.

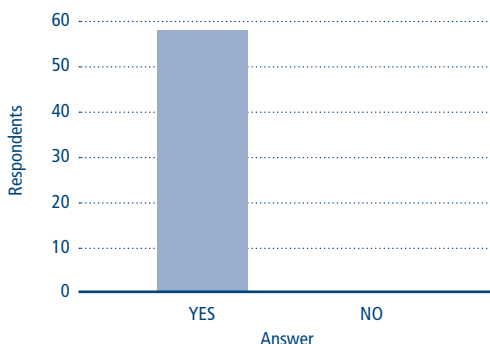
#### 5. Do you think VR/AR increases safety during training?

More than 91 % of respondents believe that VR/AR increases safety during training, and just under 9 % think the opposite.

#### 6. Would VR/AR training help you improve your responses in crisis situations?

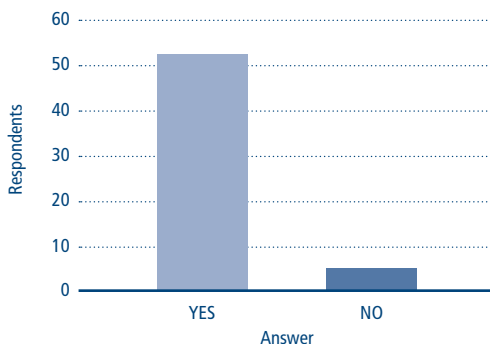
Just under 14 % of those surveyed think that VR/AR training would not help them improve their responses in crisis situations, but on the other hand, approximately 87 % of respondents believe YES.

Graphs 4 » Question 4



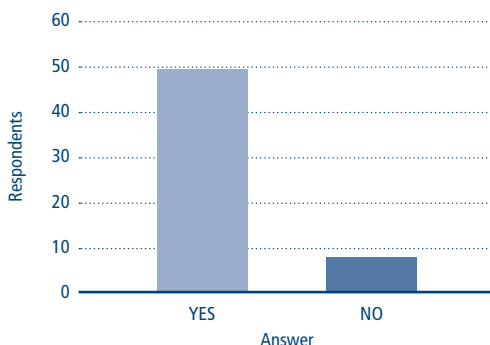
Source: Author's own work

Graphs 5 » Question 5



Source: Author's own work

Graphs 6 » Question 6



Source: Author's own work

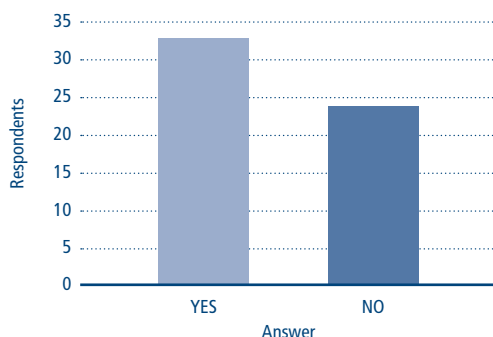
## 7. Can training in VR/AR influence your decision-making in real life?

Almost half of the respondents, that is 58 %, think that training in VR/AR can influence their decision-making in real life. Less than half of the respondents, approximately 42 %, do not think so.

## 8. Do you believe VR/AR can help overcome emotional and psychological barriers associated with real crisis situations?

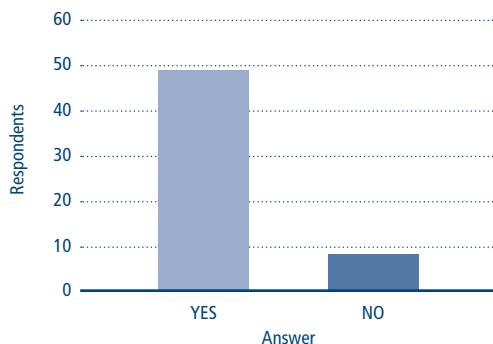
Most respondents believe VR/AR can help them overcome emotional and psychological barriers associated with real crisis situations, but just under 14 % think it will not help them.

Graphs 7 » Question 7



Source: Author's own work

Graphs 8 » Question8



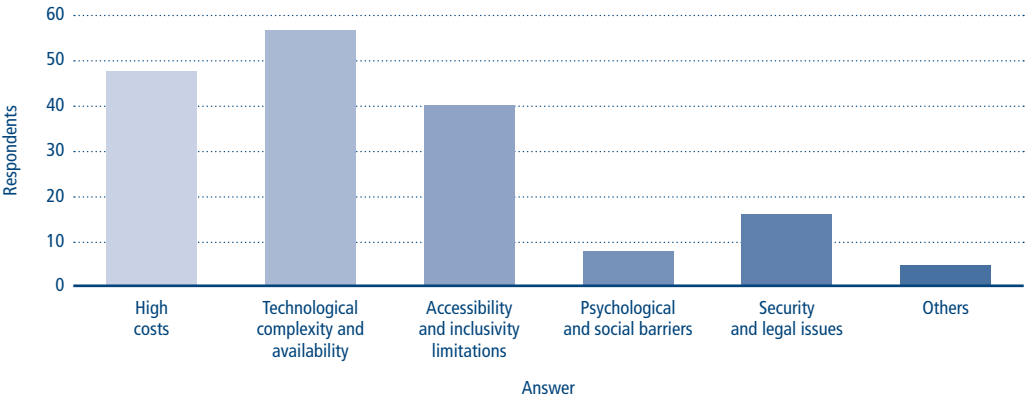
Source: Author's own work

*VR and AR technologies offer unprecedented opportunities for simulating complex, dangerous, and stressful scenarios in a controlled and safe environment. Successful implementation of crisis scenarios requires advanced technological infrastructure and a carefully thought-out educational and psychological strategy. Developers and training experts must collaborate to create realistic yet educationally effective simulations. This effort involves developing interactive elements that mimic real-life crisis situations, including physical, visual, and auditory effects that enhance the sense of immersion and help users better understand and learn to manage crisis situations.*

### 9. What are the main obstacles to implementing VR/AR in training?

In the penultimate question, respondents could choose multiple answers. The main obstacles to implementing VR/AR in training include technological complexity and availability at 100 %. High costs were in second place with 84 %, and accessibility and inclusivity limitations were in third place with 72 %. The least significant obstacles include others at just under 9 %, among which respondents mentioned limitations in movement within the VR/AR headset space, potential risk of dependency on VR/AR technologies, unsuitability for all types of training, nausea, and vomiting. Psychological and social barriers are in the penultimate position at 14 %, and security and legal issues are in one position above 28 %.

Graphs 9 » Question 9



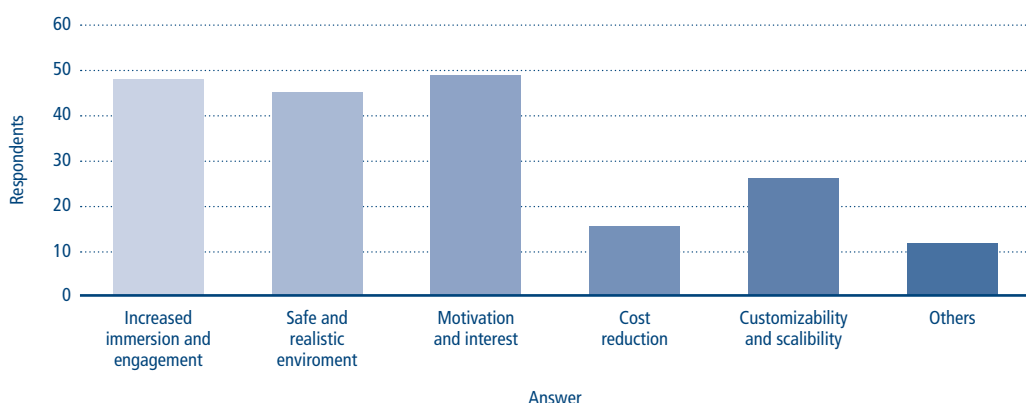
Source: Author's own work

### 10. What are the main advantages of using VR/AR in training?

Among the three main advantages of using VR/AR in training, respondents identified increased motivation and interest at 86 %, increased immersion and engagement at 84 %, and a safe and realistic environment at 79 %. Following these, with a more

significant gap, are customizability and scalability at 46 % and cost reduction at 26 %. The least considerable advantage was categorized as other at 21 %, where they wrote about the possibility of repeating training at any time, the opportunity to share VR/AR experiences with colleagues and instructors, and the ability to analyze data on participants' performance.

### Graphs 10 » Question 10



Source: Author's own work

The survey results clearly show that most respondents (88 %) have experience using VR/AR technologies in their personal or professional lives, indicating wide acceptance and engagement among participants. Nearly universal consensus (95 %) on incorporating VR/AR simulations into standard training programs emphasizes the perceived value of these technologies in education and preparation. Although 25 % of respondents expressed skepticism regarding the ability of VR/AR simulations to lead to a realistic perception of crisis situations, a significant majority (75 %) believe in their effectiveness in this regard.

Unanimity on the need to supplement VR/AR training with traditional training demonstrates recognition of the value of a combined approach to education. This is supported by the majority opinion (91 %) that VR/AR increases safety during training,

and approximately 87 % believe this training could improve their responses in crisis situations.

While nearly half of the respondents (58 %) see the impact of VR/AR training on decision-making in real life, the research also identified significant obstacles to implementing VR/AR in training, with technological complexity and availability marked as the main barriers. Nonetheless, most respondents acknowledge the main advantages of VR/AR in training, such as increased motivation and interest, immersion and engagement, and a safe and realistic environment.

### 5. Conclusion

In conclusion, the article on implementing crisis situations into the safe environment of virtual and augmented reality highlights the multidisciplinary





challenge that requires collaboration between technology experts, psychologists, educators, and crisis management professionals. The conclusion points out the key advantages of the correct implementation methodology, such as increased realism and immersion, a safe training space, enhanced cognitive and emotional skills, customizability and scalability, improved crisis response capabilities, and objective assessment and feedback. Emphasis is placed on continuous evaluation and feedback for constant improvement and adaptation of scenarios to user needs. The proper implementation of methodology holds significant potential for improving preparation and response to extraordinary events, which has the potential to save lives and minimize the impacts of disasters on society. While there are specific challenges and limitations,

such as the need to supplement traditional training methods, and possible disadvantages like technological dependency or costs, the benefits of VR/AR in education and training outweigh their potential drawbacks. Thus, integrating VR/AR into standard training programs represents a direction that the development in crisis situation preparedness should take.

The survey summary indicates strong support for integrating VR/AR technologies into educational and training programs despite the challenges associated with their implementation. Participants perceive VR/AR as a valuable tool for improving safety, responses to crisis situations, and the overall educational experience, emphasizing the need for further development and incorporation of these technologies into training programs.

## RESOURCES

- [1] DVORÁK, P., SVOBODOVÁ, M.: 2023. Využití rozšířené reality pro zvýšení efektivity tréninku v krizových situacích. *Časopis pro informační technologie*, 15(4), 48–56. ISSN 1212-4567.
- [2] GÖRNER, T., HOŘEJŠÍ, P., KURKIN, O.: 2012. *VYZTYMDP: Virtuální realita*. Plzeň: SmartMotion. ISBN 978-80-87539-07-1.
- [3] GREENWALD, W.: 2023. *Augmented Reality (AR) vs. Virtual Reality (VR): What's the difference?* [online]. [cit. 2023-08-02]. Available at: <https://www.pcmag.com/news/augmented-reality-ar-vs-virtual-reality-vr-whats-the-difference>
- [4] HORÁK, L.: 2022. *Psychologické aspekty simulací ve virtuální realitě*. Brno: Masarykova univerzita. ISBN 978-80-210-1234-9.
- [5] KALIRAJ, P., DEVI, T.: 2021. *Innovating with Augmented Reality: Applications in education and industry*. CRC Press. ISBN 978-1-003-17589-6.
- [6] LOWOOD, H. E.: 2023. *Virtual reality*. Encyclopedia Britannica. [online]. [cit. 2023-08-28]. Available at: <https://www.britannica.com/technology/virtual-reality>
- [7] MARTOF, P.: 2019. How can leaders use stress to develop their skills. In *ICERI2019 Proceedings*. Valenica, Burjassot: IATED Academy, 2487–2491. ISBN 978-84-09-14755-7.
- [8] NOVÁK, J.: 2023. *Implementace krizových situací do virtuální reality: Metodologie a případové studie*. Praha: Vysoká škola ekonomická. ISBN 978-80-245-1234-5.
- [9] ONDRŮŠEK, J.: 2019. *Využití simulací k výcviku a přípravě v Armádě České republiky*. Bakalářská práce. Masarykova univerzita. [online]. [cit. 2023-08-28]. Available at: [https://is.muni.cz/th/ei8g5/Vyuziti\\_simulaci\\_k\\_vyvcviku\\_a\\_pripave\\_v\\_Armade\\_Ceske\\_republiky\\_final.pdf](https://is.muni.cz/th/ei8g5/Vyuziti_simulaci_k_vyvcviku_a_pripave_v_Armade_Ceske_republiky_final.pdf)
- [10] REČEK, J.: 2021. *Využití simulační technologie při výcviku vybraných složek IZS na mimořádnou událost v Libereckém kraji*. Diplomová práce. České vysoké učení technické v Praze, Fakulta biomedicínského inženýrství. [online]. [cit. 2023-08-28]. Available at: <https://dspace.cvut.cz/bitstream/handle/10467/98168/FBMI-DP-2021-Recek-Jakub-prace.pdf?sequence=-1&isAllowed=y>

- [11] SAP.: 2023. *What is augmented reality (AR)?* [online]. [cit. 2023-08-24]. Available at: <https://www.sap.com/products/scm/industry-4-0/what-is-augmented-reality.html>
- [12] UNIVERZITA OBRANY.: 2018. *NAU-113/2018-9: Řízení a použití ozbrojených sil / Management and Employment of the Armed Forces*. Brno.
- [13] VR EDUCATION.: *Porovnání technologií VR AR MR XR*. [online]. [cit. 2023-07-28]. Available at: <https://vreducation.cz/porovnani-technologii-vr-ar-mr-xr>

## Implementation of crisis situations in a safe virtual reality environment

### ABSTRACT

*Virtual reality (VR) in various fields, including training and emergency preparedness, is growing. This paper focuses on innovative approaches to implement realistic crisis scenarios in a safe and controlled virtual reality environment. The main goal is to provide users with an intense and practical experience to help them better prepare for real-life crises. In the first part of this paper, we discuss the theoretical foundations of virtual reality and its ability to simulate complex and dangerous scenarios without risk to the user. Next, we discuss the technological aspects of VR, such as immersive graphics, interactive interfaces, and sensory feedback, which are vital to creating a compelling training environment. The second part of the paper is devoted to case studies where VR has been successfully used for training in fire safety, medical emergencies, military operations, and natural disaster response. These studies show how VR can be useful for skill development, critical decision-making, and stress management. In the paper's final section, we discuss the challenges and limitations associated with implementing VR in emergency training. We address issues such as technological barriers, realism of simulations, and psychological impacts on users. We also suggest directions for future research and development in this area. This article provides a comprehensive overview of the possibilities of using virtual reality for emergency preparedness and highlights its potential as a tool for enhancing security and preparedness.*

### KEYWORDS

*virtual reality (VR); crisis situations; training and preparation; safety simulation; decision making in critical situations*

### JEL CLASSIFICATION

*M14; I23; O15*



# Podcasts — an effective part of company's communication?

- ▶ **Viera Krúpová** » University of SS Cyril and Methodius, Faculty of Mass Media Communication, Nám. J. Herdu 2, 917 01 Trnava, Slovakia; email: [krupova2@ucm.sk](mailto:krupova2@ucm.sk)
- ▶ **Zora Hudíková** » University of SS Cyril and Methodius, Faculty of Mass Media Communication, Nám. J. Herdu 2, 917 01 Trnava, Slovakia; email: [zora.hudikova@ucm.sk](mailto:zora.hudikova@ucm.sk)
- ▶ **Andrea Stoklasová** » University of SS Cyril and Methodius, Faculty of Mass Media Communication, Nám. J. Herdu 2, 917 01 Trnava, Slovakia; email: [imrecze1@ucm.sk](mailto:imrecze1@ucm.sk)

## \* 1. Introduction

Podcasts in general have seen an increase in popularity in recent years. The term podcasting was coined in 2004 and was created by merging of the words iPod and Broadcast (Tvrdoň, 2017). There are many definitions of podcast. One of the comprehensive definitions can be found from 2006, when the author D. L. Potter defines podcasts as digital files that can be downloaded from the Internet and listened to anywhere and anytime (Potter, 2006). According to the New Oxford American Dictionary, a podcast is a digital recording of a radio broadcast or similar program made available on the Internet for download to a personal audio player (Podcast's lexicon's Word of the Year, Chicago Tribune, 2005). Waddingham, Zacary and Ketchen (2020) define podcasting as a series of audio files that are available by downloading them from the Internet. The format of a podcast is similar to a traditional content such as talk shows or documentary programs, but the difference is that listeners can consume it when it's convenient for them, rather than when it's scheduled in a linear broadcast program.

While podcasts were only a marginal phenomenon a few years ago, the audio format has now

found a permanent place in the current media environment and in the daily lives of many people (Bonini, 2015). The situation with podcast production in Slovakia was slightly different from developed countries. In the world, this trend developed intensively much earlier. The first podcasts began to appear in 2003. Their growth was exponential. While in September 2004 the Google search engine indexed only 28 pages containing the term podcast, a month later there were one hundred thousand and nine months later nine million (Košíček, 2006). The podcast, especially in the number of listeners, grew steadily until 2013, but despite this, it did not succeed as a mass media output. Until 2013, a podcast was seen primarily as a medium for a specific, smaller group of people. The turning point came with the podcast Serial. The arrival of the Serial podcast marks the so-called "podcast renaissance", or otherwise called the golden era of podcasts. The main theme of the Serial podcast were unsolved or otherwise mysterious murders. Based on which the listeners could form their own theories and share them through mediums such as Twitter, which only made the podcast more popular. Podcast The Series started a new era of podcasting. Fictional and non-fictional narrative formats, sci-fi series, crime thrillers with an inves-

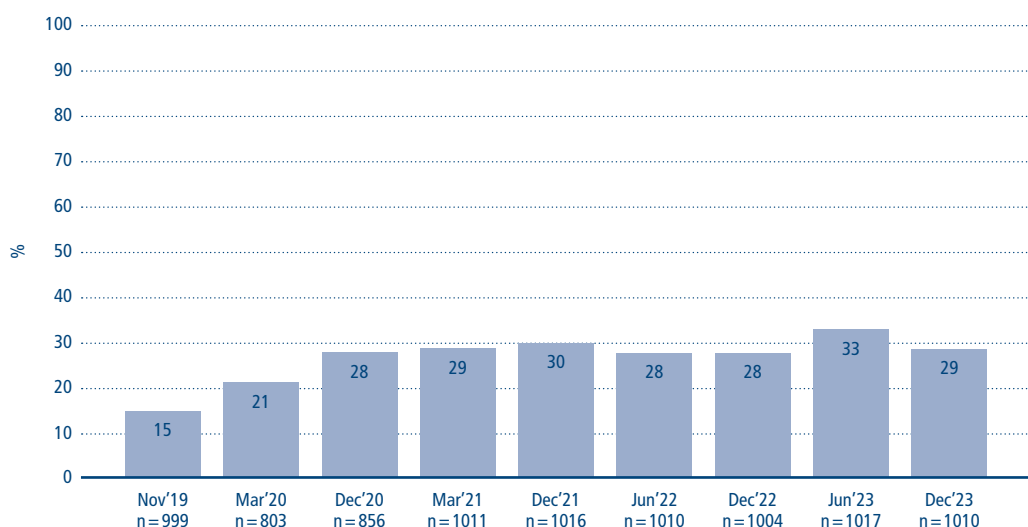
tigator conducting interviews to solve mysteries became more and more popular in podcast production. The first podcast that appeared in Slovakia was created in 2005, when the Slovak writer and journalist T. Ulej started making his own recordings of literature and published them under the heading as the first Slovak podcast. Rádio FM is also among the first podcast pioneers in Slovakia. The third circuit of the Slovak public Radio launched a podcast service on its website on April 1, 2006, just two years after podcasts appeared in the world. However, these were only the first attempts or experiments, the more massive spread of podcasts came only after 2017. Since 2019, when their listenership began to be measured regularly, podcasts in Slovakia have continuously recorded a slight year-on-year increase in popularity. Currently, the listening is relatively stable, podcast listening oscillates around 30 percent of the total Internet population between the ages of 18 and 65. According to a survey by the 2muse agency, which is the only one in Slovakia that conducts regular

podcast listenership surveys, podcast listenership reached 29 percent of the total Internet population last year, which represents 1.1 million listeners (2muse, 2024). A representative online survey was conducted on a sample of 1010 respondents, from the 8<sup>th</sup> to the 18<sup>th</sup> of December 2023.

According to the survey by 2muse agency, we can see a positive increase in the listening but also in the frequency of podcast listening. It recorded a slight increase in 2023, especially during the summer month of June.

Podcasts are available on websites of the podcast producers or can be downloaded from different podcasting platforms, on which the producers upload their content. As the number of podcasts increases so do the topics being covered. Topic is an extremely important attribute based on which people decide which podcast they want to listen to. Today, they primarily focus on current events, politics, education, business, health, but also topics concerning leisure and hobbies. According to the 2muse agency, Slovak listeners are most interested

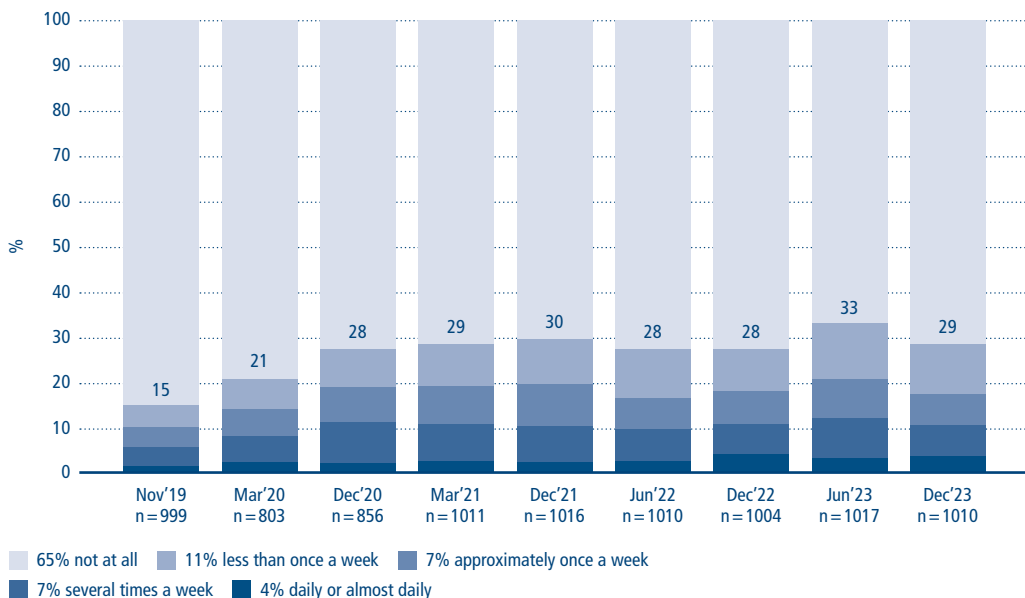
**Figure 1 » Slovak internet population from the age of 18, who listens to podcasts**



Source: Survey by the 2muse agency, final report from 26.1.2024, survey provided to the authors of the study

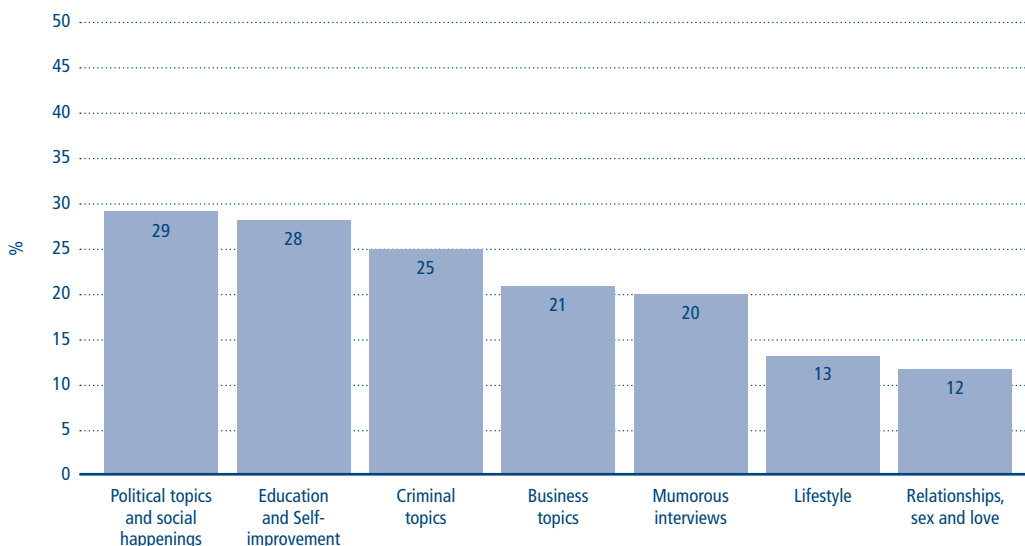


**Figure 2 » Frequency of consumption of Slovak podcasts (representative sample of Slovak internet population)**



Source: Survey by the 2muse agency, survey provided to the authors of the study

**Figure 3 » Spontaneous listenership based on topic/character of the podcast -a subgroup of those who listen to Slovak podcasts**



Source: Survey by the 2muse agency, survey provided to the authors of the study

in political topics and social events (29%), education and self-development (28%), criminal topics (25%), business topics (21%), humorous interviews (20%), lifestyle (13%), relationships, sex, and love (12%).

People are highly interested in education, especially regarding politics, current social happenings, or self-improvement. They are entertained by criminal happening / mysteries and humorous interviews. The least popular podcasts are ones concerned with relationships.

Podcast producers are diverse. It's not only media, publishers but also well-known personas, actors, presenters, influencers, or even completely unknown people. Various companies, organizations, associations, non-profit organizations are also added to the list of podcast producers. The podcast thus becomes part of their company's communication, whether external or internal. Due to its increasing popularity in society, interest in podcasts is also growing among companies that benefit from the trend in their communication portfolio by producing so-called corporate podcasts themselves (Schreyer, 2019). Businesses find that the greatest added value of podcasts is the fact that they can get the attention of their customers for 60 to 90 minutes, but it must be said that the content must be interesting (ČSOB, 2021). The podcast has thus become a marketing tool that is part of the mix of companies' communication strategy towards their clients, partners, and co-workers.

However, podcasts produced by companies or organizations are not on the leading ranks of podcast platforms, nor are they specifically evaluated in the survey of the agency 2muse, which is the exclusive source in Slovakia for obtaining relevant data in the field of podcasting. It is therefore quite difficult to get more information about whether companies, organizations produce podcasts, how they perceive podcasts, what is their motivation to do so and what are the benefits. Interesting areas of investigation may include the topic of how podcasts and their benefits are perceived by compa-

nies that have not yet decided on podcast production. As these data cannot be obtained from any relevant surveys, we decided to conduct our own survey on a selected sample of companies and organizations in Slovakia. The aim of our study was therefore to find out and bring insight into how the popular media format -- podcasts as a marketing tool, is perceived and used by private companies and organizations in Slovakia. For our investigation, we used both quantitative and qualitative methods, the results of which we evaluated, interpreted, and compared.

## 2. Podcasts as a marketing tool

Online communication has also significantly changed the behavior of businesses in an effort to establish themselves on the market. Access to the Internet, social networks and other digital solutions have significantly affected the dynamics of market power (Holliman & Rowley, 2014). Companies or organizations are therefore faced with a new situation, new market dynamics that have led to a shift in business. Companies sell online and communicate with customers digitally (Järvinen, Taiminen, 2015). Customers have an almost unlimited opportunity to search for products or services on the Internet, compare them, and get reviews from hundreds of other consumers or experts. Therefore, traditional marketing tools have lost their edge due to customers being able to choose their means of interaction to a greater extent. (Opreana, Vinerean, 2015). And it is the possibility of choice, or personal choice, why people reach for podcasts, where they can find the "correct and important information". And that's also why companies include this type of communication as their sales method. Podcasting is one of several tools that can be used in content marketing initiatives, with businesses often communicating with stakeholders without clearly articulated sales intent (Londberg, Wahlquist, 2020). Another reason for this is that customers go through almost 60 percent of the buying process before contacting the



selling company (Jefferson, Tanton, 2015). Therefore, companies try to get the attention of their customers, partners, and potential customers as much as possible. Which is only one of the reasons why podcasts have their rightful place in media.

Choosing the right topic is crucial when deciding about the content and structure of company's podcasts. Because the content should reflect the information, resources and materials that company wants to communicate (Leibtag, 2013). In addition to appropriately chosen and targeted information-saturated content, the emotional impact of podcasts on their listeners is also important. It enables building a strong relationship between the hosts (note authors – podcasters, companies) and listeners (Berry, 2016). Podcasts as a media format built on an informational and emotional basis, and thus is an effective way of disseminating information. With the help of a full-fledged, high-quality sound, one gets the full attention of the audience (Pillai, 2019). Podcasting works perfectly as a form of content marketing because there is high engagement, as well as the possibility to identify with the human voice in the text you are listening to (Scott, 2009). This helps listeners create associations between the voice and the content, thereby indirectly creating a relationship with the given topic.

In addition to the correctly chosen topic, appropriately set content, optimal structure and appropriately chosen elements of emotional impact on the listener, companies are also aware that podcasts differ from other content on the Internet in several relevant ways. Above all, it is an on demand service. This makes podcasts a potentially very effective marketing tool, available to the consumer almost anytime, anywhere. If listeners can choose the time and place to consume a podcast, consumers gain more control and personalization options with the content or author of the podcast (Morris, Patterson, 2015). In addition, podcasts are consumed in a different way than most other media (Rowles, Rogers, 2019). With smartphones, people can access podcasts anywhere and anytime (Waddingham et al., 2020), making them accessi-

ble to a wide range of consumers. Corporate podcasts thus represent an innovative form of thrust communication with a particularly interested target group, which is primarily young and educated with high purchasing power (Doberts et al., 2021). This also elevates them to an interesting and modern marketing or communication tool.

### 3. *Research objectives and methodology*

The presented study aimed to focus on finding out how Slovak companies operating in the private sector perceive podcasts as a marketing tool for external communication. We have more deeply focused on investigating whether they even include it in their communication mix or not, what are the reasons for this decision within the companies and what does it ultimately brings them, whether in terms of increasing their business revenue, building a brand, making oneself visible externally, towards one's clients, partners, co-workers, etc. We were also interested to find out if they do use this tool, what topics they prepare, whether the presented topics correspond with the focus of their companies, how often they produce podcasts, and in what form.

For this research, we have used both quantitative and qualitative research methods. The first was a questionnaire inquiry, which we used to determine the use of podcasting as a marketing tool within the communication mix for external communication, as well as the reasons for its use and the expected and real benefits of this tool for the company. The ambition was not to create representative research as we still have little information in this area. We decided to conduct an initial survey, specifically for the selection of companies and organizations classified as small and medium-sized enterprises with the number of employees from 100 to 500. We selected companies and organizations from five areas. Specifically, the following sectors: financial consulting, healthcare, travel agencies, IT sector, and real estate sector. We have chosen the mentioned areas on purpose, as



we assume that companies in the mentioned sectors have the ambition to address and educate their clients in different ways and their business is built on more intensive communication and contact with the customer, therefore we assume that a modern and attractive form, such as podcast, may be of their interest. As part of the survey, we contacted a total number of 120 companies by phone, we received answers from 63 companies and organizations.

We obtained answers in the form of a structured questionnaire. We asked everyone the same questions. As part of the answers, they had the option of choosing several options.

We evaluated the given answers (number and percentages), and then interpreted and compared them.

In the second stage, as part of qualitative research, we looked at the podcasts of companies and organizations in more detail. We monitored and evaluated the following criteria: what topics do they use in their podcasts, their frequency and structure. For a more detailed analysis, we selected all companies that answered positively to the question of whether they produce podcasts. The podcasts were created in the period from 2021 to 2023. We do not mention the specific dates of the individual podcasts due to the preservation of anonymity.

#### 4. How do small and medium-sized companies in Slovakia perceive podcasts? (quantitative evaluation)

Among the 62 companies that answered the questionnaire, only a very small part of them produce podcasts.

To the question whether their company produces its own podcast, 5 companies answered positively, which is 8.02 percent of the total number.

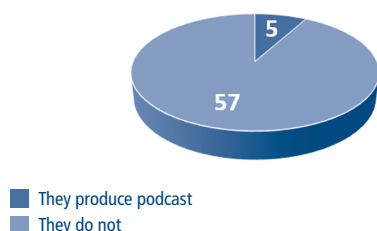
From which two companies answered that their reasons behind the decision is only that it's a new trend, three companies stated that they use podcasts as an interesting way of getting to clients, and three companies hope to higher awareness around their brand.

When asked what does the production of podcasts bring to their companies, there were various answers. One company stated that it informs their clients about their products, another company stated that this is how they inform clients about their charitable activities. In case of two companies, podcast production is appreciated by their clients, one company cannot yet evaluate the benefit because they produce podcasts for a short period of time.

Even in the case of companies that answered negatively — that is, that they do not produce podcasts, we investigated the reasons for this decision.

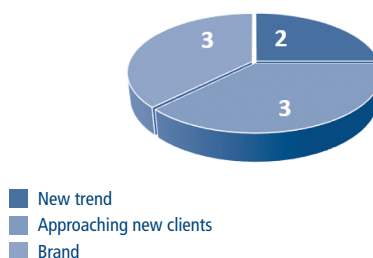
The highest number of answers, exactly 30 companies, answered that they do not have the

**Figure 4 » Companies vs Podcasts**



Source: own evaluation

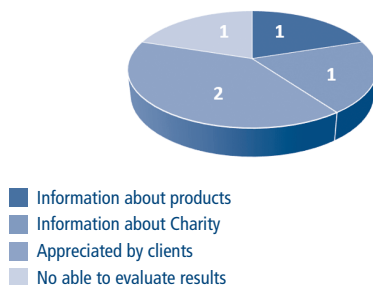
**Figure 5 » Reasons behind the decision**



Source: own evaluation



**Figure 6 »** *What does podcast production bring to companies*



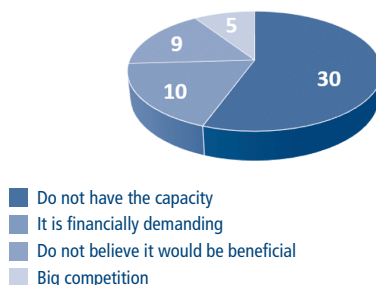
Source: own evaluation

personal capacity. For 10 companies podcast production is too financially demanding, 9 companies believe that podcast production would not be beneficial. Only 3 companies stated that they don't have the right topics and another five companies believe podcast production to be meaningless as there is too much of a competition. 16 companies stated different reasons, for example: they did not think about it, they do not have the personnel capacity or technically equipped employees, this method of marketing is not precisely targeted, they have no reason to do it, the age of their workers is high and therefore it would not be relevant. (Authors' note: companies had the option of multiple answers).

### 5. Podcasts of small and medium-sized companies (qualitative analyses)

In our probe into the issue of the use of podcasts as a modern and attractive communication tool by small and medium-sized companies, we were interested in the focus of the topics, what is the frequency of podcast production and what is their structure. We, in detail, analysed the production of 5 companies. In order to preserve the anonymity of the companies, we do not mention their names, but only areas of their activity.

**Figure 4 »** *The main reasons why companies do not produce podcasts*



Source: own evaluation

#### • Company 1

- **Focus of the company:** The company focuses on financial products, specifically on consulting in the field of finances, savings, loans, and mortgages.
- **The focus of the podcast:** The topics of the podcast are devoted to the real estate market and orientation within the market. The ambition is to provide up-to-date information on developments in the real estate market with an effort to support and connect financial advisors and real estate brokers.
- **Topics of the podcast:** The company has recorded 3 podcasts so far. The topics they covered were all related to real estate agencies, the real estate crisis, or the current situation in the real estate market.
- **Structure and processing of the podcasts:** The podcasts have the same format. The presenter (male) conducts the interview with an invited guest on a specific topic. The guests are specialists in the real-estate and real-estate market. The interview is carried out in a conservative, more formal way to provide the listener with the necessary information. In the beginning, the presenter introduces the topic and reveals the guest, which is then followed by a jingle. The presenter then gives more information about

the topic and the guest. The podcast continues with the interview with the invited guest, which is carried out conservatively to gain relevant information for the listeners. At the end of the interview, the presenter thanks the guest for the interview and says goodbye to the listeners. The podcast ends with a jingle.

- **Periodicity, length:** The podcast is produced monthly. The length ranges from 25 to 30 minutes. The podcast is available on standard podcast platforms.

#### • Company 2

- **Focus of the company:** The company focuses on providing services in the field of mobile data and internet connection.
- **The focus of the podcast:** The podcast is aimed at disseminating information about new technologies in the field of mobile data and the Internet. According to the creators of the podcast, new terms and new abbreviations are literally “rolling at people from all sides”. The world is changing too fast. The podcast therefore talks to experts about news, changes, new incoming technologies, and the latest trends in the field of telecommunications and IT.
- **Topics of the podcast:** Podcasts are devoted to online applications, practical advice related to the use of data and the Internet, as well as news on the market in this area.
- **Structure and processing of the podcasts:** At the beginning of the podcast, the listeners will be welcomed by the presenter (male), who will briefly introduce the current topic and welcome the guest. A jingle follows. The guests are either experts from the company that produces the podcasts or experts on the given topics from an external environment. After the introduction, the moderator interviews the guest. It is conducted formally and conservatively. After the interview, the moderator thanks the guest and the listeners and

says goodbye. The podcast ends with a jingle.

- **Periodicity, length:** The podcast is produced on a monthly basis, the length varies from 15 to 30 minutes. The podcast is available on standard podcast platforms.

#### • Company 3

- **Focus of the company:** The company operates in the field of tourism, focusing on the sale of stays abroad and the sale of plane tickets.
- **The focus of the podcast:** It is a travel podcast that brings interesting information about various destinations. Its goal is to provide various tips and tricks to make your travel experience more enjoyable, also wanting to reach a group of people who are travelers and want to get to know new countries.
- **Topics of the podcast:** Podcasts cover travel topics, practical advice, news, and recommendations, but also feature people who work in the industry.
- **Structure and processing of the podcasts:** At the beginning of the podcast, the upcoming guest will be quoted. Subsequently, two presenters (male and female) will introduce the guest and ask him about what is currently new in his life, what are his current activities, etc. The podcast guests are either well-known personas/celebrities, who talk about their travel experiences or experts in the field who work around topics of traveling. The podcast is conducted in a less formal way, the interview is more relaxed, all to entertain the listener. Sometimes the podcast producer mentions the possibility of supporting charitable activities. Dynamic musical breaks and sounds are incorporated into the podcast. At the end of the podcast, the presenters say goodbye and remind you when you can listen to the next episode.
- **Periodicity, length:** The podcast is produced irregularly, 2-3 times a month, and



the length is varied, ranging from approx. 30 minutes to 60 minutes. The podcast is available on standard podcast platforms.

- **Company / Organization 4**

- **Focus of the company:** The company focuses on consulting and supporting business entities in terms of their financial security.
- **The focus of the podcast:** The podcast brings an expert perspective on current social issues and topics that can move the country forward. According to the authors of the podcast, it is important to ensure that expertise comes first, because the more expert opinions we hear, the more qualified decisions the society can make.
- **Topics of the podcast:** The topics of the podcasts are current situations in society that can move companies forward, they address the topic of expertise and experts in practice and their needs. Podcasts are also focused on financial topics — drawing European funds, and financing business development.
- **Structure and processing of the podcasts:** The podcast starts and ends with a jingle. The presenter greets the listeners and introduces the topic and the guest. The producers bet on a presenter (male), who is known from the media as a political moderator. After the introduction, they move on to the interview with experts on a specific topic. The interviews are formal, the presenter is very dynamic, and the interview is led in a very professional manner. After the interview, the presenter thanks the guest as well as the listeners and invites them to listen to another episode of the podcast.
- **Periodicity, length:** The company has produced 7 podcasts on a monthly basis, so far. They were produced as pilot episodes with the ambition of continuing production. The length ranges between 15 to 30 minutes. The podcasts are available on standard podcast streaming platforms.

- **Company 5 — a specific type of a podcast**

- **The focus of the company:** The company focuses on production related to IT.
- **Focus of the podcast:** This type of podcast is specific in the sense that it is primarily intended for company employees. Therefore, it brings topics that may be useful or interesting for the employees.
- **Topics of the podcast:** The main topics of the podcasts are, for example, safety in the workplace, the introduction of employees and their successes, mental health-related topics, lifestyle advice, or practical advice on how to appropriately combine work with family.
- **Structure and processing of the podcasts:** In the beginning, the presenter (male) greets the listeners and introduces the topic and the guest. The introduction is followed by a jingle. Then the presenter conducts the interview with the host. Guests are either experts from within the firm or external environment. The interview is conducted in a more easy-going, popular way. After the interview, the second presenter (female) shares information about the company's news. The podcast ends with a jingle.
- **Periodicity, length:** Podcasts are produced 2-3 times a month, the length is very flexible, varying from 5 to 50 minutes. Podcasts are available for streaming on the company's website.

## 6. Discussion as a Conclusion

Podcasts in Slovakia are gaining popularity. Podcast platforms offer different types, formats, and topics of podcasts. But despite all of this we can conclude that podcasts produced by companies are still in a minority. This is also shown in our survey that we conducted on a sample of selected companies. Only a very small percentage of sample companies have confirmed that they produce podcasts. Despite podcasts being part of their com-

*Podcast producers are diverse. It's not only media, publishers but also well-known personas, actors, presenters, influencers, or even completely unknown people. Various companies, organizations, associations, non-profit organizations are also added to the list of podcast producers. The podcast thus becomes part of their company's communication, whether external or internal. Due to its increasing popularity in society, interest in podcasts is also growing among companies that benefit from the trend in their communication portfolio by producing so-called corporate podcasts themselves.*

munication mix, their primary motivation is not to sell products. Rather, they perceive this tool as a new trend that can appeal to clients in an interesting way, or they want to use to strengthen their brand image or further build their brand. In one specific case, a company uses podcasts with an ambition to communicate with its employees, therefore they do not support external but rather internal communication within the company. The reasons why companies decide to produce podcasts correspond directly to what this format brings them. Not one of them said that podcasts directly affect their sales or increase their business profits. The benefits for companies are therefore only secondary and it is not possible to directly measure their effectiveness or real meaning for podcast producers. This fact can also be the answer to why companies in Slovakia do not produce podcasts to a greater extent.

The stated formulations are practically confirmed by those companies that answered negatively to the question of whether they produce their own podcasts. The main reason is the fact that they don't have the personnel for it. It is logical that private companies are set up extremely efficiently also in terms of the number and structure of employees. The goal is to make as much profit as possible. Therefore, it is more likely that if they decided to produce podcasts, they would produce them with external collaborators, which could be more costly. This is also confirmed by the second most frequent answer of companies as to why they

do not produce podcasts — they consider this activity to be relatively expensive. Quite a lot of companies believe that podcasts would not be beneficial, also because there is quite a lot of competition in the podcast market. Succeeding in the competition means bringing a really interesting podcast to the market — interesting not only in terms of the topic, but also in processing. As well as invest money in advertising the podcast and not rely solely on its spontaneous spread. However, this again means that companies would have to invest more in podcasts, even though the return on investment cannot always be accurately evaluated.

Another interesting area that we focused on in the analyses is the very selection of topics for podcasts, as well as their processing. Observed companies that produce podcasts do podcasts in a very conservative way. It is mostly a conversation between the host, usually a man, and the guest. There is no creativity, unique topics, non-traditional way of processing, or inviting in famous personalities that could attract the attention of listeners. That is, everything that could make podcasts produced by companies more competitive within the podcast market. However, producing original podcasts again requires a larger input cost invested in podcast production.

If we were to generalize the results of our initial survey and define one key element that affects the production of podcasts in small and medium-sized companies in Slovakia — we could say that it is financial resources. Private small and medium-sized



companies, which are set to monitor their expenses and regularly evaluate their effectiveness in proportion to profit, are not ready to invest significant financial resources in podcasts. Therefore, they produce podcasts in a simple form, with relatively low entry costs. The result are podcasts that do not have much of a chance to establish themselves in the market and attract listeners. This is also, why companies cannot realistically evaluate their effectiveness, or see no point in producing podcasts, because it does not have a positive impact on the results of their business.

The production of podcasts in Slovakia therefore remains the domain of the media, which can rationally and organizationally link the production of podcasts with their main focus. On the podcast market, even larger producers who produce podcasts from various fields are becoming more and more successful, because they are able to produce podcasts in such a way that they have a high audi-

ence and are therefore able to sell advertising space in addition to their products. Well-known personalities who benefit from the high recognition of their personal brand when producing podcasts are also successful. If private small and medium-sized companies were to be included among the successful producers of podcasts, they would probably have to change their overall outlook on podcast production, not expecting a direct return on the funds invested in podcasts, but to perceive them only as a part and a modern addition to their overall communication or marketing mix.

### Acknowledgement

This paper was elaborated within the research project supported by Slovak Research and Development Agency (APVV) No. APVV-21-0115, titled "Hypermodern Media Culture – Film and Television Production as Mirror of Sociocultural Phenomena of the 21<sup>st</sup> Century".

### References

- [1] 2MUSE.: 2024. *Podcasty v zime 2023, meranie počúvanosti podcastov na Slovensku*. Závěrečná správa z 26. 1. 2024. [cit. 2024-02-20]. Materiál poskytnutý autorkám štúdie. Material provided to the authors of the study.
- [2] BERRY, R.: Podcasting: Considering the evolution of the medium and its association with the world 'radio'. *The Radio Journal – International Studies in Broadcast & Audio Media*, 2016, 14(1), 7-22. 10.1386/rjao.14.1.7\_1
- [3] BONINI, B., TIZIANO.: 2015. The second age of podcasting: Reframing podcasting as a new digital mass medium. *Quaderns del CAC*, 41, 23-33.
- [4] DOBERTS, S., MULLER, C., ROSTEK, L., SCHEPER, A. K., WIDULLE, P., ZETTL, N. P.: 2021. A new episode of podcasting: The strategic implementation of corporate podcasts in external communications as an innovative on demand medium. In *Communicating with, through, and as the recipient: Changing the rules in strategic communication and journalism*. GESIS. (ed.). 69-101. Available at: <https://www.ssoar.info/ssoar/handle/document/75426>
- [5] HOLLIMAN, G., ROWLEY, J.: 2014. Business to business digital content marketers' perceptions of best practise. *Journal of Research in Interactive Marketing*, 8(4), 269-293.
- [6] JÄRVINEN, J., TAIMINEN, H.: 2016. Harnessing marketing automation for B2B content marketing. *Industrial Marketing Management*, 54, 164-175. 10.1016/j.indmarman.2015.07.002
- [7] JEFFERSON, S., TANTON, S.: 2015. *Valuable content marketing: how to make quality content your key to success*. Kogan Page.
- [8] KOŠIČEK, L.: 2006. *Pomalý príchod fenoménu podcasting*. [online]. [cit. 2024-02-25]. Available at: <https://medialne.trend.sk/internet/pomaly-prichod-fenomenu-podcasting>

- [9] LEIBTAG, A.: 2014. *The digital crown: Winning at content on the web*. Elsevier. 10.1016/C2012-03597-1
- [10] LONDBERG, A., WAHLQUIST, O.: 2020. *Podcasting as a digital content marketing tool within B2B*. Linköping University. [online]. [cit. 2024-02-28]. Available at: <https://www.diva-portal.org/smash/get/diva2:1450637/FULLTEXT01.pdf>
- [11] MORRIS, J. W., PATTERSON, E.: 2015. Podcasting and its apps: Software, sounds and the interface of digital audio. *Journal of Radio & Audio Media*, 22(2), 220–230. 10.1080/19376529.2015.1083374
- [12] OPREANA, A., VINEREAN, S.: 2015. A new development in online marketing: Introducing digital inbound marketing. *Expert Journal of Marketing*, 2015, 3(1), 29–34.
- [13] BIERMA, N.: 2005. Podcast' is lexicon's Word of the Year. *Chicago Tribune*. [online]. [cit. 2024-02-28]. Available at: <https://www.chicagotribune.com/2005/12/28/podcast-is-lexicons-word-of-the-year/>
- [14] PILLAI, M.: 2019. *Voices of Specialists: Using a Podcast to further company reputations*. Alto University School of Arts, Design and Architecture. [online]. [cit. 2023-08-26]. Available at: <https://aaltodoc.aalto.fi/items/cc33ae9f-bf7a-4da1-a1e0-7944c6f4d289>
- [15] ČSOB.: 2021. *Podcast je efektivní a levný marketingový nástroj. Jak jej využít?* Sprievodca podnikaním. (Business Guide). [online]. [cit. 2023-08-26]. Available at: <https://www.pruvodcepodnikanim.cz/clanek/podcast-v-marketingu/>
- [16] POTTER, D. L.: 2006. iPod, you pod, we all pod: eager to lure news consumers, media outlets are experimenting with news-on-demand podcasts. They're fun, fresh and often unpolished. *American Journalism Review*, 28(1), 1–64.
- [17] ROWLES, D., ROGERS, C.: 2019. *Podcasting marketing strategy: A complete guide to creating, publishing and monetizing a successful podcast*. Kogan Page.
- [18] SCOTT, D. M.: 2009. *The new rules of marketing and PR: how to use news releases, blogs, podcasting, viral marketing, & online media to reach buyers directly*. John Wiley & Sons.
- [19] SCHREYER, S.: 2019. *Podcasts in der Unternehmenskommunikation: Wie Sie mit strategischen Audioformaten Ihre Zielgruppen erreichen*. Springer Gabler, 1–8. 10.1007/978-3-658-25704-0\_1
- [20] TVRDOŇ, D.: 2017. *Čo je podcast a kde nájdete podcasty?* [online]. [cit. 2023-02-26]. Available at: <https://tech.sme.sk/c/20681175/co-je-podcast-a-kde-najdete-podcasty.html>
- [21] WADDINGHAM, J., ZACARY, M., KETCHEN, J. D.: 2020. Insights on the go: Leveraging business podcasts to enhance organizational performance. *Business Horizons*, 63(3), 275–285. 10.1016/j.bushor.2020.02.001

## Podcasts — an effective part of company's communication?

### ABSTRACT

*The aim of this study is to examine how private companies in Slovakia perceive the popular media format — podcasts as a marketing tool in external communication. The ambition of this study is to learn how the private sector perceives this communication tool, whether and if it includes it in its communication mix or not. In the case of a positive approach to this tool, we want to find out what are the reasons for this decision within the companies and what does this communication tool ultimately bring them — in terms of increasing their business, building a brand, making themselves visible externally, towards their clients, partners, co-workers. In the case of companies who implement podcasts in their work, we analyze the topics they prepare, to what extent these correspond to the content of their companies' work, how often they produce podcasts and in what form. The work is theoretically-empiric. Within the theoretical part we will define basic*



→ terms and we will look, based on a relevant survey by the official agency 2muse, to what extent are podcasts listened to in Slovakia and which topics are among the most searched for. In the empirical part, we will address a selected sample of 60 companies (smaller, medium-sized companies, organizations with number of employees between 100 to 500) and obtain answers to the questions in the form of a questionnaire. We will evaluate the conducted research and draw relevant conclusions.

**KEY WORDS**

business brand; companies; communication; organizations; podcast

**JEL CLASSIFICATION**

M31; M37





# Attitudes of selected Slovak companies to internal communication in a crisis

- **Andrea Stoklasová** » University of SS Cyril and Methodius, Faculty of Mass Media Communication, Nám. J. Herdu 2, 917 01 Trnava, Slovakia; email: [andreastoklasova@gmail.com](mailto:andreastoklasova@gmail.com)
- **Hana Pravdová** » University of SS Cyril and Methodius, Faculty of Mass Media communication, Nám. J. Herdu 2, 917 01 Trnava, Slovakia; email: [pravdova@ucm.sk](mailto:pravdova@ucm.sk)
- **Viera Krúpová** » University of SS Cyril and Methodius, Faculty of Mass Media Communication, Nám. J. Herdu 2, 917 01 Trnava, Slovakia; email: [krupova2@ucm.sk](mailto:krupova2@ucm.sk)

## \* 1. Introduction

We are not saying anything new when we say that the environment is constantly changing. However, new technologies have accelerated the pace of change even more and have presented us with the challenge of how to adapt to these changes. The answer is communication, with its nearly miraculous powers. It cannot change reality, but it can change how we perceive it. It can mitigate the impact of a disaster or even turn it into a success, and vice versa. Communication alone can artificially create a crisis. A good example is the oil crisis that arose in Germany in 1973. Demand increased rapidly and, at the same time, oil prices soared above their usual highs. However, this crisis had no factual basis. The initial impetus for the crisis was media reports that Germany had insufficient oil supplies. Despite the fact that both politicians and the oil companies clearly refuted this information and described it as a lie, the media continued to disseminate information and constantly preparing people for the crisis, which eventually arose. Because the information about the shortage triggered increased demand — companies that depend on oil

to produce their products bought up supplies, and so, in fact, the crisis became a reality. Demand was so huge that stocks were running low, and prices went to all-time highs (McCombs, 2009, p. 54)

Communication can work the same magic in a corporate setting. It can motivate but also frustrate people, it can lead but it can also cause chaos and loss. Meanwhile, reality is sometimes not at all relevant because “the real crisis is not what happened but what people think happened, the crucial information is not what the organization thinks should be voiced but what the public or employees expect, and the most trust is given to the person who comes out with the information first (Vymětal, 2008, p. 287).

In today's rapidly changing environment, where the introduction of new technologies in companies is quite commonplace, where teams increasingly work remotely and employees each have their own flexible schedule, where employers are challenged by the completely different expectations of Generation Z, communication is one of the essential ingredients for business success. In our research, we will focus on internal communication, which experts believe will become increasingly important. →

As recently as 2012, the European Communication Monitor (a survey conducted annually in many European countries by the European Association for Public Relations Education and Research in collaboration with the European Communication Directors Association and Communication Director Magazine) reported that two of the disciplines or areas of practice that respondents expect to become more important in the future are internal communication and crisis communication (Johansen et al., 2012). In the same year, the Association of Internal Communications (AICO) conducted a survey in Slovakia, asking companies how much importance they placed on internal communications – a significant one. Up to 97 percent of business, owners and managers were convinced of its necessity. However, only 5 percent of them had specialists or departments dedicated to internal communication (Kariéra Info, 2012).

In the theoretical part of the thesis, we discuss the problems of the changing environment, the related crisis situations, and internal communication as a tool to cope with these situations. In the empirical part, we compare whether the perception of the importance of internal communication in relation to economic performance has changed over the last 10 years, what percentage of firms have separate specialists or departments for internal communication, and what importance they attach to employee awareness in times of crisis in the firm.

## *2. Communication as a determinant of the company's existence*

Sociology defines communication as the process by which certain information is communicated and received. It is one of the conditions for the existence of society (Kollárik et al., 2008). While sociology defines society as an association of people, we can equally define the role of communication in a company environment. However, it is not only about the simple transmission of information. Communication was originally defined much more socially, or even communally, derived from the

word “communicare” – “to make something common, to share something together.” So it’s not just about the flow of information, but sharing in an activity in mutual contact. Experts attribute great power to communication, defining it as “the life-giving sap without which an organization could not function” (Jablin, 2001, p. 51-56). Vybíral adds another ingredient to the function of communication, namely, emotion: ‘it can arouse, provoke, initiate, and enthrall, and slow down the other in their determination. It can convince of the truth and credibly spread falsehood (Vybíral, 2000, p. 34).’ Its impact on employee productivity is important. “All behaviour is communication, and all communication affects the behaviour of an individual, group or community, not only when it is actively taking place, but also when it is completely absent” (Szarková et. al., 2004, p. 52) and in this way also on the business outcome itself. Communication is one of the most common reasons for employee attrition and performance decline. Poor or inadequate feedback from supervisors is the reason for the decline in employee performance in up to 60 percent of cases. Why are not employees doing what they should be doing? Because they don’t know WHAT is required of them, they don’t know HOW they should do it, they don’t know WHY they should do it, they think they are already doing it, they think your way won’t work anyway and that their way of doing the task is better (Branham, 2009, pp. 84-95). One can hardly argue through the usual formal means of internal communication in case of such doubts, making getting and responding to feedback a key ingredient.

Hence, it is crucial that the top managements of firms fully recognise that their bottom line is equally affected by external and internal communication, both in terms of content and process. It is natural for executives to pay close attention to communication with the market or with specific customers and partners. Executives place great importance on marketers being trained in sales and customer communication, as well as having regular advertising or PR campaigns. Do they pay equal

attention to whether employees know exactly what to do, how to do it and why they should do it? The literature and studies show that they do not, and at the same time, executives are often surprised that a particular deal has failed, that a marketing campaign has failed or that its direction did not match management's original expectations. Why? The results appear to be due a failure in internal communication, the target definition has apparently failed to be precise, or because the management failed to accurately define their expectations, or due to a failure to communicate what tools needed to be used in the campaign. While the senior management typically has the capacity to properly evaluate the negative outcome, they often fail to recognize a failure of internal communication, either at the vertical or horizontal level, which has negatively impacted the outcome of the campaign, which in turn negatively affected the company's bottom line. While people cannot read each other's minds, internal communication presents itself as the solution to this problem.

### *2.1 The key position of internal communication within a company*

Internal communication is most often defined as the transmission of information within the internal structures of an organisation "involving communication between individual employees and management, across the entire internal structure, regardless of department or position within the organisation" (Heide, Simonsson, 2019, p. 166). This is its core function. In addition to enabling employees to exchange the necessary information about the organisation's tasks and goals, how to achieve them and what their ongoing performance is, it also enables a change of attitudes and helps to find new solutions and procedures in terms of the set goals. Feedback plays an important role in this process, since proper communication presupposes knowledge of what is going on in people's minds and how their attitudes are evolving, for example towards change (Vymětal, 2008, p. 263).

In terms of communication channels, there is a consensus on the division of communication in an organisation into top-down, bottom-up, horizontal, diagonal, formal and informal. Descending, i.e. directed from the management downwards — circulars, orders, directives, regulations — is the most widely used. It is a good way to implement the instructional function of internal communication. The ascending form, on the other hand, is directed from the bottom up, is more demanding, but provides us with valuable feedback. This is particularly the case in meetings or meetings with management. It rarely arises spontaneously, so it must be supported by management (Szarková et al., 2002, pp. 91–93).

It is feedback that tends to be a stumbling block. In 2011, Mazzei and Ravazzani (2011, pp. 243–254) investigated the perception of internal communication in times of crisis in an organization. They surveyed managers and employees of 61 companies and found that the same reality was perceived quite differently by each party, and it was the feedback loop where the disparities arose. Company managers were satisfied with themselves and confident that they were conducting timely, truthful, and complete internal communication and were using a rich mix of official channels (organizational journals, emails, and formal meetings). Staff complained about the lack of listening and clarity of messages by supervisors, disliked hierarchical, formal communication and interpreted it as a way of avoiding interpersonal discussion about the ambiguous and more complex aspects of a given situation. So, while managers did everything they were formally supposed to do — sending emails with tasks, announcing in meetings what needed to be done and how, sharing information through company periodicals, employees still felt that their voice was not being heard. This was mainly because they did not have the opportunity to talk informally with their supervisors about whether they had understood the assignments and information correctly, or to share their concerns and expectations. The need for feedback is one of



the four basic needs that employees need to have met (Branham, 2009, p. 32).

The division of internal communication into formal and informal also deserves attention. While descending is the typical form of formal communication, informal is made up of chance encounters, personal contacts between employees. It is as significant as formal communication. It may even have more power, as colleagues tend to be more trusted by employees, and allows not only for the spread of verified information, but also rumours and gossip, which can significantly affect the organization's activities. Eliminating this type of communication can be done only by informing employees in a timely and convincing manner (Vymětal, 2008). According to several studies, internal communication plays a crucial role in any company, and to reap its benefits, and implement it effectively, an internal communication specialist should be a member of the top management (Smith, Mounter 2008). Therefore, we investigated whether Slovak companies even have teams or specialists who are specifically dedicated to internal communication.

## *2.2 The reasons for the emergence of a crisis within a company*

The term crisis can be used to describe all situations in which something changes dramatically, and this change is accompanied by negative emotions (Špatenková, 2004). There is a myriad of reasons for the emergence of a crisis, such as: a technological problem, a faulty product, personnel problems, legal problems, an ecological disaster, and an infinite number of other possibilities of what can go wrong or fail. In this paper, we will focus mainly on the crisis that is foreseeable, which is related to the upcoming changes in the company.

Resistance to change and the associated negative emotions can be a powerful factor that can turn even a technical management operation, a process change, or the introduction of a new infor-

mation system into a crisis. It can even be a positive change that contributes to greater efficiency and even simplification of employees' work, however, it is always a process of adaptation. It is a step into the unknown that is associated with resistance (Kádárová, 2012). According to the survey, employees are most concerned about the introduction of new technologies and related changes, the collapse of the computer network, or the loss of data files (Chalupa, 2012, p. 83). Thus, crises can occur as a result of a simple or small managerial error, a wrong decision, or a technology failure (Fill, Turnbull, 2016). Up to 83 percent of all planned changes in companies fail due to passive attitudes of employees who failed to understand their meaning and therefore boycotted the change (Vymětal, 2008, p. 267). Thus, the crisis is not just some distant and hardly imaginable situation. You can easily get into a crisis through dissatisfied employees or customers (Chalupa, 2008, p. 28).

After identifying the first signs of a crisis, we switch the form of communication to crisis communication. We define it as specialized communication of a company or organization when its stability, security, or reputation is threatened by a crisis event (Ftorek, 2012, p. 121). In her research, Genčiová (2020, p. 15) confirms the function of crisis communication as a factor that can neutralize, minimize, or even solve the problem that arises. According to Szarková et al. (2002, p. 17), the aim of crisis communication is to manage a crisis event so that it does not attract attention and does not cause panic, assigning the following characteristic symptoms to the crisis: gradual replacement of formal information sources by informal and obscured information sources, gradual loss of control over information and the communication process, penetration of unverified information, speculations and rumours into communication processes, increase in emotions and moods, and distortion of feedback. She states that in a crisis, informal communication sources and networks can account for up to 80 per cent of information, so they need to be identified and controlled for as soon as possible.

Basically, it can be said that one of the key reasons for the crisis is the crisis of motivation on the part of employees. It is not a crisis stemming from lack of technical skills or lack of expertise related to a particular project or a particular reform, it is a crisis of motivation and positive attitude towards changes defined by the managers. Why does such a crisis of motivation arise in employees? Shouldn't it? After all, it is their job, they are paid for it, so why are they demotivated or poorly motivated to implement change? Typically, because they do not feel that their views and comments on the actual content of the change or the change process are sufficiently considered. Employees may feel that they are performing tasks instead of feeling that they are the agents of change themselves, which would increase their level of motivation. A tool that achieves a change in the employee's feeling from being an implementer to a change agent is feedback. Only feedback that is heard and considered can be considered effective feedback, a key tool for eliminating a crisis of motivation and ultimately the crisis in the company's economic performance.

### 2.3 Employees and crisis

Employees are an overlooked crisis communications group, yet they are the ones who should be informed first, only then followed by journalists. The order is since a crisis creates uncertainty, and this affects performance and employee morale, explaining why it is important to communicate openly, with the possibility, and encouragement of feedback. Thus, while satisfied employees and informed employees defend the company, dissatisfied employees, or uninformed employees, on the contrary, spread negative information and sentiments further, either among clients or to the media (Chalupa, 2012, p. 134). Internal communication is considered the least researched area of crisis communication. In the United States, they conducted an experimental study with 640 employees to investigate the effects on employees if the company communicates with them as a priority during a cri-

sis, i.e. if they are the first to know what the situation is, what has happened and what the company is going to do next. They found that this approach had a positive impact on employees' relationship with the firm and even led to supportive employee behaviour towards external publics. Thus, employees tended to defend the firm from external attacks when they felt they were part of the process (Kim et al., 2019). Along with the influx of information, it is essential to create and implement guidelines that specify the permitted and prohibited behaviours of employees in times of crisis, in addition to training them on how to respond to questions they may receive from all affected stakeholders. Thus, helping them to cope with the onslaught of questions from clients, the media, the public or activists, for example (Jiang, 2015).

How do employees behave in a crisis? Like any human being, they need reassurance in uncertain times. They need to know what is happening and what will happen. Simply put, they need information. Where do they look for it? In his study, Kochhar (2014) identified three key sources of information for employees in times of crisis – the internet, the intranet, and conversations with colleagues. That is, there is one external source over which the employer has no control – the internet, one formal channel over which the company has full control – the intranet, and one informal source – conversations with colleagues – over which the company has only partial control, and that is the provision of sufficient, clear and timely information, the collection of feedback, its evaluation and subsequent response. Only then can the company hope for a positive effect from this informal channel. Studying 14 companies in crisis, Kochhar found that if internal communication is transparent and prompt, employees do not seek information externally. Although the mass media is still an important source of information, internal communication helps employees to better navigate issues instead of relying on media content, which, in addition to adequate information influences internal discussions. Colleagues are then perceived as an important source



of information and support during a critical situation. They act as a unifying element and a way to cope with the situation. If they have access to information, these internal discussions can be positive, free from rumours and conjecture. The study suggests that the negative effects of media information on employees vary depending on the level of organizational identification of employees. Employees with high organizational identification show emotional reactions such as helplessness or shame and tend to defend their employer. While employees with low organizational identification do not care about the organization or the critical situation. Thus, a better-informed employee who, because of good internal communication, feels that he or she is part of a team will be better able to handle a crisis situation and will be more inclined to defend his or her employer. Therefore, open and constant internal communication with employees is essential for success (Kochhar, 2014).

Any crisis necessitates a separation of formal and informal intra-organisational information flows, both of which need to be controlled, but also complemented with appropriate information. At the first signs of a crisis, informal communication flows should be the first to be activated, as they are preferred by employees. Even under normal conditions, employees tend to mix conjecture with reality, and this is exacerbated in a crisis. Therefore, if these signals go unnoticed, the amount of uncontrolled, emotionally distorted in-

formation and conjecture can become an obstacle to managing the crisis. Rumours are probably the most dangerous kind of informal communication in a company, spreading very quickly, while also being very difficult to identify, thus requiring effective strategies to mitigate its effects. Vymětal suggests that the only way to combat them is to prevent them with proper communication or to set them straight and act quickly before the rumour is widespread (Vymětal, 2008, p. 167).

In times of crisis, or at the first signs of a crisis, the management of a company has an even stronger tendency to deal with the external manifestations of the crisis first. These external manifestations of the crisis can be thought of as intrusive and unpleasant questions from journalists, unpleasant questions from customers and partners, which increase the pressure on the whole company and on the company's management. It is precisely in these critical situations that management must realise very quickly that reactions for the external environment must wait; the key is to calm the crisis inside the company, with the employees. It is essential to immediately start communicating the reasons and consequences of the crisis very clearly to the employees, to increase their sense of belonging to the company and thus avoid adding fuel to the fire in the external manifestation of the crisis. If the company's management manages to achieve, through timely and factually correct internal communication, both the reassurance of the

*In times of crisis, or at the first signs of a crisis, the management of a company has an even stronger tendency to deal with the external manifestations of the crisis first. These external manifestations of the crisis can be thought of as intrusive and unpleasant questions from journalists, unpleasant questions from customers and partners, which increase the pressure on the whole company and on the company's management. It is precisely in these critical situations that management must realise very quickly that reactions for the external environment must wait; the key is to calm the crisis inside the company, with the employees.*

employees and the feeling that the employees and the company's management are in the same boat and that everyone is concerned with saving the company's reputation, a large part of the problem of the whole crisis is thus averted. Consequently, the company management can communicate with much greater confidence to the external environment and try to eliminate the consequences of the crisis as much as possible. In times of internal crisis communication is also likewise essential that the management achieves a feel within the company, as if that the hierarchical differences in the company have been erased, that we are all dealing with identical problem and all of us are equally concerned, which helps to increase the feeling of employees' involvement in solving the crisis in the company. Consequently, employee that have been properly integrated will naturally prevent uncertainty and crises from growing in the external environment of the company as well.

### *3. Methodology and results of survey*

In the theoretical part of the presented article, we focused on the study of academic literature, working with articles from scientific and academic journals, sources from online academic databases and monographs. In the empirical part, we used the questionnaire method and the method of comparative analysis. We selected 120 companies, as we wanted to reach a sample of at least 60 companies, approximating a 50 percent return rate of the questionnaire. The main criterion for choosing a company was the number of employees, so that the need for internal communication was sufficiently relevant. We therefore focused on medium-sized companies with 100–500 employees. The selected companies operate in the following areas: financial consulting, automotive, auditing, healthcare, tourism, IT sector and real estate and development, tobacco industry, telecommunications. This is a relatively broad scope of the focus of companies, but we started from the assumption that there is no specific industry that would be immune to crisis.

Through a telephone inquiry, we contacted the persons responsible for the communication of the companies in question. If the company did not have such a position, we directly approached the owners or managers of the companies. We conducted the survey on 22. 1. 2024–23. 1. 2024. We received 63 relevant responses from 120 companies.

The survey was composed of three questions. Our aim was, first, to find out whether the company's management thinks that informed employees can contribute to the positive economic results of the company. We deliberately asked only about the instructional function of internal communication, i.e. whether the mere fact that an employee has the information they need to perform their job has a positive effect on the company. Respondents had 3 options to choose from: yes, no, and partially. We were further interested in this data for the purposes of comparative analysis, wanting to compare the results with the AICO survey from 2012 (mentioned in the introduction of the paper) in order to find out if the perception of the importance of internal communication has changed.

The second question asked whether the company has a specialist (or a team) dedicated exclusively to internal communication and, if not, how it communicates with its employees. There were 3 options to choose from: yes, we have a specialist for internal communication; we do not have a specialist or a department, but we try to communicate through formal channels or online platforms; and the last option was we don't have one, we rely on the transmission of information by email, or the employees learn everything at a meeting with a superior.

Since in the theoretical part we dealt with the phenomenon of more and more frequent changes and the related threat of crisis and crisis communication, we found out with whom the company communicates in a crisis as a matter of priority, while we aimed to find out where the employees are in this ranking. There were three possible answers to the question: first we inform the employ-





ees; we inform the external and internal environment at the same time; and the last option was: we do not communicate; we solve the problem.

In the survey, we found that up to 51 out of 63 company representatives think that informed employees can positively influence the company's economic output. Nine of them said that this effect is only partial and 3 said that this factor has no effect on the company's results. Looking at the findings of the AICO survey, in 2012, 97 percent of company representatives were convinced of the importance of internal communication. Our survey showed that almost 81 percent were clearly convinced. If we were to include the "partially" responses, we would get a number of 95 percent who are convinced that internal communication has a positive or partially positive effect on economic output, which is only a very slight decrease compared to the results from 2012. Out of 63 companies, 23 have a separate specialist or internal communication department. 23 companies do not particularly focus on internal communication but try to communicate through formal communication channels or various online platforms. 17 companies do not deal with internal communication at all and rely on the fact that employees learn everything they need through email and at meetings. This means that 36 percent of companies have a department or dedicated person designated exclusively for internal communication. Compared to 2012, when it was only 5 percent, this is a significant increase. According to our findings, the same number of companies communicate using formal communication channels such as company newsletters, intranet, email or online platforms. 17 companies, i.e. almost 27 percent, do not pay any attention to internal communication. They disseminate information in the company by email or inform at meetings. And finally, with whom do companies primarily communicate in times of crisis? 21 companies, 33 percent, inform their employees first. 20 respondents stated that they do not prioritize employees in any way, they inform the external environment and possibly employees alongside

them. Such an approach is preferred by 31 percent of respondents. As many as 22 managers of the surveyed companies do not pay any attention to communication and focus only on solving the problem, which is almost 35 percent.

#### 4. Conclusions

In the theoretical part of this study, we examined the status of internal communication in firms. While nowadays it is almost unimaginable for a company not to have a communication department, it is often the case that the companies conflate the term 'communication' with external communication, which is, however, only one of the two key communication areas in a company. From the empirical part of the study, it is evident that internal communication is still being addressed by firms today with significantly less attention than to external communication. The research showed a discrepancy in that 95% of the firms surveyed, although they believe that an informed employee has a positive impact on the company's bottom line, only 36% companies have an internal communications department or a dedicated internal communications specialist. At the same time, the survey showed that 27% of the surveyed companies do not devote no attention to internal communication and at the same time another 36% do not pay special attention to internal communication and communicate with employees only through formal communication channels. This means that up to 63% of the surveyed companies do not pay sufficient attention to internal communication. Hence the recommendation to eliminate the discrepancy between the fact that companies are fully aware of the importance of informed employees but fail to devote sufficient attention to employees to be informed. A simple and graspable recommendation for company managements is to position organizational and procedural internal communication on the same level of importance as external communication. When achieved, the next order of business should be the quality and timeli-



ness of communication with employees. Regarding quality, companies should address feedback from employees and perceive it not only in terms of content but also in terms of its accompanying emotion. Only an employee who feels that he or she is an agent of change in the company, or a co-author of success is beneficial to the company. Internal communication is even more important in times of crisis, especially in regarding its timeliness and addressability. Only 33% of firms reported that they communicate about the crisis to their employees first, and a total of 66% of surveyed firms said that they either do not prioritize the employees in in-

forming about the crisis in relation to the external environment or do not address communicating the crisis at all and only focus on mitigating the effects of the crisis itself. However, uninformed employees only exacerbate the crisis in the external environment because they themselves are concerned about their jobs or are increasingly insecure about the impact of the crisis on their employment. A crucial recommendation for company management is to communicate the crisis at its outset with employees first, to allow them to become co-solvers of the crisis instead of exacerbating the crisis by uncontrolled public communication.

## Appendices

**Table 1 » Can informed employees contribute to the positive economic results of the company?**

Yes, they can.	81%
No, they do not.	5%
Partially, they might.	14%

**Table 2 » Does the company have a specialist (or a team) dedicated exclusively to internal communication and, if not, how does it communicate with its employees.**

Has a specialist/department dedicated to internal communication	36%
Has no interest in internal communication, utilizes emails and meeting only.	27%
No specialist or department but utilizes formal channels.	36%

**Table 3 » With whom the company communicates in a crisis as a matter of priority?**

Employees are given priority.	33%
Communicate with external environment first, employees might be informed simultaneously.	31%
Focus on only solving the crisis.	35%



## REFERENCES

- [1] BRANHAM, L.: 2009. *7 skrytých důvodů, proč zaměstnanci odcházejí z firem*. Praha: Grada Publishing.
- [2] FILL, CH.,TURNBULL,S.: 2016. *Marketing communications discovery, creations and converstaions*. Pearson Education.
- [3] FTOREK, J.: 2012. *Public relations jako ovlivňování mínění*. Praha: Grada Publishing.
- [4] GENČIOVÁ, A.: 2020. *Krízová komunikačná sféra a sociopragmatické determinant mediálne stvárneného komunikátu*. Banská Bystrica: Univerzita Mateja Bela v Banskej Bystrici.
- [5] HEIDE, M., SIMONSSON, CH.: 2019. *Internal crisis communication: Crisis awareness, leadership and coworkership*. Routledge.
- [6] CHALUPA, R.: 2012. *Efektivní krizová komunikace pro všechny manažery a PR specialisty*. Praha: Grada Publishing.
- [7] JABLIN, F. M.: 2001. *The new handbook of organizational communication*. California.
- [8] JIANG, H.: 2015. *Dedicated employees are the most valuable assets during the crisis*. [online]. [cit. 2024-02-20]. Available at: <https://instituteforpr.org/tbd-2/>
- [9] JOHANSEN, W., AGGERHOLM, H.K., FRANDSEN, F.: 2012. Entering new territory: A study of internal crisis management and crisis communication in organizations. *Public Relations Review*, 38(2), 270–279. 10.1016/j.pubrev.2011.11.008
- [10] KÁDÁROVÁ, J.: 2012. *Manažment zmien*. Košice: Strojnícka fakulta Technickej univerzity.
- [11] KARIÉRA INFO.: 2012. *Interná komunikácia na Slovensku je v plienkach*. [online]. [cit. 2024-02-20]. Available at: <https://karierainfo.zoznam.sk/cl/1000160/1325016/Interna-komunikacia-na-Slovensku-je-v-plienkach>
- [12] KIM, Y., KANG, M., LEE, E., YANG, S.-U.: 2019. Exploring crisis communication in the internal context of an organization: Examining moderated and mediated effects of employee-organization relationships on crisis outcomes. *Public Relations Review*, 45(3), 1–17. 10.1016/j.pubrev.2019.04.010
- [13] KOCHHAR, S.: 2014. *Media coverage of an organization in crisis and its impact on employees*. [online]. [cit. 2024-02-20]. Available at: <https://instituteforpr.org/media-coverage-organization-crisis-impact-employees/>
- [14] KOLLÁRIK, T. et al.: 2008. *Sociálna psychológia*. Bratislava : Univerzita Komenského, 2008.
- [15] MAZZEI, A., RAVAZZANI, S.: 2012. *Manager-employee communication during a crisis: The missing link*. [online]. [cit. 2024-02-20]. Available at: <https://instituteforpr.org/manager-employee-communication-during-a-crisis-the-missing-link/>
- [16] McCOMBS, M.: 2009. *Agenda Setting*. Praha: Portál.
- [17] SMITH, L., MOUNTER, P.: 2008. *Effective internal communication*. London: Kogan Page.
- [18] SZARKOVÁ, M. et al.: 2002. *Komunikácia v manažmente*. Bratislava: Ekonóm.
- [19] SZARKOVÁ, M., KRISTOVÁ, G., ŽÁK, F.: 2004. *Psychológia a komunikácia*. Bratislava: Ekonóm.
- [20] ŠPATENKOVÁ, N.: 2004. *Krize, psychologický a sociologický fenomén*. Praha: Grada Publishing.
- [21] VYBÍRAL, Z.: 2000. *Psychologie lidské komunikace*. Praha: Portál.
- [22] VYMĚTAL, J.: 2008. *Průvodce úspěšnou komunikací, Efektivní komunikace v praxi*. Praha: Grada Publishing.

## Attitudes of selected Slovak companies to internal communication in a crisis.

**ABSTRACT**

*The presented study deals with the level of attention and relevance that companies in Slovakia pay to corporate communication in the internal environment. The purpose of the study is to map the attitude of the private sector to internal communication in times of crisis. At the same time, the authors deal with the issues of the position of internal communication within the organizational structure of private companies, as well as their readiness for possible crisis situations in which it is necessary to implement crisis communication strategies. Based on the stated intentions, the aim of the research is to determine the degree of effectiveness of crisis communication in crisis situations that arise in the internal environment of companies. In relation to the formulated goal and its fulfilment, the authors chose a questionnaire survey and a relevant research sample through predetermined criteria. In quantitative terms, there are sixty-three medium-sized companies with between 100 and 500 employees.*

**KEYWORDS**

*internal communication; employees; crisis*

**JEL CLASSIFICATION**

*D81; D83*



# Competitive advantage of startups in business

- ▶ **Veronika Tóthová** » NEWTON University, Economic Centre, Tomášikova 22, 821 02 Bratislava, Slovakia; email: veronikatthv@gmail.com
- ▶ **Milan Fiľa** » College of Applied Psychology, Karlštejnská 11/30, 158 00 Praha 5 — Jinonice / Akademická 409, 411 55 Terezín, Czech republic; email: fila@vsaps.cz

## \* 1. Introduction

Economists studying the business environment have long been investigating the position of companies on the market and their ability to maintain themselves in the face of ever-greater and stronger competition. Based on knowledge obtained by examining individual phenomena manifesting in the market, they realized that for a company to be able to stay on the market, it must be something unique that differentiates it from other competitors. They called this uniqueness a competitive advantage, which gives the company a certain advantage and thus allows it to gain a better position on the market and thus outrun its competitors. Recently, however, we have increasingly come across the term “startup”, which by its very nature defies the classic definition of a business, and its concept also completely defies the existing business model. A startup is also often considered a disruptor of concepts, as its innovative ideas were often the result of the demise of old structures and the beginning of technical or industrial revolutions. Although we could assume that its innovativeness is the basis of its competitiveness against other business entities, this is not always the case, as startup statistics also point out that the mortality rate of startups is at the level of 90%, which indicates that

only 1 out of 10 startups make it to the market. That is why we were interested in it. The main goal of the article is to evaluate what the competitive advantage of startups from the experts’ overview is and how they perceive their competitiveness. The method to reach the paper’s objective and obtain an answer to this question, as Kondrla et al. (2023) say, is crucial to identify what is significant to us and distinguish what is significant from irrelevant. Based on this principle we analysed several scientific and professional documents, analyses, studies, and statistics dealing with this issue and used their comparison to synthesize the knowledge gained within the given paper. The comparative analyses, we used in creating this article, helped us obtain a better overview of this problem and helped us to pinpoint the most relevant data, which we used in the final synthesis by creating the final version of this paper.

## 2. Competitiveness and competitive advantage as an important part of doing business

When we speak about entrepreneurship or doing business, for every business operating in a market it is important to have a good market position and to have something “other”, that helps the company

beat the competition. We consider this to be a competitive advantage, which some authors see as a part of competitiveness, that allows a company to differentiate itself from its competition and improve its position in the market. To better understand the concept of competitive advantage and competitiveness we need to find out the attitude of experts and their perception of these terms.

When we talk about competitiveness we mean the competence of an organization or country to produce and sell products/services that meet the quality of the markets at the same or lower prices and maximize returns on the resources consumed in producing them (Maravilhas et al., 2019; Maravilhas, 2015). Based on Louati (2018) competitiveness is the ability of a firm to offer, in relation to its competitors, products of higher value at equal or lower cost and to build competitive positions that enable superior economic performance. It is also the ability and performance of a firm, to sell and supply goods and services in a given market, in relation to the ability of other firms or countries (Hernandez et al., 2015). Saha et al (2019) relate competitiveness to organizational effectiveness determined by the managerial and operational growth of an organization that satisfies the fulfillment of organizational performance development requirements. Competitiveness is also seen as a capacity to compete and in the business field, it is considered the capacity of a company to obtain profitability in the market compared to its other competitors (Martínez-Azúa, Martín-Vegas, 2019) and also as an organization's ability to deliver value and quality through their products or services (Aburto-De La Llave et al., 2022). Competitiveness in business can be divided into two areas: Price competitiveness and Structural competitiveness (Indeed, 2024). Štrukelj et al. (2019) see competitiveness as the way to achieve the organization's advantage over other competitors. On the other side Polo (2021) sees competitiveness as the position of superiority in the market in which the competitive advantage is taken advantage of.

As we have seen by Polo (2021) some authors

consider the competitive advantage as an integral part of competitiveness. Competitive advantage is also a term frequently used in business contexts and is typically what drives superior profits, better product sales, and the continuous ability to innovate. Companies with strong competitive advantages are the best positioned to succeed within their industries and generally can fend off rivals more easily than others. Some of the most common factors influencing competitive advantage include cost control, product differentiation, and customer service (Swenson, 2022).

Peterdy (2023) sees competitive advantage as something that cannot be easily replicated and is exclusive to a company or business. This value is created internally and is what sets the business apart from its competition. It refers also to the ways that a company can produce goods or deliver services better than its competitors. It allows a company to achieve superior margins and generate value for the company and its shareholders.

Having a competitive advantage can create greater value for a company and its shareholders because of certain strengths it has when compared to its competition. A consistent competitive advantage can help companies continue to be the market leaders in their industries. In any business, a competitive advantage can lead to better profit margins and market control. There are six types of competitive advantage the company can make use of:

1. Differential.
2. Cost-leading.
3. Market-focused.
4. Brand.
5. Network.
6. Resource (Indeed Editorial Team, 2022).

Based on Twin (2023) competitive advantage refers to factors that allow a company to produce goods or services better or more cheaply than its rivals. These factors allow the productive entity to generate more sales or superior margins compared to its market rivals. Competitive advantages are attributed to a variety of factors including cost structure, branding, the quality of product offerings, the



distribution network, intellectual property, and customer service. It also generates greater value for a firm and its shareholders because of certain strengths or conditions. The more sustainable the competitive advantage, the more difficult it is for competitors to neutralize the advantage. The two main types of competitive advantages are comparative advantage and differential advantage.

Competitive advantage is the favorable position an organization seeks to be more profitable than its rivals. To gain and maintain a competitive advantage, an organization must demonstrate a greater comparative or differential value than its competitors and convey that information to its desired target market. Bdc.ca (2023) considers a competitive advantage as anything that gives a company an edge over its competitors, helping it attract more customers and grow its market share, and recognizes three primary forms of competitive advantage:

1. Cost advantage—producing a product or providing a service at a lower cost than competitors
2. Offer advantage—differentiating a product by adding features that are highly valued by customers

3. Niche advantage—serving a specific segment of the market better than anyone else.

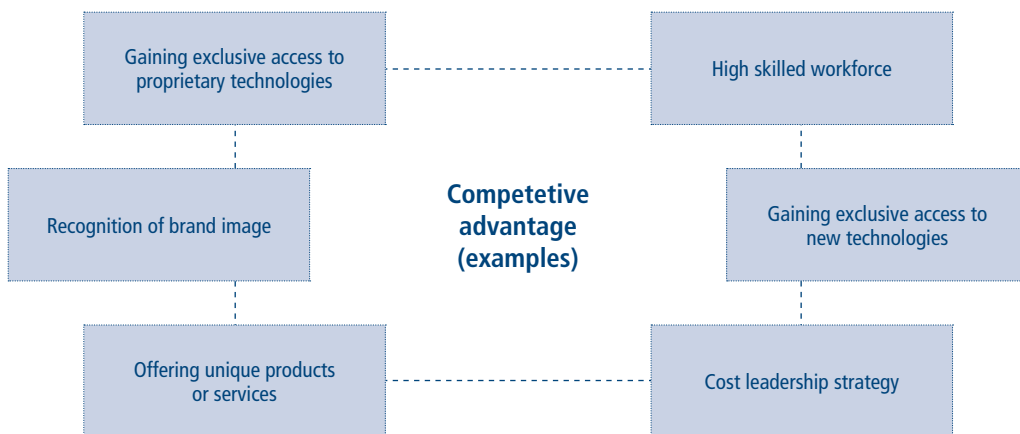
They also suggest that today's companies must make themselves more flexible so they can adapt quickly to competitive forces because digital technology is the reason why are competitive advantages becoming increasingly short-lived.

Amadeo (2022) points out, that competitive advantage is what makes an entity's goods or services superior to all of a customer's other choices. To create a competitive advantage, a business must provide a clear benefit to its target market that's better than what the competition offers.

The interpretation of competitive advantage by the WallStreetMojo Team (2023) refers to an advantage availed by a company that has remained successful in outdoing its competitors belonging to the same industry by using different and innovative strategies. They are also convinced that competitive business advantage is not something that can be vested. Rather it can only be earned through the hard work, dedication, and ethical performance of an organization.

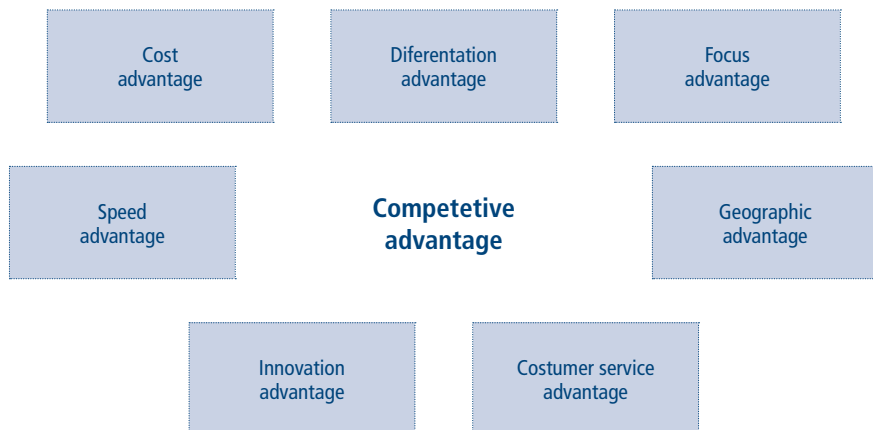
As we can see in Figure 1, the WallStreetMojo Team (2023) sees the competitive advantage of

**Figure 1 » Examples of competitive advantage**



Source: WallStreetMojo Team (2023)

**Figure 2 » The seven main types of competitive advantage**



Source: Profit.co (2023)

companies in using better designs and implementing effective strategies that allow the same in offering quality goods or services, quoting reasonable prices to its customers, maximizing the wealth of its stakeholders and so on and as a result of which the company can, for example, make more profits, build a positive brand reputation, make more sales, maximize return on assets and other.

Competitive advantage separates a surviving business from a thriving one, but the source can change from sector to sector and company to company. Competitive advantage isn't just about having a product another company doesn't. There are different types of competitive advantages that a business can use to get the upper hand, including:

1. Differentiation;
2. Cost leadership;
3. Focus (airfocus.com, 2023).

Competitive advantage is the capability the company has over competitors to create value for customers and creating a competitive advantage is a long process, starting from the very beginning of forming the company's culture, mission, and vision. The strategy of every company may be different, but each decision the company makes and fea-

ture it defines aims to achieve a competitive advantage (Yildirim, 2023).

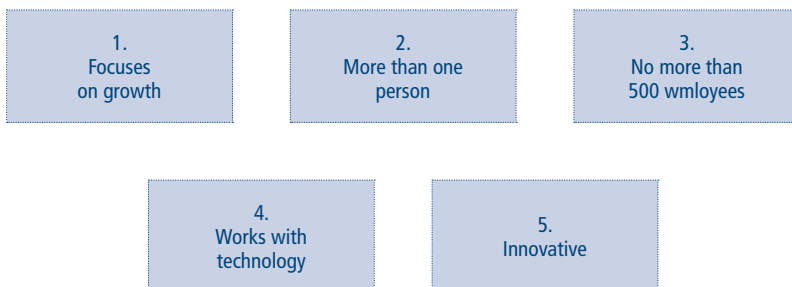
Profit.co (2023) defines competitive advantage as a collection of the unique qualities and attributes of a business or an organization that enables it to outperform its competitors, make customers choose its offerings over the competing products/services, and win a more significant market share. A competitive advantage allows the organization to sustain and grow in an aggressive market. Standing out is imperative, and the seven types of competitive advantage, characterized by them and which we can see in the next Figure, allow individuality and value for any organization.

As we can see competitiveness and competitive advantage are properties, or the company's ability to use its resources to improve its position in the market and to use them to surpass its competitors and at the same time offer its customers better products or services under more favorable conditions, or at a better price than competing firms operating in the same market as the firm applying its competitive advantage.





Figure 3 » 5 Key Characteristics of a Startup



Source: TheHub.io (2022)

### 3. Startups as an integral part of the business

Nowadays we can say, that the word “startup” is the most used word and a new trend in the business world. Based on statistics there are over 150 million startups in the world and even if the failure rate of startups is 90% globally, 50 million new startups are emerging every year. The biggest challenge faced by startups nowadays is finding a real problem and on average, it takes 2-3 years for startups to make a profit. By the nearest look at startups, we can also say that 61% of Startups offer B2B solutions, while only 39% of Startups offer B2C solutions globally and 60% of startups begin at home (Shewale, 2023). To better understand the competitive advantage of startups, first, we need to take a closer look at startups and their position in the business field among other enterprises operating in the markets.

For some of us is the word “startup” something new, so it is very important at the beginning to identify its meaning. As TheHub.io (2022) states the term “startup” was originally coined in the early tech revolution in the 1970s, referring to a new breed of small companies with astonishing growth potential. “Startup” however became a popular term in the 1990s and early 2000s business boom with brands like Microsoft or Apple scaling up at a

faster pace than ever seen before. They also define 5 key characteristics of a startup, as we can see in the next Figure.

Another definition of this term says that “start-up” refers to a young company that has often been newly founded with little initial capital. It is in the initial or start-up phase and has not yet established itself in the market. The goal of the startup is therefore to grow as quickly as possible (Einstein, 2022).

According to FranchisePortal (2020), startups are young businesses that are based on an innovative business model with high growth potential. Most of them were created only a few months or years ago or are still in the initial phase. They are initially financed with seed capital and then seek additional sources of external capital for expansion, such as venture capital, fundraising, or business angels. They often enter emerging markets or create entirely new markets by implementing and optimizing scalable business models. This confirms Mura and Buleca (2012) by mentioning, that each enterprise needs its financial sources for its activity. But many companies by the medium of self-financing cannot ensure the trouble-free running of the business and they are using various forms of external resources for settlement.

Based on Grant (2022) startups are companies or ventures that are focused on a single product or service that the founders want to bring to market.

These companies typically don't have a fully developed business model and, more crucially, lack adequate capital to move on to the next phase of business. Most of these companies are initially funded by their founders.

On the other hand, Baldridge (2022) sees startups as businesses that want to disrupt industries and change the world—and do it all at scale. Startup founders dream of giving society something it needs but hasn't created yet—generating eye-popping valuations that lead to an initial public offering (IPO) and an astronomical return on investment.

As we have seen in the definitions above and also in other various definitions, many experts define a startup as a young company with a business model that supports innovation, they are also lean in their operations and focus on rapid growth in the very beginning. They provide products with widespread appeal that either don't exist yet, or solve a problem better than the options currently available (TRUiC Team, 2023). As we can see in the next Figure, the TRUiC Team (2023) also defines some common characteristics of startup and they also refer to the implication that “startup” is not a permanent phase for any business — nor does it solely refer to companies in the tech sphere. It's a vital, early stage of the business life cycle, and can refer to virtually any industry.

This opinion is also followed by SendPulse.com (2023) which defines a startup as a young compa-

ny established by one or more entrepreneurs to create unique and irreplaceable products or services. It aims at bringing innovation and building ideas quickly.

Pahwa (2023) also differentiates startups from traditional firms by its innovation, creativity, and agile approach to growth. He also sees a startup as a high-growth-fueled business in its early stages, typically characterized by high uncertainty and risk.

Based on Sanesi (2021) for startups, it is important to be a part of an ecosystem because startup ecosystems are very important frameworks and growth systems to increase engagement with the startup community and the global network. The ecosystem is created as a network of resources — people, investors, institutions, and companies — that work together to create an environment for startups to thrive and it can be a physical place or an online space (Sullivan, 2023).

In essence, we can state that a startup is a young company in its beginnings, which tries to bring an innovative idea or product to the market, which will make it possible to solve an urgent problem, which will help the development of the existing market or the creation of a new market.

According to Steve Blank (Renderforest, 2019) a startup is a “temporary organization designed to search for a repeatable and scalable business model”, while a small business runs according to the fixed business model. For a startup founder, this

**Figure 4 » Common characteristics of a startup company**



Source: TRUiC Team (2023)



→ **Figure 5 » Six Types of Startups by Steve Blank**



Source: Renderforest, 2019

concept means the following three main functions:

- To provide a vision of a product with a set of characteristics;
- Create a series of scenarios of the business model regarding customers, distributions, and finances of the company.
- Understand, whether the model is the right one, based on customers' behavior, as your model predicts.

He has also defined Six Types of Startups which we can see in the above Figure and which are:

1. Lifestyle Startups: Self-employed folks.
2. Small Business Startups: Feeding the Family.
3. Scalable Startups: Born to Be Big.
4. Buyable Startups: Born to be bought.
5. Large Company Startups: Innovate or die.
6. Social Startups: Mission — Difference (Renderforest, 2019).

Even though many statistics regarding startups (Shewale, 2023) are unfavorable:

- Only 40% of startups are profitable, and 1/3rd of Startups continue to lose money.
- 9 out of 10 startups fail.
- 20% of startups fall apart post the 1-year mark.
- 30% of startups fall apart within the 2-year mark, while 50% do so within 5 years.
- 70% of startups close within a decade.
- The most common reason for startup failure is

the lack of product demand — 34% of startups fail due to it.

and it might seem that the interest in the creation of startups will subside, the reality is different and the interest in the creation of startups is enormous every year. Some authors see this interest as launching a startup in an attempt to bring something new and revolutionary to the market; disrupt or break the usual business concept and allow the “rebels” in themselves to express themselves fully, or fulfill their dreams and offer new, overlooked solutions to existing problems that trouble consumers of existing products or services offered by established companies.

#### *4. Competitiveness and competitive advantage of startups*

The competitiveness of startups can be, based on Silva et al. Júnior (2022) who agrees with Agarwal et al. (2013) seen in innovation that is a key factor for the competitiveness and survival of the startup, whose main advantage over other players is the massive use of innovation in product and service development processes. Shaw (2024) sees the competition as something positive for a startup because competition pushes startups to be innovative, focused, and persevering but he also sees the

negatives of competition — rivals make it so much harder to get more customers and get more sales. Bachman (2023) also agrees with Shaw's (2024) positives of competition for a startup business, but on the other hand, he knows that too much competition can also exhaust the business resources (see Table 1).

As we can from startup statistics see, the failure rate of startups is very high — 90% globally (just 1 startup out of 10 is successful), to make this risk lower it is also for startups important to have a competitive advantage because that can be the difference between success and failure and as from FasterCapital (2023a) analyse follows, having a competitive advantage is essential for any business, but its especially important for startups as they strive to gain a foothold in the market. They also characterized some of the benefits of having a competitive advantage in a startup, such as:

1. Increased Profits.
2. Access to resources.
3. Brand Recognition.
4. Long-term Sustainability.
5. Reduced risk.

As we know the unique challenge of startups is the competition in a market with established businesses that have greater resources and more experience. To remain competitive, startups must leverage their innovative ideas and quickly adapt to changes in the marketplace. The best ways how to maintain a competitive advantage for a startup is to:

1. Focus on its core competency.
2. Invest in Research and Development.

3. Utilize digital technologies.
4. Embrace agility.
5. Find the right partnerships.
6. Be open to Feedback (FasterCapital, 2023b).

As VIKO (2021) says competitive advantages are points that are key to a product's success and they are determined by the type of product, but in general terms some competitive advantages are shared among digital products, such as:

1. Product value and market fit.
2. Know-how and team.
3. Speed and momentum.
4. Capital and funding.
5. Personal relationships.
6. Marketing or advertising.
7. Patents and licensing.

They also see defensibility as a crucial concept of protecting a company from other competitors and circumstances. Statistics show that enormous amounts of new startups are founded every day and only 10% of them end up being successful. Competitiveness is fiercer than ever and that is why considering defensive factors may be the differentiating factor to be successful over time. VIKO (2021) is considering some of the defensive tactics like Network effects, Economies of scale, and Brand image.

With this concept agrees also Dutta (2023), who refers to competitive advantage as a "moat", that acts as a barrier to entry for other companies in the same industry. It provides a startup with a unique and defensible position, making it difficult for competitors to replicate its success. Just as a moat protected castles from invaders in ancient

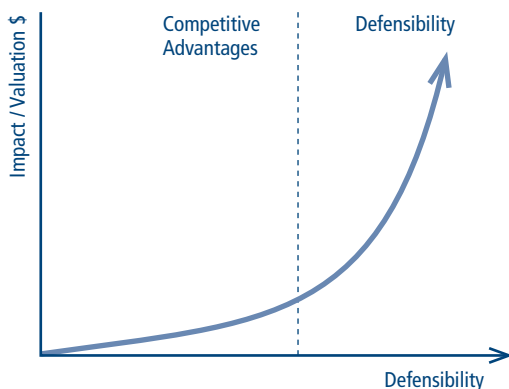
**Table 1 » Pros and Cons of Startup Competition**

PROS	CONS
Strengthens the market	Potential resource exhaustion
Refines products and elevates services of startup	Possible "copycat" issues
Keeps startup personally motivated	
Helps startup learn from others' experiences	

Source: Bachman (2023)



**Figure 6 » Correlation between competitive advantages/defensibility and startup valuation**



Source: De Toro (2019)

times, a startup moat guards against market disruptions and imitators. The types of startup moats, he defines are Intellectual Property, Network Effects, Economies of Scale, Branding and Customer Loyalty, and Regulatory and Legal Barriers.

De Toro (2019), agrees also with the defensibility concept and identifies the moats as Recurring revenues, Network effects, Switching costs, and Brand awareness. He also points out the correlation between competitive advantages/defensibility and startup valuation identified by James Carrier, which we can see in Figure 7 and where we can see how the competitive advantages increase the valuation of a startup in a linear way and the defensibility characteristics in an exponential way.

“Innovations have become a driving force for the future opportunities of the companies.” (Urbaníková et al., 2020). Šimelytė et al. (2021) state, that it involves developing and applying new technologies, processes, and systems enabling the efficient use of resources, waste reduction, and the creation of sustainable products and services.

Mykhoparkina (2017) gives startups some advice related to achieving a competitive advantage such as adding a primary value to already existing products or services, understanding the value the startup is selling, and knowing the way to make the product better. Using differentiation, not cost

advantage, unless the startup is competing in the food market and getting a clear view of the value behind the product you are selling.

On the other hand, Tunguz (2016) identifies 5 categories of competitive advantages in which startups fall: product, cost, positioning, distribution, and execution. He also agrees with the opinion of other authors, who say that it's critical to identify and focus on a startup's competitive advantage because without it the startup faces fundraising challenges.

## 5. Discussion and Conclusions

When we look at the various definitions of competitive advantage and competitiveness of businesses we can say that for a business it is good to know its market position and its strong and weak points toward the competitors, also it is important to know the business's customers, their needs, attitudes, and purchasing power, so the company can win the best market position and fend off the rivals by using the most common factors like cost control, product differentiation, and customer service by creating its competitive advantage. As known the creation of competitive advantage is a long-term strategy, it is important for a business to think in bigger and long-term circumstances and what can

it bring and where can it take the company, because a consistent competitive advantage can help companies continue to be the market leaders in their industries. In any business, a competitive advantage can lead to better profit margins and market control. To fulfill this aim the company can make use of various types of competitive advantages like differential, cost-leading, market-focused, brand, network, and resource advantage. But to earn and keep the competitive advantage it can only be done through the hard work, dedication, and ethical performance of an organization.

On the other side, we can see that startups have become a very important part of the business environment and despite their high mortality rate in the first years of their life (90%), we can see the increased number of births of startups worldwide every year (50 million new startups are emerging every year) and 60% of startups begin at home. The most important solutions offered by startups are B2B solutions (61%) and only 39% of Startups offer B2C solutions.

The benefits of startups are primarily in the fact that they are young and dynamically growing businesses with innovative ideas that they are trying to further develop and then bring to life despite low capital. This gives them the first competitive advantage among all businesses — the innovative way of thinking and the dynamic. But these specifics are not enough, because as we can see from startup statistics, only 40% of startups are profitable, and 1/3rd of Startups continue to lose money. The biggest challenge faced by startups nowadays is finding a real problem, on average, it takes 2–3 years for startups to make a profit, and this is a long time enough to lose the advantage to be the leader among the competition especially if you don't have enough capital to further develop your idea, to bring it on the market and you are as a startup on your own and you are not a part of the startup ecosystem, which can help you to steady yourself and can help you with the initial phase of your business. Because as known from the statistics the most common reason for startup failure is

the lack of product demand, where 34% of startups fail due to it.

As it follows from the results of the conducted comparison of studies, analyses, and scientific and professional outputs of many world authors, startups have a great competitive advantage in several areas compared to traditional businesses. They are primarily high-tech-oriented and concentrated on only 1 category of product or service. It is about the so-called laser focus. These are usually supplemented by legal protection in the form of a patent, license, or registered trademark. At the same time, startups focus primarily on the potential for high growth and gaining market share (fast-growing industries). Startup teams are usually agile and malleable, even given the usually young age of the team with a high interest in growing professionally. The advantage of startups also lies in the fact that they support creativity in the team and at the same time take into account the uniqueness of each team member, as well as in the fact that they do not try to copy generally established concepts and models, but look for their path and are not afraid of mistakes, because they take it as part of development, thanks to which they move forward. The research identifies and confirms the correlation between competitive advantages/defensibility and startup valuation. The competitive advantages increase the valuation of a startup in a linear way and the defensibility characteristics in an exponential way. Based on the explored authors the best way how to maintain the competitive advantage for a startup is to focus on its core competency, invest in Research and Development, utilize digital technologies, embrace agility, find the right partnerships, and be open to Feedback. It is also important to use differentiation and cost advantage use just in case the startup wants to compete in the food market, but also here he needs to see the value behind the product he is selling. All authors, on the works we were looking at agree with the finding out, that it's critical to identify and focus on a startup's competitive advantage because without it the startup faces fundraising challenges.



*These factors allow the productive entity to generate more sales or superior margins compared to its market rivals. Competitive advantages are attributed to a variety of factors including cost structure, branding, the quality of product offerings, the distribution network, intellectual property, and customer service. It also generates greater value for a firm and its shareholders because of certain strengths or conditions. The more sustainable the competitive advantage, the more difficult it is for competitors to neutralize the advantage. The two main types of competitive advantages are comparative advantage and differential advantage.*

## REFERENCES

- [1] ABURTO-DE LA LLAVE, P. et al.: 2022. Market and entrepreneurial orientation strategies in the wood furniture industry in Mexico. In MACHADO, C., DAVIM, J. P. (eds.): *Creativity models for innovation in management and engineering*, 163–186. 10.4018/978-1-6684-2339-4.ch007
- [2] AGARWAL, N. et al.: 2013. A decision support framework for Innovation and sustenance of enterprises. In Lee, G. (ed.): *International Conference on Management Innovation and Business Innovation*. Singapore: Singapore Management & Sports Science, 122–127.
- [3] AIRFOCUS.COM.: 2023. *What is competitive advantage*. [online]. [cit. 2023-03-12]. Available at: <https://airfocus.com/glossary/what-is-competitive-advantage/>
- [4] AMADEO, K.: 2022. *What is competitive advantage?* [online]. [cit. 2023-03-12]. Available at: <https://www.thebalancemoney.com/what-is-competitive-advantage-3-strategies-that-work-3305828>
- [5] BACHMAN, K.: 2023. *The surprising pros and cons of competition for startup businesses*. [online]. [cit. 2023-03-12]. Available at: <https://www.huntclub.com/blog/the-pros-and-cons-of-competition-for-startups>
- [6] BALDRIDGE, R.: 2022. *What is a startup? The ultimate guide*. [online]. [cit. 2023-03-12]. Available at: <https://www.forbes.com/advisor/business/what-is-a-startup/>
- [7] BDC.CA.: 2023. *Competitive advantage*. [online]. [cit. 2023-03-12]. Available at: <https://www.bdc.ca/en/articles-tools/entrepreneur-toolkit/templates-business-guides/glossary/competitive-advantage>
- [8] EINSTEIG.: 2022. *Bewerbung beim startup*. [online]. [cit. 2023-03-12]. Available at: <https://www.einstieg.com/bewerbung/bewerbung-beim-startup.html>
- [9] DE TORO, J.: 2019. *Competitive advantages & defensibility: How to achieve and maintain a startup's market position*. [online]. [cit. 2023-03-12]. Available at: <https://medium.com/swlh/competitive-advantages-defensibility-how-to-achieve-and-maintain-a-startups-market-position-68f9a040f1f>
- [10] DUTTA, R.: 2023. *Startup moat: Creating competitive advantage in the business world*. [online]. [cit. 2023-03-12]. Available at: <https://www.linkedin.com/pulse/startup-moat-creating-competitive-advantage-business-world-rana-dutta/>
- [11] FASTER CAPITAL.: 2023. *What does competitive advantage mean for startups*. [online]. [cit. 2023-03-12]. Available at: <https://fastercapital.com/content/What-Does-Competitive-Advantage-Mean-for-Startups.html>



- [12] FASTER CAPITAL.: 2023. *What is a startup's competitive advantage*. [online]. [cit. 2023-03-12]. Available at: <https://fastercapital.com/content/What-is-a-startup-s-competitive-advantage.html>
- [13] FRANCHISEPORTAL.: 2020. *Was ist ein Start-up-Unternehmen? (Definition)*. [online]. [cit. 2023-03-12]. Available at: <https://www.franchiseportal.de/definition/start-up-unternehmen-a-29010>
- [14] GRANT, M.: 2022. *What a startup is and what's involved in getting one off the ground*. [online]. [cit. 2023-03-12]. Available at: <https://www.investopedia.com/terms/s/startup.asp>
- [15] HERNANDEZ et al.: 2015. Understanding actual socio-economic behavior as a source of competitive advantage: the role of experimental-behavioral economics in innovation. CARMO FARINHA, L. M. et al. (eds.): *Handbook of research on global competitive advantage through innovation and entrepreneurship*, 127–149. 10.4018/978-1-4666-8348-8.ch009
- [16] INDEED.: 2024. *How can you define competitiveness in business?* [online]. [cit. 2023-03-12]. Available at: <https://www.indeed.com/hire/c/info/competitiveness-definition>
- [17] INDEED EDITORIAL TEAM.: 2022. *What is competitive advantage, and why is it important?* [online]. [cit. 2023-03-12]. Available at: <https://www.indeed.com/career-advice/career-development/what-is-competitive-advantage-and-why-is-it-important>
- [18] KONDRILA, P. et al.: 2023. The philosophical context of curriculum innovations with a focus on competence development. *Journal of Education Culture and Society*, 14(2), 78–92. 10.15503/jecs2023.2.78.92
- [19] LOUATI, F.: 2018. Knowledge management and the competitiveness of learning organizations. MALHEIRO, A., RIBEIRO, F., LEAL JAMIL, G., POCAS RASCAO, J., MEALHA, O. (eds.). *Handbook of research on knowledge management for contemporary business environments*, 64–85. 10.4018/978-1-5225-3725-0.ch005
- [20] MARAVILHAS, S.: 2015. Information quality and value. MEHDI KHOSROW-POUR, D.B.A. (ed.): *Encyclopedia of information science and technology*. 3rd ed., 3981–3997. 10.4018/978-1-4666-5888-2.ch392
- [21] [21] MARAVILHAS, S. et al. 2019. Information Strategy: Implementing and Managing a Digital Strategy in a Portuguese Company. *Handbook of Research on Expanding Business Opportunities With Information Systems and Analytics*, 2019. Available at: <https://www.igi-global.com/chapter/information-strategy/208566>. DOI: 10.4018/978-1-5225-6225-2.ch011
- [22] MARTÍNEZ-AZÚA, B. C., MARTÍN-VEGAS, F.: 2019. Characterization of companies based on willingness to innovate and competitiveness. TEIXEIRA, N. M., DA COSTA, T. G., LISBOA, I. M. (eds.): *Handbook of research on entrepreneurship, innovation, and internationalization*, 282–308. 10.4018/978-1-5225-8479-7.ch011
- [23] MURA, L., BULECA, J.: 2012. Evaluation of financing possibilities of small and medium industrial enterprises. *Procedia Economics and Finance*, 3, 217–222. 10.1016/S2212-5671(12)00143-8
- [24] MYKHOPARKINA, O.: 2017. *Startup competitive advantage – How to validate your business idea and position your saas product?* [online]. [cit. 2023-03-12]. Available at: <https://www.chanty.com/blog/startup-competitive-advantage/>
- [25] PAHWA, A.: 2023. *What is startup ecosystem? How does it work?* [online]. [cit. 2023-03-12]. Available at: <https://www.feedough.com/what-is-startup-ecosystem-how-does-it-work/>
- [26] PETERDY, K.: 2023. *What is competitive advantage?* [online]. [cit. 2023-03-12]. Available at: <https://corporatefinanceinstitute.com/resources/management/competitive-advantage/>
- [27] POLO, Y. E. P.: 2021. Strategy from human talent. In PEREZ-URIBE, R. I., LARGACHA-MARTINEZ, C., OCAMPO-GUZMAN, D. (eds.): *Handbook of research on international business and models for global purpose-driven companies*, 235–252. 10.4018/978-1-7998-4909-4.ch013





- [28] PROFIT.CO.: 2023. *The seven types of competitive advantage*. [online]. [cit. 2023-03-12]. Available at: <https://www.profit.co/blog/performance-management-blog/the-seven-types-of-competitive-advantage/>
- [29] RENDERFOREST.: 2019. *Startup definition: Everything about startups*. [online]. [cit. 2023-03-12]. Available at: <https://www.renderforest.com/blog/startup-definition>
- [30] SAHA, N. et al.: 2019. The influence of SHRM and organizational agility: Do they really boost organizational performance? In DOĞRU, Ç. (ed): *Handbook of research on contemporary approaches in management and organizational strategy*, 62–83. 10.4018/978-1-5225-6301-3.ch004
- [31] SEND PULSE.COM.: 2023. *Startup*. [online]. [cit. 2023-03-12]. Available at: <https://sendpulse.com/support/glossary/startup>
- [32] SHAW, A.: 2024. *How to deal with competition as a startup business*. [online]. [cit. 2023-03-12]. Available at: <https://www.startupgrind.com/blog/how-to-deal-with-competition-as-a-startup-business/>
- [33] SHEWALE, R.: 2024. *Startup statistics in 2024: Failure rates, funding & insights*. [online]. [cit. 2023-03-12]. Available at: <https://www.demandsage.com/startup-statistics/>
- [34] SILVA JÚNIOR, C. R. et al.: 2022. Overview of the factors that influence the competitiveness of startups: a systematized literature review. *Gestão & Produção*, 29, 1–23. <http://doi.org/10.1590/1806-9649-2022v29e13921>
- [35] SWENSON, S.: 2022. *What is competitive advantage?* [online]. [cit. 2023-03-12]. Available at: <https://www.fool.com/terms/c/competitive-advantage/>
- [36] SULLIVAN, M.: 2023. *How to build startup ecosystems*. [online]. [cit. 2023-03-12]. Available at: <https://blog.hubspot.com/the-hustle/startup-ecosystem>
- [37] ŠIMELYTĖ, A., TVARONAVIČIENĖ, M., HOLMEN, R. B., BURINSKAS, A.: 2021. Knowledge and technology transfer as driving force for social innovations. *Polish Journal of Management Studies*, 23(2): 512–536. 10.17512/pjms.2021.23.2.31
- [38] ŠTRUKELJ, T. et al.: 2019. Socially responsible culture and personal values as organizational competitiveness factors. In NEDELKO, Z., BRZOZOWSKI, M. (eds.) *Recent advances in the roles of cultural and personal values in organizational behavior*, 81–101. 10.4018/978-1-7998-1013-1.ch005
- [39] THE HUB.IO.: 2022. *What is a Startup? The hub definition*. [online]. [cit. 2023-03-12]. Available at: <https://insights.thehub.io/insight/what-is-a-startup-the-hub-definition/>
- [40] TRUIC TEAM.: 2023. *What is a startup?* [online]. [cit. 2023-03-12]. Available at: <https://startupsavant.com/what-is-a-startup>
- [41] TUNGUZ, T.: 2016. *Your startup's competitive advantage*. [online]. [cit. 2023-03-12]. Available at: <https://tomtunguz.com/your-startups-competitive-advantage/>
- [42] TWIN, A.: 2023. *Competitive advantage definition with types and examples*. [online]. [cit. 2023-03-12]. Available at: [https://www.investopedia.com/terms/c/competitive\\_advantage.asp](https://www.investopedia.com/terms/c/competitive_advantage.asp)
- [43] URBANÍKOVÁ, M., ŠTUBŇOVÁ, M., PAPCUNOVÁ, V., HUDÁKOVÁ, J.: 2020. Analysis of innovation activities of Slovak small and medium-sized family businesses. *Administrative Sciences*, 10(4), 1–19. 10.3390/admsci10040080
- [44] VIKO.: 2021. *Competitive advantages & defensibility: How startups can survive over time*. [online]. [cit. 2023-02-12]. Available at: <https://www.viko.net/innovation/competitive-advantages-and-defensibility-analyzing-how-startups-can-survive-over-time>
- [45] YILDIRIM, Z. C.: 2023. *What is competitive advantage? Strategy with examples*. [online]. [cit. 2023-01-12]. Available at: <https://blog.logrocket.com/product-management/what-is-competitive-advantage-strategy-examples/>

[46] WALL STREET MOJO TEAM.: 2023. *Competitive advantage*. [online]. [cit. 2023-03-12]. Available at: <https://www.wallstreetmojo.com/competitive-advantage/>

## The competitive advantage of startups in business

### ABSTRACT

*Recently, the word startup has become a frequently inflected word in the business environment. And although many are “born” every year (50 million), very few live to see their first year of life (1 of 10). However, how to overcome this difficult period and stay on the market despite the high competition probably worries all entrepreneurs. For startups, it is much more important, precisely because it is an enterprise in its beginnings and also a rapidly growing business, disrupting established business concepts and often dealing with the basic problems of business survival. So it is important to find something that helps you to stand out from the crowd and better your position on the market. This “something” is known as a competitive advantage, which helps a business to outrun the competitors and can lead to better profit margins and market control. But to earn and keep it it can only be done through the hard work, dedication, and ethical performance of an organization. The main goal of the article is to evaluate what the competitive advantage of startups from the experts’ overview is and how they perceive their competitiveness. To reach the paper’s objective and obtain an answer to this question, we used comparative analysis to analyse various scientific and professional documents, analyses, studies, and statistics dealing with this issue and we used their comparison to synthesize the knowledge gained within the given paper. In this article, we focus on the concept of competitive advantage and its benefits for startups. Based on the methods used in creating this paper we identified, with the help of other authors, the key competitive advantages of startups, which include orientation to 1 product or service, high-tech orientation, orientation to a potentially fast-growing market, or team agility and learning.*

### KEYWORDS

*Startup; Competitive advantage; Business; Entrepreneurship*

### JEL CLASSIFICATION

*M13; M10; M19; L26*



# Value determinants of the Russian threat in historical context

- ▶ Petr Krajáč » University of Defence, Faculty of military leadership, Kounicova 65, 662 10 Brno, Czech Republic; email: petr.krajac@unob.cz
- ▶ Tomáš Řepa » University of Defence, Faculty of military leadership, Kounicova 65, 662 10 Brno, Czech Republic; email: tomas.repa@unob.cz
- ▶ Roman Dont » University of Defence, Faculty of military leadership, Kounicova 65, 662 10 Brno, Czech Republic; email: roman.dont@unob.cz
- ▶ Zdeněk Mikulka » University of Defence, Faculty of military leadership, Kounicova 65, 662 10 Brno, Czech Republic; email: zdenek.mikulka@unob.cz

## \* 1. Introduction

There is an inexhaustible amount of empirical and conceptual evidence for research on our subject. To introduce our topic, we use two recently published literary sources. Milan Syruček published a study in 2023 aimed at exploring the deep roots of the Russian-Ukrainian conflict. In addition to a comprehensive historiographical view of the causes of the conflict, he touches on many of its other contexts and circumstances, including some psychological insights. It says something very important about the Russian nature, the way of thinking and feeling of the typical “Russian soul”. It says something about a very important value of the Russian world – to win at all costs, if I find myself in a fight. The value of winning the war is so dominant in the Russian value world that it is legitimately involved in the causality of various Russian armed aggressions, not only against Ukraine (Syruček, 2023).

The second interesting source is the extensive work of the British expert on Eastern European and specifically Russian security affairs, Mark Galeotti: *Putin’s Wars. From Chechnya to Ukraine*.

In it, he examines in detail the pre-Putin and Putin periods, and the book segues into a consideration of the projected future of warfare involving Russia. He discusses, among other things, Russian military thinking, which includes an important element for us, the consideration of the necessity to “...strike the first blow, if possible before the enemy completes mobilization” (Galeotti, 2023, p. 362). In this context and as evidence of the above thesis, he quotes general Gerasimov, considered to be an important Russian military theorist. The latter writes in a text published in *Krasnaya Zvezda*, 4 March 2019: “The basis of our response is an active defensive strategy that ... applies a set of measures to actively neutralize the threat in the interests of state security (Galeotti, 2023, p. 362). The value significance of the statement in question lies in the emphasis on the “active neutralization” of the subject considered as a military adversary. It is considered a threat that must be eliminated before the adversary itself undertakes any military action. One may ask: was Russian policy guided by these doctrinal principles in the case of the attack on Ukraine? In the following text of our article, we will provide evidence that the answer can be given in

the affirmative. In this sense, its objective was chosen: to identify and characterise the security threat associated with Russian imperial ambitions and overall Russian power aggression in a value-based and historical context. In relation to this objective, the main research question was chosen: Which value determinants, historically influencing the majority of Russian society and the Russian ruling elites, identify and characterise the Russian security threat? Research Question 1: What models of ordering Russian society, associated with the values of power and success, have influenced its historical development? Research question 2: How does the preference for the values of power and success manifest itself in the mentality of Russian society? Research question 3: Based on historical knowledge and axiological approaches, what is the prognosis for the further development of the Russian world and the resulting threats?

Investigating value determinants requires the application of an appropriate theoretical and methodological approach. The theoretical one is axiology, i.e. the philosophical study of values, dealing in particular with values in the field of ethics, religion, aesthetics, etc. (Flew, 1979; Schroder 2021; Bradley, Zimmerman, 2019; Howard 2023) The axiological exploration of the subject of our paper also relies on George Simmel's methodologically strong work, *The Philosophy of Money* (Simmel, 2011).

The axiology is also the basis for the methodological approach adopted by the authors of the article in examining the value determinants of the Russian threat in the historical context and described in this text. This methodological approach uses the following applications of analytical and research methods: historiographical analysis and synthesis of historical events, analysis of authentic statements and speeches of Russian subjects with an emphasis on value and axiological aspects, abstraction of axiologically significant commentaries, texts and studies related to the object of investigation – the value determinants of the Russian threat, comparison of the resulting findings of the

analysed materials in order to reveal and exploit different perspectives on the investigated value aspects of the Russian and non-Russian world, generalizing and generalizing the determinants of values and axiological findings in order to formulate synthesizing (theoretical) conclusions about the value determinants of the current threats stemming from Russian imperial policy and its support by the Russian public, and exploration and prediction to assess the further development of the Russian threat.

This axiological methodological approach allows us to examine Russian current and threatened aggression, or its roots, comprehensively. Not only to the necessary depth, but also systematically. In this context, axiological inquiry asks what state of affairs is so good that it warrants a deliberate action leading to the establishment or maintenance of a desired state of affairs. The difficulty, however, often lies in the lack of an objective criterionology. Thus, in a hierarchy of ideas about the good and positive values, ideological constructs can be placed at the top of the imaginary value pyramid, leading to at least questionable substantive consequences. An aggressive, unjust war against a neighbouring country and the dehumanisation of the inhabitants of the invaded country are certainly among these.

For these reasons, too, the authors of this article had to set themselves the task of establishing an objective value criterion and, on this basis, to attempt to classify and comment on the facts described in the context of axiological approaches, represented for the purposes of this article by studies by (Bradley, Zimmerman 2019; Howard 2023; Schroder 2023).

As theoretical starting points for an objective criterionology of values, the authors of the article chose Shalom Schwartz's theory of values to define value orientation and Ladislav Tondl's (1999) approach to the question of the role of knowledge and values in the decision-making process. Shalom Schwartz and Wayne Bilsky (1987, 1990) developed a theory that defines five formal proper-



ties of values: values are concepts or beliefs, refer to desirable end states or behaviours, transcend specific situations, guide the selection or evaluation of behaviours and phenomena, and are ordered by relative importance. In their theory, they also derived a typology of values based on three universal requirements of human existence: the needs of the individual as a biological organism, the need for coordinated social interaction, and the survival and security of group interests. This led to the development of ten basic value orientations: power, achievement, hedonism, stimulation, autonomy, universalism, benevolence, tradition, conformity and security (Schwartz and Bardi, 1997; Schwartz, 1992; 1994; Schwartz and Sagie, 2000; Schwartz et al, 2001; Schwartz, 2003; 2005; 2006a; 2006b; 2007; Schwartz and Rubel-Liftschitz, 2009) and their interrelations and regularities (Anýžová, 2014). One of the main goals Schwartz pursued in formulating a theory of values was to clarify the extent to which value priorities are influenced by social experience and, conversely, the extent to which values influence attitudes and, in particular, actions (Schwartz, 2012). This also justifies the choice of Schwartz's theory for the purposes of this axiological study.

Tondl (1999) discusses the issue of evaluation, its processes and models, and the relationships between cognition, decision making and evaluation. His dominant research interest is the value orientation of intellectually demanding activities, the context of evaluation and rationality in the decision-making process as a choice of acceptable alternatives, and the role of knowledge and values in decision-making. Tondl concludes that "...decision-making procedures... always imply the engagement not only of knowledge but also of values and value structures, including considerations of possible or expected impacts, of foresight dimensions." (Tondl, 1999, p. 10) This conclusion emphasizes the need for dialogue and places a higher premium on the culture and quality of communication associated with evaluation and decision-making procedures. This implies that achieving

the quality of social consensus in evaluation and decision-making processes is conditional on fulfilling the criteria of the ability to conduct society-wide dialogue and communication (Tondl, 1999). In an axiological context, this means that a value world with a distorted communication culture and a distorted model of the population's participation in evaluation, decision-making and social consensus-building procedures exhibits social and value distortions.

## *2. The historical context of Russian attitudes to power and success and its implications for the present*

Over the past five centuries or more, Russia and its ruling elites have pursued their imperial ambitions so aggressively that Russia has become the world's largest state and, after World War II, a superpower with global ambitions. Moreover, the current war situation confirms that it continues to pose a permanent danger. Contempt for human life and cynicism is not the prerogative of the Russian rulers, but largely of the whole of society, which at least tolerates or even directly supports expansionist policies and militarism, regardless of the consequences for their own lives. Violence is thus an organic part of the development of Russian society. The masses of the population suffer under the burden of war and languish in misery, while the Russian state grows and absorbs its neighbours as if it had no borders (Bidlo, 1907). A summary of the historical context that shaped such a mentality of rulers and subjects can be instructive for understanding their current patterns of behaviour.

The current wartime confrontation between Russians and Ukrainians is only the result of long-standing problematic relations and is based on a different understanding of their own identity and historical roots. The Russian concept of Ukrainian history sees it as an integral part of Russian history (Rychlík, 2015). Christianity played an important role in the construction of the Russian empire. It was Orthodox Christianity that became a firm sup-

port for the ruling power in Russia and for militarism, and this is still the case today. Related to this is the idea of Moscow as the third Rome – i.e. that the true heir of the Christian faith after the fall of Rome and Constantinople is Moscow (Boček, 2019).

A phase that fundamentally influenced the Russian mentality was several centuries under the Mongol rule of the Golden Horde. The inhabitants living in a vast territory had to get used to the cruelty of their rulers. At the slightest hint of revolt, the Mongols and Tatars resorted to the harshest repression. It was not until the 14th and 15th centuries that the Moscow princes were able to gradually break free from Mongol domination. The final defeat of the Golden Horde came in 1480. The Russian lands continued to deal with the consequences of Mongol rule for several centuries (Vydra, 2022).

The weakening of the Mongols and Tatars led to a number of power disputes and wars. One consequence of the power conflicts was the rise to power of the Moscow prince Ivan the Terrible around 1547, notorious for his immense cruelty, suspiciousness and aggressive expansionism towards the east. Ivan the Terrible established himself as the first Russian Tsar with unlimited power, called the Autocracy. After the death of Ivan, Tsarist Russia descended into chaos and succession struggles in the late 16th and early 17th centuries, accompanied by many waves of violence. The period of chaos ended only with the reign of the first tsar of the Romanov dynasty, Mikhail I Fyodorovich (Švankmajer, 2008). The rebellion of Bohdan Khmelnytsky and the Zaporozhye Cossacks from 1648 onwards was particularly crucial. At the end of it, after the negotiations at the Perejaslavl Council in 1654, Tsarist Russia for the first time brought the whole of the Left Bank Ukraine under its rule (Rychlík, 2015).

An important ruler who opened Russia's window to Europe was Tsar Peter the Great. He tried to change Russia's backwardness with radical reforms on the Western model. In 1721, after his final

victory over the Swedes and thanks to a modernised army, he called Russia an empire, titled himself Tsar-Emperor and founded the city of St Petersburg, which became the capital of the empire. However, it was also characteristic of Russian history that, like Ivan the Terrible, Peter the Great had a penchant for cruelty, ruthlessly suppressing any signs of resistance both to himself and to the reforms. At the end of his reign, he was also behind the death of his son and successor to the throne, Alexei. During the 18th century, Russia, already a great power, was involved in many outbreaks, including the Seven Years' War.

As with many other Russian rulers, Peter III's failure in foreign policy was unforgivable, while successful conquests legitimised everything, however difficult the lot of his subjects. Thus, ironically, soon after the coup and the subsequent murder of Peter III in prison, his wife, the ethnic German Catherine II, became tsarina. Her nickname, the Great, was rightly earned, as she greatly accelerated Russia's expansion, especially during the wars with Turkey. Territories along the coasts of the Black and Azov Seas were colonised. The serfs, however, continued to feel their exploitation, accompanied by cruel oppression and physical punishment for disobedience was often unbearable, leading to several large-scale uprisings. The most notorious was that of Pugachev, which was only harshly suppressed after three years in 1775, and the main protagonists faced exemplary punishments. Russia began to expand into North American territory in Alaska and was involved in the three partitions of Poland in 1772, 1793 and 1795 (Troyat, 2008).

After the death of Catherine the Great, Russia became involved in the Revolutionary and Napoleonic Wars. Thus, after the Battle of the Nations in 1813 at Leipzig, which ended in a crushing French defeat and a campaign into the heart of France in 1814, the Russian Cossacks found themselves in Paris (Holmes, 2008). Despite some contact with European civilization, it was not until 1861 that serfdom was abolished in Russia (Švankmajer,



2008). Insufficient reforms, growing discontent and military defeat in the 1904–1905 war with Japan heralded the collapse of Tsarist power on the battlefields of World War I. (Warner, 1997).

The First World War, for which Russia was not sufficiently prepared, brought about the disintegration of the state, millions of victims and first the February Revolution (which ended with the abdication of the Tsar) and then the even more radical October Revolution. This was followed by the Bolsheviks, led by Lenin, who came to power and turned Russia into a communist state, plunging it into civil war with millions more dead (Pipes, 2017). Stalin, with absolute power since 1926 and a cult of personality, modernised the Soviet empire, at least in the economic sphere, and promoted heavy industry. However, he also gradually and intensively prepared for war and did not hesitate to enter into an alliance with Nazi Germany shortly before the outbreak of war in August 1939. The fate of many Eastern European territories, which Moscow saw as its sphere of influence (Davies, 2005), was determined by the Ribbentrop-Molotov Pact.

The Second World War, which cost the USSR up to 26 million lives, was a struggle to the death between two inhuman totalitarian ideologies. The end of the war remained accompanied immediately by Soviet interference in the internal affairs of many European countries, and by the end of the Second World War, we can already trace the beginnings of the Cold War. Moscow did not hesitate to use military force to enforce the obedience of its satellites, as it did in Hungary in 1956 and in Czechoslovakia in 1968. The rivalry between the West and the East led to several escalated crises (Vydra, 2022). The USSR fell into a trap in the war in Afghanistan from 1979 to 1989 (Sarin, 2001). Moreover, despite the emergence of reformist politicians in the USSR such as Gorbachev, the economic model of the Eastern bloc proved unsustainable and popular discontent grew. As a result, the countries of Central and Eastern Europe gradually broke away from Soviet subjugation and the USSR collapsed in 1991 (Švankmajer, 2008).

In the 1990s, it appeared that Russia could transition to a democratic country that would not pose a threat to its neighbours. After initial chaos, social unrest and a sharp decline in living standards, Vladimir Putin came to power in the late 1990s (Vydra, 2022). Many Russians felt humiliated by the collapse of the USSR. The status of a superpower that imposes its will by force is something that many Russians are comfortable with and will support such a model based on expansion regardless of the country's internal difficulties. Moreover, not only do wars not solve these problems, they exacerbate them. However, as has often been the case in Russian history, successful expansion will at least temporarily mask obvious shortcomings at home. During Putin's reign as president or prime minister, Russia has been involved in many wars and other military actions, most notably the Second Chechen War of 1999–2009, the Russo-Georgian War of 2008, the annexation of the Ukrainian peninsula of Crimea in 2014 and immediately thereafter the covert but intense involvement in the war in Donbass, the intervention in Syria since 2015, and finally the most serious invasion of Ukraine from a European perspective since 24 September (Kříž, 2023). Kříž also stated that this conflict is the most intense on the European continent since the end of the Second World War. Moreover, Russia has justified its deployment on such absurd pretexts that it is clear that the ongoing conflict is unlikely to find a rational solution any time soon. Moreover, in the completely state-controlled Russian media, the war is presented as a battle with the collective West, which 'threatens Russia'. The war of aggression therefore also has a kind of ideological and religious fervour, and it is not just a struggle for Russian control of Ukraine, which has been going on for at least a quarter of a century.

Can Russia be different? This is now one of the most important axiological questions. Indeed, the support for the current Russian regime seems to be quite solid, and it could not be implemented without the acceptance of the majority of Russian society. The cause of Russia's age-old aggression there-



fore lies not only in the mentality of Russia's rulers, but apparently also in Russian society, which recognises violence as a legitimate means of politics. At the same time, this conclusion allows for the resolution of the first research question: which models of the organization of Russian society, associated with the values of power and success, have influenced its historical development? Based on the above historical reflection, it can be answered that, starting from the period of the Golden Horde domination, it has always been a model of organization in which power was concentrated in the hands of individuals or a relatively small group of persons. Power was used absolutely in relation to its own population, with maximum use of brutality and harsh means of repression. The goal of the ruling regime was success in the form of absolute control of the population and resources, as well as successful expansion at the expense of other states, nations, or ethnicities, regardless of their own human or material losses. At the same time, in the past, it has been significant defeats that have been able to change the regime in Russia, but most of the time the power situation has eventually evolved into an even worse situation in terms of individual rights and freedoms.

### *3. Values of power and success in the mentality of the current Russian ruling elites and the majority of Russian society.*

Russia's actual and threatened power aggression, or rather its roots, not only in the necessary depth, but also in its complexity and systemic nature. We are also concerned with a structured assessment of actions and decisions related to the struggle for power both within Russian society and towards its neighbours, especially those states that were formerly part of Russia's sphere of influence. If, for example, a politician decides to order a military attack on a neighbouring country, it is firstly because he has a violent upbringing, as is demonstrably the case with Vladimir Putin, and secondly because he has assessed such an attack as some-

thing positive for him and his policies, something that will have desirable value consequences from his point of view. He, too, is surely deeply convinced that his aggressive decisions have mostly positive value consequences for his country, e.g. that by attacking Ukraine he has restored Russia's superpower status. In other words, from the point of view of the majority of Russian society, he has succeeded.

Putin, like other Russian rulers, believes that power can be successfully achieved and maintained through methods that naturally involve various forms of violence. That is why he is not reluctant to rely on the reconstruction and strengthening of the social position of the armed forces and their use whenever the opportunity arises. During Putin's career in the highest echelons of power in the Russian state, a number of armed aggressions have taken place at his will. The conflicts provoked by Russia are analysed in detail by the expert mentioned in the introduction, Mark Galeotti. In particular, he notes that during his time in the Kremlin Putin has relied more and more on reconstituted military power. Galeotti provides a detailed and well-informed analysis of Russia's move towards a new form of Cold War with the 'collective West'. He also provides a detailed analysis of the growing tendency towards armed violence (Chechnya, Georgia, Crimea), which has, not surprisingly, culminated in an open invasion of Ukraine in order to 'de-Ukrainise', 'de-Nazify' and 'demilitarise' it. At the same time, however, Galeotti also provides an informed assessment of the real capabilities of the Russian military and outlines the presumed entropic direction of Putin's aggressive regime (Galeotti, 2023).

In an interview with the daily Forum 24 in April 2023 (Hlaváček, Galeotti, 2023), Galeotti also states that Putin is also convinced that he is being forced into violence by external forces that have put him in a situation where he has no alternative. Thus, he repeatedly accuses the West of attacking Russia's interests and that the processes in Ukraine are operations of the (US) CIA and the (British) →



M16. The conflict in Ukraine has reached a stage where Putin has no choice but to fight by all means until “all objectives are achieved”, which of course change as the war progresses according to changes on the battlefield. It is also clear that the regime Putin has built is characterised, among other things, by the shortcomings caused by distorted, biased or outright false information, due to the fact that “...he is surrounded by his “courtiers” who tell him only what he wants to hear” (Hlaváček, Galeotti, 2023). This is not unusual in authoritarian regimes based on violence and fear.

The value of power and success in Russia has traditionally been associated with the idea of a great empire dominated by the Kremlin. Putin’s axiological thinking is no different. That is why the war of aggression against Ukraine can be seen as part of the restoration of the Great Russian Empire, as an imperial war (Hlaváček, Galeotti, 2023). Its organic part is also the “hybrid” activities throughout the West with the aim of destabilising it, weakening it as much as possible and maximising its overt and covert influence on processes in Western countries, including the Czech Republic. Russia’s developmental progress is hindered by its attachment to the past. On the evolutionary scale, it is currently lagging behind. The generation of ‘homo sovieticus’ is often criticised for their inability to adapt to the new realities of the world and Russia’s position within it. This criticism is due to their perceived lack of control over their leaders, weak institutions, and an excessive willingness to use force. As a result, we remain vulnerable to non-military threats such as subversion and sabotage (Hlaváček, Galeotti, 2023). The above corresponds to Russian strategic culture and Russian identity and self-perception. An essential feature of both is the desire of Russian leaders to achieve a state in which Russia is perceived and respected as a great power. By this they mean a great power status backed by formidable military power. This is seen as a direct instrument of foreign policy and is also often exercised beyond the borders of the Russian Federation in various conflicts in which Russia has

interests. The power of a state is derived solely from the strength of its armed structures, from the destructiveness of its military potential, of which the ‘nuclear triad’ is an organic part. “The determination to use military potential to establish itself as a great power is combined with the persistent belief that Russia is under threat.” (The willingness to use the military to establish itself as a great power is combined with a persistent conviction that Russia is threatened.) (Wiltenburg, 2020)

Clearly, then, the necessary understanding of Russia includes an understanding of its aggressiveness, its massive rearmament, and its growing determination to use its military capabilities to pursue foreign policy interests (Wiltenburg, 2020). This is also related to the fact that “...as Keir Giles explains in his book *Moscow Rules*, the cultural difference between Western Europe and Russia is greater than the geographical distance. Giles goes on to assert his view that Russian culture is substantially different from Western culture, and argues that Gonzague de Reynold should consider the Russian nation and culture as Asian, not Euro-Asian. For an illustration of how easily friction can arise in diplomatic discussions, one need only look at the different interpretations of concepts such as compromise, truth and respect” (Wiltenburg, 2020).

The aggressive subjectivism of values (an attribute of Putinism) naturally refers to traditions, to the long-term, even centuries-long influence of the dominant culture, customs, living conditions, the style of exercising power and authority, and the way of achieving social success. If violence, brutality, cruelty, and ruthlessness play a major role, then it is only natural that this shapes the world of values that produces rulers like Dzhughashvili/Stalin in the past and Putin and his entourage in the present. Not only that, but the unquestioning acceptance of this style and manner by the public is a given. The typical Russian, in other words, holds in high esteem those who are capable of inflicting truly painful damage, who can convincingly threaten such violence that they will not

*On the basis of this analysis, the author arrives at a formulation of possible outcomes of the war in Ukraine. According to him, there will be (1) the Westernisation of Ukraine, (2) Ukraine's own way, (3) a postponed war, or (4) an apocalypse. This is an idea on a scale from the most optimistic to the most catastrophic, culminating in World War III. In each scenario, Russian aggression and imperial mythology and aspirations play a prominent role. The question is how far these factors can be resisted. In any case, it is useful to reflect on the traditional, current and future Russian value system.*

hesitate to take decisions that will lead to massive loss of life. Our public is now wondering about the unusually high number of falls from windows in Russia. The Russian public sees this as proof of the strength and decisiveness of the authorities, as an acceptable means of persuasion.

Also axiological significant in this context is the perception of contemporary Russian society by the authority on Russian sociology, Lev Gudkov, head of the independent Levada Centre. He describes his society as primitive, apathetic, burdened with fear of repression, in a state that can be described as rigidity or paralysis “в состоянии ступора” (Gudkov, 2024). This is also connected with the ignorance of a large part of the Russian population about important events of the recent past. At the same time, no one has the will to look for an alternative to the current leadership of the Russian state. People are lulled by the appearance of economic stability and growth. They believe the official claims about wage growth and purchasing power exceeding that of the Germans, for example. There is a clear return to the cult of the leader after the disappointments of the 1990s” (Gudkov, 2024).

Apathy among people often arises from the belief that they have no control over the decisions made by those in power, and that the opinions and needs of ordinary people are disregarded. Therefore, individuals feel compelled to adapt to any given situation, even in times of war. Gudkov describes a “process of degradation” (Gudkov, 2024) that is linked to a fixation on the past, the promo-

tion of nationalism and the glorification of war, and most importantly, fear that is fuelled by the blatant increase in repression by the central power. This “method” is highly effective in Russia due to its foundation in deeply ingrained customs and values. Gudkov argues that the anti-regime 20% minority and anti-Putinists in exile lack ideas to help Russian society overcome its current situation.

The atmosphere of fear is reinforced by the propaganda of the threat from the West, which is said to want to weaken, humiliate and disintegrate Russia, pump out its raw materials without limit and thus contribute to the disintegration of the Russian Federation into a number of easily controllable individual states. Gudkov characterises Russian society as follows: “In general ... our society is very primitive, and its social structure is also extremely primitive and undeveloped, so that individual groups are unable to express their opinions, their interests. This primitiveness of the social and group structure is an extremely important characteristic of authoritarian or totalitarian power, that is, a centralised system of vertical power that controls everything. The inertia of Soviet perception is also at work. Power does one very important thing: it denies people their own dignity, their own importance and their own abilities. It pretends and imposes on people that it knows better what they need. Whether it is family policy, sexual practices, morality, what is acceptable, what is unacceptable, what to believe or not to believe, what science



should do, how the economy should develop, and so on.” (Gudkov, 2024).

Traditionally and currently, power in Russia is exercised through the brutal and arbitrary destruction of anything that might in any way threaten it. The elites from all spheres of social life are virtually eliminated, or rather their will to represent an alternative to the existing power and possible bearers of responsibility for Russia’s future is paralysed and offers no viable idea of how to overcome Putinism and return society to normality (Gudkov, 2024). Relative social success (career or property) is linked to conformity with the power structures and now with the war aggression against Ukraine. The above text also offers an answer to the second research question: How is the preference for the values of power and success manifested in the mentality of Russian society? The preference for the values of power and success, which (as the first chapter and the answer to the first research question state) is deeply historically rooted in the mentality of Russian society, is manifested in the perception of aggression as a value-legitimate tool to achieve power, the perception of violence as a value-legitimate means to achieve success, the legitimacy of using fear to assert power and achieve success even at the cost of distorting the objective view of reality, the linking of the values of power and success with the idea of creating a great empire — a superpower controlled from the Kremlin, the legitimacy of achieving social success through the use of violence, brutality, cruelty and ruthlessness — in Russian society socially respected evidence of strength and decisiveness, the linking of power and success with conformity to the ruling power structures and their ideology and politics. The aforementioned links between power and success and the way they are achieved also have their consequences in the form of apathy and paralysis, fear of repression, willingness to conform and primitivism of social and group structures.

#### *4. Predictions about the further development of the Russian value system and the threats it is likely to pose.*

Functional theoretical reasoning must fulfil its explanatory and predictive function. Predictions should follow exploration, although there is always a degree of uncertainty and indeterminacy inherent in any prediction. This is because predictions can never be based on knowledge that is completely true and explanatory. Additionally, future events are influenced by countless factors, and the combination of these factors will ultimately determine one of many possible outcomes, which will become the new reality. The above applies to the possible development of Russian society’s values and its consequences or threats. We will attempt to predict its future development based on the overview of the Russian world of values obtained so far, in connection with its aggressive and violent component. The text discusses the immediate and distant future, as well as the potential consequences of this development, particularly in relation to the security situation in Europe and the Czech Republic. We will point out the geopolitical context, or rather the systemic environment of the Russian value system and its influence on it. We will point out the entropic characteristics of the Russian value system and what is likely to emerge from it.

First, we will draw attention to an inspiring text by Petro Sukhorolskyi of the National Polytechnic University in Lviv, who presents four possible scenarios for Ukraine’s future. (Sukhorolskyi, 2022) He bases his concept on a CLA (causal layer analysis) of existing discourses, an important aspect of which is the conflict between mythological Russian and pro-Russian narratives and Ukrainian and pro-Ukrainian perspectives, which seek to present the reality of Russian-Ukrainian relations and their development in history and the present. On the basis of this analysis, the author arrives at a formulation of possible outcomes of the war in Ukraine. According to him, there will be (1) the Westernisa-

tion of Ukraine, (2) Ukraine's own way, (3) a postponed war, or (4) an apocalypse. This is an idea on a scale from the most optimistic to the most catastrophic, culminating in World War III. In each scenario, Russian aggression and imperial mythology and aspirations play a prominent role. The question is how far these factors can be resisted. In any case, it is useful to reflect on the traditional, current and future Russian value system. As one of the conditions for the probability (verisimilitude) of the required predictions of the next development of the Russian value system in terms of the dangerousness of the threats arising from it, it is worth recalling the deep-rooted Russian fear of a surprise military attack analogous to Operation Barbarossa during the Second World War. This fear also influences the Russian security doctrine, which includes the value-unacceptable self-imposed "pre-emptive" attack in the event of a "perceived threat" and even the "justification" of using nuclear weapons if all possibilities of winning the war with conventional weapons have been exhausted. Thus, the Russian value system allows nuclear weapons to be considered not only as a deterrent, but also as a tactical weapon (Cimbala, 2013, pp. 10 and 18).

We still have to reckon with the fact that Russian security thinking is deeply rooted in the "Russian strategic culture cultivated over centuries", and this culture includes expansionism, unpredictability and a constant sense of threat. At the same time, the decision to invade Ukraine was not the result of irrationality on the part of the Russian leadership, but the result of their core belief in the necessity of doing so in order to prevent Russia from losing its security buffer zone (Rumer, 2020, pp. 1–2).

In the near future, within the next few months and years, the fundamental essence of the Russian value system is unlikely to change. This is because the order has deep roots, dating back centuries. Additionally, the forces that could significantly impact the Russian world of values are either non-existent or in a nascent state, and are quantitatively and qualitatively insignificant. Instead, there are

internal forces that aim to preserve the existing conditions, which have been built up by decades of Kremlin manipulation. This is achieved primarily through propaganda controlled by the Kremlin or at least heavily influenced by it, pressure on the education system, or presidential decrees that interfere with cultural activities (Putin, 2022).

The traditional values promoted include, in particular, patriotism in the Russian sense, a strong family with more children, creative work for the homeland, and a preference for the spiritual over the material, and thus a willingness to accept a decline in living standards. Thus, the decree mentions the need to combat "destructive ideologies" that are secretly and purposefully imposed on Russia by the actions of the United States and other "hostile countries (Putin, 2022).

In the more distant future, in the order of years and decades, we can foresee an ambivalent development of the Russian value system. One direction could be the spread of entropy to chaos, full of internal conflicts in Russian society. The break-up of the Russian Federation into a number of small states is also being considered. These will be conditioned by growing dissatisfaction with the disintegration processes associated with the ongoing war in Ukraine (which, regardless of the military situation, may continue through a partisan movement of Ukrainians who do not accept Russian domination in any form), or with other armed or "hybrid" conflicts waged by the current Russian regime of power outside Ukraine. In terms of values, there will be an increase in violence, aggression in all directions, selfish and ruthless individualism and negative emotions. The material, cultural and living standards of the majority of the population will be characterised by hardship, deprivation or deformation and regression. Russia's world of values will move further away from the normal standards of civilisation in the developed world. This will inevitably lead to an increase in hostility towards it and a readiness to ally itself with other dictatorial regimes and to wage war against the West in particular.



However, the Russian public's discontent may have different value connotations, which may also lead to a variable development towards democracy or, on the contrary, towards a more rigid dictatorship than Putin's. However, Russian society is value-based in a way that can also lead to a so-called 'rallying around the flag', increased hatred of Ukrainians and the 'collective West', and even greater aggression despite, or as a result of, a significant decline in living standards and the loss of a basic sense of security for Russians themselves. We must also remember that public support for Putin's regime and for Putin himself is not declining significantly, but rather the structure of responses to opinion polls, for example by the independent Levada agency, is changing.

The threats arising from the outlined possibilities for the development of the Russian value world are obvious. In particular, the escalatory potential of ongoing Russian aggression dominates both the actions and narratives of the protagonists of the current regime in power. The West, led by the United States, is repeatedly accused, with varying intensity, of being responsible for the war in Ukraine, and even of seeking to start a major, virtually global war with Russia. See, for example, as early as April 2023, the appearance of Russian Defence Minister Sergei Shoigu in New Delhi, India. The West, he says, does not want to help Ukraine anyway, this is just a proxy war, he is pursuing a "criminal policy", provoking and wanting to go to war with Russia and China (Agentura Tass, 2023).

Russia is making intensive preparations for a long, protracted war, and certain indications (the Suwałki Pass, the Kaliningrad region) suggest a tendency to start a war with NATO, however nonsensical it may seem to rational European thinkers. These preparations are also in the area of values and ideology, which we consider more dangerous than the feverish armaments and the transformation of the Russian economy into an essentially warlike one. In the explanatory part of the text, we have argued that the value of winning a war (any war, even an unjust one, once Russia has been in

it) is, for the power holders and the Russian public at large, incomprehensibly important to us. Another dominant value is the sense of belonging to a large, powerful empire that others fear.

Finally, explicit statements by Russian officials confirm geopolitical aggression and, among other things, efforts to restore Russia's sphere of influence as far west as possible. At the very least, within the borders that resulted from the Yalta Conference before the end of the Second World War and the military operations carried out by the Soviet Union's armed forces in 1945. Axiological thinking and feeling in Russia is also associated with a certain visionaries and certainty about Russia's predestination to dominate other countries, at least neighbouring countries. Russia's almost sacred visionaries, linked to the Orthodox religion (the Church's support for Putin and vice versa is obvious and well visible in contemporary Russia), reassures the majority of Russian public opinion of its predestination to save the true Christian values so violated by the "decadent" and "decaying" West. The logical prediction for the coming historical period is therefore the growing and prolonged conflict between our world of values and Russia's. We cannot expect any positive change for us in this area. Therefore, the threats to us from Russia will continue to grow and become more complex, intense and sophisticated.

In the context of more general geopolitical developments, on which Russia has an undoubted influence, it is necessary to be concerned about the growing threats to the democratic way of life and politics, to the values of freedom, human rights, the rule of law over brute force, etc. At the same time, Russia is part of a wider world of values that tends towards various variants of undemocratic governance, towards the unpunished use of violence in order to revise the borders recognised by international law and treaties in force, towards a certain return to the past in which Hobbes's "homo homini lupus" was in force, when practically continuously someone was at war with someone else, even on the territory of Europe. Hence the danger

of radical value changes. There is a growing conviction that the approach of some Western political and value structures is involved in these negative developments. The latter takes the form of modified appeasement in relation to the defending Ukraine, and has features of relative tolerance towards dictatorial regimes (not only Russia's). The self-destruction due to the influence of progressivist ideologies and activisms, the consequent lack of awareness of what is truly essential to human and social life, the prevalence of the value of fun, comfort, arbitrariness and sufficiency over duty, responsibility, sacrifice, diligence and modesty, all tempt predatory aggressors like Putin to be aggressive now and in the future (Opršal, 2024).

The value implications of the predicted developments may have a number of very unpleasant aspects for Europeans, including the Czechs. If a certain indifference, in extreme cases deliberate ignorance or even infantile political incompetence towards them persists, we will inevitably be surprised by the growing aggressiveness of geopolitical forces hostile to our world of values. The most serious threat is war aggression, which competent and responsible personalities do not underestimate. In this respect, the statement of the Chief of the General Staff of the Army of the Czech Republic, General Karel Řehka, is significant: "Russia must realistically see that we have the ability and will to defend ourselves. It is not about some declaration, they have to see that realistically it is not worth it (Řehka, 2023). Predicting the further development of the Russian world of values and thus answering the third research question: "What is the prediction, based on historical knowledge and axiological approaches, of the further development of the Russian world and the threats arising from it?" It offers the following conclusion: in Russian society, and especially on the part of Russian power elites, the emphasis will continue to be placed on the promotion of conservative values (tradition, conformism, security) in the short and medium term. These values, in the isolated Russian environment and in relation to the values of

power and influence exercised by the power structures (as interpreted for Russian society in Chapter 2), will allow for an increasingly consistent control of Russian society. This increasingly sophisticated control is then aimed at making it a docile and effective tool for fulfilling the imperial geopolitical ambitions of the current Russian power elites, led by Vladimir Putin or someone like him. It is therefore very likely that we can expect the Russian imperial scenario that has been repeated several times in history: after the absolute domination and ideological indoctrination of Russian society and its educational system (a goal that Putin has already practically achieved), massive armaments and the building up of the armed forces will continue, going to the very limit of the economic sustainability of the Russian economy. At the same time, the drive to subjugate or at least eliminate Ukraine (in the sense of favourable peace terms for Russia) will intensify. Russia will also escalate its hybrid war against European democracies, the European Union and NATO, using all available options and means, including AI. The goal will be to subvert and destabilize democratic Europe, the alliance between Europe and the US, to the maximum extent possible. Ultimately, it will be about subverting the current world security order and trying to successfully assert itself against the traditional enemy – the "decadent" and "Russian world and culture threatening West". The Kremlin thus seeks to create the conditions for a successful military expansion westward and the restoration of the former spheres of influence of the Soviet Union.

## 5. Conclusion

The conclusion is (among other things) defined to answer the main research question: which value determinants, historically influencing the majority Russian society and the Russian ruling elites, identify and characterize the Russian security threat? It should be emphasized that Russia expects the failure of the "West" also in the area of value anchoring and its resignation to the traditional values of





Euro-Atlantic civilization. These are (in the context of Shalom Schwartz's theory of values) stimulation, autonomy, universalism and benevolence. A typical intersection of this value anchoring is aid to Ukraine. The possible lack of our support for Ukrainian self-defence would further etch the Western value world as a result of the "dominance" of Russian axiology. This, as we have shown, is based on the values of power and success, and on the belief of Russian elites and the majority of Russian society in the legitimacy of achieving geopolitical goals through armed force, violence and brutality. The failure of the Euro-Atlantic value system would mean that a sense of complacency and justification to pursue its great power ambitions by any means, including violent warfare, would be fixed in the Russian axiological system. This would most likely lead to an increase in Russian state geopolitical aggression. The leaders of a victorious Russian power would be inclined to further demonstrate their values in ways unacceptable to the West. Pu-

tin's self-confidence and popularity with the Russian public would increase markedly, giving him the legitimacy to consolidate his power through virtually unchecked authoritarian practices. Russian power elites and society would in turn become even more convinced that aggressive, illegal and immoral violence pays off. The moral, cultural and spiritual devastation would be deepened. The threat from Russia, though temporarily diminished by the war in Ukraine, would not be diminished, but the opposite. The difference in the Russian mentality, its "specific" non-European logic, would very likely lead to an attack on one of the NATO countries, even if this is insane, irrational and nonsensical from our current perspective. Despite all this, "...it is necessary to continue our support (for Ukraine), despite the enormous costs, for as long as it takes. I know it's a cliché, but this war is really a marathon, not a sprint" (Hlaváček, Galeotti, 2023).

## REFERENCES

- [1] AGENTURA TASS.: 2023. *Šojgu: SŠA naceleny na provoiirovanie drugih stran k voennomu protivostoianiju s RF a KNR*. [online]. [cit. 2024-02-28]. Available at: <https://tass.ru/armiya-i-opk/17634609>
- [2] ANÝŽOVÁ, P.: 2014. Srovnatelnost Schwartzovy hodnotové škály v mezinárodních datech. *Sociologický časopis*, 50(4), 547–580.
- [3] BIDLO, J.: 1907. *Dějiny Ruska v devatenáctém století*. Díl 1. (1796–1855). Otto.
- [4] BOČEK, P.: 2019. *Moskva – Třetí Řím: od ideje k symbolu*. NLN.
- [5] BRADLEY, B., ZIMMERMAN, M., J.: 2019. Intrinsic vs. Extrinsic Value, *The Stanford Encyclopedia of Philosophy*. [online]. [cit. 2023-10-09]. Available at: <https://plato.stanford.edu/archives/spr2019/entries/value-intrinsic-extrinsic>
- [6] CIMBALA, S. J.: 2013. Russian threat perceptions and security policies: Soviet shadows and contemporary challenges. *The Journal of Power Institutions in Post-Soviet Societies*, 14/15. 10.4000/pipss.4000
- [7] DAVIES, N.: 2005. *Evropa: dějiny jednoho kontinentu*. Prostor.
- [8] FLEW, A.: 1979. *A dictionary of philosophy*. London: Pan Books Ltd.
- [9] GALEOTTI, M.: 2023. *Putinovy války. Od Čečenska po Ukrajinu*. Praha: Bourdon.
- [10] GUDKOV, L.: 2024. *Putin as a leader focuses on the worst in man*. [orig. in Russian Путин как лидер ориентируется на худшее в человеке.] Polygon. [online]. [cit. 2023-10-19]. Available at: <https://www.polygonmedia.net/lev-gudkov>
- [11] HLAVÁČEK, P., GALEOTTI, M.: 2023. *Putin už nevěří ve vítězství na válečném poli, ale doufá, že Západ začne ochabovat v podpoře Ukrajiny*. [online]. [cit. 2024-02-01]. Available at: <https://www.fo>



- rum24.cz/mark-galeotti-putin-uz-neveri-ve-vitezstvi-na-valecnem-poli-ale-doufa-ze-zapad-zacne-ochabovat-v-podpore-ukrajiny
- [12] HOLMES, R.: 2008. *Napoleonské války*. Computer Press.
  - [13] HOWARD, Ch.: 2023. Fitting attitude theories of value. *The Stanford Encyclopedia of Philosophy*. [online]. [cit. 2023-10-09]. Available at: <https://plato.stanford.edu/archives/spr2023/entries/fitting-attitude-theories/>
  - [14] KRÍŽ, Z.: 2023. *Cesta z Ruska: Ruská agrese proti Ukrajině a její důsledky*. Brno: Masarykova univerzita.
  - [15] OPRŠAL, P.: 2024. *Budíček, Západe! Hrozí, že demokracii nahradí násilí a destrukce, ale ještě to můžeme zastavit*. [online]. [cit. 2024-02-11]. Available at: <https://www.forum24.cz/budicek-zapade-hrozi-ze-demokracii-nahradi-nasili-a-destrukce-ale-jeste-to-muzeme-zastavit>
  - [16] PIPES, R.: 2017. *Dějiny ruské revoluce*. Argo.
  - [17] PUTIN, V. V.: 2022. *Putin opredělil "tradicionnye cennosti" v Rossii*. [online] [cit. 2022-11-09]. Available at: <https://www.moscowtimes.io/2022/11/09/putin-opredelil-traditsionnye-tsennosti-vrossii-a26228>
  - [18] RUMER, R.: 2020. Russian strategic culture and the future of transatlantic security. *Etched in Stone*. [online]. [cit. 2024-04-06]. Available at: <https://www.jstor.org/stable/resrep26183.3>
  - [19] RYCHLÍK, J.: 2015. *Dějiny Ukrajiny*. NLN.
  - [20] ŘEHKA, K.: 2023. *Válka s Ruskem není nepředstavitelná. K odolnosti se nepromlčíte*. ČTK, [online]. [cit. 2024-01-15]. Available at: <https://www.novinky.cz/clanek/domaci-rusko-musi-videt-ze-jsme-silni-domluva-nezabere-upozornil-rehka-40453831>
  - [21] SARIN, O.: 2001. *Afghánský syndrom: sovětský Vietnam*. Jota.
  - [22] SCHRODER, M.: 2021. Value theory. *The Stanford Encyclopedia of Philosophy*. [online]. [cit. 2023-12-11]. Available at: <https://plato.stanford.edu/archives/fall2021/entries/value-theory>
  - [23] SCHWARTZ, S. H.: 1992. Universals in the content and structure of values: Theory and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1-65. 10.1016/S0065-2601(08)60281-6
  - [24] SCHWARTZ, S. H.: 1994. Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, 50(4), 19-45. 10.1111/j.1540-4560.1994.tb01196.x
  - [25] SCHWARTZ, S. H.: 2003. A proposal for measuring value orientation across nations. In *The European social survey core questionnaire development*. 259-319. [online]. [cit. 2023-12-11]. Available at: [https://www.europeansocialsurvey.org/sites/default/files/2023-06/ESS\\_core\\_questionnaire\\_human\\_values.pdf](https://www.europeansocialsurvey.org/sites/default/files/2023-06/ESS_core_questionnaire_human_values.pdf)
  - [26] SCHWARTZ, S. H.: 2005. Robustness and fruitfulness of a theory of universals in individual human values. In TAMAYO, A., PORTO, J. B. (eds.): *Valores e comportamento nas organizações*, 56-95.
  - [27] SCHWARTZ, S. H.: 2006a. Les valeurs de base de la personne: Théorie, mesures et applications. [Basic Human Values: Theory, Measurement, and Applications]. *Revue française de Sociologie*, 42, 249-288.
  - [28] SCHWARTZ, S. H.: 2006b. Value orientations: Measurement, antecedents and consequences across nations. In JOWELL, R. et al. (eds.): *Measuring attitudes cross-nationally – Lessons from the European social survey*. London, UK: Sage, 169-203.
  - [29] SCHWARTZ, S. H.: 2007. Cultural and individual value correlates of capitalism: A comparative analysis. *Psychological Inquiry*, 18(1), 52-57. 10.1080/10478400701388963
  - [30] SCHWARTZ, S. H.: 2012. An overview of the Schwartz theory of basic values. *Online Readings in Psychology and Culture*, 2(1), 11-20. 10.9707/2307-0919.1116



- [31] SCHWARTZ, S. H., BARDI, A.: 1997. Influences of adaptation to communist rule on value priorities in Eastern Europe. *Political Psychology*, 18(2), 385–410. 10.1111/0162-895X.00062
- [32] SCHWARTZ, S. H., BILSKY, W.: 1987. Toward a psychological structure of human values. *Journal of Personality and Social Psychology*, 53(3), 550–562. 10.1037/0022-3514.53.3.550
- [33] SCHWARTZ, S. H., BILSKY, W.: 1990. Toward a theory of the universal content and structure of values: Extensions and cross-cultural replications. *Journal of Personality and Social Psychology*, 56(5), 878–891. 10.1037/0022-3514.58.5.878
- [34] SCHWARTZ, S. H., MELECH, G., LEHMANN, A. et al.: 2001. Extending the cross-cultural validity of the theory of basic human values with a different method of measurement. *Journal of Cross-Cultural Psychology*, 32(5), 519–542. 10.1177/0022022101032005001
- [35] SCHWARTZ, S. H., RUBEL-LIFSCHITZ, T.: 2009. Cross-national variation in the size of sex differences in values: Effects of gender equality. *Journal of Personality and Social Psychology*, 97(1), 171–185. 10.1037/a0015546
- [36] SCHWARTZ, S. H., SAGIY, G.: 2000. Value consensus and importance: A cross-national study. *Journal of Cross-Cultural Psychology*, 31(4), 465–497. 10.1177/0022022100031004003
- [37] SIMMEL, G.: 2011. *Filosofie peněz*. Praha: Academia.
- [38] SUKHOROLSKYI, P.: 2022. Russian aggression against Ukraine: Past, present, and futures. *Journal of Futures Studies*, 26(4), 1–13. 10.6531/JFS.202206\_26(4).0001
- [39] SYRUČEK, M.: 2023. *Rusko-ukrajinské vztahy. Jak hluboké jsou kořeny současného konfliktu?* Praha: Grada Publishing.
- [40] ŠVANKMAJER, M.: 2008. *Dějiny Ruska*. NLN.
- [41] TONDL, L.: 1999. *Hodnocení a hodnoty, metodologické rozměry hodnocení*. Praha: Filosofia.
- [42] TROYAT, H.: 2008. *Kateřina Veliká*. Beta.
- [43] VYDRA, Z.: 2022. *Dějiny Ruska*. NLN.
- [44] WARNER, P.: 1997. *První světová válka*. OLDAG.
- [45] WILTENBURG, I.: 2020. The importance of understanding Russian strategic culture, *Atlantisch Perspectives*, 44(1), 7–12.

## Value Determinants of the Russian Threat in Historical Context

### ABSTRACT

The text is an overview study. It aims to identify and characterise the security threats associated with Russian imperial ambitions and power aggression in a value-based and historical context. In order to achieve this goal, the following methodological procedure was followed: a search for available open sources, analysis of these sources, creation of a narrowed selection of relevant sources, identification of key characteristics of the security threats of Russian imperial ambition and Russian power aggression in a values-based and historical context, synthesis of the acquired knowledge and creation of the resulting coherent output. The study presents the following findings: the essence and core of the Russian threat lies in the latent, historically demonstrable aggression of Russian ethnic groups and the Russian majority population, and in the fact that objectively identifiable Russian aggression has long been reflected in the mentality of the ruling elites and in the conventional military-political behaviour of the Russian state. This latent aggressiveness is subsequently integrated into the value priorities of the Russian population and manifests itself not only in the contexts of everyday life in Russian society, but especially in critical and extreme situations (social and political upheavals, civil war, and military aggression against a foreign country). Its characteristic features are

*brutality and creative cruelty combined with socially legitimised forms of physical violence, manifested mainly in the form of confrontation with ideological and military-political opponents. The study concludes that the described characteristics of the Russian value system have a profound impact on Russia's present and will have significant fatal consequences for Russia's future, with implications for global stability and security.*

**KEYWORDS**

*Values; axiology; Russian threat; historical development; Russian population and society; aggression; violence*

**JEL CLASSIFICATION**

*A12; A13; D71; D74; D78; D79*



# ESG reporting for small and medium-sized enterprises in the Czech Republic: a beneficial tool or just an additional administrative burden?

► **Monika Hodinková** » VŠ Sting, Rašínova 103/2, 602 00 Brno, Czech Republic; email: [monika.hodinkova@sting.cz](mailto:monika.hodinkova@sting.cz)

## \* 1. Introduction

ESG reporting is a form of non-financial reporting that focuses on three main areas, namely environmental (E), social (S) and governance (G). The introduction of ESG reporting should bring about a responsible and sustainable approach to investing and business in general.

It is important to note that the obligation to undertake non-financial reporting and the scope of reported information varies significantly depending on the size and type of business entity. From 2024 is valid the new Corporate Sustainability Reporting Directive (further only “CSRD”). It has replaced the Non-Financial Reporting Directive (further only “NFRD”) from the October 2014. It is essential to mention that the CSRD, compared to the NFRD, significantly expands both the range of companies concerned and the scope of release information, particularly in the area of sustainability.

This fact is also confirmed by the Corporate Social Responsibility Association (2023), which states that of the original 11,600 large public-interest companies with more than 500 employees (e.g.

listed companies, banks, insurance companies, etc.) defined by the original NFRD, the newly adopted CSRD covers all large companies as well as all small, medium and large companies trading their securities on the stock exchange, which extends the range of affected companies to approximately 49,000 companies. The number of companies affected by the new CSRD obligation has increased by more than four times. The newly defined group of companies required to report under the CSRD represents approximately 75% of the total turnover of all companies operating in the European Union.

The obligation to report non-financial information will also apply to selected SMEs, according to the currently approved timetable, in 2027. Many SMEs are not yet fully aware that the CSRD will also affect their business. However, the impact of CSRD on SMEs can be expected especially for companies involved in supply chains, which may also have a significant impact on SMEs operating in the Czech Republic (BusinessInfo, 2023a, 2023b).

## 2. Theoretical background

ESG reporting is a form of non-financial reporting that concentrates on three main areas: environmental, social and governance. Based on the EU Taxonomy, sub-objectives related to each area are further defined.

According to the EU Taxonomy, the following partial goals are defined for the environmental area: working to prevent and adapt to climate change, sustainable use and protection of water and marine resources, transition to a circular economy, prevention and control of pollution, and protection and restoration of biodiversity and ecosystems (Sasfai et al., 2023). In the social field, the focus of responsible enterprises should be on issues both within the enterprise and in its environment. Internally, a responsible enterprise should pay sufficient attention to employee care, health and safety in the workplace, respect for human rights, employee training and development, non-discrimination against certain groups of employees, etc. However, the social dimension also includes the objectives of the Corporate Responsibility Policy. A responsible business should maintain a good rela-

tionship with the community in which it does business, pay sufficient attention to supplier-customer relations, charity, consumer protection, etc.

The governance area establishes several goals for responsible: maintain a good corporate culture, manage the relationship with suppliers, prevent and detect corruption and bribery, manage payment practices, etc.

### 2.1 The process of implementing ESG reporting in the European Union

The European Commission highlights that the current ESG reporting standards so far only apply to large companies (i.e. companies employing more than 250 employees). The European Commission also states that the standards that SMEs will have to comply with be less strict to avoid imposing excessive administrative burden on SMEs. However, a problem and an issue that persists is that the form of ESG reporting standards for SMEs is still not clearly defined, which causes considerable anxiety among SMEs and concerns of an increase in their administrative burden (European Parliament, 2020).

**Table 1 » Key milestones in the ESG reporting implementation**

Year	Date	Activity
2021	21 <sup>st</sup> April	European Commission publishes draft CSRD
2022	31 <sup>st</sup> December	Adoption of the Directive by the European Commission
	31 <sup>st</sup> October	Adoption of the final version of the general reporting standards by the European Commission
	10 <sup>th</sup> November	Approval of the CSRD by the European Parliament
	28 <sup>th</sup> November	Approval of the CSRD by the Council of the European Union
2023	31 <sup>st</sup> October	European Commission adopts reporting standards applicable to small and medium-sized enterprises
2024		Incorporation of the Directive into the national legislation of EU Member States (within 18 months of the Directive's entry into force)
	1 <sup>st</sup> January	ESG reporting obligation for companies that are required to report under the NFRD
2026	January	Provisional deadline for the creation of ESG reporting obligations for listed SMEs.
2027		Publication of the first ESG reports by listed SMEs (for 2026).

Source: Own processing based on CSRD (2023)



## 2.2 ESG reporting in the EU Member States

Gjergji et al. (2021) argue that environmental, social and governance (ESG) disclosure has become a critical part of corporate reporting. However, the effectiveness of this type of disclosure is still under-researched among SMEs. The study points to the fact that environmental disclosure by SMEs raises the cost of capital. Except for family SMEs, which get an advantage of environmental disclosure as well as the large companies.

Chouaibi et al. (2022) conducted research on a selection of ESG index companies from the UK and Germany. The authors examined 115 UK companies and 90 German companies. The results of the research indicate that due to the introduction of ESG, the companies under study experienced an increase in their value and a strengthening of their weaknesses.

According to Minutiello and Tettamanzi (2022), companies are currently paying a lot of attention to sustainability, which is mainly due to increasing pressure from stakeholders and society. For this reason, attention is now being paid to three dimensions: financial, social, and environmental, which together ensure the continued functioning of business. This reality leads to increasing reporting requirements, both financial and social-environmental. Knowing only the current financial situation of a company does not provide an overall picture of the company, as it does not consider possible risks or outline further development opportunities.

Cronin and Doyle-Kent (2022) assert that SMEs operating in Ireland lack awareness of the risks associated with climate change and its environmental, social, and economic impacts. The authors point out that voluntary compliance among SMEs is still very low. The authors therefore welcome the introduction of climate-related regulations and mandatory disclosure of information in the annual financial reports of these companies.

Bieliková et al. (2023) focused on the level of reporting of non-financial information by large en-

terprises in the Czech Republic in the period from 2017 to 2021. There was revealed an increasing trend in the reporting of non-financial information by the surveyed enterprises, as well as an increasing trend in the quality of reported information, which the authors consider beneficial.

Lebbe et al. (2023) state that, according to the European Commission's proposal, SMEs are generally outside the scope of ESG reporting. The problem remains, however, that they are likely to be indirectly affected by the CSRD. Their failure to comply with ESG requirements could risk their exclusion from the supply chain. The problem remains that SMEs must provide their own ESG-related data to their larger business partners who fall within the scope of the CSRD.

Menicucci and Paolucci (2023) conducted research that focused on the implementation of ESG in the banking sector in Italy. The research findings show that the introduction of ESG reporting had a positive impact on the reduction of waste produced by these companies.

Valente (2023) states that ESG aspects are cross-cutting across all value chains. SMEs play a key role in the chain of larger companies where they act as suppliers, subcontractors, or business partners. The author therefore points out that SMEs will be obliged to disclose and comply with the sustainability standards set to the large companies with which they work with. Valente (2023) also states that several large corporations and multinational organizations already require their suppliers to meet specific ESG criteria, including environmental standards, ethical working practices and transparent policies. Failure to comply with sustainability requirements not only exposes SMEs to legal and financial risks but could also lead to their exclusion from the supply chain. On the other hand, the author points out that compliance with ESG standards presents significant opportunities for SMEs to develop further as well. The author further focuses her research on the relationship between transfer pricing and ESG issues.

Dalli (2024) states that Malta sees the concept

of ESG reporting as a chance to enhance business efficiency, promote decarbonization, sustainability, and social justice. The Maltese government has established a grant for SMEs to use for consultancy services in introducing ESG reporting into their business practices.

### *2.3. Applying ESG principles around the world*

Nkomo (2023) reports that South Africa has made significant improvements in ESG in recent years. This is due to the valuable information provided by ESG practices, which enables stakeholders, including local banks and investors, to analyze businesses they wish to invest in. Furthermore, as stated by Nkomo (2023), the implementation of ESG represents a clear opportunity for SMEs to prepare high quality reports on their sustainability performance and enables each of them to respond more effectively to potential opportunities.

Yip and Yu (2023) report that for large corporations trading on the Hong Kong Stock Exchange, issuing ESG reports, and reporting key indicators related to their performance is currently not a problem and that they have been voluntarily providing such data for years. However, the authors point out that issuing ESG reports can be a major challenge for SMEs as they may lack the necessary knowledge, skills, motivation, etc. to adequately prepare the report.

Soni (2024) states that sustainability reporting is becoming increasingly important. Nearly 50% of SMEs in India have been requested to provide ESG information. However, there is a mismatch between the information requested and the capacity of SMEs to generate it. The survey shows that less than 45% of SMEs have received technical assistance in gathering ESG information. SMEs are primarily concerned about the high costs associated with ESG reporting.

### *3. Methods*

The method of systematic literature review and comparison methods were used in the research. The systematic literature review aims to provide a comprehensive overview of existing research on the same issue as the conducted research. This method uses precise filtering techniques and assesses individual research in a critical and reasoned manner. The main aim of our research is to assess whether the introduction of ESG reporting in large companies will also affect SMEs in the Czech Republic. Another partial aim was to assess the impact of ESG reporting regarding the increase of the administrative burden placed on this type of business entities.

A systematic literature search was carried out on publications from respected journals, as well as printed publications focused on ESG reporting, which were available in the Moravian Library in Brno until 24 January 2024. Based on predefined research questions, the most relevant publications were selected regarding the application area of the research. Within the research, 45 key publications were selected, which were subsequently processed and critically assessed in relation to the conducted research, to the final 13 used.

### *4. Results*

The currently adopted ESG reporting requirements apply to large companies with more than 250 employees. However, the fundamental problem is that it is not yet clear what form of the SMEs' ESG standards should look like. Although there is discussion in professional circles of a "lighter version" of the SMEs' ESG standards (in comparison to large companies), this topic still causes great nervousness among SMEs. SMEs fear of a significant increase in the administrative burden placed on them.





#### 4.1 Administrative burden on entrepreneurs operating in the Czech Republic

The Ministry of Industry and Trade of the Czech Republic (2023) carried out research aimed at identifying the amount of administrative burden placed on entrepreneurs operating in the Czech Republic in 2022. According to the research results, a total of 1,789 obligations were identified, which are found in 167 legal regulations. The highest administrative burden is caused mainly by the legislation handled by the Ministry of Finance of the Czech Republic, followed by the Ministry of Labour and Social Affairs of the Czech Republic and the Ministry of Industry and Trade of the Czech Republic. Interesting is also the overview that divides the obligations according to their origin (see Chart No. 1)

According to the research of the Ministry of Industry and Trade of the Czech Republic (2023), it was also found that in terms of the frequency of fulfilling obligations, a total of 84 % of obligations must be fulfilled by entrepreneurs operating in the Czech Republic once a year, 12 % of obligations more than once during the year and 4 % of obligations even less frequently.

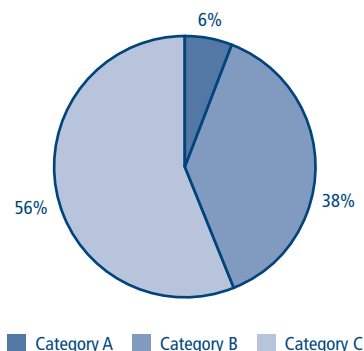
The Ministry of Industry and Trade of the Czech Republic (2023) research also points out an interesting fact regarding the obligations of entrepreneurs in terms of the specification of the business entity. It was found that legal entities are subject to 19 % of the obligations, natural persons are subject to 6 % of the obligations, and both groups of entrepreneurs are simultaneously subject to 75 % of all obligations identified in the research of the entrepreneur's administrative burden. The results show that the administrative burden imposed on entrepreneurs — natural persons, who are the majority in the Czech Republic in the SME category (about 76 %), is significant.

#### 4.2 ESG reporting for SMEs in the Czech Republic

Awareness of the impending ESG reporting obligation for SMEs is currently not very high among SMEs in the Czech Republic. The Czech Chamber of Commerce reports that more than 80 % of self-employed and small businesses mistakenly believe that they are not affected by the CSRD.

Similarly, the results of the survey of the Association of SMEs and Crafts of the Czech Republic

**Chart 1 » Obligations according to their origin**



Source: Own processing based on data from the Ministry of Industry and Trade of the Czech Republic (2023) (Notes: Category A — obligation, the content and form of which have been transposed from an EC/EU regulation — European Commission Regulation); Category B — obligation, the content of which has been transposed from an EC/EU regulation, but the form of provision is within the competence of the competent authorities of the Czech Republic — European Parliament and Council of the European Union Directive); Category C — national legislation).

*In the social field, the focus of responsible enterprises should be on issues both within the enterprise and in its environment. Internally, a responsible enterprise should pay sufficient attention to employee care, health and safety in the workplace, respect for human rights, employee training and development, non-discrimination against certain groups of employees, etc. However, the social dimension also includes the objectives of the Corporate Responsibility Policy. A responsible business should maintain a good relationship with the community in which it does business, pay sufficient attention to supplier-customer relations, charity, consumer protection, etc.*

(2023) show that 2/3 of the respondents to the survey among SMEs operating in the Czech Republic do not know what ESG reporting mean to them yet. Quite interesting is also the fact that 71 % of SME respondents stated that they do not plan to invest in ESG reporting at all in the next year 2024. This attitude is partly understandable because the expected date for ESG reporting for selected SMEs is not until 2027. On the other hand, this approach is also somewhat irresponsible, because SMEs involved in supply chains are likely to need to report this data much earlier, and to a sufficient quality that large enterprises will demand.

According to the Association of SMEs and Crafts of the Czech Republic (2023) research, the main obstacles that SMEs currently cite in terms of implementing ESG principles in their processes are: unclear return on investment, lack of finance and lack of information.

Another potential problem for SMEs is the obligation under the CSRD that they need externally verified their sustainability report by an independent third party. This verification should be provided by independent auditors. However, it is still not yet precisely defined according to which standards these reports should be audited.

The question therefore remains whether the introduction of ESG reporting in large companies, which will have an impact on SMEs involved in supply chains, will be an additional administrative burden for these businesses. When looking at the

partial goals of ESG reporting, many SMEs already unknowingly meet at least part of them.

When assessing the efforts of SMEs operating in the Czech Republic to meet the environmental objectives of ESG reporting, certain changes and pro-environmental thinking are already evident. SMEs have long been trying to reduce pollution and to reduce their resource consumption. To some extent, this is also related to the fact that SMEs have been pushed in recent years to reduce, for example, energy consumption, as energy prices in the Czech Republic are extremely high and thus significantly impair the competitiveness of their products and services.

In the social area, it is SMEs that have been very strong in the long term. Knowing the needs of their employees and striving to maintain their further development, despite limited financial resources, is characteristic of them. SMEs also know their social environment very well. This means the village/town, district, or region in which they do business. SMEs are very often involved in the life of the local community and consider themselves an part of it. In the area of customer relations, SMEs are characterized by being very familiar with their customers' needs and are much better and faster (than their large competitors) at responding to changes in their customer preferences.

Regarding to governance area, SMEs operating in the Czech Republic aim for maximum transparency. The company values its reputation and is



typically a tax resident of the Czech Republic, which means they pay taxes in the Czech Republic according to the current Czech legislation.

## 5. Discussion and conclusion

The introduction of the CSRD mainly apply to large companies and only a selected part of SMEs (known as listed SMEs). However, the problem remains that non-listed SMEs involved in supply chains will also have to report ESG information. They will have to satisfy their large customers, investors, or banks.

Meanwhile, the European Union declares on that SMEs will be able to take advantage of simpler voluntary reporting standards that should make ESG reporting easier for them. In addition, the scope of information that large companies can ask SMEs to provide will be limited. However, no specific limits or restrictions have yet been agreed. This situation raises several unanswered questions among SMEs and a fear of a further increase in the administrative burden imposed on them.

According to the results of the Association of SMEs and Crafts of the Czech Republic (2023) survey approximately 75% of SMEs operating in the Czech Republic have no idea that they are likely to face additional significant administrative burdens for which they have not even started to prepare.

Therefore, the problem with the mandatory introduction of SMEs' ESG reporting is mainly the lack of knowledge of the requirements and scope of the reported information that should concern these business entities. In addition to the increased administrative burden, another problem for SMEs involved in supply chains is the lack of financial resources to use the services of ESG reporting specialists. On the other hand, ESG reporting can be seen as an option that will bring more efficiency, transparency and ultimately lead to sustainability of business activities.

In conclusion, it is therefore important to stress that the scale of the impact of the CSRD on SMEs is likely to be significantly higher than the Directive initially appears. Especially, SMEs involved in supply chains will feel a significant impact soon.

The ESG reporting obligation will therefore increase the SMEs' administrative burden, which will necessitate additional financial resources. It is very difficult for SMEs to prepare for ESG reporting as the clear reporting scopes to which these businesses will be subject are still not clearly defined. Further research will be focused on assessing of the limited extent of the ESG reporting obligations for SMEs involved in supply chains compared to ESG reporting obligations for large enterprises defined by the CSRD.

## REFERENCES

- [1] ASOCIACE MALÝCH A STŘEDNÍCH PODNIKŮ A ŽIVNOSTNÍKŮ ČR. (Association of SMEs and Crafts of the Czech Republic): 2023. *Průzkum AMSP ČR – Dvě třetiny malých a středních podniků neví, co je ESG. Je to hrozba?* [online]. [cit. 2023-12-06]. Available at: <https://amsp.cz/opojisteni-cz-pruzkum-amsp-cr-dve-tretiny-malych-a-strednich-podniku-nevi-co-je-esg-je-to-hrozba/>
- [2] ASOCIACE SPOLEČENSKÉ ODPOVĚDNOSTI. (Corporate Social Responsibility Association): 2023. *NFRD a CSRD: Jaká je jejich role, obsah a v čem se liší?* [online]. [cit. 2024-01-22]. Available at: <https://www.spolecenskaodpovednost.cz/nfrd-a-csrd-jaka-je-jejich-role-obsah-a-v-cem-se-lisi/>
- [3] BIELIKOVÁ, S. et al.: 2023. Kvantitativní a kvalitativní analýza vývoje nefinančních informací v České republice. *ACTA STING*, 12(3), 6–20.
- [4] BUSINESSINFO.CZ.: 2023a. *ESG v roce 2023: Klíčové trendy nefinančního reportingu z hlediska legislativy a firemní praxe.* [online]. [cit. 2023-12-21]. Available at: <https://www.businessinfo.cz/clanky/esg-v-roce-2023-klicove-trendy-nefinancniho-reportingu-z-hlediska-legislativy-a-firemni-praxe/>

- [5] BUSINESSINFO.CZ.: 2023b. *Směrnice CSRD je příležitostí. Ovlivní i malé firmy, ty ale potřebují podporu.* [online]. [cit. 2024-01-22]. Available at: <https://www.businessinfo.cz/clanky/smernice-csrd-je-prilezitosti-ovlivni-i-male-firmy-ty-ale-potrebuji-podporu/>
- [6] CRONIN, M., DOYLE-KENT, M.: 2022. Creating value with environmental, social, governance (ESG) in Irish manufacturing SMEs': A focus on disclosure of climate change risks and opportunities. *IFAC PapersOnline*, 55(39), 48–53. 10.1016/j.ifacol.2022.12.009
- [7] CSRD.: 2023. *Co je to CSRD?* [online]. [cit. 2024-01-18]. Available at: <https://csrd.cz/co-je-csrd/>
- [8] DALLI, M.: 2023. Malta Enterprise launches ESG reporting support for SMEs. *The Malta Independent*. [online]. [cit. 2023-11-12]. Available at: <https://www.independent.com.mt/articles/2023-09-06/local-news/Malta-Enterprise-launches-ESG-reporting-support-for-SMEs-6736254633>
- [9] EVROPSKÝ PARLAMENT. (European Parliament): 2020. *Nařízení Evropského Parlamentu a Rady (EU) 2020/852 o zřízení rámce pro usnadnění udržitelných investic a o změně nařízení (EU) 2019/2088.* [online]. [cit. 2023-11-12]. Available at: <https://eur-lex.europa.eu/legal-content/CS/TXT/PDF/?uri=CELEX:32020R0852>
- [10] GJERGJI, R. et al.: 2021. The effects of environmental, social and governance disclosure on the cost of capital in small and medium enterprises: The role of family business status. *Business Strategy and the Environment*, 30 (1), 683–693. 10.1002/bse.2647
- [11] CHOUAIBI, S. et al.: 2022. ESG and corporate financial performance: the mediating role of green innovation: UK common law versus Germany civil law. *EuroMed Journal of Business*, 2022, 17(1), 46–71. 10.1108/EMJB-09-2020-0101
- [12] LEBBE, I. et al.: 2023. *ESG: A long road from E to S.* [online]. [cit. 2024-01-18]. Available at: <https://www.iflr.com/article/2bhjgin4uha5gr58pgzcw/sponsored/esg-a-long-road-from-e-to-s>
- [13] MENICUCCI, E., PAOLUCCI, G.: 2023. ESG dimensions and bank performance: and empirical investigation in Italy. *Corporate Governance*, 23(3), 563–586. 10.1108/CG-03-2022-0094
- [14] MINISTERSTVO PRŮMYSLU A OBCHODU ČR. (The Ministry of Industry and Trade of the Czech Republic): 2023. *Výsledky přeměření zátěže podnikatelů za rok 2022.* [online]. [cit. 2024-01-18]. Available at: <https://www.mpo.cz/cz/podnikani/regulace-podnikani-a-snizovani-administrativni-zateze/snizovani-administrativni-zateze-podnikatelu/vysledky-premereni-zateze-podnikatelu-za-rok-2022--275161/>
- [15] MINUTIELLO, V., TETTAMANZI, P.: 2022. The quality of nonfinancial voluntary disclosure: A systematic literature network analysis on sustainability reporting and integrated reporting. *Corporate Social Responsibility and Environmental Management*, 29 (1), 1–18. 10.1002/csr.2195
- [16] NKOMO, N.: 2023. *Sustainability for SMEs. Gain trust and market access.* Accountancy SA, 16(10), 86–87.
- [17] SASFAI, B. et al.: 2023. European Union adopts long-awaited mandatory ESG reporting standards. *Insights*, 37(10), 13–16.
- [18] SONI, S.: 2024. Escalating costs, talent management, ESG reporting top 3 hurdles for SMEs entering 2024: Report. *Financial Express*. [online]. [cit. 2024-01-29]. Available at: <https://www.financialexpress.com/business/sme/escalating-costs-talent-management-esg-reporting-top-3-hurdles-for-smes-entering-2024-report/3361996/>
- [19] VALENTE, C.: 2023. How to manage ESG, value chains, and transfer pricing considerations. *International Tax Review*. [online]. [cit. 2023-11-11]. Available at: <https://www.internationaltaxreview.com/article/2cf7n02pknx6hvxtpuqrk/local-insights/how-to-manage-esg-value-chains-and-transfer-pricing-considerations>



[20] YIP, A.W.H., YU, W. Y. P.: 2023. The quality of environmental KPI disclosure in ESG reporting for SMEs in Hong Kong. *Sustainability*, 2023, 15 (4), 1–26. 10.3390/su15043634

## ESG reporting for small and medium-sized enterprises in the Czech Republic: a beneficial tool or just an additional administrative burden?

### ABSTRACT

*This paper deals with the issue of ESG reporting, with an emphasis on the small and medium-sized enterprises reporting obligations. The method of systematic literature review and comparative methods were used in the research. The main aim was to assess whether the introduction of ESG reporting concerning large companies according to the CSRD will have an impact on SMEs operating in the Czech Republic. The main attention was focused on the administrative burden associated with ESG reporting affecting this type of business entities. The research results disclose a negative impact of the ESG reporting introduction on the administrative burden of SMEs operating in supply chains.*

### KEYWORDS

ESG reporting; Corporate Sustainability Reporting Directive; SMEs

### JEL CLASSIFICATION

G11; M14; Q01



# Employee benefits in the post-covid era in the Czech Republic: reality, expectations, challenges

- ▶ Renáta Ježková » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: renata.jezkova@newton.university
- ▶ Milan Lindner » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: milan.lindner@newton.university
- ▶ Karina Benetti » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic;  
email: karina.benetti@newton.university

## \* 1. Introduction

Employee benefits are nowadays a common or integral part of employer presentation and at the same time a frequently accentuated subject of interest for employees and job seekers, not only within the business, but also within the public and non-profit sectors. They are mentioned in the context of the employee care system itself, but also as a complementary tool within reward, motivation, performance management, training and development, succession and career management systems.

A comprehensive definition of the concept of employee benefits (also referred to as employee benefits, employee care instruments, etc.) may be a relatively difficult task, especially in view of their considerable diversity, but in general terms, the authors of specialist publications (cf. Armstrong, Taylor, 2020; Koubek, 2015; Dressler, 2014; Armstrong, 2009; Urban, 2011) agree that it is the distribution of financial, non-financial tangible or even intangible benefits that employees receive from their employer precisely because they work or have worked or will work for the employer. This also makes employee benefits fundamentally dif-

ferent, from a managerial, personnel and economic point of view, from remuneration (wages or salary) granted and paid to an employee for the work he or she does for the employer, whatever its form and nature. Nowadays benefits are also seen as a key tool for building employee engagement (Ježková, 2016). This is why it is important to examine the relationship between benefits and employee satisfaction. Employees' satisfaction, and specifically their satisfaction with their reward, is key in influencing their affective reaction toward the firm, and consequently in influencing their behaviour (Lawler, 1981; Williams et al., 2002). The effect of compensation satisfaction on aspects of employees' attitude and behaviour such as organizational commitment have been analysed in many studies (e.g. Baran et al., 2012; Dinç, 2015; Jayasingam, Yong, 2013; Miceli, Mulvey, 2000), job satisfaction (e.g. Hofmans et al., 2013).

## 2. Employee benefits: from past to present

Although the historical precursors of today's employee benefits can be considered, with some ex-



aggeration, e.g. various forms of loyalty rewards granted by the monarch to his subjects, etc., the actual emergence of benefits can only be linked to the period of the accumulation of industrial production and the rise of modern modes of transport – shipping, rail transport (Kim, 2022).

Employee benefits at that time are now mostly taken for granted as part of the regulation of the relationship between employee and employer, typically in the form of guaranteed maximum working hours with time off on a specified day, reduced working hours for children, entitlement to compensation in the event of work-related injury or death. Other employee benefits related to civil servant positions, whether in the public or private administration, in the form of entitlements to retirement benefits, loyalty payments, pensions.

The Zlín entrepreneur Tomáš Baťa came up with a ground-breaking offer of employee benefits in the territory of the first republic of Czechoslovakia, although most of the benefits he offered his employees were primarily aimed at rationalising production and making the company as a whole more efficient (personal interest-bearing accounts for employees maintained by the company, the Baťa School of Work, etc.). Others, however, undoubtedly do not deny the character of employee benefits, whether it was the provision of housing for Bata's co-workers (as he called "his" workers) in houses, apartment buildings and dormitories built by Baťa's factories, the provision of education for employees' children, rest leave of at least 7 days a year introduced in 1925, access to sports activities and culture, especially in the form of film screenings, etc. (Rybka, 2017).

Employee benefits were not unknown even in socialist Czechoslovakia, starting in the 1950s. One can mention, for example, company recreation, which in later years was sponsored both by individual enterprises and by the so-called Revolutionary Trade Union Movement (i.e. the employees' trade union organisation) in the network of special recovery centres of the ROH and other co-operating entities. Contributions to medical sup-

plies and aids (e.g. glasses) for employees and their families, contributions to summer stays and children's camps, tickets to theatres and various cultural events, company-organised sightseeing and holiday trips, loyalty bonuses for years of service or bonuses on the occasion of important life anniversaries, and many others were common. Among the employee benefits that were really appreciated and generally very valuable at that time were undoubtedly the possibility of being allocated a company flat or of obtaining a cooperative flat more quickly. On a global scale, since the 1960s, major employers have been trying to individualize employee benefits in the direction of the specific needs of individuals, as evidenced, for example, by the so-called cafeteria plans, which subsequently became the subject of regulation in the US federal tax code (Internal Revenue Code) in 1978 (Armstrong, 2020; Dressler, 2014).

Nowadays, we can encounter employee benefits in a very wide range of titles, types, forms and specific forms. The reasons for their provision oscillate from the obligation imposed by legislation or other applicable norms, through increasing the employer's competitiveness on the labour market and the implementation of desirable employer branding, to the actual expression of the employer's interest in the needs of employees, the promotion of their loyalty to the employer and mutual cohesion, or the reward for loyalty and retention in the employment relationship with the company. In some cases, however, it can also be a tool for manipulating employees, typically by covering up shortcomings, such as unattractive levels of remuneration for the performance of one's own work or poor working conditions through massive promotion of seemingly attractive employee benefits.

## 2.1 Categorisation and specification of employee benefits

As regards the typology of employee benefits, there are a number of possible aspects (ways) of categorising them. As already mentioned above,



some of them are compulsory for employees by law or by virtue of an existing collective (trade union) agreement, while others are implemented by employers on an optional basis. According to Urban (2011) we can further divide employee benefits into financial, quasi-financial, non-financial tangible, non-financial intangible or their various combinations, from another perspective we can talk about benefits offered and granted across the board or selectively, benefits implemented in a pre-defined form or adjusted according to individual needs (see the above-mentioned system of so-called “financial benefits”). We can also refer to the system of cafeterias, which can be likened to a kind of e-shop of employee benefits traded for points gradually earned during the employee’s tenure in the company), benefits granted periodically or non-periodically, etc. (Armstrong, 2020; Koubek, 2015; Dressler, 2014; Armstrong, 2009).

An important aspect of the categorisation of employee benefits is also their tax deductibility, which has undergone quite significant changes in the Czech Republic since the beginning of 2024. From this perspective, the most economically advantageous benefits are those that are a tax deductible expense for the employer and at the same time their value does not affect the employee’s income tax base or the assessment base for social security and health insurance premiums (Macháček, 2021, Beránek, 2024).

From the perspective of the nature and form of specific employee benefits, individual authors and sources divide them very differently (Armstrong, 2020; Koubek, 2015; Dressler, 2014). However, their views usually distinguish between employee benefits related to the performance of work (organisation of working hours, telework, working conditions and aids, travel compensation), to rest and regeneration enabling quality performance of work (meals, breaks at work, holidays, conditions in case of incapacity for work), to the provision of current living needs (accommodation or housing allowances, transport to/from work, company nurseries and children’s groups, working from

home, support in dealing with difficult situations) or future life needs (contributions to pensions and supplementary insurance) and health, body and mind care (contributions to optional health care, cultural and sporting activities, education and personal development).

Among the currently emphasized and frequently requested by employees are employee benefits supporting the so-called work-life balance, i.e. an effective balance between work and private life (family-friendly company, kids-friendly office, dog/pet-friendly office, etc. However, it is possible that, just as we now consider employee benefits from the late 19th century to be a natural part of the relationship between employers and their employees, the above-mentioned modern employee benefits will be quite common and inherent elements of the employment relations of the future.

### 3. Methodology

Current issues of employee benefits in the post-covid era were investigated by a questionnaire survey conducted through employees in different types of organizations in the Czech Republic between March 2023 and June 2023. The questionnaire consisted of three main parts – (1) characteristics of the employee respondent, a part concerning the employee benefits and (3) characteristics of employer and it had 36 questions in total.

Regarding the nature of the data, an elementary statistical analysis of selected company identification data – territorial scope and number of employees – was first performed, and then descriptive statistical analyses were performed. Data were analysed using more advanced functions of MS Excel and the statistical program Statgraphics Centurion.

A total of 326 subjects filled out the questionnaire. First, a descriptive statistical analysis of selected factors from the descriptive part related to information about the subjects was performed. Furthermore, a basic statistical analysis of the sub-



jects regarding the number of employees was carried out. Out of a total of 326 subjects, 300 provided this information.

#### 4. Results

Table 1 illustrates the results of the basic statistical analysis. This table shows summary statistics for all surveyed companies. It includes measures of central tendency, measures of variability, and measures of shape. The standardised skewness and standardised kurtosis are of particular interest, which can be used to determine whether the sample comes from a normal distribution. Values of these statistics outside the range of -2 to +2 indicate significant departures from normality, which would tend to invalidate any statistical test regarding the standard deviation. In this case, the stand-

ardised skewness value is not within the range expected for data from a normal distribution. The standardised kurtosis value is not within the range expected for data from a normal distribution.

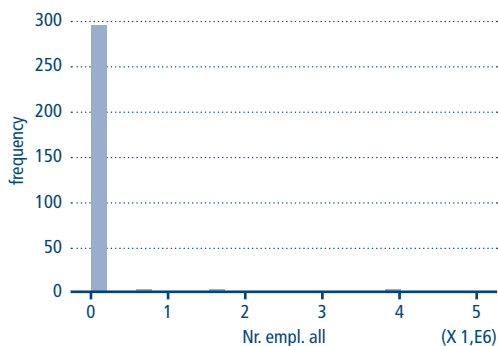
From the values shown in Table 1, it is clear that both the size of the companies – according to the number of employees, and the companies that participated in the questionnaire survey, where 25% of companies employ the same or less than 23 employees and 75% of companies employ less than or equal to 550 employees, only 25% of companies of the surveyed sample employs equal to or more than 550 people. The median value is 110 – i.e. 50% of companies employ less than or equal to 110 employees, and at the same time, 50% of companies employ equal to or more than 110 employees. The results of the basic statistical analysis without the three extremes are interesting – i.e.

**Table 1 » Summary Statistics for all companies**

Quantity	Value
Count	300
Average	23 407.9
Median	110.0
Mode	50.0
Variance	62 885 300 000
Standard deviation	250 769
Coeff. of variation	1 071.3%
Standard error	14 478.2
MAD	100.0
Minimum	0
Maximum	4 000 000
Range	4 000 000
Lower quartile	23.0
Upper quartile	550.0
Std. skewness	100.787
Std. kurtosis	769.178
Sum	7 022 380

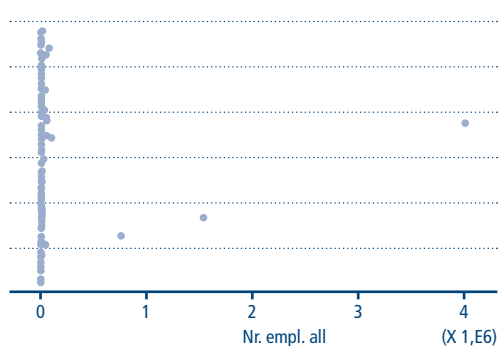
Source: own

**Figure 1 » Scatterplot from all values**



Source: own

**Figure 2 » Histogram of all values**



Source: own

**Table 2 » Summary Statistics for companies without extreme**

Quantity	Value
Count	297
Average	2 462.55
Median	100.0
Mode	50.0
Variance	94 938 800
Standard deviation	9 743.65
Coeff. of variation	395.673%
Standard error	565.384
MAD	95.0
Minimum	0
Maximum	100 000
Range	100 000
Lower quartile	23.0
Upper quartile	500.0
Stnd. skewness	47.4689
Stnd. kurtosis	186.014
Sum	731 377

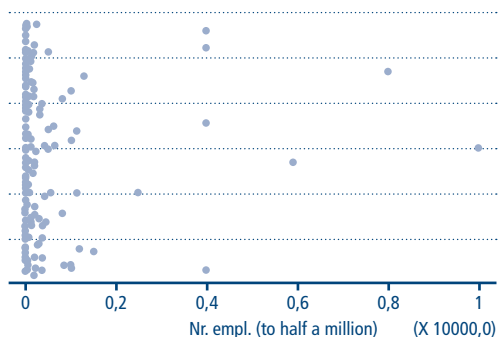
Source: own

companies with up to 500,000 employees. The results are contained in Table 2.

Figure 1 shows the number of companies according to their number of employees, and it is clear

from the figure that there are three extremes – it further evaluates the data with extremes. Among other interesting graphs that can help us visually describe the given dataset is the histogram – for all

**Figure 3 » Scatterplot from data of companies without extreme**



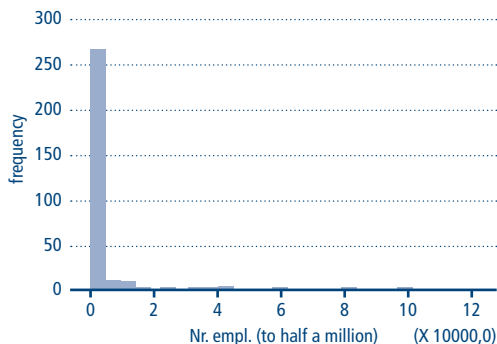
Source: own

investigated companies it is shown in Figure 2. Then, it evaluates the analyses without these three extremes. From the histogram (see Figure 2), we can see that the highest frequency distribution of the variable is achieved by companies with up to 200 employees.

Even after omitting the extremes, according to the results of the basic statistical analysis, see Table 2, it is not data with a normal distribution, although it was possible to “straighten out” the data thanks to the abstraction of the extremes, but even so it was not enough, but the telling abilities of basic descriptive statistics are more objective. Based on the results, the quartile values show that 25% of the surveyed companies employ the same or less than 23 people, 50% of the companies employ the same or less than 100 people. At the same time, 50% of the companies employ the same or more than 100 people. The upper value of the quartile shows that 75% of companies employ less than or equal to 500 employees (i.e. 25% of companies employ equal to or more than 500 employees). Figure 3 – Scatterplot and Figure 4 – Histogram show a basic overview of how the data looks graphically.

From the histogram of data cleaned of extremes (see Figure 4), this adjustment helped the dataset. Still, despite this, there is a large concentration of data – for companies with up to two hundred employees, although from Figure 4, it is evident that

**Figure 4 » Scatterplot from data of companies without extreme**



Source: own

there is also a moderate concentration of companies that employ 200–400 and 300–500 people.

#### 4.1 Selected results of the Analysis of Employee Benefits in the Post-covid Era in the Czech Republic

As already mentioned, a total of 326 companies filled out the questionnaire. From the previous descriptive statistics of selected basic characteristics of these companies – territorial operation and number of employees, these are the companies operating in the Czech Republic and companies that employ a maximum of 50 employees (modal value) and median (50% quartile) value of the number of employees is 110. Now, we will focus on selected results from the questionnaire survey – employee benefits and their satisfaction with them. This pivotal part of the questionnaire was in the second part and consisted of 18 questions. Here we will focus on the results from question No. 11 (11. What benefits does your employer currently offer you?), which had 23 multiple-choice answers), question 15 (15. Were your expectations regarding benefits before entering the current labour-legal relationship?), which had three possible answers, No. 18 (18. Are you satisfied with the current set of benefits at your employer?), which had 10 multiple-choice answer options and question

No. 19 (19. Do you think the current benefits have an effect on your satisfaction with work?), where 6 answers were possible, while two answers (I don't know, I can't judge, and I have not thought about it) were combined for statistical processing. The answers to the individual questions are analysed below.

**Question 11:** What benefits does your employer currently offer you? Answers (multiple-choice):

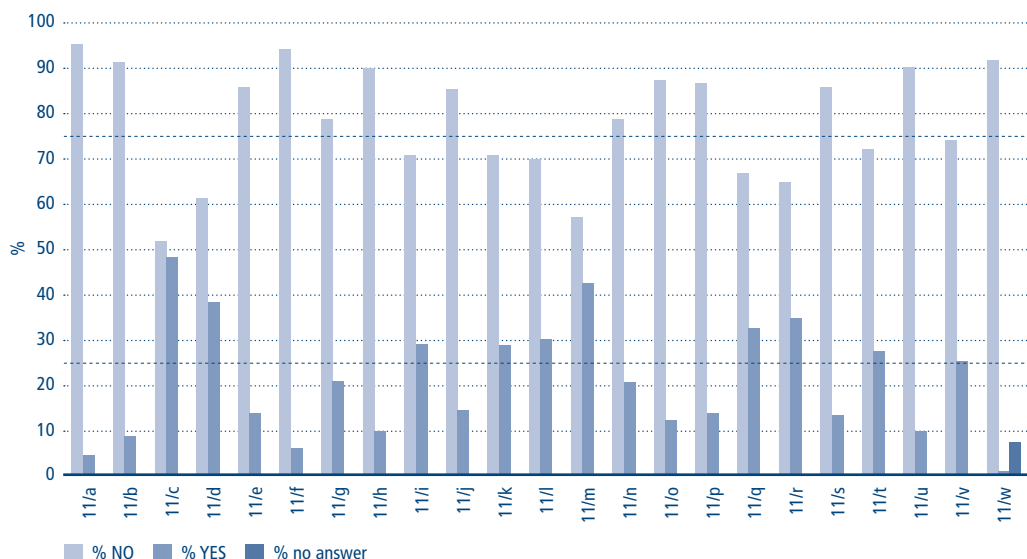
- a) none,
- b) 13th and 14th salary,
- c) flexible working hours,
- d) possibility of working from home (home office),
- e) progressive performance components of wages,
- f) profit shares,
- g) meals at a discounted – subsidized price,
- h) allowances for meals in the company's own facility,
- i) meal vouchers,
- j) meal plan flat rate,
- k) refreshments at the workplace,

- l) additional leave,
- m) sick days,
- n) insurance contribution,
- o) allowance for education,
- p) allowance for leisure activities,
- q) mobile phone,
- r) laptop,
- s) company car for personal purposes,
- t) multi-sport card,
- u) Cafeteria system,
- v) discount on company products/services,
- w) other (please specify which): .....

The basic analysis results are summarised in Figure 5, where two auxiliary lines are shown at the 25% level – i.e. the lower quartile and at the 75% level, i.e. the upper quartile. It is clear from the results that the values of the lower quartile within the YES answers and higher values are achieved by answers of the following types:

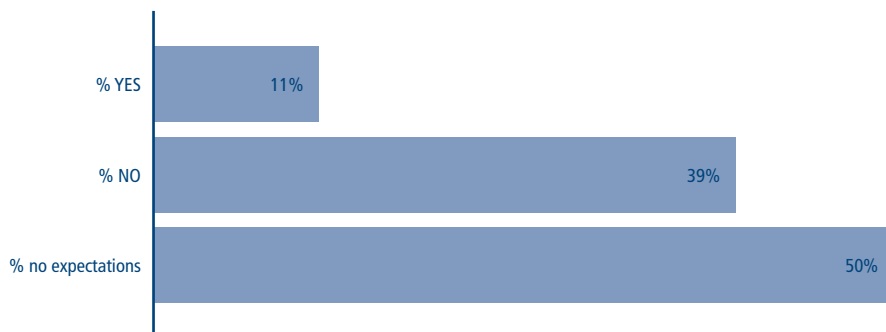
- c) flexible working hours,
- d) possibility of working from home (home office),

**Figure 5 » The results of the analysis of the answers to Q11**



Source: own

**Figure 6 » The results of the analysis of the answers to Q15**



Source: own

- i) meal vouchers,
- k) refreshments at the workplace,
- l) additional leave,
- m) sick days,
- q) mobile phone,
- r) laptop,
- t) multi-sport card,
- v) discount on company products/services.

**Question 15:** Were your expectations regarding benefits fulfilled before entering the current employment-legal relationship? Answer:

- a) yes,
- b) no,
- c) I had no expectations.

The results of the analysis of answers to Q15 see in Figure 6.

One interesting fact emerged from this research: 50% of respondents had no expectations regarding benefits before entering the current employment-legal relationship. The theory appeals to the fact that people choose their employers, among other things, based on the benefits they provide (Horváthová et al., 2016) as well as published empirical experience from the practice of mainly Generation Z do (Ježková, 2016; Patáková, 2023). For almost 40% of the respondents, the expectations regarding the benefits were met, and only 11% of the respondents did not meet these expectations.

**Question 18:** Are you satisfied with your employer's current set of benefits? Answers (multiple-choice):

- a) yes, I consider them fair,
- b) yes, I consider them sufficiently motivating,
- c) yes, they make me need to increase my work performance,
- d) yes, but with some minor reservations,
- e) yes, but with some serious caveats,
- f) no, he does not consider them to be correctly set,
- g) no, they do not adequately consider the merits/performance of the employee,
- h) no, they do not have the appropriate value or financial benefit for employees,
- i) no, they do not correspond to the real needs of employees,
- j) I can't express myself / I can't assess this.

The results of the basic analysis of the answers to Q18 are summarized in Figure 7, where two auxiliary lines are also shown, at the level of 25% – i.e. the lower quartile and at the level of 75%, i.e. the upper quartile. It is clear from the results that only one sub-answer reaches the values of the lower quartile within the range of YES answers and higher values, namely a) yes, I consider them fair. Other numerous answers (but below 25%) include b) – yes, I consider them sufficiently motivating and d) yes, but with some minor reservations.

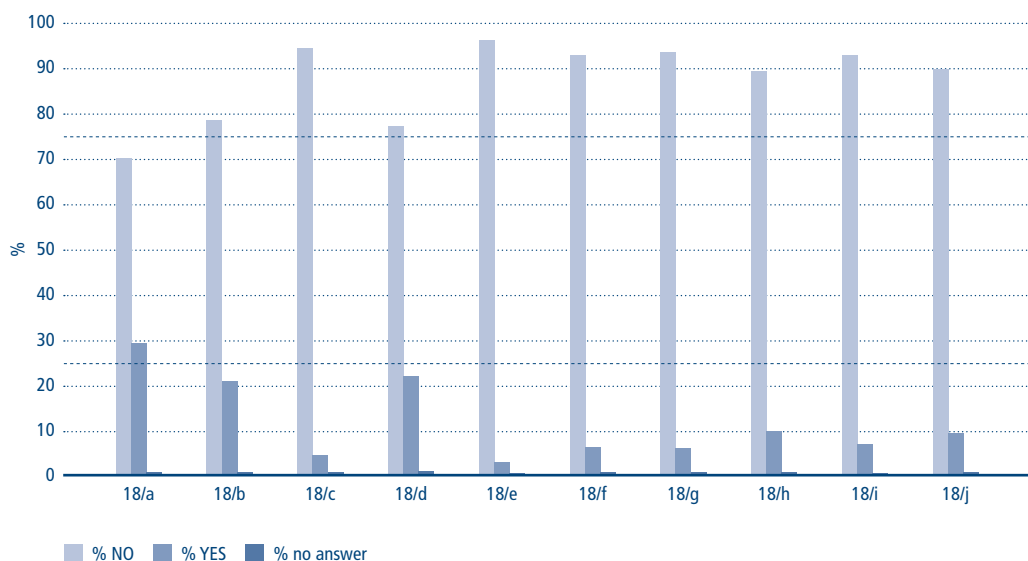
**Question 19:** Do you think the current benefits influence your satisfaction with work? Answers (from the six possible answers, 5 scale answers were created for the needs of more advanced analyses (two answers were combined – I don't know, I can't judge, and I have not thought about it)):

a) definitely yes;  
b) rather yes;

c) I don't know, I can't judge / I didn't think about it;  
d) rather not;  
e) definitely not.

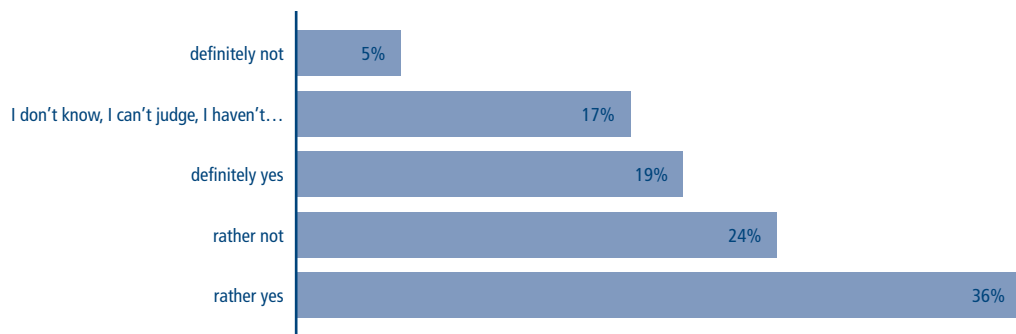
As mentioned above, 50% of respondents had no expectations regarding employer benefits, but this analysis of the answers to Q19 showed (results see Figure 8) that for 36% of respondents' benefits

**Figure 7 » The results of the analysis of the answers to Q18**



Source: own

**Figure 8 » The results of the analysis of the answers to Q19**



Source: own



have (rather yes) an effect on job satisfaction, definitely yes this is reported by 19% of respondents (in total, i.e. 55% of respondents. Definitely no effect of benefits on job satisfaction is reported by 5% of respondents and rather no effect by 24% (in total, i.e. 29%) of respondents. They cannot assess whether they have not thought about this effect in total 17% of respondents.

## 5. Discussion and conclusion

The article dealt with the impact of the post-covid era on employee benefits and satisfaction with them in the Czech Republic. Its aim was to analyse the current application of benefits in the conditions of Czech companies from the point of view of their employees, with regard to their satisfaction, while also dealing with the changes that have occurred in the provision of benefits to employees by employers in the period after the Covid-19 pandemic. The results presented in the article showed that employees consider flexible working hours, sick days and the possibility of working from home

(home office), which is one of the consequences of the post-covid era. However, it is interesting that before starting work, half of the respondents had no expectations regarding the benefits offered by the future employer — only 39% had any expectations, but the employees are generally satisfied with the benefits offered (more than 25% of the respondents said — yes, I consider them fair). When evaluating the effect of benefits on job satisfaction, 19% said definitely yes, rather yes 36% and definitely not 5% and rather not 24% of respondents. Further research will focus more deeply on analysing the current application of benefits not only with regard to employee satisfaction, but especially on their motivation and ability to achieve higher performance.

## Acknowledgement

The article was written within the framework of research projects carried out by the authors at the Centre for Business Disciplines and the Centre for Economics at Newton University.

*Among the currently emphasized and frequently requested by employees are employee benefits supporting the so-called work-life balance, i.e. an effective balance between work and private life (family-friendly company, kids-friendly office, dog/pet-friendly office, etc. However, it is possible that, just as we now consider employee benefits from the late 19th century to be a natural part of the relationship between employers and their employees, the above-mentioned modern employee benefits will be quite common and inherent elements of the employment relations of the future.*

## REFERENCES

- [1] ARMSTRONG, M., TAYLOR, S.: 2020. *Armstrong's handbook of human resource management practice*. Kogan Page.
- [2] ARMSTRONG, M.: 2009. *Odměňování pracovníků*. Praha: Grada Publishing.
- [3] BARAN, B. E., SHANOCK, L. R., MILLER, L. R.: 2012. Advancing organizational support theory into the twenty-first century world of work. *Journal of Business and Psychology*, 27(2), 123–147. 10.1007/s10869-011-9236-3

- [4] BERÁNEK, P.: 2024. *Zaměstnanecké benefity a obdobná plnění z hlediska daňové výhodnosti*. Anag.
- [5] DINÇ, E.: 2015. Perceived organizational support as a mediator of the relationship between effort-reward fairness, affective commitment, and intention to leave. *International Business Research*, 8(4), 259–269. 10.5539/ibr.v8n4p259
- [6] DRESSLER, G.: 2014. *Human resource management*. Pearson.
- [7] HOFMANS, J., DE GIETER, S., PEPERMANS, R.: 2013. Individual differences in the relationship between satisfaction with job rewards and job satisfaction. *Journal of Vocational Behavior*, 82(1), 1–9. 10.1016/j.jvb.2012.06.007
- [8] HORVÁTHOVÁ, P., BLÁHA, J., ČOPÍKOVÁ, A.: 2016. *Řízení lidských zdrojů. Nové trendy*. Praha: Management Press.
- [9] JAYASINGAM, S., YONG, J. R.: 2013. Affective commitment among knowledge workers: The role of pay satisfaction and organization career management. *International Journal of Human Resource Management*, 24(20), 3903–3929. 10.1080/09585192.2013.781520
- [10] JEŽKOVÁ, R.: 2016. Daňové aspekty zaměstnaneckých benefitů jako nástroj angažovanosti zaměstnanců v České republice. In *Sborník z XIX. ročníku mezinárodní odborné konference Daně – teorie a praxe 2016*. Brno: Akademie Sting, 100–119.
- [11] KIM, S.: 2022. *A surprising history of employee benefits – From Caesar to kaiser with much in-between*. [online]. [cit. 2024-01-27]. Available at: <https://www.linkedin.com/business/talent/blog/talent-engagement/surprising-history-of-employee-benefits>
- [12] KOUBEK, J.: 2015. *Řízení lidských zdrojů: Základy moderní personalistiky*. Management Press.
- [13] LAWLER, E. E.: 1981. *Pay and organization development*. Reading, MA. Addison-Wesley.
- [14] MACHÁČEK, I.: 2021. *Zaměstnanecké benefity a daně*. Wolters Kluwer ČR.
- [15] MICELI, M. P., MULVEY, P. W.: 2000. Consequences of satisfaction with pay systems: Two field studies. *Industrial Relations: A Journal of Economy and Society*, 39(1), 62–87.
- [16] PATÁKOVÁ, V.: *Zaměstnanecké benefity*. [online]. [cit. 2024-01-29]. Available at: <https://www.vema.cz/cs/zamestnanecke-benefity>
- [17] RYBKA, Z.: 2017. *Základní zásady Bařova systému řízení*. Zlín: Nadace Tomáše Bati.
- [18] URBAN, J.: 2011. *Zaměstnanecké výhody*. In: Meritum Personalistika. Wolters Kluwer ČR, 394–403.
- [19] WILLIAMS, M. L., MALOS, S. B., PALMER, D. K.: 2002. Benefit system and benefit level satisfaction: An expanded model of antecedents and consequences. *Journal of Management*, 2002, 28, 195–215. 10.1177/014920630202800204

## Employee benefits in the post-covid era in the Czech Republic: reality, expectations, challenges

### ABSTRACT

The paper deals with the impact of the post-covid era on employee benefits and satisfaction with them in the Czech Republic. Its goal is to analyze the current application of benefits in the conditions of Czech companies from the point of view of their employees, with regard to their satisfaction, while also dealing with the changes that have occurred in the provision of benefits to employees by employers in the period after the Covid-19 pandemic. It is based on the statistical processing of the results of interviewing employees, including foreigners, in various types of companies in terms of size and character (focus of their business activity) throughout the Czech Republic. Regarding the nature of the data, an elementary statistical analysis of selected company identification data was first performed, and then descriptive statistical analyses were per-



→ formed. Data were analysed using more advanced functions of MS Excel and the statistical program Statgraphics Centurion. The results presented in the article showed that employees consider flexible working hours, sick days and the possibility of working from home (home office), which is one of the consequences of the post-covid era. However, it is interesting that before starting work, half of the respondents had no expectations regarding the benefits offered by the future employer, but the employees are generally satisfied with the benefits offered. When evaluating the effect of benefits on job satisfaction, they definitely have a significant impact on employees' satisfaction; 55% of respondents said definitely yes and rather yes; 29% of respondents definitely not and rather not.

#### **KEYWORDS**

Employee Benefits; Post-covid Era; Czech Republic

#### **JEL CLASSIFICATION**

J24; J28; M12; O15



# Adjusting entries for receivables and foreign currency receivables from an accounting perspective

- ▶ **Michal Jaroš** » Mendel University in Brno, Faculty of Business and Economics, Zemědělská 1665, 613 00 Brno, Czech Republic; email: xjaros12@mendelu.cz
- ▶ **Jana Gláserová** » Mendel University in Brno, Faculty of Business and Economics, Zemědělská 1, 61300 Brno, Czech Republic; email: jana.glaserova@gmail.com
- ▶ **Milena Otavová** » Mendel University in Brno, Faculty of Business and Economics, Zemědělská 1, 61300 Brno, Czech Republic; email: milena.otavova@mendelu.cz

## \* 1. Introduction

Accounting for receivables is among the most common accounting operations at all. Receivables are part of the current assets of a company, and even though they do not have a tangible nature, they typically constitute a significant portion of assets on the company's balance sheet. Receivables represent the right of a creditor to demand something from a debtor as a counter-value for certain provided performance, usually certain amount of money. However, even though the debtor has the obligation to fulfil this claim, it is not unequivocally certain that he will indeed do so. The accounting must react to this fact by creating so-called adjusting entries for receivables to report correct net amounts of receivables in accordance with the principle of true and fair view and the prudence principle.

The question, however, is in what manner, i.e., to what extent and according to what rules to create adjusting entries for receivables and thereby ensure the best fulfilment of the above-mentioned accounting principles? The research presented in

this article focuses on developing a sophisticated method for evaluating receivables in large enterprises and creating adjusting entries for receivables as accurately as possible with respect to accounting principles.

The basis for creating this method is the so-called multicriteria credit rating method (Novotný, Krakowczyková, 2013), which will be modified for the purpose of its application in accounting, meaning that it provides precise results while not being overly time and administratively demanding.

In the field of receivables there is also another hot topic, which is the issue of foreign currency receivables. In the last few years, in the Czech accounting environment there were professional discussions regarding the correctness of a Czech regulation of the accounting of foreign currency receivables. A National Accounting Board (NAB) issued several interpretations in respect to this topic, which were inspired by the approach of International Accounting Standards and its concept of exchange rate risk. Therefore, this paper also aims to find out, how is this approach perceived by the Czech professional community.



## 2. Methodology

This research paper is divided into two parts, which are connected, however, for a clarity of this paper it is better to take them as separate parts. The first part refers to the issue of multi-criteria rating method (MRM) and the second part discusses the issue of foreign currency receivables.

To achieve the objective of this research paper, a questionnaire survey was carried out and suggestions of 298 experts, members of trusted professional chambers – the Chamber of Tax Advisors of the Czech Republic, the Chamber of Auditors of the Czech Republic, and the Chamber of Certified Accountants – were collected. The questionnaire results provided us with all the necessary outcomes to answer all the research questions, which were designed to be able to modify the MRM for the purpose of its use in accounting and to find out how the Czech professional community perceive the NAB's interpretations regarding the foreign currency receivables. The research questions are as follows:

Is it sufficient to create adjusting entries for receivables (AE) only based on the overdue period of the receivable? Or should other factors that determine the value of a receivable be considered when determining the impairment of the receivable (when creating the AE)? If so, is it appropriate to use the MRM? What are its advantages and limitations? In what size of entities is it reasonable to use this method, or in what circumstances should it not be used? What is the view of the professional community on the NAB's interpretation I-42 "Foreign currency receivables with an adjusting entry"? Do tax advisors and auditors or accountants have different views on I-42 interpretation?

The structure of this paper is following:

- the literature overview of the issue of receivables management and the MRM in general,
- results of the questionnaire survey regarding the use of MRM in accounting,
- an example of possible implementation of MRM into the intercompany directives,

- the literature overview of the topic of foreign currency receivables and the NAB's interpretations,
- results of the questionnaire survey regarding the perception of NAB's interpretation I-42,
- discussion of all the results and implications into practice.

The specific procedures and formulas used for the research are described in the following relevant chapters.

## 3. Receivables management in the company

A well set up receivables management system is an absolute necessity in preventing problematic receivables. If overdue receivables arise, this management system should help to solve the situation in the most efficient way possible.

Adusei (2017) points to the necessity to have a well set up policy for managing receivables, which contains mainly two phases. The first is a thorough assessment of the customer and their ability to repay their debts. Problematic and solvent clients should be kept separately. The second phase is a monitoring of receivables in terms of shares of the company's revenues, which should help to make important decisions more efficiently in the future. The author stresses also the importance of clearly defining a plan for dealing with overdue receivables. This view is shared by other authors as well, for example Královič and Vlachynský (2002) or Siekelova et al. (2017), according to whom management of receivables is one of the most important activities done by the company. The most important phase of this whole process is the prevention, i.e. assessing the creditworthiness of customers. It is therefore obvious that a prudent businessman will carefully check the solvency of his customers to whom he grants a trade credit and monitor receivables already incurred. However, even if these rules are observed, it is not possible to avoid overdue receivables at all.

It is recommended to categorise them according to their risk level. Perthen (2015) and Novotný

and Krakowczyková (2013) use the same classification, which is possible to be freely modified:

1. standard – there is no reason to doubt the timely fulfilment of the claim,
2. monitored – no loss is assumed, but the debtor's rating has worsened since the claim was made (hence they should be monitored),
3. non-standard – at least partial repayment is highly probable, but full repayment is uncertain because of the debtor's credit rating,
4. high-risk – partial repayment is possible and likely, but full repayment is highly unlikely based on the debtor's credit rating and
5. loss-making – receivables that are more than one year overdue. Repayment is unlikely but still possible in the future.

#### 4. Valuation of receivables – multicriteria rating method

The valuation of receivables can be understood in two ways. One is the accounting view (valuation at historical cost or fair value) and the other is the economic view. *“Valuation of a receivable is a procedure whereby we seek in principle to express the risk of default or outright default of the debtor” (Schönfeld, 2011).* This economic view should be important for us in accounting valuation, as the financial statements are supposed to give a true and fair view of the economic situation of the reporting entity.

This brings us to the issue of adjusting entries for receivables. In the Czech environment, these are often created, for example, based on the age structure of receivables only, to formally fulfil a legal obligation to create them. The problem is that the economic value of receivables is determined by many other factors, such as the experience with the debtor and his financial situation, the collateral of the receivable, the expected cost of its collection, etc.

Of course, large accounting entities use various sophisticated methods to determine the impairment of receivables very accurately, but no source

has yet been published that explains any of these methods. That is why this paper explores the possibility of using the so-called multicriteria rating method (**MRM**) described by Novotný and Krakowczyková (2013). It is based on the assessment of various risk factors that affect the market value of a receivable. These factors need to be categorised by common characteristics into multiple groups, as each factor has a different impact on the impairment of the receivable. The factors are then assigned a risk weighting from 0 (minimum risk) to 1 (maximum risk). Once the respective rating criteria have been assessed, the value of the receivable is then calculated as follows:

$$CR = \prod_j^N (1 - C_i)$$

where:

CR = creditworthiness ratio of a receivable

N = number of risk factors

$C_i$  = a rating coefficient expressing the level of risk according to each criterion

However, the market value of the claim must also consider the expected costs of its collection. After taking these into account, the market value of the receivable is obtained using the following formula:

$$MV = NV \times (CR - CC)$$

where:

MV = market value of a receivable

NV = nominal value of a receivable

CR = creditworthiness ratio of a receivable

CC = cost coefficient, which is the ratio of the expected cost of recovery to the nominal value of the receivable, or:

$$MV = NV \times \left[ \prod_i^N (1 - C_i) - CC \right]$$

As regard the  $C_i$  criteria, it is possible to distinguish, for example, the following 3 criteria:

1. criterion – evaluation of the legal status of the receivable, according to Schönfeld (2011) legal



due diligence of the receivable (in practice, it is the time after the receivable is due and other formalities that may affect the claim's enforceability in the case of court proceedings).

2. criterion — assessment of the debtor's willingness to repay (e.g. the willingness to accept security instruments, acknowledgement of the debt, acceptance of contractual penalties or simply quality and transparent communication).
3. criterion — evaluation of the debtor's financial situation — rating of the debtor (e.g. a financial analysis can be carried out considering the previous experience with a debtor and his general credibility)

### 5. Multicriteria rating method and its application in accounting — results

As was said in the methodology part, the questionnaire survey was carried out in order to answer the research questions defined in the methodology chapter. The results of the survey show that the time factor is clearly not the only factor that determines the impairment of a receivable (according to 93.3% of respondents). This seems to be self-explanatory, however, many accounting units do not reflect this at all. For us, this at least confirms the purpose of the research.

In addition, respondents were asked whether they thought that, in the context of the previous

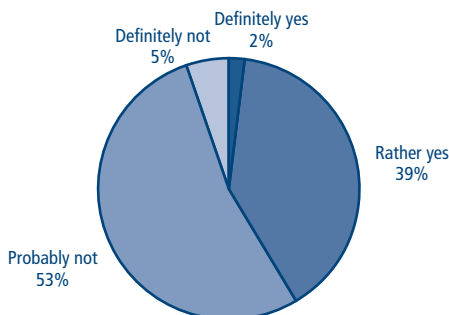
question, entities should take also consider factors other than time when making adjusting entries for receivables, such as experience with business partners and their financial position or certain legal and formal aspects of the receivable, if appropriate given the nature of the receivable. It turned out that 87 % of respondents thought that these factors should be considered. Only 9 % did not think so and the remaining 4% of respondents used the self-response option. From these we learn mainly that the materiality of the receivable should be taken into account, as the use of a any sophisticated method would not make economic sense for small (non-material) receivables.

The answers to the next question indicate that the company should take care of the prevention of problem receivables through debtor assessment, both before the contract is concluded and during the business relationship. 90 % of the respondents were in favour of this answer, only 2 % did not think so and 8 % again used the option of their own comments. The comments suggest that thorough debtor's assessment does not need to be carried out for every small transaction, therefore, as in the previous case, it is a good idea to determine the materiality from which these processes will be carried out. Further, then, that debtor ratings are important, but the economic benefits should exceed the cost of performing these complex administrative processes.

The next question was aimed at understanding

**Graph 1 » The general quality of creation of adjusting entries for receivables in the Czech companies**

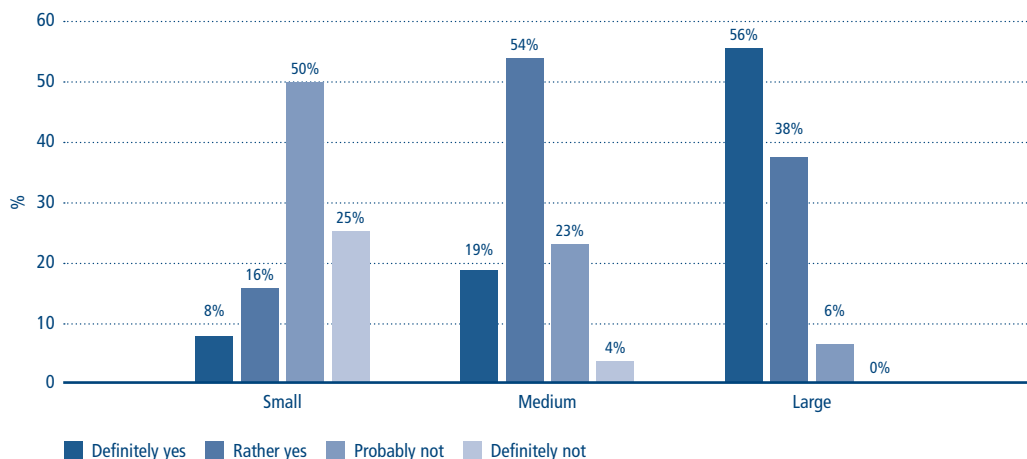
In your opinion, is it generally possible to conclude that companies' internal regulations regulate the creation of adjusting entries for receivables in such a way that they comply sufficiently with the principle of prudence and the principle of a true an



Source: own work



**Graph 2 »** *Would experts from praxis use the multi-criteria rating method in companies of different sizes?*



Source: own work

the respondents' opinions on the current state and quality of the creation of AE for receivables in Czech accounting units. The results are shown in the graph 1.

Although the results here are not unequivocal, it is clear (also from the open answers) that the respondents have practical experience with the problem of incorrect creation of AE for receivables. Next, the questionnaire dealt specifically with MRM and its use in accounting, specifically in accounting units according to their size. After the respondents were introduced to the principle of this method in detail, it became clear that, for example, in large accounting units, MRM or a similarly sophisticated method is a necessity. See the following graph for more details.

In general, we can say that in medium-sized accounting units the method is applicable, in large ones it is almost necessary. In small entities, on the other hand, the use of the MRM is generally not recommendable, and in most cases, it is possible to use just the overdue basis for the creation of AE for receivables.

The main benefits of MRM were cited by re-

spondents as improving the true and fair view of the value of receivables in the company, reducing the risk of insolvency due to not paying customers and reducing the risk of the occurrence of overdue receivables due to the systematic assessment of debtors.

However, there are also disadvantages associated with the method, namely the increased administrative and time requirements of its use and the possible level of subjectivity in assigning coefficients to individual evaluation criteria. The administrative and time requirements are certainly a valid point, but as already mentioned, the condition for using the MRM is that the benefits must be greater than the costs. The biggest problem, however, lies precisely in the assignment of coefficients to the evaluation criteria. This can be practically solved, for example, by creating certain tables where a verbal rating is created for each evaluation criterion and a coefficient is assigned to it. This system would need to be developed individually in each entity according to its personal experience.

However, there is another problem with MRM, which is the multiplication of coefficients in the



calculation of the amount of AE. Novotný and Krakowczyková (2013) multiply the coefficients in their formula and then multiply the obtained variable CR (creditworthiness ratio) by the nominal value of the receivable. However, this method is highly non-intuitive for accounting purposes because the coefficients cannot be assigned based on the extent to which a given criterion is met, but in a way that does not disproportionately reduce the nominal value of the receivable after multiplying the coefficients. In practice, this leads to inaccurate results where the receivable may be significantly undervalued as a result.

That is why a new formula, which uses the method of weighted arithmetic average of the individual coefficients, was designed. The formula for the calculation of the amount of creation of AE for relevant receivable newly looks as follows:

$$AE = NV - NV \times \left( \frac{C_1 + C_2 + \dots + C_i}{n} \right)$$

where:

AE = adjusting entry (the amount of the impairment of the receivable)

NH = nominal value

$C_i$  = a rating coefficient expressing the level of risk according to each criterion

$n$  = the sum of the weights of the individual evaluation criteria (may or may not be equal to  $i$ )

The advantage of this new approach is a more realistic view of the impairment of the receivable. In addition, it is possible to assign weights to each criterion, as each can (and probably does) have a different impact on the value of the receivable.

## 6. Example of a part of an internal company directive

### Section 1 — Accounting adjusting entries for small (non-material) overdue receivables.

For overdue receivables with a nominal value or the nominal value of the foreign currency receivable converted at the daily exchange rate of the Czech National Bank (CNB) at the date of creation of the AE lower than ..... (amount) CZK, the AE for receivable is created in the following manner according to the time overdue of a receivable:

### Section 2 — Accounting adjusting entries for material overdue receivables.

(1) For overdue receivables with a nominal value or the nominal value of the foreign currency receivable converted at the daily exchange rate of the CNB at the date of creation of the AE lower than ..... (amount) CZK, the AE for receivable is created using so-called multi-criteria rating method. At the date of a creation of an AE, the level of fulfilment of these three evaluation criteria is assessed:

1. *criterion* — the period after the due date of the receivable, (formalities that affect the enforceability of the receivable in potential court proceedings may also be taken into consideration),
2. *criterion* — the debtor's willingness to repay the receivable (level and promptness of communication, willingness to accept security instruments, acceptance of contractual penalties, etc.),

**Table 1 » The example of creation of adjusting entries for receivables in case of non-material receivables.**

Time overdue	The amount of an AE
More than 6 months	25 %
More than 12 months	50 %
More than 18 months	75 %
More than 24 months	100 %

3. *criterion* – the debtor's financial situation and previous experience with the debtor.

This criterion is evaluated in two possible steps:

- If information about the debtor's financial situation is not available, the company will request data from the debtor. If the debtor provides it, this is also an improvement on criterion 2 and criterion 3 is then assessed.
- If the debtor does not provide the information, this is also a deterioration of criterion 2 and a financial analysis of publicly available statements and information in public registers follows.
- In both cases, past experience with the debtor is considered (if it is a long-term business partner).

Each criterion is assigned a coefficient and after assigning the coefficient, the amount of the OP is calculated according to this relationship:

$$AE = NV - NV \times \left( \frac{C_1 + C_2 + C_3}{3} \right)$$

where:

AE = adjusting entry (the amount of the impairment of the receivable)

NV = nominal value of the receivable

$C_{1,2,3}$  = a rating coefficient expressing the level of risk according to each criterion

- (2) It is possible to assign weights to the coefficients according to the importance of each individual criterion. In this case, the method of weighted arithmetic average is used.
- (3) The final amount of the AE calculated using the formula is then *rounded up to the nearest thousand*.
- (4) The legal aspects of the receivable are evaluated by a legal specialist of a company.
- (5) If it is possible to create AEs according to the Reserves Act higher than the accounting AEs, the above mentioned shall not apply.

## 7. Receivables and foreign currency

Another interesting and recently highly discussed topic among the Czech professional community was foreign currency receivables, especially the problem of how to approach exchange rate conversions in the case of foreign currency receivables with an adjusting entry and advances provided in foreign currency.

It is basically a three-level collision. The first level is the effort to represent reality as accurately as possible through accounting information, the second level is the current approach accepted in the Czech Republic, which is simpler and more established, but does not fulfil the accounting principles so thoroughly. Finally, the third level is the problem of how income tax will react to the accounting solution. The whole problem is then covered by the concept of exchange rate risk as known from International Financial Reporting Standards (IFRS), specifically IAS 21 – The Effects of Changes in Foreign Exchange Rates.

The first question is therefore how to approach the recognition of exchange differences on foreign currency receivables where an adjusting entry has already been created. Here, the National Accounting Board's interpretation refers specifically to the IFRS concept of foreign exchange risk. Until now, both the net value of the receivable and the portion for which an AE has been made have been subject to exchange rate conversion. However, this is incorrect under the correct treatment of foreign exchange risk because only the portion of the receivable for which the entity still expects future cash flows should be subject to foreign exchange translation. Therefore, under National Accounting Board's (NAB) Interpretation I-42, only the net amount of the receivable should be subject to foreign exchange conversion (NAB, 2020a). The insufficient regulation of foreign currency issues is pointed out, for example, by Vašek (2019) or Šrámková (2019). According to Vašek (2021), this is the reason why Czech accounting units proceed to exchange rate conversions in cases where there



is no reason to do so because no exchange rate risk has arisen.

However, the problem here is the inconsistency with tax legislation, specifically the Act on Reserves for Determining the Income Tax Base. According to this law, tax AE's are made for the unpaid balance sheet value of the receivable. However, the exchange rate conversion in fact changes the balance sheet value of the receivable, which implies that the amount of the AE should also change so that the amount of the AE is the same in percentage terms and only its nominal value in Czech currency changes because of the exchange rate change (see coll. 563/1991; coll. 586/1992; coll. 593/1992).

The ultimate consequence of the new method presented by the NAB is, among other things, the impact on the corporate tax base. This is also why there is still some uncertainty about the acceptance of this method by the tax authorities.

Perhaps even more concerning was the issue of foreign currency advances provided. The NAB published Interpretation I-43 (NAB, 2020b), which states that advances paid for which no cash is expected to be returned (i.e., similar to I-42, no future cash flow is expected) are not subject to foreign exchange risk and therefore foreign exchange conversion does not make sense. The Supreme Administrative Court agreed with this in its judgement 4 Afs 170/2021-35, which itself mentions the interpretation in the judgement and refers to it as to the correct solution. Thanks to this judgment, it can be assumed that both the I-42 and I-43 interpretations will be accepted by the tax authority and, if not, the decision should be consistent with the aforementioned judgment in the event of court proceedings.

## 8. Receivables and foreign currency – results

The questionnaire, which included research on the multi-criteria rating method, also addressed the issue of foreign currency receivables with an AE ad-

dressed in NAB's Interpretation I-42. The questionnaire no longer included foreign currency advances provided, as the Supreme Administrative Court has already introduced new administrative practice in this area.

The questions on the interpretation of I-42 sought the respondents' opinion on whether they agreed with the approach proposed by the NAB, or whether they preferred the previously commonly used method of recalculating the full gross value of the receivable and accounting for the exchange difference arising from the recalculation of the AE as an adjustment. The assumption was that different professions would have different views on this issue, so the results are categorised according to which of the professional chambers the respondent is a member of. Unfortunately, it was not possible to collect a higher number of responses from certified accountants, but at least there are sufficient responses from members of the Chamber of Tax Advisers and the Chamber of Auditors. The assumption of different views of the different professions was confirmed as can be seen in the table below 2.

Unfortunately, the defect of this output is that it was not possible to collect as many responses from the members of the Chamber of Auditors and the Chamber of Certified Accountants as from the members of the Chamber of Tax Advisors, but even so, the difference between the opinions of different professional groups is quite clear.

Even though the method according to the NAB, i.e. exchange rate conversion of the net value of the receivable only, wins narrowly overall, it is not possible to generalise the result in this way because of the different sizes of the individual groups. Indeed, if we look at the opinion of those respondents who are members of the Chamber of Tax Advisers only, the current statutory procedure of converting only the gross value of the receivable wins. However, for all other options, the new method according to the NAB wins quite clearly. The greater scepticism of tax advisers who understand tax the most is the indication of certain tax dis-

**Table 2 » An opinion on the interpretation of National Accounting Board (NAB) I-42 Foreign Currency Receivables with an Allowance.**

Which of the chambers are you member of?	I agree with:					Number of responses
	the approach of the NAB (a)	the current (previously commonly used) approach (b)	with both approaches, I'm more inclined to a)	with both approaches, I'm more inclined to b)	They are equivalent approaches, it is up to the entity which one they choose	
Chamber of Certified Accountants (CCA)	3	5	3	4	1	16
	19 %	31 %	19 %	25 %	6 %	
Chamber of Tax Advisors (CTA)	52	64	24	30	18	188
	28 %	34 %	13 %	16 %	10 %	
Chamber of Auditors (CA)	12	06	08	04	5	35
	34 %	17 %	23 %	11 %	14 %	
CTA, CA	11	5	08	2	2	28
	39 %	18 %	29 %	7 %	7 %	
CTA, CCA	11	5	5	1	3	25
	44 %	20 %	20 %	4 %	12 %	
CA, CCA	1	1	1	0	1	4
	25 %	25 %	25 %	0 %	25 %	
CTA, CA, CCA	1	0	1	0	0	2
	50 %	0 %	50 %	0 %	0 %	
<b>Total</b>	<b>91</b>	<b>86</b>	<b>50</b>	<b>41</b>	<b>30</b>	<b>298</b>
	<b>31 %</b>	<b>29 %</b>	<b>17 %</b>	<b>14 %</b>	<b>10 %</b>	<b>100 %</b>

crepancies. However, the other results show that the new IFRS-inspired approach is generally perceived as the more correct and preferred approach.

The questionnaire also asked about one more thing, i.e. under what conditions the new method (which is an alternative method to the existing legal method) should be used and how to argue if it is questioned by the tax administrator. The resulting recommendations for argumentation and the conditions for using the method can be summarised in the following points:

1. The use of the method is an alternative to the statutory method and falls within the provisions of Section 7(2) of the Accounting Act be-

cause the method under the Interpretation provides a more true and fair view of the financial position of the entity by more accurately capturing foreign exchange risk.

2. The method shall be applied consistently even in situations where the tax effect is averse to the entity.
3. All argumentation should be embedded in an internal directive and described as clearly as possible.
4. It is possible to record older accounting cases where both methods are used. The result of the survey can be described and subsequently used as evidence of the intangible differences in us-



ing one or the other method. This can also be mentioned in an internal directive.

5. The case law of the Supreme Administrative Court No. 4 Afs 170/2021-35 on foreign currency advances can be indirectly applied, as the Supreme Administrative Court itself argued there for the concept of exchange rate risk described in the interpretations of the National Accounting Board and it can therefore be assumed that the Court would behave identically in the case of foreign currency receivables with a correction item in the event of a court dispute.

## 9. Discussion and Conclusion

The conclusion of the research presented in this paper is that the multi-criteria rating method is usable under the right conditions, especially in large and medium-sized accounting units. The most important criterion for its use is then setting a certain materiality of receivables from which the method will be applied. A section of the internal company guidelines for this area has also been drafted with a proposal for the practical application of the multi-criteria rating method.

The aim of investigating the use of MRM in accounting was not only to achieve the best possible representation of the value of receivables in the financial reporting system, but also to help improve the functioning of receivables management through MRM, which at the same time would be fully

linked to accounting. In the end, the increased initial administrative costs should thus be compensated by cost reductions after optimisation of internal processes and also in the form of a reduction in the number of bad debts. In any case, this cost-benefit relationship should be borne in mind by every accounting entity when implementing MRM.

The part examining the opinion of the Czech professional community on the new understanding of exchange rate risk and the National Accounting Board's interpretation I-42 showed that although the new approach has some tax shortcomings, it is generally a more correct approach and preferred by the professional community. After all, this approach is also intended to be the only correct one in the draft of the new Accounting Act. Accounting entities should therefore be advised to make a gradual transition to this method of accounting before the adoption of the new law in order to avoid excessive overload in subsequent periods due to the implementation of extensive changes. For the case of a tax inspection, the conditions under which it is possible to use this method and how to argue in the event that this method is nevertheless questioned by the tax authorities during a tax inspection were created.

## Acknowledgement

Supported by funding of specific research at the Faculty of Business and Economics, Mendel University in Brno – IGA24-PEF-TP-005.

*However, there are also disadvantages associated with the method, namely the increased administrative and time requirements of its use and the possible level of subjectivity in assigning coefficients to individual evaluation criteria. The administrative and time requirements are certainly a valid point, but as already mentioned, the condition for using the MRM is that the benefits must be greater than the costs. The biggest problem, however, lies precisely in the assignment of coefficients to the evaluation criteria. This can be practically solved, for example, by creating certain tables where a verbal rating is created for each evaluation criterion and a coefficient is assigned to it.*

## REFERENCES

- [1] Act No. 563/1991 Coll. on Accounting
- [2] Act No. 593/1992 Coll. on Reserves for Determining the Income Tax Base
- [3] Act No. 586/1992 Coll., Income Tax Act
- [4] ADUSEI, CH.: 2017. Accounts receivables management: Insight and challenges. *International Journal of Finance & Banking Studies*, 6(1), 101–112. 10.20525/ijfbs.v6i1.668
- [5] Judgement of the Supreme Administrative Court, No. 4 Afs 170/2021–35 from 14.2.2022
- [6] KRÁLOVÍČ, J., VLACHYNSKÝ, K.: 2002. *Finančný manažment*. Bratislava: Wolters Kluwer.
- [7] NAB.: 2020a. *Interpretation of the National Accounting Board I-42 Foreign currency receivables with an adjusting entry*. [online]. [cit. 2024-01-05] Available at: <https://nur.cz/wp-content/uploads/2020/11/I-42.pdf>
- [8] NAB.: 2020b. *Interpretation of the National Accounting Board I-43 Advances provided denominated in foreign currency*. [online]. [cit. 2024-01-05] Available at: <http://nur.cz/wp-content/uploads/2021/08/I-43.pdf>
- [9] NOVOTNÝ, J., KRAKOWCZYKOVÁ, M.: 2013. Určování hodnoty pohledávek. *Zeszyty Naukowe Wyższej Szkoły Humanitas. Zarządzanie*, (2), 83–90. Available at: <https://www.sbc.org.pl/dlibra/publication/102314>
- [10] PERTHEN, E.: 2015. *Správa a vymáhání pohledávek v praxi*. Praha: Wolters Kluwer.
- [11] SCHÖNFELD, J.: 2011. *Moderní pohled na oceňování pohledávek: problém aktiv zvláště v insolvenčním řízení*. Prague: C.H. Beck.
- [12] SIEKELOVA, A., KLIESTIK, T., SVABOVA, L., ANDRONICEANU, A., SCHÖNFELD, J.: 2017. Receivables management : the importance of financial indicators in assessing the creditworthiness. *Polish Journal of Management Studies*, 15(2), 217–228. 10.17512/pjms.2017.15.2.20
- [13] ŠRÁMKOVÁ, A.: 2019. Inspirace v IFRS. *Bulletin of a Chamber of Tax Advisors of the Czech Republic*, (3), 26–28. Available at: <https://www.kdpcr.cz/bulletin/2019?sp=down-file&did=11667>
- [14] VAŠEK, L.: 2021. Cizoměnové poskytnuté zálohy a pohledávky v rozsahu nových interpretací NÚR. *Auditor – Journal of a Chamber of Auditors of the Czech Republic*, 28(1), 27–30. Available at: <https://www.kacr.cz/file/6375/1-auditor-2021.pdf>
- [15] VAŠEK, L.: 2019. Opravné položky k cizoměnovým pohledávkám: Jak s nimi pracovat v účetnictví, aby byla naplněna myšlenka věrného zobrazení? *Bulletin of a Chamber of Tax Advisors of the Czech Republic*, (3), 28–32. Available at: <https://www.kdpcr.cz/bulletin/2019?sp=down-file&did=11667>

## Adjusting entries for receivables and foreign currency receivables from an accounting perspective

### ABSTRACT

The contribution focuses on the area of receivables. It primarily deals with the recognition of impairment of receivables, i.e., the creation of adjusting entries for receivables. The research primarily explores the potential utilization of the so-called multi-criteria scoring method for creating adjusting entries for receivables and its modification for accounting purposes, with a focus on respecting the principle of information benefits outweighing the costs of acquisition. To achieve the research goal, a questionnaire survey method was employed. The potential incorporation of the resulting multi-criteria method is then demonstrated in a section of the internal directive for the receivables area. Foreign currency receivables were also examined, spe-







cifically through the application of interpretations by the National Accounting Board, which alters previously established accounting practices in the Czech environment in favour of an approach inspired by IFRS.

**KEYWORDS**

*Receivable; adjusting entry; valuation; foreign currency*

**JEL CLASSIFICATION**

*M40; M48; M21*



# Authentic people leadership

- ▶ **Martina Zapletalová** » University of Defence, Faculty of military leadership, 662 10 Brno, Czech Republic; email: [martina.zapletalova2@unob.cz](mailto:martina.zapletalova2@unob.cz)
- ▶ **Vratislav Pokorný** » Comenius University in Bratislava, Faculty of management, Odbojárov 10, 820 05 Bratislava 25, Slovakia
- ▶ **Zdeněk Mikulka** » University of Defence, Faculty of military leadership, Kounicova 65, 662 10 Brno, Czech Republic; e-mail: [zdenek.mikulka@unob.cz](mailto:zdenek.mikulka@unob.cz)
- ▶ **Eva Ambrozová** » NEWTON University, Rašínova 103/2, 602 00 Brno, Czech Republic; email: [eva.ambrozova@newton.university](mailto:eva.ambrozova@newton.university)

## \* 1. Introduction

Authenticity is perceived as a specific configuration of natural potential, unique to a given individual and recognized, cultivated and developed by him. It is valorized through his way of being, knowing, experiencing, behaving and acting in different situational contexts and is ultimately validated by other members of the community as following values.

In the first part of this article, we will try to find a form of answers to possible questions such as why to study and research qualitative phenomena and aspects of values from the perspective of authenticity. In the following sections we will try to take a position, either from the perspective of a particular person, from the perspective of a particular situation or from the perspective of a human community. Highly complex, relatively closed and dynamically evolving and changing (this dynamic is necessary to ensure the “permanence” of the whole and will have certain specific and describable / recognizable patterns of organization of relationships and influences) human systems in interaction with the environment must have different

levels of regulation. Axiological themes seem to touch the interface between the individual – the whole environment (situation) – the whole social environment. Thus, values, as specific aspects of inner, natural potentialities, organized in the process of being of an individual due to experience, adaptation and learning, are approached from different, distinct perspectives. At the same time, we consider it important to reflect and respect this diversity and its effects and consequences. This not only allows us to recognize the “same by the same”, but also cultivates humility as a regulator of the ambition of the mathesis universalis.

## 2. Authenticity and people leadership

The evolution of the modern environment, in terms of trends in the field of management, that is the management and leadership of people and human systems, points to the growing importance of the aspects indicating a preference for authenticity, in the sense of using and cultivating the natural potentials of people and human systems and the leadership modality over the management modality. Justified arguments for this reasoning can be →

found both in the changes in the preferences of the values of the successor generations (generations Y, Z, A) entering the workplace, and in the changes in the nature, character, conditions, and circumstances of work itself. All this also in view of the growing trend of the application of modern information and communication technologies, including the dynamics of the emergence of the effects of the phenomenon called Artificial Intelligence. The fourth area is to increase the efficiency of the use of human resources and the added value they can potentially generate. This is possible through the application of their own critical thinking to create new knowledge, not only as individuals, but as relatively closed units of human systems through communication and sharing. It appears that one of the dominant issues generating this potentiality is the issue of how relationships are organized. The nature of this organization and its principal aspects correspond firstly to the nature of the functions and activities of the human system (development, production, services) and secondly to the nature of the socio-cultural and economic environment. They are also related to the preferred modes of communication, organisation of relationships, functions, and activities, including preferences for locating the locus of control, decision-making power or regulation. The history and the development and transformation of management and leadership styles (Khan, 2015) corresponds both to the nature, purpose and meaning of the function of the human system and corresponds to the nature of the environment in which the system operates and thus translates into the economics and ecology of the system's being in the totality of the environment (Ilies et al., 2005; Atkinson, 2021).

The management of people and human systems is usually discussed when it involves a central location of the decision-making point and a unidirectional, hierarchical distribution of power. Leader-

ship is more often discussed when the location of decision-making and regulation is diversified among the members of the human system and when the unidirectionality of power is tempered by feedback and an increased emphasis on the involvement of community members. Whether in terms of rewarding or exchange of value and resources (e.g. transactional leadership). The rise of the importance of authenticity in leading people and human systems can be discussed particularly in the context of self-organizing human systems, and in this respect is probably most relevant to systemic leadership, situational leadership (Blanchard, 2020; Grossman et al., 2019) or crisis management.

We consider the specificity of leaders, the ones that other people consider as potentially worthy of following, in terms of authenticity, in the sense that the phenomenon of integrity is situationally more pronounced here. In these cases, there is an intersection of three specific dimensions in which the characteristic duality of the nature of authenticity is manifested. The first dimension is called ecological or situational and refers to the relationship of the human being with the environment. Specifically to the nature of its ways of cognition, reasoning, decision-making and behaviour in different situational contexts, whether it is an individual (independent) – situation – role/problem, an individual (as a component of the human system) – situation – role, or an individual (as an external or internal regulator of the organization of the relationships of the whole human system) – situation – role. The second dimension relates to the relations of humans in the social environment, meaning the relations with individuals of their own kind. This refers to the “chosen” individual's unintended or intended influence<sup>1</sup> and impact on other people (Cialdiny, 2012, 2016). The third one is the dimension of the relationship to self, manifested as

<sup>1</sup> In this context, it is important to note not only the importance of conscious, intentional influence and the influence of the “unconscious”, but also the difference in whether the conditions and circumstances of a situation are relational determinations or whether there is a situation “without determination” (Bondy, 2007, 2013), which may call for a different epistemological as well as ontological perspective.

a way of being in and of the world, and can perhaps be thought of as the quality or meaningfulness of life. In Maslow's schema (2021) we will probably look for it in the top position within the themes of self-actualization and self-realization. One possible "point" of intersection of these three continua of dimensions (a kind of "data" point) may, in our view, be a domain that can be thought of as axiological (Matsuo and Tsukube, 2020; Yamamoto, 2021).

Different styles of leading people may, to varying degrees, emphasize the authenticity of the individual in a leadership position and the authenticity of individuals as members of a human system or different sub-specific aspects of their abilities, preferences, needs, ambitions or competencies. The corporate environment will emphasize algorithmically homogeneous specific aspects. The institutional environment will emphasize selected general aspects. By their nature, both tend towards homogeneity and an abaliet mode of management and leadership. Authenticity, however, refers to the wholeness, the uniqueness in the fullness of the particular person, the leader, to the qualities of their potentials, their integrity, and thus to the uniqueness and exceptionality of their specific organization and to the truly authentic leadership of people. This can be considered especially in the context of synergistic, situational or systemic leadership of people and human systems that emphasize self-poesis (Luhman, 1986), plurality, flexibility, adaptive potential for change and openness. Other leadership styles emphasize the nature of the organizational structure (e.g. hierarchical), the organizational environment's preferred style of communication and relationships, or the satisfaction of needs (e.g. transactional leadership). A dominant pattern of values (e.g. permanence of organizational environment, functions and activities in corporate units of an institutional nature – the banking sector) is another possible accentuation. If people leadership is to be truly authentic without attributions, then the following indicators are there to identify it:

- a. The choice and willingness of people to follow a given individual, to entrust him with decision-making status and to choose him as a reference, criterial point for reasoning in situations of uncertainty (inserts order). The freedom to make one's own decisions is confused with the certainty of "outcome" (the resignation to trial/error).
- b. Authenticity of the chosen individual as an expression of the integrity and wholeness of his/her natural qualities and their importance to others (evaluation). The assumption of "attractiveness", i.e. something that is axiologically more worthy of attention.
- c. A greater degree of "freedom" of the organizational environment, the environmental environment, or the organizational whole. Including ambiguity of outcomes (effects) and their consequences. A context that allows an authenticity, i.e. a context that is "open", "requiring" some capabilities, specific functions, and activities.

In some contexts, the authenticity of the leader can be perceived as a kind of "dangerous" from the position/perspective of the "whole" (state, institution, church, etc.), i.e. "governing" structures working with the domain of the mass person (Jung, 2019), structures based on standards of power, influence, and stereotypes of control. The authentic and, in this sense, free person, is "dangerous", because of independence, self/awareness, and also non/submissiveness and difficulty to influence or manipulate. The person becomes un/useful because he is un/usable in a given context for the obvious or hidden power and other goals, ambitions or intentions of various "leaders/rulers". He becomes ungovernable for all types of functional dependency or servitude, including those "in the higher interest and power" (state/nation, the whole, welfare), etc. Fear and dependency (security and safety) are the core motivators of the dangerousness of so considered freedom. Faith and knowledge in the service of "power" become religion, dogma, doctrine, and magic of a "higher" →

order. They cease to be personal and become collective. The antidote to these often unacknowledged psychological motivators is self/consciousness, self/identity, self/status, courage and discernment in thought and action. Every conscious and free creative act, based on critical thinking, knowledge and knowing, conducted with alert attention and a relaxed mind, takes on the characteristics (form) of sacred, mysterious or mystical living and consciously experienced conjunction of man with the Tao: “...that non-transcendent essence of being and non-being” (King, 1971, pp. 25). The false “moral” sense of belonging and compassion disappears and in its place comes radical self-ishness in the sense of truly serious and courageous care for self/soul, genuine compassion, and naturally moral and ethical decision-making and action. The beauty of the tiger can only be perceived and “appreciated” in the wild, in its natural habitat, and it is in this environment that you can learn more about it and yourself than in a zoo. By observing it in its cage and enclosure, even if you supplement your observations by reading the information on the chart next to the cage. These are the two approaches. One is “safer”, but the other suggests reality. The sight of a tiger in a zoo is rather sad, and the experience is not much different from visiting a museum with stuffed “exhibits”. But it is different from the experience of seeing a tiger footprint in the jungle. In the first case, your behaviour, perception and thinking will not change. You may just sip more lemonade from the cup and move on, “unperturbed” and undisturbed, to the next “experience” that does not have the potential for a reflected experience with an adaptation or even learning effect. In the latter case, even though you may not know exactly that the footprint in the dirt is a tiger footprint, you begin to behave more “attentively”, cautiously, and deliberately (some do not). The “caged” nature is a different experience of the natural (wild) than the nature in which the individual is in direct relationship. Paradoxically, the more devices, technologies, and tools there are in this naturalness, the more it im-

mobilizes (immobilizes) or slows down, limits, and sterilizes the potential of spontaneity as a meaningful adaptation and useful application of the natural potentials of the person and his or her environment. It becomes static, non-moving, and the nature of the concept and the feeling of “safety” and security changes. Instead of attention and balance, the individual builds walls, relies on doors, bars, locks and passwords, just as a long wall was built in Asia against the “mobility” of nomads, which we admire today as the culmination of human skill and social effort. After all, like the pyramids, it is only a different modality of expressing the need for security and safety of the individual and the community. The price that is paid for an individual to shut himself off from the outside world and feel secure lies in the emotional value of consciousness and exceeds the mere gain of survival. This suggests that while security arrangements and technologies are useful, they can also have negative impacts on the quality of life and an individual’s ability to fully experience and adapt to their environment.

Authenticity, as the completeness or finality of a person and every “thing”, process and phenomenon, is a big topic and in our opinion it is a theoretical concept. It is necessary to respect and reflect the following distinction:

- a. Completeness in the sense of completion of a process, the end of an activity — work on a piece of creation, i.e. the achievement of a “state” (hence the question why some artists leave works un/finished or keep “remaking” them). Achieving a state of completion means that the phase of creation is replaced by a phase of duration, in which forms of management, preservation and maintenance of the condition prevail. Completion means reaching a state where the processes of entropy are initiated. Their effect may be a maintained ruin (here we come to the subject of the abiotic).
- b. The permanent attainment of the maximum of a quality or set of qualities by a whole is a process phenomenon, constantly renewing itself,

whether we mean authenticity or mastery. In this process, however, we necessarily arrive at the theme of the biotic and the theme of limits in the sense of a permanent approaching, regardless of how “close” we are.

Therefore, rather than perfection and the perfect man, the ancient and holistic doctrines spoke of the true or real man and his potential “rule”, such as Lao Tzu (Čarnogurská, 2021, pp. 9, 11), in terms of following the requirements/principles of permanent existence in the here and now. They were dedicated to the exploration, recognition, and methods of cultivating the inner, natural and individual’s own potentials in a pragmatic and realistic relation to the situational, contextual (ecological) and socio/cultural environment, its conditions and circumstances. They did not discuss the topic of transhumanism or posthumanism (Tegmark, 2020) or transformation and transgression (Petrů, 2005) in the sense of making something different. They worked with the idea that the ultimate purpose of being a human being is knowledge, the ultimate value is freedom, and the ultimate task is exploration (study), knowledge and cultivation of the human being by himself. According to Master Zhuang (2006), “the perfect man of antiquity first worried whether he had everything in himself, then he worried whether others had everything.” Master Zhuang does not deal with the idea of Eden and instead assigns perfection<sup>2</sup> and ideals to people in the past. He imagines that at one time in the past, human behaviour was more perfect, “better,” or more Edenic, especially in terms of the occurrence of perfect individuals or people. Zhuang transfers his idea of perfection to the past and does not attribute it to present-day people. His way of thinking is not much different from European and other thinkers in this regard, because ideal, abstract, or “prescribed” perfection simply cannot be achieved. Therefore it makes no difference whether they

place perfection in paradise, heaven, Atlantis, the Pleiades, or in the past, as the ideal/idealized perfection of the “ancients” or whether they place it in the future as the “goal” of sustainable development and the purpose of human and human existence. In reality, there is, was and will be no such thing. However, human imagination and consensual (social) reality, as opposed to the existence of reality, allows the appearance of different thoughts and ideas on this topic. Moreover, in a way, they support them, especially because they generate a sense of certainty, stability or legitimacy of a given mode of human community, including the organization of power and government. And thus other people and different thinkers have engaged in reflections on Eden, hell, goodness and perfect laws, ideas, or whatever else the theme of perfection offers. All of them basically end and also begin their thinking with the incompleteness and imperfection of humans, and they illustrate this, for example, by the separation of body and mind (spirit, soul). Or also the imperfection of humans as products of the creation of higher entities, powers or gods, starting with Adam or another word (i.e. the name for the “first” man). One of the possible implicit assumptions considers an ideal preconcept and considers the meaning of life to be its conscious fulfilment or realization, the achievement of fusion with the “other” for the potential of the creation of a “third” or the whole. Sometimes it is perceived that one bears responsibility for the quality and meaning of life directly. This responsibility involves active participation in conscious self-actualization, cultivation of one’s own natural qualities and potentials, and is presented as a response to changes and alterations in the internal and external environment. The holders of this assumption consistently and permanently orient themselves to what they consider essential. Primarily on the mind of the person, the soul or psyche if you pre-

<sup>2</sup> In the sense of focusing attention on the self and into the self in the sense of self/knowledge, self/consciousness and self/cultivation, as sources or pathways to the potential maximum quality of natural potentials or perfection, manifested, for example, as completeness, wholeness, reflected in „wisdom“ in the sense of right decision-making and action.

fer, its conscious care, recognition, and cultivation. And thus, thinkers such as Lao Tzu, Zhuang Tzu, or Lie Tzu and other original Taoist thinkers (Čarnogurská, 2021; Lao-C' and Lomová, 2003; Král, 1971, 2006; Beran, 2019) are different from other thinkers because of their consistent focus on the mind, on the change and transformation of the natural qualities of the human being. They also differ in that they are concerned with the present and do not consider it meaningful or useful to think of a "higher"<sup>3</sup> intelligence, plan or intention (Reffo and Wark, 2015). In this sense, they take particular care and pay attention to the reality, the particular situation of a particular person, in the conditions and relative circumstances of change and transformation.

With the overlap of management and leadership of people, for example into the field of politics, one cannot disagree with the view expressed by Sun Tzu many years ago. According to him, *"politics is the thing that causes people to be in harmony with their leader so that they will follow him without regard for their lives and without fear of danger."* (Sun Tzu, 1998, pp. 22). We can say that history shows, among other things, that people dispose of a natural tendency to follow someone. The psychoanalyst Maccoby (2004) describes attachment to some type of authority figure (parent, manager, politician) as an irrational instinct of the human subconscious (unconscious), and it is possible that Master Sun also perceived it, either as an instinct of the human subconscious or as, in the language of the Taoists, *"a desire for unification and harmony."*

### 3. Authenticity validation methods and their use in the context of leadership

Authenticity, in the context of management and leadership, i.e. in the context of managing and leading people and human units or systems, has come to the attention of the scientific community in recent years. This may be due to the fact that trust in leaders in business is undergoing a kind of crisis, which shows that career progression in all sectors has been driven over the last few decades more by political ability, a willingness to conform or to perform assigned tasks at any cost, regardless of people's internal norms. Some research has shown a positive relationship between a leader's authenticity, the job performance of his/her team, and also the level of stress experienced by his/her co-workers (Dar et al., 2016).

The issue of authenticity of a person in general, and of a manager and leader professionally, is linked to the themes of the relationship between the external and the internal, appearance, form, shape, and the nature of content. At the same time, it is linked to methods or ways of addressing this relationship and ways of knowing, gaining and creating "insight". Natural methods include, for example, observation, imitation or trial/error. Both the functions of thinking and the functions of feeling and intuition are then involved in the ways of knowing (Jung, 2020). In the context of appearance and insight, Neubauer discusses the topic of the *aitia eidetica*<sup>4</sup>, Aristotle's shape cause, literally the eidetic cause: *"The shape cause is the source of the manifold specific shapes of the same thing, it is the basis of the similarity of its formation in individual cases and manifestations."* (Neubauer, 2001, pp. 159; 2004). This cause of shape/shaping, however, does not presuppose causality and Neubauer

<sup>3</sup> The term "higher" does not have a hierarchical character in the sense of superior, but rather points to the "essence", to the ultimate, where the theme of opposites loses its meaning in terms of knowledge (Štěchová, 1930, pp. 72) and opposites are perceived as aspects of one.

<sup>4</sup> *Aitia (cause) eidos (idea)* — originally meaning appearance, form, shape. For example, Democritus speaks of „atoms of ideas“ i.e. indivisible shapes. Nowadays most often in the sense of idea, thought, design, project. The etymology points to the connection between the seen, the known and potentially the imagined.

*The management of people and human systems is usually discussed when it involves a central location of the decision-making point and a unidirectional, hierarchical distribution of power. Leadership is more often discussed when the location of decision-making and regulation is diversified among the members of the human system and when the unidirectionality of power is tempered by feedback and an increased emphasis on the involvement of community members.*

suggests: “...to see in the cause of shape what we call here the eidetic space — the interior of reality, opening to intuition.” (Neubauer, 2001, pp. 159). Eidetic space is the area within which the quality or capacity of the method of insight is exercised. It is a space that is difficult for other methods of cognition to access. Moreover, it is always and only in a specific context or modality. This is why the method of insight is important for the discovery and exploration of the nature of “things”, i.e. objects of any kind. Discoveries relate to “inner shape” in the sense of the essence, potentiality, quality, and specific organization of relations in the dynamics of their emergence, progress, and extinction. Appearance then refers to a specific variant, a configuration that contains this inner quality or potentiality and makes it “stand out”. It is the “after/after” of ideas, i.e. essences. Formability is not materiality. Matter has neither shape nor form. When we have knowledge about something, including ourselves, we become, whether in ordinary or professional life, experts and eventually experts or masters of something. However, this knowledge is created through reflection on our own experience or through the application of knowledge gained from external sources. The pragmatics of the saying “ora et labora”, referring to the “unification” of thought and action, study, theory and practice, resulting in the knowledge of a particular individual and manifested as the relative constancy and consistency of reasoning, decision-making and action, is closely related to authenticity. Authenticity thus refers to the “unifi-

cation” between the inner and the outer, the appearance, i.e. the external form and the qualities, or their arrangement in the inner. Pragmatists are critical of multi-knowledge and Kratochvíl (1994) thinks, that “Any determination of an organism — the recognition of a species in an individual — requires intuition. Every expert must know much and be first and foremost an expert”. If we become experts of ourselves, we gain a potential tool for knowing other individuals and, depending on our foundation, we can become experts or masters in this field (Neubauer, 2001, pp. 72–73). The topic of culture and cultivation is closely related to the problematic under discussion, to knowledge, expertise, and the extent to which an individual is capable of formation and transformation in the process of study and exploration. In this context, we distinguish between experts and masters of the field (craft). According to Neubauer (2001, pp. 160), expertise: “is a virtue so neglected, undervalued and declining today — it is actually a kind of initiation. It gives access to the inner space of other human beings. The expert is also able to be “at home” elsewhere than in the commonly shared world; he also has access to another way of being, perhaps to the hidden way of life of other human beings.” The expert view requires experience and previous models and methods of knowing, in relation to the environment of the profession. The master’s view is open and oblivious. The essence of the difference lies in the inner approach or attitude in which the expert differs qualitatively from the master. It does not matter whether it is a professional or any





other problematic. The master's forgetting does not consist in a failure of memory function, but in the ability to correctly place or handle his experience so that it does not limit the cognition itself, as well as its result in the sense of decision and action. It doesn't matter whether one relies more on reason (logic and analysis) or on feeling and sensation (insight, intuition), because it depends on the situation, conditions, and the state of the whole individual. This ability of conscious "spontaneity" is related to the ability and courage to "commit to the process" but still be "with myself". It is the ability to slice the evidence into a phenomenon/state/situation and go down to the very sub-detail. It means as well to understand (grasp) the actual form of the whole situation (both the state and the process) in its relations and in its changing conditions. This needs to be consistently thought through and properly understood. We know that *"the adequacy of the more non-objective criteria (quantitative, biochemical, generic) is determined by physical appearance – habitus, appearance, typical form, characteristic shape, gestalt."* (Neubauer, 2001, pp. 159).

The problem faced by professionals and experts is that they are sometimes too attached to the one-sided views and ways of thinking that have developed in their professional career. When they encounter real life, they can either adopt a mindset where they try to defend their views or attack others. On the other hand, they can choose a path where they explore new approaches and possibilities not only in their work environment but also in the way they look at things, and the way they act. This is what sets them apart from others. The same danger can be involved in the tendency to bring expert ideas and methods into everyday life, which can be problematic. In other words, there is a danger where people adopt or apply expert or scientific practices and principles in their everyday lives, which can sometimes have undesirable or disproportionate consequences.

The topic of capturing qualities, at least in words or usually through observable behaviour or

through self/description, has accompanied various human societies throughout history and has been the subject of myths (Gilgamesh) and various complex disciplines and systems of thoughts, as well as ways of philosophical thinking (Prokešová, 2019). Implicitly, they are in the background of ontology, gnoseology (epistemology, noetics). Explicitly, they are the central subject of a scientific field such as axiology, ethics or as a specific topic of the scientific field of psychology (Cakirpaloglu, 2004; Maslow, 2021, Nakonečný, 1996, 1997), sociology, management, and others. In order to be able to detect the degree or intensity of qualities/values, it is necessary not only to formulate (define and "shape") the form of their nature, but also to choose the position/the place from where the observation is made. Usually this relates to some defined relational framework, for example person – situation – role or person – environment, or person – other people (society). These frameworks are then the subject of study and research in specific sciences such as psychology, sociology, axiology, and others. The nature of authenticity and its aspects is, then, a matter of structured models, through which we try to study this phenomenon and its aspects with reflection and respect for the fact that we capture this complex phenomenon only through a given framework, and its other potential and contributing aspects remain "hidden". However, authenticity in a broader sense has a number of parameters that can be described and to some extent quantified and measured (see for example Gardner et al., 2005). Different techniques and methods can be used to develop leadership skills. A leader's effectiveness and authenticity relate to the economics and ecology of flexibility and relationships, and may be determined by his/her ability to apply different cognitive models, reasoning and decision-making processes or leadership styles in a given situational context and thus acting "situationally". This assumption changes the direction of development of people with the potential to lead, from learning single isolated techniques to more complex perception, mental flexi-

bility, and much better self-reflection of their actions. Elements of training must dominate such development as it moves from the adoption of cold knowledge to applied skills and changes in thinking.

#### *4. Methodological approach for the preparation and organisation of the pilot project*

For the preparation and organization of the pilot project we reflect the following levels: empirical level, social psychological-diagnostic level, and axiological level. The first level, empirical level, covers the conditions of data collection. The respondents will be participants of courses with applied X-tream II methodology, focused on the issue of teams as autopoietic (self-learning, self-organizing, self-managing, and self-developing) human systems, the nature of their members and potential leaders. The three-day participatory and active face-to-face course consists of methodologically structured activities in which respondents participate continuously and independently of the time of day or night. During the whole time, participants are in direct interaction with each other and solve standard and non-standard, linear and heuristic situations, tasks and problems. The participants are mostly persons in executive positions, i.e. either top managers responsible for organizational units of the level of entire enterprises or statutory representatives of small and medium-sized enterprises. The participants are professionally in leading positions of different levels with at least 3 years of experience. One source of data will also be the positive choice of three persons from the course participants that the respondent would be willing to follow as a leader and a preference – ranking – will be established among them.

The assignment is: *“Based on your experience, please select from the other participants that you feel you would be willing to follow or accept as a leader as first, second and third in order.”* (Poněšický, 2011, pp. 40–41). Participants do not justify

the choice and negative choices are not made by participants. The instruction is intentionally vague and does not specify to respondents the criterion for selection. The space for the application of the function of feeling, intuition and own experience is therefore created. Something that could be called *mathesis singularis* as an effect of intersubjective interaction (the importance of contact and relationship / responding to each other) is applied here and it is a basic need and characteristic of human beings. Furthermore, it refers to communication (natural). It relates to the issue of intersubjectivity and is directed to something that is common to many or all people, or to the possibility and ability of sharing something (of a mental character) between subjects (Poněšický, 2011). Intersubjectivity, in contrast to the rather stable concept of relationship, can be understood as all that takes place between an individual and another individual, as a form of mutual communication and influence. In terms of sensory perception, intersubjectivity can be defined as a collective interactive creation on the physical, emotional, imaginative, and language-cognitive levels. It is a process of perceiving and responding to each other on all these levels. Of course, the most widespread medium of communication is speech, whose structure mirrors the intersubjectivity of any given human community. At one time it may have more of a function of social cohesion, at other times it may be mainly a call to action, serve for cooperation, etc. Intersubjectivity can be understood as the outcome of a shared representation of the world, as a result of letting the others into one's world and vice versa. Speech, narrative, culture, and consensual reality are all the result of human intersubjectivity.

The specificity of this approach lies in the assumption of a link to somatic markers. That is, individuals, based on their own and direct experience, as well as the training of the method of reflection in practice, make a choice of the person they are willing to follow “for a situation without determination”. However, with the formulation “without experience” and at the same time in rela-



tion to the statement “a person worthy of following, whom I would be willing to be guided by”<sup>5</sup> (i.e. without being conditioned by any criteria, specification of conditions and circumstances). Here we assume that the effect of experience is projected without claiming a reason/purpose analysis (why). This brings us closer to the theme of the relationship between the external and the internal, the modality of the appearance/insight relationship, as well as the modality of intuition/observation. All of this in the sense of a statement (form/shape) about the nature of the “content”, the quality of the whole or the way of organizing the “qualities” of its natural potentials (which it could consciously or unconsciously notice due to the coexistence), the qualities of features, abilities, and competences. Feelings, sentiments, and intuitions could thus have their application potential here, although the evaluator may not be aware of it, rationalise, categorise, and justify it. The experience of the holistic is evident here. This results in a “feeling” of perception of the quality of the “whole” of the individual “without determination”. Attempts to formulate causes and reasons led to a “chaos” of subjectivity (the statements of different people in relation to a particular individual were simply diverse) and to contamination by ideas of right, efficient, certainty, purpose, etc.

The second level is the selected methods of complex social psychological diagnosis. The participants of the courses undergo complex pre-diagnosis and diagnosis during and at the end of the courses. The selected methods that affect potential relational aspects of authenticity are SPARO, GPOP, GPP-I, Big Five (NEO), ICL, LOC and ALQ. For the SPARO method (Mikšík, 2001), these items saturate, for example, (in terms of mental agility) cognitive variability or overall personality integration. In the GPOP method (Bents, Blank, 2009), which is based on C. G. Jung's (2020) concept of personali-

ty types, these are items related to cognitive processes — thinking and feeling, as well as items related to decision-making and action — planning and spontaneity. Gordon's (1999) method — GPP-I (Gordon Personality Profile — Inventory) in the personality profile section measures four aspects of personality — ascendancy (A), responsibility (R), emotional stability (E), and sociability (S). The sum of the scores section of the profile (ARES) provides a measure of self-confidence (SE — self-esteem). The inventory section measures four additional traits — cautiousness (C), original thinking (O), personal relationships (P) and vigour (V). The Big Five method (Hřebíčková and Urbánek, 2001) deals with the scale of openness. In the ICL method, it is about the location of the centre point in specific octants, characteristic for interpersonal relationships. The Locus of Control method (LOC), according to Rotter's (1966) concept, identifies the individual differences of participants, in terms of the location, i.e. the centre (internal — external) of control of one's own activity (centre of control and regulation of influence). One of the methods accepted by the wider professional community to capture and quantify authenticity, using categories where there is relative agreement on the relationship between leader autonomy and authenticity, is the Authentic Leadership Questionnaire (ALQ). According to the authors of the method, authenticity, as an individual's quality, is expressible by four non-competing parameters (Avolio et al., 2007; Banks et al., 2016; Baron et al., 2015; Hsiung, 2012). Leader authenticity consists of four specific categories: transparency, ethics/morality, process balance (balanced processing), and self-awareness.

The third level will consist of the methods we include in the standardized battery. These are methods with the ambition to identify values and a way of moral reasoning/decision making. Three

<sup>5</sup> *Giving up freedom — power and control over yourself, for the sake of self (dominated by aspects of survival, safety, security), the whole human system, team, community (dominated by relationships and communication) or efficiency of performance (dominated by economic aspects — energy, resources).*

methods are currently under consideration, based on the models of Rokeach, Schwartz and Kohlberg. If authenticity is perceived as a virtue and hence as a value and a way of moral reasoning, it represents a certain quality and thus a quantifiable phenomenon. We assume that it also has a “graspable” (observable, describable) nature and form and is therefore quantifiable and metrically determinable (measurable). We also assume that the authenticity of leaders corresponds, not only in terms of individuation, with the specific organization of the individual’s qualities, abilities, and skills (in the sense of the exercise of their natural potentials), but also with the level and specific organization and consistency (integration) of values.

The three methods mentioned above, based on the models of Rokeach, Schwartz and Kohlberg, are thus considered for incorporation in the pilot project. Rokeach (1968) considers values as the basic pedant (driving force) of behaviour and action and differentiates two categories of values. Instrumental and target – terminal values. Instrumental values are more related to appropriateness (being logical) and morality (being honest). Terminal values are used to achieve something that is meaningful to us and can be thought of as patterns of action that allow us to achieve a particular goal. These values, therefore, work with the idea of a target state. They are ideal or general, current, and future goals with a link to the consistency with the degrees of social desirability or acceptability (Cakirpaloglu, 2004). Values are hierarchically organized (Nakonečný, 1996, pp. 142) and, in the context of management, they are put in connection with the integrity of the manager (Hronik 2008, pp. 70–82). A different way of classifying values in the context of management, leadership, people, and human systems is presented for example by Ullrich and Thieleman (in Steinmann, Löhr, 1995, pp. 35–38). The core dimensions consist of a continuum of system versus culture orientation and confronta-

tional versus compromise orientation. The authors then consider four types according to the preferences of individuals – economists, idealists, conventionalists, and reformers. Potůček (2007, pp. 137–145), in the context of strategic governance in terms of decision making, distinguishes between types of managers in three different dimensions according to preferences. The following dimensions can be considered as fundamental, using factor analysis, for reasoning and decision making, in problem solving: predation / carelessness, carelessness / responsibility, and cunningness / correctness.

Currently, there are two tools available to identify value orientations according to Schwartz. These are the SVS method – The Schwartz Value Survey (Schwartz 1992), and the PVQ – Portrait Values Questionnaire (Schwartz, 2001). The SVS method places specific demands on respondents. The respondent assesses 57 specific values as “guiding (controlling/regulating) principles” in their life. The content, meaning and purpose of each value is explained and the respondent ranks the values in order of importance and in contrast to their values. A nine-point scale is used for rating, starting from a value of 7 (extremely important) to a value of -1 (in contrast to my values). These specific values saturate ten theoretically and research-based categories of value orientations (Schwartz, 1992; 2012). Another requirement, that apparently inspired the authors to pursue another variant of the method, is that the SVS method requires a higher level of abstract thinking and is time consuming<sup>6</sup>. The subsequently developed PVQ method is designed to measure the same ten types of values but to be more concrete, accessible to all social groups and less time consuming. It is constructed on short verbal descriptions / portraits of 29 different people. For each verbal portrait, the respondent uses a word scale to determine how similar the person described is to him or her by select-

<sup>6</sup> There is a shortened version of the SSVS (Schwartz Short Value Survey) that contains only ten characteristics, one for each category (Lindeman and Verkasalo, 2005).

ing one of six possible answers. The difference between the SVS and PVQ methods is that the SVS method measures values directly and the PVQ method indirectly (Řeháková, 2006). The output of the SVS method is an ordering of the importance of values as regulatory and guiding principles in the life of a particular individual. The output of the PVQ method is judgments about the similarity of the portrait and the respondent. Both instruments have the advantage of being commonly available in electronic form in Czech equivalents and are prospectively usable. The SVS method has already been applied in research on universality of categories in more than 65 countries (Schwartz, 2003). In the conditions of the Czech environment, we can note, for example, the application of the PVQ method in the military environment (Mikulka et al., 2019), as well as the SVS method in social care workers (Marková et al., 2020), which focuses on research on the personal values of caregivers in the context of social care for the elderly or in the context of intercultural research (Březina et al., 2019), with the addition of other methods.

As mentioned above, Schwartz's concept also addresses the dynamics of the relationships between the subcategories of value orientation, for example in terms of the conflict or compatibility of their aims. For schematic representation, a circular diagram is used, allowing to illustrate oppositional tendencies of values. On the one hand, the diagram shows the "closeness" of the categories (close categories are similar in their goals [tradition×conformity] and distant ones differ or are in conflict [benevolence×success]), on the other hand, the oppositeness of the two dimensions (Schwartz, 2003). One dimension contains the opposite tendencies of self-transcendence vs. self-enhancement and the other dimension contains conservatism vs. openness to change. It should not be forgotten that the concept was gradually expanded to include two principles. The principle of the fear and anxiety relationship and the principle of pursuing own interests (Schwartz, 2012). The first principle puts different values in opposition. It re-

fers specifically about values that can be described as "protective" and are associated with anxiety and fear. This effort leads to a tendency to have control over them, which can be expressed in the form of power. Alternatively, conformity or conflict avoidance may be preferred through preferences for order and rules, which includes tradition and security (safety). Values neutral to anxiety and fear, such as self-affirmation, stand in contrast. The category of "success" intervenes in both – it helps to control anxiety and can also confirm true abilities. The principle of observation self-interest puts in opposition the categories of power and success, which emphasize the observation of self-interest, and the values of universalism and benevolence, which emphasize, among other things, the welfare and well-being of others.

Tools using moral dilemma allow to quantify the ways of reasoning, when solving moral problems, in a simple form. However, they have disadvantages and limitations that must be taken into account when employing them. The answers are tied to the context of the moral dilemma used. The moral dilemmas are usually hypothetical and are not identical to the content of dilemmas that the respondent solves in everyday life. If the moral dilemma being solved is close to the respondent's personality, it is solved in a different context. Moreover, the format of the answers and the way they are evaluated usually involve only a limited number of alternative courses of action and, therefore, may not suit every respondent.

Probably the most commonly used instruments for measuring moral reasoning are the MJJ – Moral Judgment Interview, the DIT – Defining Issues Test, and the MCT – Moral Competence Test (Elm, Weber 1994).

In the European context, one of the most widely used instruments, based on Kohlberg's concept of moral decision-making/judgement development, is Lind's MCT – Moral Competence Test (Lind, 2004). It is constructed to measure moral competence and represents the ability to judge conflicting arguments, primarily on the basis of

moral principles and orientation, rather than on the basis of one's own position or agreement with others. The MCT questionnaire contains two moral dilemmas and the respondent's task is to assess the agreeing and disagreeing arguments, justifying the actions of the characters in the story. The questionnaire allows the calculation of preference scores corresponding to each stage of moral reasoning, according to Kohlberg's theory of moral development.

It has been independently translated and used in Slovakia and the Czech Republic by 3 groups of authors: 1) Slováčková (2001), Slováčková and Slováček (2007); 2) Lajčiaková (2004a, 2004b, 2007, 2008, 2009, 2011); 3) Klimešová and Babinčák (2009), Babinčák and Klimešová (2011). Moreover, the use of the MCT methodology in the context of measuring the overall level of moral competence and moral attitude (measuring the way of moral reasoning and attitude towards the seriousness of moral argument) seems to be possible within the framework of the upcoming project and technically realizable in terms of international experience (Martin et al. 2023).

## 5. Discussion

The presented methodological procedure for the preparation and organisation of the pilot project creates a space for discussion and further possibilities for exploring this issue. For example, the question may be whether the method of selecting course participants and their subsequent evaluation of the leaders, despite the emphasis on the vagueness of the instructions and the possibility of using the "mathesis singularis", actually eliminates subjective bias and guarantees objective results, or whether, for example, personal preferences, likes or dislikes can influence the decisions of the participants and call into question the objectivity of the selection of leaders.

The interpretation of the results regarding the values and moral judgments of the participants may also be a matter for discussion. As noted

above, Schwartz's framework also addresses the dynamics of the relationships between the sub-categories of value orientation, for example in terms of conflict and/or congruence of their goals. For schematic representation, a circular diagram is used to illustrate oppositional tendencies of values. On the one hand, the diagram shows the "closeness" of the categories (close categories are similar in their goals [tradition × conformity], and distant ones differ or are in conflict [benevolence × success]), and on the other hand, the oppositeness of the two dimensions (Schwartz, 2003). One dimension contains the opposing tendencies of self-transcendence vs. self-affirmation (self-transcendence vs. self-enhancement) and the other dimension contains conservatism vs. openness to change (conservatism vs. openness to change). It cannot be forgotten that there has also been a gradual extension of the concept to include two principles, the principle of the fear-anxiety relationship and the principle of pursuing one's own interests (Schwartz, 2012). The first principle puts in opposition the values of protectiveness (related to anxiety and fear), where the desire to avoid conflicts and conflicts leads to a tendency to have control over them (power), or a preference for conformity, or to avoid them to a preference for order and rules (tradition and security – safety).

Values neutral to anxiety and fear, such as self-affirming, stand in contrast to these, and the category of success cuts across both – it helps to control anxiety, and can affirm true ability. The principle of self-interested pursuit puts in opposition the categories of power and achievement, which emphasize the pursuit of self-interest, and the values of universalism and benevolence, which emphasize, among other things, the benefit and well-being of others. Tools using moral dilemmas allow us to quantify in a simple way the ways of thinking in solving moral problems. However, they have drawbacks and limitations that must be taken into account when using them: the answers are tied to the context of the moral dilemma used; the moral dilemmas used are usually hypothetical in nature →

and are not identical to the content of dilemmas that the respondent solves in everyday life and if the moral dilemma solved is close to the respondent's personality, he/she solves it in a different context; the format of the answers and subsequently the way of their evaluation usually includes only a limited number of alternatives of action and therefore may not suit every respondent.

Probably the most commonly used instruments for measuring moral judgment are the MJI – Moral Judgment Interview, the DIT – Defining Issues Test, and the MCT – Moral Competence Test (Elm and Weber, 1994). In the European context, one of the most widely used instruments based on Kohlberg's concept of the development of moral judgment/judgement is Lind's MCT – Moral Competence Test (Lind, 2004). It is constructed to measure moral competence and represents the ability to judge conflicting arguments primarily on the basis of moral principles and orientation, rather than on the basis of one's own position or agreement with others. The MCT questionnaire contains two moral dilemmas and the respondent's task is to assess the agreeing and disagreeing arguments justifying the actors' management of the story. The questionnaire allows for the calculation of preference scores corresponding to each stage of moral reasoning according to Kohlberg's theory of moral development.

It has been independently translated and used in Slovakia and the Czech Republic by 3 groups of authors: 1) Slováčková (2001), Slováčková and Slováček (2007); 2) Lajčiaková (2004a, 2004b, 2007, 2008, 2009, 2011); 3) Klimešová and Babinčák (2009), Babinčák and Klimešová (2011). Also in this context, the use of MCT methodology in connection with the measurement of the overall level of moral competence and moral attitude (measurement of the way of moral reasoning and attitude towards the seriousness of moral argument) seems to be possible and technically feasible within the framework of the planned project, also in terms of international experience (Martin et al., 2023).

In light of the above considerations and themes, it is worth considering further options and possibly extending the methodological procedure with additional methods or approaches that could contribute to a better understanding of the phenomena under study and minimise potential biases. Therefore, we perceive it useful to validate the pilot project and to critically analyse and reflect on the results obtained.

## 6. Conclusion

In the context of current development in the management and leadership of people and human systems, the growing importance of authenticity is evident. This trend is supported by the transformation of values, the preferences of new generations of workers, changes in the character of work, and the impact of modern technologies, including artificial intelligence. Authentic leadership is evident especially in situations of self-organising human systems and it finds its core in the concepts of systemic leadership and situational leadership. The specificity of authentic leaders lies in the interaction of three dimensions – ecological perception of the environment, social relations, and relationship to self. The purpose of the nature of the reflection of some of the topics was to approach this point of intersection, which emerges in different directions and modalities between the process of the state of authenticity of the individual, the process of the state of actions in the changing conditions and circumstances of the situation, and within the socio-cultural or organizational context. That is in the processes of being and transformation of relationships and influences between members of the human system, the community.

Philosophical, psychological, and sociological perspectives on morality/values are also discussed and several specific models and theories that can be applied in the context of value development are presented.

The suggested methodological approach for the preparation and organisation of the pilot project



reflects the empirical, social psychological – diagnostic and axiological levels. The empirical level is focused on the conditions of data collection and describes the course participants with the applied X-tream II methodology. The social psychological – diagnostic dimension includes selected diagnostic methods such as SPARO, GPOP, GPP-I, Big Five (NEO), ICL, LOC, and ALQ, which are used to measure personality characteristics in the context of leaders' authenticity. The axiological level focuses on methods for identifying values and moral decision making. The three methods considered are based on the models of Rokeach, Schwartz and Kohlberg.

Authenticity is not just a theoretical concept but has a concrete impact on the effectiveness of human resource use and added value in organizations. Authentic leadership is based on the ability of leaders to respect and support the natural potentials of individuals and human systems. Consciously embracing authenticity in leadership brings not only individual development but also benefits the overall dynamics of the organization and meets the challenges of the modern work environment. Authentic leadership thus opens the way to synergies, adaptation, and sustainable development of human systems in accordance with their natural potentials.

## REFERENCES

- [1] ATKINSON, S.: 2021. The toxic effects of subjective wellbeing and potential tonics. *Social Science & Medicine*, 288, 1–8. 10.1016/j.socscimed.2020.113098
- [2] AVOLIO, B. J., WERNISING, T., GARDNER, W. L.: 2018. Revisiting the development and validation of the authentic leadership questionnaire: Analytical clarifications. *Journal of Management*, 44(2), 399–411. 10.1177/014920631773996
- [3] BABINČÁK, P., KLIMEŠOVÁ, M.: 2010. Morálna kompetencia a hodnoty budúcich policajtov. In FEDÁKOVÁ, D., KENTOŠ, M. (eds.) *Sociálne procesy a osobnosť – Zborník príspevkov*, 24–31. Košice: SpÚ SAV.
- [4] BANKS, G. C., McCAULEY, K. D., GARDNER, W. L., GULER, C. E.: 2016. A meta-analytic review of authentic and transformational leadership: A test for redundancy. *The Leadership Quarterly*, 27(4), 634–652. 10.1016/j.leaqua.2016.02.006
- [5] BARON, L., PARENT, E.: 2015. Developing authentic leadership within a training context. *Journal of Leadership & Organizational Studies*, 22(1), 37–53. 10.1177/1548051813519501
- [6] BENTS, R., BLANK, R.: 2009. *Typický člověk (Úvod do typologie osobnosti)*. Praha: Hogrefe – Testcentrum.
- [7] BERAN, J.: 2019. *Mistr, který létal na větru (Staročtnská kniha Lie-č)*. Praha: Academia.
- [8] BLANCHARD, K.: 2020. *Vedení na vyšší úrovni*. Praha: Euromedia Group.
- [9] BONDY, E.: 2007. *Útěcha z ontologie (filosofické dílo sv. I)*. Praha: DharmaGaia.
- [10] BONDY, E.: 2013. *Postpřtběh, přležitostné eseje a rekapitulace (filosofické dílo sv. IV)*. Praha: DharmaGaia.
- [11] BREZINA, I., BAŠNÁKOVÁ, J., SOLLÁR, T.: 2019. Beyond Czech and Slovak differences in Hofstede's Masculinity index: An investigation of cross-cultural differences using Hofstede's and Schwartz's framework. *Individual & Society/Človek a Spoločnosť*, 22(1), 16–33. 10.31577/cas.2019.01.550
- [12] ÇAKIRPALOGLU, P.: 2004. *Psychologie hodnot*. Praha: Votobia.
- [13] CIALDINI, R. B.: 2016. *Před-svědčování*, Brno: Jan Melvil Publishing.
- [14] CIALDINI, R. B.: 2012. *Zbraně vlivu*, Brno: Jan Melvil Publishing.
- [15] ČARNOGURSKÁ, M.: 2021. *Lao č Tao Te Ťing*. Ducovo: Ursa Minor.





- [16] DAR, F., BUKHARI, I., HAMID, M.: 2016. Relationship between authentic leadership, work engagement and job stress among employees of telecommunication organizations. *Peshawar Journal of Psychology and Behavioral Sciences (PIPBS)*, 2(2), 235–247. 10.32879/pipbs.2016.2.2.235-247
- [17] ELM, D. R., WEBER, J.: 1994. Measuring moral judgment: The moral judgment interview or the defining issues test. *Journal of Business Ethics*, 13(5), 341–355. 10.1007/BF00871762
- [18] GARDNER, W. L., AVOLIO, B. J., LUTHANS, F., MAY, D. R., WALUMBWA, F.: 2005. Can you see the real me? A self-based model of authentic leader and follower development. *The Leadership Quarterly*, 16(3), 343–372. 10.1016/j.leaqua.2005.03.003
- [19] GORDON, L. V.: 1999. *Gordonův Osobnostní Profil – Inventorium (příručka)*. Brno: Psychodiagnostika.
- [20] GROSSMAN, P. J., ECKEL, C., KOMAI, M., ZHAN, W.: 2019. It pays to be a man: Rewards for leaders in a coordination game. *Journal of Economic Behavior & Organization*, 161, 197–215. 10.1016/j.jebo.2019.04.002
- [21] HRONÍK, F.: 2008. *Manažerská integrita*. Development & consulting. Brno: Motiv Press.
- [22] HSIUNG, H.: 2012. Authentic leadership and employee voice behavior: A multi-level psychological process. *Journal of Business Ethics*, 107(3), 349–361. 10.1007/s10551-011-1043-2
- [23] HŘEBÍČKOVÁ, M., URBÁNEK, T.: 2001. *Big five. NEO pětifaktorový osobnostní inventář*. Praha: Test-centrum.
- [24] ILIES, R., MORGESON, F. P., NAHRGANG, J. D.: 2005. Authentic leadership and eudaemonic well-being: Understanding leader-follower outcomes. *The Leadership Quarterly*, 16(3), 373–394. 10.1016/j.leaqua.2005.03.002
- [25] JUNG, C. G.: 2020. *Psychologické typy*. Praha: Portál.
- [26] JUNG, C. G.: 2019. *Přítomnost a budoucnost*. Brno: Holar.
- [27] KHAN, M. S. et al.: 2015. The styles of leadership: A critical review. *Public Policy and Administration Research*, 5(3), 87–92.
- [28] KLIMEŠOVÁ, M., BABINČÁK, P.: 2009. Morálna kompetencia a spokojnosť so životom adolescentov. In: GOLECKÁ, L., GURŇÁKOVÁ, J., RUISEL, I. (Eds.) *Sociálne procesy a osobnosť*, 584–592. Bratislava: Ústav experimentálnej psychológie SAV.
- [29] KRÁL, O.: 1971. *Tao (texty staré Číny)*. Praha: Československý spisovatel.
- [30] KRATOCHVÍL, Z.: 1994. *Filosofie živé přírody*. Praha: Herrman & synové.
- [31] LAJČIAKOVÁ, P.: 2011. Osobná morálka ako determinant mentálneho zdravia. In ŘEHULKA E. (Ed.) *Škola a zdraví 21. Výchova ke zdraví: podněty ke vzdělávacím oblastem*, 199–204. Brno: Masarykova univerzita.
- [32] LAJČIAKOVÁ, P.: 2009. Morálna kompetencia slovenských a nemeckých vysokoškolákov. In HELLER, D., CHARVÁT, M., SOBOTKOVÁ, I. (eds.) *Psychologické dny 2008: Já & my a oni*. Brno: Masarykova univerzita.
- [33] LAJČIAKOVÁ, P.: 2008. *Psychológia morálky*. Brno: Cerm.
- [34] LAJČIAKOVÁ, P.: 2007. Morálne úsudky adolescentov. In HUMPOLÍČEK, P., SVOBODA, M., BLATNÝ, M. (eds.) *Sociálne procesy a osobnosť*. Sborník příspěvků, 251–255. Brno: MSD.
- [35] LAJČIAKOVÁ, P.: 2004a. Možnosti skúmania morálneho usudzovania adolescentov, In ŠRAMOVÁ, B., POLIAKOVÁ, E., SELVEK, P. (Eds.) *Zdravie, morálka a identita adolescentov*, 131–144. Nitra: KPP a ÚAP FSV a Z UKF.
- [36] LAJČIAKOVÁ, P.: 2004b. Morálne perspektívy mužov a žien: rovnakosť či odlišnosť? In HELLER D., PROCHÁZKOVÁ J., SOBOTKOVÁ I. (Eds.) *Psychologické dny 2004: Svět žen a svět mužů: polarita a vzájemné obohacování*. Olomouc: Universita Palackého v Olomouci.

- [37] LAO-C', LOMOVÁ, O.: 2003. *Tao te ťing: O tao a ctnosti*. 3. vyd. Praha: DharmaGaia
- [38] LIND, G.: 2004. The Meaning and Measurement of Moral Judgment Competence: A Dual-Aspect Model. In FASKO, D., WILLIS, W. (eds.) *Contemporary philosophical and psychological perspectives on moral development and education*. Cresskill. Hampton Press. 185–220.
- [39] LINDEMAN, M., VERKASALO, M.: 2005. Measuring values with the short Schwartz's value survey. *Journal of Personality Assessment*, 85(2), 170–178. 10.1207/s15327752jpa8502\_09
- [40] LUHMAN, N.: 1986. The autopoiesis of social systems. In GEYER, F., VAN DER ZOUWEN, J. (eds.) *Sociocybernetic paradoxes*. London: Sage.
- [41] MACCOBY M.: 2004. Why people follow the leader: The power of transference. *Harvard Business Review*, 82(9), 76–85.
- [42] MARKOVÁ, A., HIRŠOVÁ, M., KOMÁRKOVÁ, L.: 2020. Personal values of caregivers in Czech social elderly care. *Kontakt*, 22(1), 68–75. 10.32725/kont.2020.001.
- [43] MARTIN, D., MÖRCH, C., FIGOLI, E.: 2023. The notion of moral competence in the scientific literature: a critical review of a thin concept. *Ethics & Behavior*, 33(6), 461–489. 10.1080/10508422.2022.2067163
- [44] MASLOW, A. H.: 2021. *Motivace a osobnost*. Praha: Portál.
- [45] MATSUO, M., TSUKUBE, T.: 2020. A review on cognitive apprenticeship in educational research: Application for management education. *The International Journal of Management Education*, 18(3). 10.1016/j.ijme.2020.100417.
- [46] MIKŠÍK, O.: 2001. *Psychologická charakteristika osobnosti*. Praha: Univerzita Karlova.
- [47] MIKULKA, Z., NEKVAPILOVÁ, I., FEDORKOVÁ, J.: 2019. Measurement of professional value orientation of military professionals. *Journal of Organizational Management Studies*, 1–10. 10.5171/2019.907156
- [48] NAKONEČNÝ, M.: 1997. *Encyklopedie obecné psychologie*. Praha: Academia.
- [49] NAKONEČNÝ, M.: 1996. *Motivace lidského chování*. Praha: Academia.
- [50] NEUBAUER, Z.: 2001. *Smysl a svět*, Moraviapress, Praha.
- [51] NEUBAUER, Z.: 2004. *O Sněhurce aneb cesta za smyslem bytí a poznání*. Praha: Malvern.
- [52] PETRŮ, M.: 2005. *Možnosti transgrese*, Praha: Triton.
- [53] PROKEŠOVÁ, M.: 2019. *Základy filosofie a etiky*. Ostrava: Ostravská univerzita.
- [54] PONĚŠICKÝ J.: 2011. Vztah těla a duše (nejen) v psychosomatice, *Psychosom*, 9(1), 36–41.
- [55] POTŮČEK, M.: 2007. *Strategické vládnutí a Česká republika*. Praha: Grada Publishing.
- [56] REFFO, G., WARK, V.: 2015. *PQ: politická inteligence lídrů: jak PQ odlišuje úspěšné lídry od neúspěšných*. Praha: Management Press.
- [57] ROKEACH, M.: 1968. The Role of Values in Public Opinion Research. *The Public Opinion Quarterly*, 32(4), 547–559. 10.1086/267645
- [58] ROTTER, J. B.: 1966. Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80(1), 1–28. 10.1037/h0092976
- [59] ŘEHÁKOVÁ, B.: 2006. Měření hodnotových orientací metodou hodnotových portrétů SH Schwartze. *Sociologický časopis / Czech Sociological Review*, 42(01), 107–128. 10.13060/00380288.2006.42.1.07
- [60] SCHWARTZ, S. H.: 2012. An overview of the Schwartz theory of basic values. *Online Readings in Psychology and Culture*, 2(1), 2307–2919. 10.9707/2307-0919.1116
- [61] SCHWARTZ, S. H.: 2003. A proposal for measuring value orientations across nations. *Questionnaire package of the European social survey*, 259–290.
- [62] SCHWARTZ, S. H.: 2001. *A proposal for measuring value orientation across nations*, ESS central coordinating team. 241–296.



- [63] SCHWARTZ, S. H.: 1992. Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. Online. *Advances in Experimental Social Psychology*, 25, 1–65. 10.1016/S0065-2601(08)60281-6
- [64] SLOVÁČKOVÁ, B.: 2001. Morální kompetence a morální postoje u studentů lékařské fakulty Univerzity Karlovy v Hradci Králové. *Psychiatrie*, 4(2), 1–8. Available at: <https://www.tigis.cz/images/stories/psychiatrie/2001/02/04slovak.pdf>
- [65] SLOVÁČKOVÁ, B., SLOVÁČEK, L.: 2007. Moral judgement competence and moral attitudes of medical students. *Nursing Ethics*, 14 (3), 320–328. 10.1177/0969733007075867
- [66] STEINMAN, H., LÖHR, A.: 1995. *Základy podnikové etiky*. Praha: Victoria Publishing.
- [67] SUN TZU.: 1998. *The Art of War*. Wordshorth Editions Limited, Hertfordshire.
- [68] ŠTĚCHOVÁ, M.: 1930. *Myslenky čínského filosofa Čuang-Tse*. Praha: Helios.
- [69] TEGMARK, M.: 2020. *Život 3.0 (člověk v éře umělé inteligence)*. Praha: Argo/Dokořán.
- [70] YAMAMOTO, S.: 2021. A research-creation model. *Procedia Computer Science*, 192, 1813–1820. 10.1016/j.procs.2021.08.186
- [71] ZHUANG.: 2006. *Sebrané spisy*. Praha: Maxima.

## Authentic people leadership

### ABSTRACT

The text focuses on the theoretical analysis of authenticity and then presents possible methods for studying of this phenomena on empirical, social-psychological-diagnostic and axiological levels. The aim is to present a methodological procedure for the preparation and organisation of a pilot project to investigate authenticity in the context of leadership. The proposed interdisciplinary concept and methodological approach serves to prepare and organize a research project that would explore in depth the aspects of authenticity in the leadership of people and human systems. The first part of the text is devoted to a theoretical description of authenticity. The second part focuses on specific questionnaire methods, e.g. GPDP, Big Five, LOC, ALQ, PVQ, suitable for analysis and research on this specific complex of qualities.

### KEYWORDS

Leading People; Authenticity; Individuation; Axiology

### JEL CLASSIFICATION

M12; M14



# Analysis of Risk Correlations among Stock Markets before and during the COVID-19 Pandemic

- **Michal Mertuš** » Comenius University in Bratislava, Faculty of management, Odbojárov 10, 820 05 Bratislava 25, Slovakia; email: [michal.mertus@fm.uniba.sk](mailto:michal.mertus@fm.uniba.sk)
- **Ľudomír Šlahor** » NEWTON University, 5. května 1640/65, 140 00 Praha, Czech Republic; & Comenius University in Bratislava, Faculty of management, Odbojárov 10, 820 05 Bratislava 25, Slovakia; email: [ludomir.slahor@fm.uniba.sk](mailto:ludomir.slahor@fm.uniba.sk)

## \* 1. Introduction

We live in times when the events around us, including the development of the world's economies, is being divided into "before and during – COVID-19" periods. The direct and indirect consequences of the global COVID-19 pandemic continue being a reality. The pandemic has destabilized the global financial markets and created uncertainty for investors. It seems like stock markets will remain stagnant for a certain period of time. However, compared to the financial crisis of 2007/2008, such a significant negative impact was and is not expected (at least as a direct result of the pandemic), mainly as a result of the quick actions by governments and central banks (Bennani, 2023), which act as a safety brake for financial markets.

The aim of this article is to compare the correlation of securities within two different time periods, namely before and during the COVID-19 pandemic. The intention of the research is to find out if stocks in these two periods are correlated differently, that is, if the relationship between the stocks in the first period is different than the latter. Based on these observations, the outcome is a recom-

mendation to investors how to best construct stock portfolios by allocating funds across stock market sectors during such times.

This article is structured into four chapters. Chapter two describes the methodology used to confirm the hypothesis that the correlation coefficients were different during the two time periods and how the lowest-correlated stock sectors were identified. It should be emphasized that the time periods analyzed were limited in order to filter out as many other macroeconomic and political factors as possible that could affect the stock prices (Ahmad et al., 2023). In chapter three, the results are presented. In the last chapter, the conclusions are presented.

## 2. Methods

### 2.1 Researched time periods

It is necessary to set the researched time series correctly – filter out periods during which external elements could have influenced share prices and thus distort the results (Elberry et al., 2023). External elements can be understood as various macro-



economic and (geo)political factors (Eijffinger and Karatas, 2023) influencing the European and American stock markets. These factors should ideally not enter into the calculation of correlation coefficients because market sectors, stocks and as a result the sector indices can be impacted by them to different extents. For the purpose of comparing the correlation coefficients of the investigated time periods and as such using suitable underlying datasets, it is necessary to define the following periods:

- The period before the pandemic (the initial date of the research period up to the start date of the pandemic)
- The period during the pandemic (the start date of the pandemic up to the end date of the pandemic)

The first cases of novel coronavirus (nCoV) were first detected in China in December 2019, with the virus spreading rapidly to other countries across the world. This led WHO to declare a Public Health Emergency of International Concern (PHEIC) on 30 January 2020, and to characterize the outbreak as a pandemic on 11 March 2020 (WHO, 2023).

As a result, the start date of the pandemic, which would be reflected by the stock markets, must be set at a date in between January 30, 2020 and March 11, 2020. Closer analysis of price movements of the stock indices shows the first major price drop in the stock markets on February 20, 2020, which will be, for the purposes of this article, considered the start date of the pandemic.

The end date of the pandemic and thus end date of the research period itself was set for December

31, 2021 for the following reasons: Russian invasion of Ukraine (Reuters, 2022), interest rate hikes by FED (FED, 2023) and ECB (ECB, 2023), rising inflation in US (Kilian and Zhou, 2022) and the Eurozone (Della Posta and Morroni, 2022) and rise of commodities prices (Bolhuis et al., 2022). All these events have a common aspect — they took place towards the very end of 2021 or beginning of 2022 and could further skew the results.

Initial date of research was set for January 1, 2015 for the following reasons: European debt crisis ending (Stoupos and Kiohos, 2022), interest rate cuts by ECB (Ampudia and van den Heuvel, 2022) and dropping unemployment rates in the US (Saboori et al., 2022) and the Eurozone (Popescu and Diaconu, 2022).

## 2.2 Data

Daily closing prices of 11 S&P 500 sector indices and 19 STOXX Europe 600 sector indices obtained from Bloomberg Terminal, MarketWatch, Inc. and Yahoo Finance were used to calculate the correlation coefficients. Alternatives to daily closing prices were considered but rejected. Data with a lower frequency (weekly or monthly) might not have provided a sufficient sample size and data with a higher frequency (hourly or higher) were considered unnecessary for comparisons of the correlation coefficients of a 7-year time sample. Out of the 1796 total trading days, 19 trading days have been excluded from the sample due to missing data for one or more sector indices of the of STOXX Europe 600 index. All data of S&P 500 sector indices were complete. In line with the Global Industry Classifi-

**Table 1 » Sector indices of S&P 500, as per GICS**

S&P 500	S&P 500	S&P 500	S&P 500
communication services	consumer discretionary	consumer staples	energy
financials	health care	industrials	information technology
materials	real estate	utilities	

Source: S&P Dow Jones Indices, 2023

**Table 2 » Sector indices of STOXX Europe 600, as per GICS**

STOXX Europe 600	STOXX Europe 600	STOXX Europe 600	STOXX Europe 600	STOXX Europe 600
telecommunications	retail	automobiles and parts	media	travel and leisure
household goods	food and beverage	oil and gas	insurance	financial services
banks	health care	goods and services	construction and materials	technology
basic resources	chemicals	real estate	utilities	

Source: STOXX Ltd., 2023

cation Standard, “GICS” (MSCI Inc., 2023), the following sector indices were chosen for the calculation:

### 2.3 Hypothesis testing

The null hypothesis  $H_0$  and alternative hypothesis  $H_A$  state:

- $H_0$ : The means (for a parametric type of test) or medians (for a non-parametric type of test) of two independent, approximately normally distributed random samples are not equal, i.e., the correlation coefficients before the COVID-19 pandemic are identical to the correlation coefficients during the pandemic:

$$H_0: \mu_1 = \mu_2, \text{ or } H_0: \mu_{1/2} = \mu_{1/2}$$

- $H_A$ : The means (for a parametric type of test) or medians (for a non-parametric type of test) of two independent, approximately normally distributed random samples are not equal, i.e., the correlation coefficients before the COVID-19 pandemic are different from the correlation coefficients during the pandemic:

$$H_A: \mu_1 \neq \mu_2, \text{ or } H_A: \mu_{1/2} \neq \mu_{1/2}$$

The next step was to choose a suitable statistical test. In this case, there are two variables from two independent samples. It remained to choose whether to use a parametric or non-parametric statistical test. The advantage of parametric tests is their higher precision, i.e. higher chance of detecting differences in correlation coefficients between the two periods. However, parametric tests assume

normal distribution of data, which means that they are not suitable for non-normally distributed underlying data.

Kolmogorov-Smirnov test for normality and the Shapiro-Wilk test have both been used to verify whether the underlying data follow normal distribution. Two types of tests were used for confirmation, in case the data before the pandemic were normally distributed and the data during the pandemic were not, or vice versa. The hypotheses for these two tests are as follows:

- $H_0$ : The data are normally distributed
- $H_A$ : The data are not normally distributed.

If p-value is > significance level  $\alpha$  for both periods before and during the pandemic,  $H_0$  is confirmed. Correlation coefficients of the sector index returns are normally distributed and in order to confirm the original hypothesis, a parametric test will be used: Student’s two-sample unpaired t-test.

If p-value < significance level  $\alpha$  for at least one period before and during the pandemic,  $H_0$  is rejected. Correlation coefficients of the sector index returns are not normally distributed and in order to confirm the original hypothesis, a non-parametric alternative test will be used: Mann-Whitney U test.

For this test, significance level  $\alpha = 0.05$ , which is a common standard (Ross, 2010) will be used for the Kolmogorov-Smirnov test for normality, Shapiro-Wilk test, Student’s two-sample unpaired t-test and Mann-Whitney U test:



- If  $p\text{-value} > \text{significance level } \alpha$ , the null hypothesis  $H_0$  is confirmed at significance level  $\alpha$ , i.e., the correlation coefficients have not changed between the two time periods.
- If  $p\text{-value} < \text{significance level } \alpha$ , the null hypothesis  $H_0$  is rejected at significance level  $\alpha$  and alternative hypothesis  $H_A$  is accepted, i.e., the correlation coefficients have changed between the two time periods.

To filter out market tendencies and focus purely on the impact of the pandemic on sector index returns, 1000 random samples with replacement with the size of 252 returns were simulated for both periods. The reason for the  $n=252$  was the attempt to obtain an estimate of the correlation coefficients of pairs of sector indices for the entire period. The original complete sample of ca. 500 trading days during the pandemic partially limits the size of  $n$  and could be a theoretical maximum  $n$ . The size of  $n=252$  was decided due to the average of 252 trading days in an average calendar year. 1000 random samples were simulated in order to achieve better precision.

The result of the simulation was 1000 matrices generated for both time periods with the size of  $11 \times 11$  (S&P 500) and  $19 \times 19$  (STOXX Europe 600) correlation coefficients of sector index pairs. Based on these 1000 matrices, we examined whether the correlation coefficients have changed.

Kolmogorov-Smirnov (K-S) test and Shapiro-Wilk test were used to test whether the series of corresponding data points (correlation coefficients of each pair of sector indices) across the sample matrices were normally distributed. Based on the

results, either Student's two-sample unpaired t-test or Mann-Whitney  $U$  test were used to verify changes between the two time periods.

Microsoft Excel was used for calculation of the overall correlation coefficient matrices for both time periods. Python was used for random sampling and to perform the statistical tests.

### 3. Results

#### 3.1 Hypothesis testing results

##### 3.1.1 S&P 500 sector indices

The hypothesis was confirmed as follows:

$H_0$  was rejected and  $H_A$  was confirmed for 53 out of 55 pairs of S&P 500 sector indices and therefore it was confirmed that the sector pairs were more strongly correlated during the pandemic as opposed to the pre-pandemic period. The full results for the confirmed sector pairs can be found in thesis (Mertus, 2023). The table below shows the two remaining sector pairs, for which  $H_0$  was confirmed, i.e., changes in correlations were not confirmed.

##### 3.1.2 STOXX Europe 600 sector indices

The hypothesis was confirmed as follows:  $H_0$  was rejected and  $H_A$  was confirmed for 166 out of 171 pairs of STOXX Europe 600 sector indices and therefore it was confirmed that the sector pairs were more strongly correlated during the pandemic as opposed to the pre-pandemic period. The full results for the confirmed sector pairs can be found in thesis (Mertus, 2023). The table below shows

**Table 3 » Test results for S&P 500 sector indices, sector pairs with changes not confirmed**

Sector pairs		Normality tests (p-values)				Comparison tests (p-values)	
Sector index 1	Sector index 2	K-S before COVID	K-S during COVID	Shapiro-Wilk before COVID	Shapiro-Wilk during COVID	T-test	Mann-Whitney U test
IT	Energy	~0	~0	0.049499091	1.10111E-06	—	0.104963692
IT	Financials	~0	~0	9.52227E-08	3.01804E-10	—	0.389867062

Source: own calculations



**Table 4 » Test results for STOXX Europe 600 sector indices, sector pairs with changes not confirmed**

Sector pairs		Normality tests (p-values)				Comparison tests (p-values)	
Sector index 1	Sector index 2	K-S before COVID	K-S during COVID	Shapiro-Wilk before COVID	Shapiro-Wilk during COVID	T-test	Mann-Whitney U test
Technology	Industrial Goods & Services	~0	~0	8.94287E-06	0.005279331	—	0.408224
Tele-communications	Industrial Goods & Services	~0	~0	9.52227E-08	4.11004E-14	—	0.635961
Retail	Media	~0	~0	0.000199872	0.000166353	—	0.203788
Insurance	Financial Services	~0	~0	0.001368158	2.19379E-11	—	0.131012
Personal & Household Goods	Real Estate	~0	~0	0.000220138	2.32216E-08	—	0.880855

Source: own calculations

*Alternatives to daily closing prices were considered but rejected. Data with a lower frequency (weekly or monthly) might not have provided a sufficient sample size and data with a higher frequency (hourly or higher) were considered unnecessary for comparisons of the correlation coefficients of a 7-year time sample. Out of the 1796 total trading days, 19 trading days have been excluded from the sample due to missing data for one or more sector indices of the STOXX Europe 600 index.*

the five remaining sector pairs, for which  $H_0$  was confirmed, i.e., changes in correlations were not confirmed.

### 3.2 Correlation coefficients

#### 3.2.1 S&P 500 sector indices

Table 5 illustrates the growth of correlation coefficients across the sector index pairs of S&P 500 (values shown equal to values before COVID subtracted from values during COVID).

The five strongest correlated sector index pairs during the pandemic are shown in the table 6. These pairs exhibited almost perfect positive correlation.

The five weakest correlated sector index pairs during the pandemic are shown in the table 7. These pairs exhibited low-moderate level of positive correlation and have been the most suitable for diversification of stock portfolios during the COVID-19 pandemic if the goal was to allocate funds in a way to minimize risks and avoid the largest price drops.

#### 3.2.2 STOXX Europe 600 sector indices

Table 8 illustrates the growth of correlation coefficients across the sector index pairs of S&P 500 (values shown equal to values before COVID subtracted from values during COVID).

The five strongest correlated sector index pairs





**Table 5 » Changes in correlation coefficients (during COVID — before COVID), S&P 500**

Difference	Communication Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities
Communication Services	x										
Consumer Discretionary	0.27	x									
Consumer Staples	0.20	0.10	x								
Energy	0.13	0.03	0.14	x							
Financials	0.21	0.01	0.21	0.21	x						
Health Care	0.28	0.04	0.24	0.07	0.08	x					
Industrials	0.17	0.02	0.18	0.14	0.11	0.09	x				
Information Technology	0.36	0.06	0.20	0.02	0.01	0.10	0.03	x			
Materials	0.24	0.06	0.23	0.09	0.16	0.14	0.09	0.06	x		
Real Estate	0.30	0.25	0.16	0.32	0.42	0.31	0.38	0.30	0.39	x	
Utilities	0.31	0.40	0.27	0.33	0.57	0.48	0.50	0.42	0.51	0.21	x

Source: own calculations

**Table 6 » Sector index pairs with highest correlation, S&P 500**

Financials & Industrials	Materials & Industrials	IT & Communication Services	IT & Consumer Discretionary	Materials & Financials
0.93	0.93	0.90	0.90	0.90

Source: own calculations

**Table 7 » Sector index pairs with lowest correlation, S&P 500**

Utilities & Energy	Energy & Consumer Staples	IT & Energy	Energy & Communication Services	Energy & Health Care
0.50	0.54	0.56	0.58	0.58

Source: own calculations

during the pandemic are shown in the table 9. These pairs exhibited almost perfect positive correlation.

The five weakest correlated sector index pairs during the pandemic are shown in the table 10. These pairs exhibited low-moderate level of positive correlation and have been the most suitable for diversification of stock portfolios during the

COVID-19 pandemic if the goal was to allocate funds in a way to minimize risks and avoid the largest price drops.

#### 4. Conclusions

The purpose of this article was to confirm the hypothesis that prices, i.e., stock returns during the

pandemic, showed different correlations as opposed to prices during the pre-pandemic period and to pinpoint the weakest-correlated stock market sector. Sector indices of S&P 500 and STOXX Europe 600 were chosen due to being the largest, most liquid markets with most complete and reliable data.

The impact of COVID-19 on stock markets has been studied from different perspectives. However,

most studies (Wu et al., 2022) have focused on systemic risk in individual countries or financial markets during the COVID-19 pandemic. Additionally, few studies have combined the conditional autoregressive value at risk model and network theory to investigate the risk correlations among stock markets in different countries. To bridge this research gap, this paper measures the tail risk under the impact of COVID-19 by analysing the risk

**Table 8, part 1 » Changes in correlation coefficients (during COVID — before COVID), STOXX Europe 600**

Difference	Telecommunications	Retail	Automobiles & Parts	Media	Travel & Leisure	Personal & Household Goods	Food & Beverage	Oil & Gas	Insurance	Financial Services
Telecommunications	x									
Retail	-0.03	x								
Automobiles & Parts	0.06	0.02	x							
Media	-0.02	0.01	0.12	x						
Travel & Leisure	-0.14	-0.08	0.08	0.01	x					
Personal & Household Goods	0.07	0.05	0.10	0.04	0.08	x				
Food & Beverage	0.08	0.05	0.13	0.08	0.01	0.03	x			
Oil & Gas	0.11	0.03	0.18	0.16	0.19	0.13	0.14	x		
Insurance	-0.01	-0.03	0.11	0.09	0.02	0.07	0.13	0.17	x	
Financial Services	-0.02	0.00	0.08	0.06	0.03	0.07	0.10	0.12	0.00	x
Banks	0.01	-0.02	0.11	0.13	0.05	0.10	0.20	0.14	0.02	-0.02
Health care	-0.01	-0.07	-0.06	-0.06	-0.23	-0.01	-0.01	-0.03	-0.10	-0.04
Industrial Goods & Services	0.00	-0.02	0.06	0.07	0.04	0.06	0.11	0.07	0.04	0.04
Construction & Materials	0.02	-0.01	0.08	0.06	0.02	0.06	0.11	0.14	0.07	0.04
Technology	-0.02	0.02	0.00	0.02	0.04	0.05	0.03	0.07	-0.02	0.05
Basic Resources	0.14	0.14	0.15	0.23	0.16	0.21	0.21	0.02	0.17	0.18
Chemicals	0.09	0.00	0.03	0.09	0.04	0.07	0.11	0.08	0.04	0.06
Real Estate	-0.06	-0.02	0.16	0.05	0.06	0.01	0.02	0.22	0.13	0.10
Utilities	0.02	0.05	0.12	0.06	0.03	0.06	0.05	0.05	0.08	0.09

Source: own calculations



**Table 8, part 2 » Changes in correlation coefficients (during COVID — before COVID), STOXX Europe 600**

Difference	Banks	Health Care	Industrial Goods & Services	Construction & Materials	Technology	Basic Resources	Chemicals	Real Estate	Utilities
Banks	x								
Health Care	-0.15	x							
Industrial Goods & Services	0.02	0.07	x						
Construction & Materials	0.05	0.09	0.02	x					
Technology	-0.04	0.00	0.00	-0.02	x				
Basic Resources	0.15	0.04	0.11	0.16	0.13	x			
Chemicals	0.05	-0.04	-0.01	0.03	-0.02	0.14	x		
Real Estate	0.10	-0.08	0.13	0.12	0.10	0.20	0.09	x	
Utilities	0.06	0.06	0.09	0.11	0.09	0.17	0.15	-0.01	x

Source: own calculations

**Table 9 » Sector index pairs with highest correlation, STOXX Europe 600**

Industrial Goods and Services & Construction and Materials	Industrial Goods and Services & Financial Services	Financial Services & Construction and Materials	Banks & Insurance	Insurance & Financial Services
0.94	0.93	0.90	0.90	0.89

Source: own calculations

**Table 10 » Sector index pairs with lowest correlation, STOXX Europe 600**

Health Care & Banks	Health Care & Travel and Leisure	Health Care & Basic Resources	Health Care & Automobiles and Parts	Health Care & Oil and Gas
0.40	0.42	0.46	0.49	0.49

Source: own calculations

correlation of the individual sectors of the stock markets worldwide.

The added value of the paper is the resulting information demonstrating what has been the optimal stock allocation strategy based on correlations

during the pandemic which could serve as a base for investors should another pandemic (or any crisis of another type) arise and pressure the global markets.

## REFERENCES

- [1] AHMAD, M. et al.: 2023. The impact of COVID-unemployment rate: an intelligent based unemployment rate prediction in selected countries of Europe. *International Journal of Finance & Economics*, 28(1), 528–543. 10.1002/ijfe.2434
- [2] AMPUDIA, M., VAN DEN HEUVEL, S. J.: 2022. Monetary policy and bank equity values in a time of low and negative interest rates. *Journal of Monetary Economics*, 130, 49–67. 10.1016/j.jmoneco.2022.05.006
- [3] BENNANI, H.: 2023. Effect of monetary policy shocks on the racial unemployment rates in the US. *Economic Systems*, 47(1). 10.1016/j.ecosys.2022.101058
- [4] BOLHUIS, M. A. et al.: 2022. The coming rise in residential inflation. *Review of Finance*, 26(5), 1051–1072. 10.1093/rof/rfac048
- [5] DELLA POSTA, P., MORRONI, M.: 2022. The credibility of monetary policy and the fiscal response to the pandemic in the Eurozone. *Evolutionary and Institutional Economics Review*, 19(1), 77–96. 10.1007/s40844-021-00226-0
- [6] EUROPEAN CENTRAL BANK (ECB): 2023. *Key ECB interest rates*. [online]. [cit. 2024-02-14]. Available at: [https://www.ecb.europa.eu/stats/policy\\_and\\_exchange\\_rates/key\\_ecb\\_interest\\_rates/html/index.en.html](https://www.ecb.europa.eu/stats/policy_and_exchange_rates/key_ecb_interest_rates/html/index.en.html)
- [7] EUJFFINGER, S. C. W., KARATAS, B.: 2023. Three sisters: the interlinkage between sovereign debt, currency, and banking crises. *Journal of International Money and Finance*, 131. 10.1016/j.jimonfin.2022.102798
- [8] ELBERRY, N. A. et al.: 2023. Optimal public debt composition during debt crises: a review of theoretical literature. *Journal of Economic Surveys*, 37(2), 351–376. 10.1111/joes.12491
- [9] FEDERAL RESERVE BANK (FED): 2023. *Federal funds effective rate*. [online]. [cit. 2024-02-14]. Available at: <https://fred.stlouisfed.org/series/FEDFUNDS>
- [10] KILIAN, L., ZHOU, X. Q.: 2022. The impact of rising oil prices on US inflation and inflation expectations in 2020–23. *Energy Economics*, 113. 10.1016/j.eneco.2022.106228
- [11] MERTUS, M.: 2023. *Analysis of changes in securities correlations before and during the pandemic*. Comenius University, Master's Thesis.
- [12] MSCI Inc.: 2023. *The global industry classification standard (GICS®)*. [online]. [cit. 2024-02-14]. Available at: <https://www.msci.com/our-solutions/indexes/gics>
- [13] POPESCU, C. C., DIACONU, L.: 2022. Inflation – unemployment dilemma. A cross-country analysis. *Scientific Annals of Economics and Business*, 69(3), 377–392. 10.47743/saeb-2022-0012
- [14] REUTERS.: 2022. *Russia invades Ukraine: Political, military leaders' reactions*. [online]. [cit. 2024-02-14]. Available at: <https://www.reuters.com/markets/europe/leaders-key-quotes-after-russia-invades-ukraine-2022-02-24/>
- [15] ROSS, S. M.: 2010. Testing statistical hypotheses. In *Introductory Statistics*, 387–442. 10.1016/B978-0-12-374388-6.00009-0
- [16] SABOORI, B. et al.: 2022. Renewable energy sources and unemployment rate: evidence from the US states. *Energy Policy*, 168. 10.1016/j.enpol.2022.113155
- [17] STOUPOS, N., KIOHOS, A.: 2022. Euro area stock markets integration: empirical evidence after the end of 2010 debt crisis. *Finance Research Letters*, 46(B). 10.1016/j.frl.2021.102423
- [18] STOXX Ltd.: 2023. *Sector indices*. [online]. [cit. 2024-02-24]. Available at: <https://www.stoxx.com/discovery-search?category=flagship&superType=sector&indexFamily=standard>



- [19] S&P Dow Jones Indices.: 2023. *S&P Sectors*. [online]. [cit. 2024-02-14]. Available at: <https://www.spglobal.com/spdji/en/index-family/equity/us-equity/sp-sectors/#indices>
- [20] WHO.: 2023. *Coronavirus disease (COVID-19) pandemic*. [online]. [cit. 2024-02-24]. Available at: <https://www.who.int/europe/emergencies/situations/covid-19>
- [21] WU, J. et al.: 2022. Analysis of risk correlations among stock markets during the COVID-19 pandemic. *International Review of Financial Analysis*, 83(10), 1–11, 10.1016/j.irfa.2022.102220

## Analysis of Risk Correlations among Stock Market before and during the COVID-19 Pandemic

### ABSTRACT

The COVID-19 pandemic formed a unique situation across stock markets during which stocks performed differently as compared to non-pandemic time periods. These conditions created an opportunity to analyze the changes in stock correlations during a time period of such global market uncertainty. Objective of this article is to confirm the hypothesis that there have been changes in stock price correlations before and during the pandemic and to give a recommendation how to diversify stock portfolios during future pandemics by allocating funds to stocks from different sectors with the lowest rates of correlations in order to minimize risks. To achieve precise results, thousands of random samples of 2-dimensional matrices (19×19 for Stoxx Europe 600 and 11×11 for S&P 500) containing correlation coefficients of all combinations of sector indices were calculated separately for both pre-COVID and COVID time periods. Using a variety of statistical tests based on the character of underlying datasets, the results (whether there was a significant change in correlations or not) were calculated. Lowest-correlated pairs were identified. The hypothesis was confirmed for both stock indices and vast majority of the sector index pairs although the change was more noticeable throughout the S&P 500 index. The least correlated sector index pairs were suggested as a diversification option to minimize risks during future pandemics.

### KEYWORDS

Stock indices; Correlation; Risk; Pandemic; COVID-19

### JEL CLASSIFICATION

C32; E30; E44; F21; F44; G15



# Fast fashion influence on the purchasing decisions of Generation Z customer behaviour

- ▶ **Ludmila Hruban** » NEWTON University, Centre for International Programmes, Rašínova 103/2, 602 00 Brno, Czech Republic; e-mail: ludmila.hruban@newton.university
- ▶ **Martin Příbyl** » NEWTON University, Centre for Business Studies, Rašínova 103/2, 602 00 Brno, Czech Republic; e-mail: martin.pribyl@newton.university
- ▶ **Kristýna Kupczaková** » NEWTON University, Centre for International Programmes, Rašínova 103/2, 602 00 Brno, Czech Republic; NOTINO, Czech Republic; e-mail: kristyna.kupczakova@notino.com

## \* 1. Introduction

Fashion is one of the world's most important industries, driving a significant part of the global economy. Currently, the United States and China make up the largest economies and the largest retail apparel markets in the world (McKinsey, 2017).

China, which is also the world's largest producer and exporter of textiles and apparel, accounts for up to 65% of the world's apparel. China is attractive to brands from around the world because of its huge workforce, manufacturing capacity and efficient supply chains. An important factor is that low wages keep production costs low, allowing high margins for all brands, both fast and luxury fashion. The central issue with this commercially successful production model, is the benefit of significant social and environmental impacts on the planet and its inhabitants (Garagnon, 2021).

The second largest garment manufacturing country in the world is Bangladesh. Garment exports account for almost 85% of the country's total exports. Bangladesh's apparel industry has experienced growth in recent years, increasing its share of global apparel exports to 6.7% (Berg et al.,

2021). Bangladeshi factory workers are experts at handling bulk orders and fast delivery, which explains why fast fashion brands such as Zara prefer these suppliers (Asia Perspective, 2022).

The European Union is the largest importer of goods from China and Bangladesh (Berg et al., 2021). Other leading clothing producers include Vietnam and India. The Vietnamese apparel industry accounts for 5.2% of the global market share (Fibre2Fashion, 2022). Many major global companies such as Nike, Adidas, The North Face, H&M, Zara, and Mango produce apparel in Vietnam (Asia Perspective, 2022). India's domestic textile and apparel industry accounts for 4% of global textile and apparel trade and contributes 2% to the country's GDP (IBEF, 2022). Other important countries in the global apparel industry include Turkey, USA, Pakistan, Philippines, Kenya, Sri Lanka and Ethiopia (Tidswell, 2023).

The European textile and clothing industry employs 1.7 million people and generates a turnover of €166 billion. The leading manufacturing countries in Europe are Germany, Spain, Portugal and Italy (European Commission, 2023).

The revenue generated by the global apparel →

market increased gradually from 2015 until 2020, when the Covid-19 pandemic hit retail sales hard. In 2022, the revenue of this market was approximately US\$ 1.53 trillion. According to the Consumer Market Outlook, this will increase to nearly \$2 trillion by 2027 (Smith, 2022). Global apparel consumption has grown explosively over the past 20 years. Fashion consumers purchase more than 80 billion new garments each year, which is 400% more than in the past (The True Cost, 2015).

## 2. Fast fashion

The term “fast fashion” was officially introduced in the 1990s by the New York Times (SANVT, 2022). Fast fashion is a method of production, manufacturing and marketing aimed at the rapid production of huge volumes of clothing. Fast fashion clothing production uses replications of trends, often based on styles presented at Fashion Week shows or worn by celebrities and well-known personalities. Fast fashion allows ordinary consumers to acquire trendy fashion products at affordable prices due to the use of low quality materials and cheap labor (Stanton, 2023).

From a marketing perspective, fast fashion represents a strategy to produce fashion products at affordable prices to the widest possible range of customers. Fast fashion has become common due to cheaper, faster production and shipping methods. The increase in consumers’ desire for current trends has also increased their purchasing power, especially among young people. The goal of fast fashion is to produce pieces of clothing at an efficient rate in response to rapidly changing consumer demands (Hayes, 2022).

Companies specialising in fast fashion are often characterised by a lack of accuracy and transparency regarding their supply chain and production methods for fashion products. These companies often fail to disclose specific information about their efforts to reduce their negative environmental impact, and they also frequently fail to provide evidence of ensuring decent and safe working con-

ditions for their employees and compliance with minimum human rights standards. In the fast fashion market, some of the largest companies include H&M Group, Inditex Group, Shein, Primark, Forever 21, Topshop, Fashion Nova and New Look. These companies often implement a hybrid business model where they operate as both retailers and manufacturers, even though the actual production of the clothes is part of the outsourcing (Hayes, 2022). Outsourcing production means that a company outsources the production of its products to another company that specializes in a certain type of production or has sufficient capacity and resources to produce products at a lower cost. This allows the company to concentrate on its core business activities such as marketing, sales, design or research and development while reducing the cost of producing the products. In the context of fast fashion, many brands and companies outsource production to countries with cheap labour, which allows brands to offer garments at lower prices and achieve a competitive advantage (Cheav, 2020).

## 3. Problematic aspects of fast fashion chains

There are many problematic aspects to the concept of manufacturing and selling fast fashion retailers. Large retailers with a global reach, such as Inditex or the H&M Group, copy the latest trends from catwalks and have them quickly adapted in factories in third world countries. Factories located in developing countries are used to rapidly produce new collections, which are then available in stores within two weeks. The traditional division of seasons into spring/summer and autumn/winter has receded and fast fashion brands now produce up to 52 micro-collections per year (Stanton, 2023). According to Thomasová (2020) fast fashion has three main areas of concern, namely the labour market and human rights in developing countries and the environment which is being destroyed by pesticides, toxic paints and plastics.

### 3.1 Environmental impacts

Globally, the fashion industry is the second most polluting industry after the oil and gas sector (GENeco, 2023). Chemicals are often used to produce textile fibres and dyes, which can pollute water and soil. In the production and transport of clothing, greenhouse gas emissions are produced. Water pollution and greenhouse gas emissions have detrimental effects on the environment, including global warming and biodiversity loss (SANVT, 2020). It is also believed that most unsold clothing is incinerated, resulting in significant carbon dioxide emissions. According to research by McKinsey & Company (2018), it was found that 80% of clothes sold end up in landfill and only 1% are fully recycled.

### 3.2 Unethical production and working conditions of employees

Thomasová (2020) states that fast fashion companies aim to reduce costs as much as possible, which is why fast fashion chains outsource (outsourcing part of the organisation's operations to another, external organisation) to countries where workers' rights protection is virtually non-existent. Garment workers often work in dangerous conditions with no basic human rights. Workers also have extremely low wages, which do not even reach a living wage. Nguyen (2022) adds that in manufacturing countries such as Bangladesh, China and India, the minimum wage covers only half to a fifth of what workers' families need to get by. Thomasová (2020) describes working conditions in factories as miserable, unsanitary and unsafe. Factories are located in countries with lower levels of economic development, characterized by inadequate legal provisions for workers and limited government control. Workers in garment industries have 14 to 16 hour working hours and are exposed to harmful substances. Child labour, which involves the employment of underage children in the production of clothing and other products, is also

an enormous problem in the fashion industry. These children are often forced to work in unsafe conditions, violating their rights and endangering their health (Moulds, 2022).

### 3.3 Greenwashing

Greenwashing is the process of conveying false impressions or misleading information about how environmentally friendly the products of fashion companies are. This process involves unsubstantiated claims designed to mislead consumers. Fast fashion brands often try to hide their supply chain and manufacturing processes in an attempt to project a sustainable or ethical image (Hayes, 2024). The Changing Market's Foundation (2022) found that almost 60% of the environmental claims made by popular fashion brands within the European Union are misleading.

### 3.4 Psychological pressure and overconsumption

Fast fashion chains influence consumers themselves and encourage throw-away culture. Throw-away culture refers to a modern society where the prevailing trend is to buy cheap products, use them for only a short period of time and then throw them away regardless of the environmental consequences (Morrison, 2022). The marketing strategies of fast fashion companies, encourage consumers' constant desire to buy new, often unnecessary products and encourage a mentality of over-consumption, leading people to think they need more and more things. These companies are likely to encourage a kind of addiction through instant gratification and dopamine release (Hayes, 2022).

### 4. Fashion marketing

Fashion marketing is a branch of marketing that deals with advertising clothing and accessories to a specific target market. Fashion marketing is the





process of managing production from the selection of designs to the presentation of products to retail customers in order to maximize a company's sales and profitability. Fashion marketing involves the process of identifying and defining the target customer segment of a fashion manufacturer, followed by responding to the preferences of this group in the form of appropriate products that should evoke high value in the perception of customers and should be presented in creative ways that motivate customers to buy (Steele, Major, 2023). The key attributes that differentiate fashion marketing from marketing other products are the rapid change in the fashion trends and the associated change in consumer preferences, therefore much attention is paid to building long-term relationships and the associated customer loyalty (Rath et al., 2014).

The fashion marketing system covers everything from the creation of the design product to the sale of the product, as well as its development, packaging, promotion and sales promotion. The 4P method may vary from industry to industry. The fashion industry is no exception and each component has its own characteristics in the context of fashion. Kiron (2022) states that the classical 4P marketing mix translates into a 7P marketing mix that adds the product, price, distribution and promotion components of people (people), process (process) and physical evidence (physical evidence). The 7P marketing mix provides fashion brands with a coherent framework that allows them to manage all aspects of their marketing strategy to gain consumer attention (Fashion Retail Academy, 2023).

## 5. Generation Z

Marc McCrindle's (2014a, 2014b) globally accepted definition of generation is based on the Strauss-Howe generational theory, which describes it as a group of people born within a certain time period (about 15–20 years), who are the same age, at a similar stage of life, and who have been affected by

the same events, trends and developments. Each generation has unique experiences, lifestyles and demographics that influence their buying behaviour.

Marc McCrindle (2014a, 2014b) defines Generation Z from 1995 to 2009. Currently, the age range of Generation Z is approximately 15 to 29 years (2024). There have been many technological advances during their birth and adolescence. It is the generation most affected by technological developments, the internet and associated social networks. These factors and many others (such as higher divorce rates, new concepts of family, attitudes towards politics, etc.) are leading to the individualisation of individuals. This is a generation completely different from the previous ones (Horváthová et al., 2016). Due to many factors, it is not possible for all members of Generation Z to share the same views, values or characteristics. However, they do share a common context that determines their worldview (Seemiller, Grace, 2017). Williams (2015) presents Generation Z as an 'open-eyed' generation – conscientious, hard-working, anxious and consciously focused on their future. Katz (2022) describes Generation Z, influenced by growing up in an internet-connected society, as a highly collaborative social group that cares deeply about others, has a pragmatic approach to tackling a range of legacy issues (e.g. climate change), but also values diversity and the search for its own unique identity. Rosulek (2023) characterizes Generation Z as, "self-aware, persistent and relying only on their own judgment".

### 5.1 Generation Z and fashion

Generation Z's consumer behaviour reflects their values and the influence of the digital world. They rely on their technology skills and social media platforms to make purchasing decisions. Their pragmatism leads them to explore and evaluate a range of options before deciding on the final product they will purchase. The final decision may be heavily influenced by the reference group they are

part of, reviews from real users or also influencers and celebrities. Generation Z uses social media platforms as a means of expressing their personalities and they view their purchasing decisions in the same way — as an expression of their own values and identity (Casey, 2023).

Generation Z is generally more concerned about the environment and sustainability than any generation before it, but as a generation they are also under a lot of pressure to constantly change their wardrobe, leaving the question of which impulse will win out (Kale, 2021). This generation represents a dichotomy in consumer values that is becoming more pronounced. Despite the fact that Gen Z is usually considered socially progressive and environmentally conscious, they are also voracious consumers of fast fashion — one of the most polluting industries in the world (Wilson, 2021).

Generation Z has found itself in fashion according to Den Houdyker (2022). Youth culture and young people have always been the driving force behind trends. Now, the fashion world is driven by the TikTok platform, where Generation Z in particular sets the rules. This generation has a very strict internet subculture that they use to describe their sense of style, lifestyle aesthetics and overall define the current vibe of today. The dominant TikTok platform has allowed fashion brands to flourish and has also become a crucial venue for Generation Z.

Data from UK market research company Mintel (2020) suggests that Generation Z is consuming more than previous generations when it comes to fashion shopping. The survey found that 64% of British 16 to 19-year-olds admit to buying clothes that they then never wear, compared to 44% of all those surveyed from older generations. The data from this survey also shows that 70% of Gen Z 16 to 19-year-olds say they are more concerned about the environmental impact of their purchases and that sustainability is an important factor in their fashion purchases.

STEM (Centre for Empirical Research) conducted a research entitled Sustainability in Fashion,

which focused on the motivations and strategies of Czech consumers when purchasing clothing and other consumer goods. According to the results of the survey, people most often try to choose eco-friendly alternatives in the areas of pharmaceuticals and cosmetics (54%) and food (51%), while factors such as price, appearance and material are the most important for them when choosing clothes. Shoppers are divided into two groups, with 47% combining the purchase of new and second-hand clothes and 45% buying only new clothes. The most common motive for buying second-hand across the age spectrum is a good price. The 18–29 age group also adds to this motivation a belief in environmental friendliness, which is the most important aspect for them compared to other age groups. At the same time, this group of people are also highly motivated by the fact that they feel better about such a purchase than buying from a chain store (STEM, 2022).

Claxton for Vogue Business (2020) adds that *“The way we consume clothes is tied to our identity in a way that is very different from other environmental issues that may be of concern to this generation”*. Young people find it hard to break the cycle of consuming clothes as they feel pressure to wear the latest trends due to the influence of social media. Claxton (2020) adds, *“It’s time for brands to make a change so people can make it. We need to address the whole behavioural issue with consuming things and the idea that we need to buy new things all the time. We’re all susceptible to that”*.

## 5.2 Reaching Generation Z consumers — attracting attention

Generation Z is an emerging buying power, and brands want to respond to this and try to tailor their communications to their existing or potential consumers. Engaging with this social group and building their trust can be challenging for many brands as they are better at displacing traditional advertising. This digital generation has grown up alongside the modern development of influencer



marketing, so they have developed the ability to gauge the authenticity of ads. Gen Z expects brands to participate together in meaningful values that they themselves profess. They therefore prefer brands that make sense to them and expect more than just a product or service (Fashionary, 2018; Schneider, Lee, 2022).

Trends in marketing strategies to engage Gen Z are highly intertwined with fashion marketing trends. These trends are social media and influencer marketing, visual merchandising, sustainability and last but not least the trend of diversity and inclusivity.

Gilcrease (2022) states that there are two potential problems in targeting Generation Z brands. The first problem is that brands very often rely on the most familiar form of promotion through Instagram and Google. These two platforms are not necessarily the first choice that Generation Z uses to get information. The second problem can be characterized as a real knowledge gap when it comes to what actually motivates Generation Z to buy. What they are looking for are brands that are authentic, invest in building meaningful connections with their audience and build trust by aligning with their values.

TikTok, which has a very different aesthetic compared to Instagram, has become a very popular platform for creating authentic content. Gen Z also wants to see content that feels authentic in the context of the platform. Therefore, brands should seek out highly authentic creators to help them capture the attention of this group (Oakum, 2022).

Generation Z is a visually oriented generation, which means that visual appeal plays a key role in their buying process. They expect not only authentic, but also visually appealing content to showcase products and services, through E-commerce and social media like Instagram and TikTok (Uubex, 2019). Generation Z expects a visually appealing and intuitive shopping experience, which is why brands use visual product descriptions, 3D models or virtual reality. With content creation, brands can leverage influencers, who often have a big im-

pact on this generation's buying behaviour and decision-making (Kuzminov, 2023).

Brands should also actively engage in solving social problems. For the new generation, no attitude is also an attitude and can seriously damage the brand image. The main issues for Generation Z are mental health, diversity, climate change, stereotypes and violence. Generation Z also wants the brands they support to be heard and show some solidarity in times of crisis (Brzezicki, 2023).

## 6. Research methodology

### 6.1 Data collection

The quantitative research used an anonymous online questionnaire created in Survio. The questionnaire was targeted specifically at Generation Z, i.e. respondents born between 1995–2009. This research set allows for the analysis of Generation Z's consumer behaviour in the field of fashion and the identification of the influence of fast fashion chains on the purchasing decisions of this generation. Social networking sites Instagram and Facebook were used to recruit respondents, where engaging templates were shared to motivate respondents to complete. The questionnaire was shared on various profiles and also to focus groups to find respondents. Data collection was conducted from February 22, 2023 to March 7, 2023 and was completed by 441 respondents. The overall completion rate of the questionnaire was 83.1%.

### 6.2 Research design

The research focused on searches of secondary professional and practical sources focusing mainly on fashion marketing, fast fashion, Generation Z, consumer, purchasing decisions, and sustainability.

The aim of the primary research is to find out how is the influence of fast fashion chains on Generation Z's fashion purchasing decisions and analyse the fashion consumption behaviour of this generation.

The authors chose not to use the determination of assumptions in quantitative research using a questionnaire survey in this paper. This decision is mainly based on the authors' decision to focus on descriptive and exploratory data analysis rather than testing specific assumptions. The aim of this article is to gain a comprehensive insight into the relationship between fast fashion chains and Generation Z's purchasing behaviour and consumer preferences in fashion. In this context, the authors collected and analysed the data provided by the respondents in the questionnaire survey and drew relevant conclusions based on these data.

The questionnaire in this research survey consisted of 24 questions and 4 categories that were logically linked to each other. The following categories were designated for the research:

- consumer demographics (Q1-Q5),
- consumer fashion buying behaviour (Q6-Q15),
- the influence of social media (Q16-Q19),
- approach to sustainability in fashion purchasing (Q20-Q24).

The data processed in this paper were part of the defended bachelor thesis of student Kristýna Kupczaková, NEWTON University student, one of the co-authors.

### 6.3 Respondents analysis

Demographic questions will help to identify the respondent in some way and will be used to look for possible links and connections between respondents' answers. A total of 441 respondents participated in the actual data collection, of which 341 were female (77.3%), 97 were male (22%) and 3 (0.7%) respondents indicated their gender as other. The option to indicate their gender as other was for the reason that no one should feel discriminated or humiliated.

The questionnaire was targeted specifically at Generation Z. McCrindle's (2014a, 2014b) definition of Generation Z from 1995 to 2009 was used for this research. 47.2% of respondents are currently between 23 and 26 years old and 39% of re-

spondents are between 19 and 22 years old. For the age categories 14-18 and 27-28 the percentage of participation in data collection has dropped significantly, therefore for the other results we must assume that most respondents who participated in the survey are between 19 and 26 years old.

The most frequent response of respondents regarding their current status was studying or working. 35.5% of respondents are studying and working at the same time, 30.9% of respondents are only working and 28.2% of respondents are only studying. A smaller proportion of respondents are also on maternity leave (3.2%) or unemployed (1.4%). In the answer "other" 1 respondent indicated that he/she is in business.

According to primary research data, monthly income of 25.9% of respondents is between 0-5.000 CZK. This is probably related to the current status of the respondents, which showed that they are often students or part-time students and working. Subsequently, we can observe a large income gap with 23.4% of respondents reaching 20.001-30.000 CZK per month, this group may be more likely to be only working but also students. We also observe a difference in income, with 15.9% of respondents reaching monthly amounts of 5.001-10.000 CZK and another 15% of respondents reaching 30.000 CZK or more. Thus, overall, we can observe large differences in the income of all respondents.

### 6.4 Research questions

The following research questions were identified to explore consumer fashion buying behaviour and the influence of fast fashion brands on Generation Z.

**RQ<sub>1</sub>: What impact do fast fashion chains have on the purchasing decisions of Generation Z?**

**RQ<sub>2</sub>: What is the consumer behaviour of Generation Z in the area of fashion?**



## 7. Research questions results

### **RQ<sub>1</sub>: What impact do fast fashion chains have on the purchasing decisions of Generation Z?**

The data analysis showed that fast fashion chains have a significant influence on the purchasing decisions of Generation Z. 85.7% of respondents shop at commonly available fast fashion brands. This influence is due to several factors such as affordability (43.3%), easy access to a range of goods (19.7%), choice of styles (16%), offering trendy clothing (13.9%). Generation Z is very price sensitive and is used to constantly changing fashion trends. Fast fashion chains offer them trendy clothes and accessories at relevantly low prices, which is attractive to many people from this generation and can lead to more frequent purchases and larger volumes of goods bought. However, this availability often has a negative impact on the environment and working conditions of workers in the countries where these products are produced.

Frequency of clothing purchases is quite alarming, nearly 35% of Gen Z consumers were most likely to say they buy clothing once a month. In turn, with a result of 32.9%, consumers said they buy new clothes seasonally, which is both a sensible and more sustainable way, also recommended by experts. Up to 19.3% of consumers buy new clothes 2 to 3 times a month. Among consumers of this generation, there are also people who buy clothes once a week or daily, which is obviously not a sustainable way of consuming clothes. What is interesting about these results is that when asked in question 23 whether Generation Z consumers wear all the clothes they own, 82.3% of respondents said no.

Fast fashion chains have strategically located brick-and-mortar stores in shopping malls and busy locations in cities, allowing easy access to a range of goods. However, analysis has shown that Generation Z nowadays prefers to shop online rather than in brick-and-mortar stores. This trend

is mainly due to the convenience and speed of shopping, the ability to compare prices and offers, but also the lack of time to physically visit stores. This easy access to a range of goods is one of the factors contributing to the attractiveness of fast fashion chains to Generation Z.

Generation Z is known for their interest in fashion and following the latest trends. Fast fashion chains are very attractive to this generation because they offer trendy clothes that match the latest fashion trends. These chains have a fast production cycle, which allows them to respond flexibly to the latest fashion trends and incorporate them quickly into their offerings. Fast fashion chains thus offer a wide range of clothing that matches current fashion trends and the demands of Generation Z.

Fast fashion chains strive to offer the widest possible choice of styles to appeal to the widest possible range of customers, including Generation Z. As part of this, they also try to provide a variety of sizes so that customers can find clothes that fit them perfectly and suit their body proportions.

The main fast fashion brands that influence Generation Z are H&M (29%) and Zara (12%). These brands offer a wide range of trendy clothing and are available both online and in brick-and-mortar stores. Popularity with Generation Z is based on offering trendy clothes at affordable prices and popularizing these trends on social media (41.3% Instagram, 17.5% Pinterest, 13.2% TikTok, 1.8% YouTube, 0.5% others vs. 25.9% no inspiration from social media platforms). These fast fashion brands have a very significant role in the buying behaviour of Generation Z and are often the first choice for these customers when looking for trendy and affordable fashion. Fashion influencers are followed by 46.3% of survey respondents.

### **RQ<sub>2</sub>: What is the consumer behaviour of Generation Z in the area of fashion?**

Generation Z has different shopping habits compared to previous generations. Based on an analy-

sis of Generation Z's fashion shopping behaviour, several key trends were identified.

Based on the analysis conducted, it can be concluded that Generation Z tends to spend more money on clothes than they can actually afford. This is largely influenced by the fast fashion industry, which is enticing Generation Z to shop more frequently due to its low prices and easy availability. However, this dependence on the fast fashion industry can lead to adverse financial consequences, as the quality of clothes and their durability are often lower, which means that they have to be replaced more often. This ultimately leads to increased overall spending on clothing, which can exceed the original budget and lead to a financial burden for the individual.

Generation Z tends to spend more money on clothing than they can actually afford, which can have a negative impact on their financial stability. The fast fashion industry has a significant impact on this, with its low prices and easy availability enticing Gen Z to shop more frequently. However, this dependence on the fast fashion industry can lead to adverse financial consequences, as the quality of clothes and their durability are often lower, meaning that they have to be replaced more frequently. This group also prefers to shop more frequently, which can lead to increased expenditure on clothing over a longer period of time.

Generation Z prefers to buy clothes and fashion accessories online rather than in brick-and-mortar stores. This way of shopping is more convenient for them and allows them to compare prices and

products before buying. The analysis also shows that this generation prefers buying through websites and e-stores over mobile apps. This may be due to the fact that e-shops are easily accessible from different devices and provide more options for searching products, comparing prices and reading reviews. For this reason, it can be a new opportunity for fashion brands to focus on further developing their websites and e-stores. Fashion brands should strive to create user-friendly mobile apps that provide added value for customers, such as exclusive discounts, product recommendations or access to limited edition collections. Given that Generation Z spends most of its time on its mobile phones, mobile apps can become a key tool for brands looking to build relationships with their customers to increase customer loyalty.

Analysis has shown that for Generation Z, various factors are critical when choosing clothing. The most important factors include price, design and convenience. As a result, respondents report that they want clothing to be affordable, but at the same time they like it and find it comfortable to wear. Another important factor is the quality of the material and practicality, which means that the clothes should be made of quality materials and be practical for everyday wear. Brand and sustainability are also factors that have been shown to be important, although they have a lower priority compared to price, design and comfort.

According to the analysis, Generation Z is very active on social media and often use it as a source of fashion inspiration. Instagram, Pinterest and

*Companies specialising in fast fashion are often characterised by a lack of accuracy and transparency regarding their supply chain and production methods for fashion products. These companies often fail to disclose specific information about their efforts to reduce their negative environmental impact, and they also frequently fail to provide evidence of ensuring decent and safe working conditions for their employees and compliance with minimum human rights standards.*

TikTok are the most preferred platforms. These social networks are an important source of information on fashion trends for young people, which means that brands trying to reach Generation Z should have a strong presence on these platforms. Within these social networks, the so-called Fashion Influencers are also very important to Generation Z, who they prefer to follow more than the fashion brands themselves. For this reason, brands should partner with influencers to reach their target audience and increase their visibility on social media.

Generation Z tends not to wear all the clothes they own, especially because of rapidly changing trends. Unused clothing is most often sold or donated by Generation Z. This trend is particularly influenced by Gen Z's greater awareness of sustainability and environmental issues. This generation is well-informed about the fashion industry's impact on the planet, and is trying to minimize their own ecological footprint. Analytical data shows that Generation Z tends to combine buying new clothes with buying second-hand clothes (61.9%). The affordability of products offered in second-hand stores also contributes to this trend.

The survey found that Gen Z representatives sell unwanted clothing, 26.1% in total. The most popular platform for selling and buying clothes is Vinted, which according to SimilarWeb (2023) is the most visited fashion web platform in the Czech Republic. It is evident that consumers are satisfied when they have some profit from their no longer needed clothes. A very similar number of consumers donate their clothes to friends or family (25.9%) or donate them to charity (25.6%).

## 8. Conclusion

Generation Z's consumer behaviour can be seen as a paradox because it includes different elements that may be contradictory or inconsistent. The results of the investigation showed that Generation Z is highly influenced by fast fashion chains, mainly

due to the affordability of trendy clothes. At the same time, it was found that Generation Z is very receptive to sustainable and ethical fashion and many of them are trying to reduce their ecological footprint by recycling clothes or combining new clothes purchases with second-hand purchases. A large part of this generation would also be willing to pay more for a more eco-friendly product, but so far this is not happening.

One of the key measures could be to improve the design to produce longer lasting garments, but this would imply a significant change in pricing. Another important aspect is to educate consumers on sustainability issues to encourage recycling and recovery of unused clothing. Fashion brands could provide customers with recycling and donation options for charity, which would help reduce textile waste and provide customers with more sustainable alternatives for consumption behaviour.

It is important to mention that people often believe that rational factors such as price, quality or product features are the main influences on their behaviour and decision-making. In reality, the environment, people close to them, personal experiences or even the mood of the moment may be a more significant factor. This is important to consider in consumer behaviour and decision-making, where people are often influenced by advertising, fashion trends and recommendations from people in their environment without realising how much all this influences their decisions. It is therefore important to take these facts into account to better understand consumer behaviour.

The research conducted for this paper has shown that Generation Z has specific preferences and buying behaviour when it comes to fashion. Fashion brands trying to appeal to this generation should focus on adapting their marketing strategies to the trends that this generation responds to. Other key areas to highlight are minimising the need for constantly new clothes, educating consumers and encouraging more conscious purchasing decisions.



Not only consumers need to be involved in the change, but also the fashion companies themselves. These companies should adopt an ethical

and sustainable approach to production and marketing and avoid any greenwashing that has a negative impact on the planet and society as a whole.

## REFERENCES

- [1] ASIA PERSPECTIVE.: 2022. Clothing manufacturing in China: An introduction. *Asia Perspective*. [online]. [cit. 2023-12-17]. Available at: <https://www.asiaperspective.com/china-clothing-manufacturing-sourcing/>
- [2] BERG, A. et al.: 2021. What's next for Bangladesh's garment industry, after a decade of growth? *McKinsey & Company*. [online]. [cit. 2023-12-17]. Available at: <https://www.mckinsey.com/industries/retail/our-insights/whats-next-for-bangladeshs-garment-industry-after-a-decade-of-growth>
- [3] BRZEZICKI, A.: 2023. Marketing to Gen Z: What the new consumers want. *The Bazaar Voice*. [online]. [cit. 2023-12-19]. Available at: <https://www.bazaarvoice.com/blog/marketing-to-gen-z/#h1-look-out-and-promote-user-generated-content>
- [4] CASEY, A. E.: 2023. What are the core characteristics of generation Z? *The Annie E. Case Foundation*. [online]. [cit. 2023-12-17]. Available at: <https://www.aecf.org/blog/what-are-the-core-characteristics-of-generation-z>
- [5] CHANGING MARKET FOUNDATION.: 2022. *Licence to greenwash*. [online]. [cit. 2023-12-18]. Available at: <http://changingmarkets.org/wp-content/uploads/2022/03/LICENCE-TO-GREENWASH-FULL-REPORT.pdf>
- [6] CHEAV, M.: 2020. *Fast fashion and outsourcing*. [online]. [cit. 2024-02-12]. Available at: <https://blogs.chapman.edu/sustainability/2020/02/26/fast-fashion-and-outsourcing/>
- [7] CLAXTON, S.: 2020. *Gen Z still loves fast fashion, but Boohoo investors are spooked*. [online]. [cit. 2024-01-12]. Available at: <https://www.voguebusiness.com/consumers/gen-z-still-loves-fast-fashion-but-boohoo-investors-are-spooked>
- [8] DEN HOUDYKER, T.: 2022. *Gen Z, finding themselves in fashion*. [online]. [cit. 2024-01-18]. Available at: <https://glossimag.com/gen-z-fashion/>
- [9] EUROPEAN COMMISSION.: 2023. *Textiles and clothing industries*. [online]. [cit. 2023-01-18]. Available at: [https://single-market-economy.ec.europa.eu/sectors/fashion/textiles-and-clothing-industries\\_en](https://single-market-economy.ec.europa.eu/sectors/fashion/textiles-and-clothing-industries_en)
- [10] FASHIONARY.: 2018. *The fashion business manual: an illustrated guide to building a fashion brand*. Hong Kong: Fashionary International Limited.
- [11] FASHION RETAIL ACADEMY.: 2023. *The fashion marketing mix: The 7 P's of fashion marketing*. [online]. [cit. 2023-12-18]. Available at: <https://www.fashionretailacademy.ac.uk/news/fashion-marketing-mix-the-7ps-of-fashion-marketing>
- [12] FIBRE2FASHION.: 2022. *Vietnam's textile-garment exports to reach \$45 bn in 2022*. [online]. [cit. 2023-12-18]. Available at: <https://www.fibre2fashion.com/news/textile-news/vietnam-s-textile-garment-exports-to-reach-45-bn-in-2022-282781-newsdetails.htm>
- [13] GARAGNON, E.: 2021. *How the "Made in China" label is transforming in fashion*. [online]. [cit. 2023-12-17]. Available at: <https://goodonyou.eco/made-in-china/>
- [14] GENeco.: 2023. *Fast fashion and its impacts*. [online]. [cit. 2023-12-18]. Available at: <https://www.geneco.uk.com/news/fast-fashion-and-its-impacts>
- [15] GILCREASE, G.: 2022. *The gen Z marketing challenge: Focus on authenticity, connection, and trust*.



- [online]. [cit. 2024-02-13]. Available at: <https://www.wpromote.com/blog/digital-marketing/gen-z-marketing-2022>
- [16] HAYES, A.: 2024. *What is greenwashing? How it works, examples, and statistics*. [online]. [cit. 2024-02-17]. Available at: <https://www.investopedia.com/terms/g/greenwashing.asp>
- [17] HAYES, K.: 2022. *The price of fast fashion: How quick trends, 'throwaway culture' harm the planet*. [online]. [cit. 2024-02-17]. Available at: <https://www.fox10phoenix.com/news/the-price-of-fast-fashion-how-quick-trends-throwaway-culture-harms-the-planet>
- [18] HORVÁTHOVÁ, P., BLÁHA, J., ČOPÍKOVÁ, A.: 2016. *Řízení lidských zdrojů: nové trendy*. Praha: Management Press.
- [19] IBEF.: 2022. *Textile industry & market growth in India*. [online]. [cit. 2023-12-20]. Available at: <https://www.ibef.org/industry/textiles>
- [20] KALE, S.: 2021. *Out of style: Will gen Z ever give up its dangerous love of fast fashion?* The Guardian. [online]. [cit. 2024-01-28]. Available at: <https://www.theguardian.com/fashion/2021/oct/06/out-of-style-will-gen-z-ever-give-up-its-dangerous-love-of-fast-fashion>
- [21] KATZ, R.: 2022. *Gen Z are not 'coddled.' They are highly collaborative, self-reliant and pragmatic, according to new Stanford-affiliated research*. [online]. [cit. 2024-01-28]. Available at: <https://news.stanford.edu/2022/01/03/know-gen-z/>
- [22] KIRON, M. I.: 2022. *Marketing mix in fashion industry*. [online]. [cit. 2023-12-21]. Available at: <https://textilelearner.net/marketing-mix-in-fashion-industry/>
- [23] KUZMINOV, M.: 2023. *What should you know about gen Z to drive your business?* [online]. [cit. 2024-02-12]. Available at: <https://www.forbes.com/sites/forbesagencycouncil/2023/01/04/what-should-you-know-about-gen-z-to-drive-your-business/?sh=49b2a5736235>
- [24] MCCRINDLE, M.: 2014a. *The ABC of XYZ: understanding the global generations*. Sydney: UNSW Press.
- [25] MCCRINDLE, M.: 2014b. *Understanding generation Alpha*. [online]. [cit. 2024-02-12]. Available at: <https://mccrindle.com.au/insights/blog/gen-alpha-defined/>
- [26] MCKINSEY, J. O.: 2017. *The state of fashion*. [online]. [cit. 2023-12-21]. Available at: <https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/The%20state%20of%20fashion/The-state-of-fashion-2017-McK-BoF-report.pdf>
- [27] MCKINSEY & COMPANY.: 2018. *The state of fashion*. [online]. [cit. 2023-12-21]. Available at: [https://cdn.businessoffashion.com/reports/The\\_State\\_of\\_Fashion\\_2018\\_v2.pdf](https://cdn.businessoffashion.com/reports/The_State_of_Fashion_2018_v2.pdf)
- [28] MINTEL.: 2020. *Britain's thrifty young fashionistas: More than half of 25-34-year-olds buy second-hand clothes*. [online]. [cit. 2023-12-21]. Available at: <https://www.mintel.com/press-centre/britains-thrifty-young-fashionistas-more-than-half-of-25-34-year-olds-buy-second-hand-clothes/>
- [29] MOULDS, J.: 2022. *Child labour in the fashion supply chain*. The Guardian.
- [30] MORRISON, R.: 2022. *Throwaway culture is drowning us in waste*. [online]. [cit. 2024-02-12]. Available at: <https://earth.org/throwaway-culture/>
- [31] NGUYEN, L.: 2022. *Fast Fashion: The danger of sweatshops*. [online]. [cit. 2023-12-18]. Available at: <https://earth.org/sweatshops/>
- [32] OAKUM, L.: 2022. *Nielsen and TikTok collaborate to unlock global marketing insights*. [online]. [cit. 2023-12-23]. Available at: <https://www.nielsen.com/news-center/2022/nielsen-and-tiktok-collaborate-to-unlock-global-marketing-insights/>
- [33] RATH, P. M. et al.: 2014. *The why of the buy: Consumer behavior and fashion marketing*. 2<sup>nd</sup> ed. London: Bloomsbury Publishing.

- [34] ROSULEK, M.: 2023. *Generace Z: internetová generace přináší změny, inovace a spoustu otázek: internetová generace přináší změny, inovace a spoustu otázek.* [online]. [cit. 2023-12-23]. Available at: [https://sitevhrsti.cz/generace-z/#Co\\_zajima\\_generaci\\_Z](https://sitevhrsti.cz/generace-z/#Co_zajima_generaci_Z)
- [35] SANVT.: 2022. *The meaning & history of fast fashion.* [online]. [cit. 2023-12-23]. Available at: <https://sanvt.com/blogs/journal/fast-fashion-explained-meaning-and-history>
- [36] SANVT.: 2020. *The environmental impact of the fast fashion industry.* [online]. [cit. 2023-12-23]. Available at: <https://sanvt.com/blogs/journal/environmental-impact-of-fast-fashion-infographic>
- [37] SCHNEIDER, B., LEE, D.: 2022. *Gen-Z and fashion in the age of realism.* [online]. [cit. 2023-12-18]. Available at: <https://www.businessoffashion.com/reports/retail/gen-z-fashion-in-the-age-of-realism-bof-insights-social-media-report/>
- [38] SEEMILLER, C., GRACE, M.: 2017. *Generation Z stories study.* Routledge.
- [39] SMITH, P.: 2022. *Revenue of the apparel market worldwide from 2014 to 2027.* [online]. [cit. 2023-12-18]. Available at: <https://www.statista.com/forecasts/821415/value-of-the-global-apparel-market>
- [40] STANTON, A.: 2023. *What is fast fashion, anyway?* [online]. [cit. 2023-12-18]. Available at: <https://www.thegoodtrade.com/features/what-is-fast-fashion/>
- [41] STEELE, V. S., MAJOR, J. S.: 2023. *Fashion industry.* [online]. [cit. 2023-12-17]. Available at: <https://www.britannica.com/art/fashion-industry>
- [42] STEM.: 2022. *Při výběru oblečení je pro Čechy nejdůležitější cena, ke spotřebitelské zodpovědnosti se více hlásí mladší generace.* STEM. [online]. [cit. 2023-01-28]. Available at: <https://www.stem.cz/pri-vyberu-obleceni-je-pro-cechy-nejdulezitejsi-cena-ke-spotrebitelske-zodpovednosti-se-vice-hlasi-mladsi-generace>
- [43] THE TRUE COST.: 2015. *Environmental impact.* [online]. [cit. 2023-12-18]. Available at: <https://truecostmovie.com/learn-more/environmental-impact/>
- [44] THOMASOVÁ, D.: 2020. *Vláda módy: cena rychlé módy a budoucnost oblečení.* Brno: Host.
- [45] TIDSWELL, E.: 2023. *Asking the big question: Where do clothing brands manufacture?* [online]. [cit. 2023-12-20]. Available at: <https://goodmakertales.com/where-do-clothing-brands-manufacture/>
- [46] UUBEX.: 2019. *Generation Z: The visual-driven generation.* [online]. [cit. 2024-01-28]. Available at: <https://uubex.com/generation-z-the-visual-driven-generation/>
- [47] WILLIAMS, A.: 2015. *Move over, millennials, here comes generation Z.* The New York Times. [online]. [cit. 2024-01-28]. Available at: <https://www.nytimes.com/2015/09/20/fashion/move-over-millennials-here-comes-generation-z.html>
- [48] WILSON, M.: 2021. *Who's in, who's out: Shifting buying habits of gen Z.* [online]. [cit. 2024-02-12]. Available at: <https://chainstoreage.com/whos-whos-out-shifting-buying-habits-gen-z>

## Fast fashion influence on the purchasing decisions of Generation Z customer behaviour

### ABSTRACT

The aim of the research article is to find out the influence of fast fashion chains on Generation Z's fashion purchasing decisions and analyse the fashion consumption behaviour of this generation. Based on the research of expert sources and practical approaches of fast fashion brands, trends of purchasing decisions and Generation Z consumer behaviour, a qualitative and quantitative analysis of consumers buying fashion products will be conducted. Fashion industry and its very powerful development, including fashion marketing and consumer behaviour and Gen Z who is constantly under the pressure buying new clothes is leading to acceleration of this business and natural disasters around the world, especially in the continent of Asia. →



*Equally important are aspects focusing on attitudes towards fashion in general, fashion sustainability and analyses the preferred brands of these consumers. These topics are formulated into research questions. By answering the research questions, the paper will provide insights for fast and slow fashion brands and help them to improve the sustainability of their product development in area of sustainability and communication with the customers of Gen Z.*

**KEYWORDS**

*Fashion marketing; Fast fashion; Generation Z; Consumer; Purchasing decisions; Sustainability*

**JEL CLASSIFICATION**

*M31; M37; D47; D91*



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

# European Forum of Entrepreneurship 2024

“Entrepreneurship, education  
and society development in the context  
of technological changes”

ISBN 978-80-87325-72-8

Publisher: NEWTON College, a. s.,  
Politických vězňů 10, 110 00 Praha 1, Czech Republic

Published on July 2024.

© NEWTON College, a. s.

[www.efp.cz](http://www.efp.cz)



Proceedings of the 17<sup>th</sup> International Scientific Conference;

# European Forum of Entrepreneurship 2024

