



Department of Economic
and Managerial Studies

KNOWCON 2023

Knowledge on Economics and Management

Conference Proceedings

Michal Müller, Pavla Slavíčková (eds.)

Palacký University Olomouc
Olomouc 2023



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Impact of Reduced Value Added Tax Rate on Cultural services as a Tool of Indirect Public Funding in the Creative Industries

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Abstract: The article focuses on the potential impact of a reduced value added tax (VAT) rate on cultural services as a cultural policy goal to increase attendance on cultural events and to increase employment rate in the field of Creative industries. In order to understand this complex relationship, the paper examines the contributions of public management and the economy, to determine the potential outcomes of the following assumptions: (1) a reduced VAT rate will result in lower prices for consumers, (2) lower prices of cultural services will stimulate demand for cultural events, and (3) higher consumption of cultural services will lead to a higher income for artists. Indirect funding methods can often be more effective than direct subsidies. However, indirect tools, such as a VAT reduction, may not always be the most straightforward approach towards achieving cultural policy targets. Although a VAT reduction has great potential as an indirect funding tool, it requires a thorough ex-ante assessment and mid-term evaluation to ensure its effectiveness and consequences in the cultural policy.

Keywords: Creative industries, Public Funding, Taxation, Value added tax

JEL classification: H20, H50, Z18

Grant affiliation: The presented research paper is the output of the scientific grant VEGA n. 1/0582/22 "Dimensions of cross-sectoral entrepreneurship of cultural and creative industry actors in the context of sustainable development" (100 %).

1. Introduction

Value Added Tax (VAT) is an indirect consumption tax imposed on goods and services. In recent years, many countries have implemented reduced VAT rates on cultural services as a means to promote access to and support the cultural sector. This literature review aims to explore the effects and implications of reduced VAT rates on cultural services, examining various studies and scholarly articles to gain insights into the impact of such policies. By analyzing the existing literature, this review seeks to provide an overview of the key findings, identify knowledge gaps, and offer recommendations for future research and policy considerations.

Several studies have investigated the economic impact of reduced VAT rates on cultural services. For example, a study by García-Enríquez and Echevarría (2018) found that lowering VAT rates on cultural goods and services leads to increased demand, resulting in higher revenues for cultural businesses and overall economic growth. Similarly, research by Benzarti and Carloni (2019) revealed that reduced VAT rates can stimulate cultural consumption, leading to positive effects on employment and income generation within the cultural sector. Reduced VAT rates have been shown to enhance accessibility and audience engagement in the cultural sector. A study by Borowiecki and Navarrete (2018)

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demonstrated that lower taxes on cultural services can make cultural activities more affordable for a wider range of individuals, thereby increasing cultural participation. Moreover, research conducted by Ateca-Amestoy et al. (2020) suggested that reduced VAT rates positively impact the willingness of individuals to attend cultural events, leading to greater cultural diversity and social cohesion.

One significant benefit of reduced VAT rates on cultural services is the potential for preserving and promoting cultural heritage. Study by Gómez-Antonio et al. (2022) highlights that lower VAT rates encourage investment in the preservation of historical sites, museums, and cultural landmarks. Such policies can contribute to the conservation of cultural heritage and foster cultural tourism, consequently boosting local economies.

While reduced VAT rates on cultural services present numerous advantages, there are also challenges and limitations to consider. For instance, some researchers argue that such policies can result in revenue losses for governments, potentially impacting public budgets and other sectors (Baum, 1991; Atkinson and Stiglitz, 1972; Asllani and Statovci, 2018). Furthermore, defining cultural services eligible for reduced VAT rates can be a complex task, as the boundaries of cultural activities are often blurred. Balancing the economic benefits with the need for fair and transparent policies poses a continuous challenge for policymakers.

The impact of VAT rate reduction on VAT collection can vary depending on various factors (Oliver et al., 2022; Liu et al., 2022), including the specific context of the country and its economic conditions. While it is possible that a VAT rate reduction could have positive effects on VAT collection, it is not a guarantee, and the actual outcome may be influenced by multiple factors:

1. Price elasticity: A reduction in VAT rates can lead to lower prices for goods and services, which, in turn, may increase demand and consumption. If the demand is price-sensitive (elastic), the lower prices could stimulate economic activity, potentially leading to increased sales and, consequently, higher VAT collection.
2. Compliance behaviour: Lower VAT rates may reduce the incentive for businesses and individuals to engage in tax evasion or avoidance. When VAT rates are high, there is a greater temptation for taxpayers to underreport sales or engage in other illicit practices. By reducing rates, the motivation for non-compliance may be reduced, which could positively impact VAT collection.
3. Tax base and exemptions: It is important to consider the overall structure of the tax system. A reduction in VAT rates should ideally be accompanied by a careful evaluation of the tax base and exemptions. Narrowing exemptions and broadening the tax base can help offset the revenue loss from lower rates and contribute to improved VAT collection.
4. Administrative capacity: Effective tax administration and enforcement play a crucial role in VAT collection. Even with lower rates, if tax authorities lack the necessary resources, technology, or expertise to enforce compliance effectively, the impact on VAT collection may be limited.

Slovakia recorded a historic success in the evaluation of VAT collection for 2021. According to the evaluation by the European Commission, the VAT gap was reduced to 12.1% in 2021, which is the best result since 2000 (see Figure 1). The VAT rate in Slovakia in general is at the level of 20%. The reduced 10% VAT rate is charged, for example, on the sale of books, selected foods, selected medical devices, accommodation services, and goods and services within the social economy.

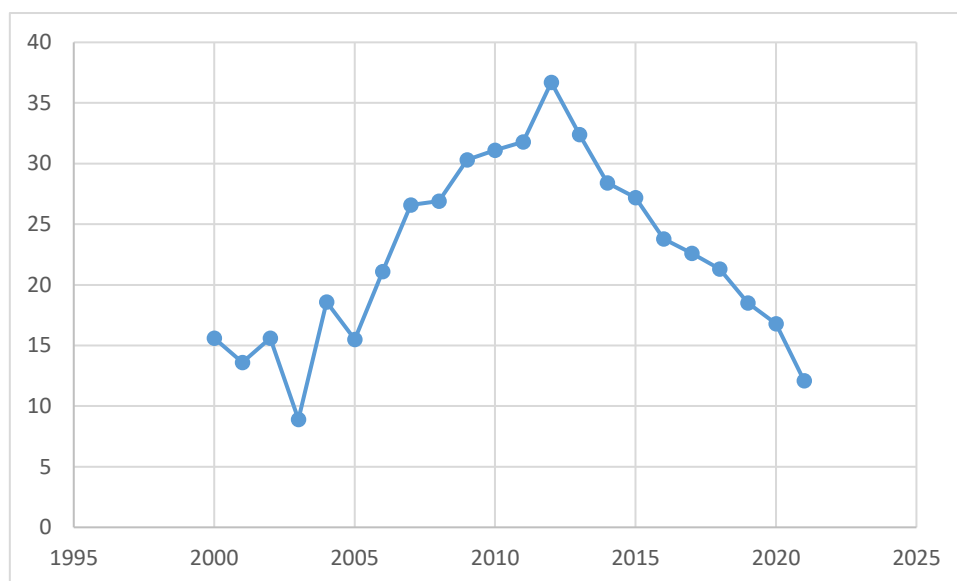


Figure 1: VAT Gap

2. Methods

The research objective of this study is to examine the effectiveness of reducing Value Added Tax (VAT) rate aligned with cultural policy objectives, specifically focusing on increasing attendance at cultural events. However, due to the intricate nature of this relationship and the influence of various economic, social, and cultural factors on attendance, verifying or disproving the hypothesis regarding the positive impact of a preferential VAT rate on attendance poses significant challenges. To address this, the study employs a three-step analysis, which allows for the examination of partial assumptions separately. This analytical approach aims to integrate existing research findings and identify key issues in the field under investigation. The study ultimately aims to create a comprehensive understanding of the three-way correlation encompassing the following elements:

1. Reduced VAT rate will result in lower prices for consumers.
2. Lower prices of cultural services will stimulate demand for cultural events.
3. Higher consumption of cultural services will lead to a higher employment of artists.

To forecast the development of the value added made by Cultural and Creative industries and the employment in the Cultural and Creative industries. Many researchers have proposed methods to identify the order of an ARIMA model (Xue and Hua, 2016; Snyder et al., 2001; Maravall et al., 2016; Guerrero, 1989). For seasonal data we can consider ARIMA (p, d, q) (P, D, Q) m where m is the seasonal frequency.

In order to guide this paper, the following research questions are formulated:

Q1: Will the implementation of a reduced VAT rate result in an increase of the value added made by the Cultural and Creative industries?

Q2: Do the value added effectively stimulate the employment in the Cultural and Creative industries?

By addressing these research questions, this paper aims to contribute to the understanding of the intricate relationship between a reduced VAT rate and its impact on Value added and Employment in the Creative and Cultural Industries.

We have analysed the data obtained from the Eurostat database and the database of the Statistical Office of the Slovak republic.

3. Results and Discussion

In this chapter, the results of the forecasts related to value added and employment provided by Cultural and Creative industries are published.

Table 1: Model coefficients for Value added forecasts

Model coefficients			Model fit	
	Estimate	SE	Fit Measures	Value
ma1	-0.31	0.18	LL	-782.05
sar1	-0.45	0.17	AIC	1570.10
			AICc	1570.83
			BIC	1574.94

Note. LL=Log Likelihood.

Figure 2 and 3 show the positive forecasted development of value added as well as the number of persons employed in the cultural and creative industries (Eurostat, 2023; Statistical Office of the Slovak republic, 2023). In terms of quantities, we find a positive response of the employment and value added. It means that the reduction of the tax rate will result in the higher value added of the Cultural and Creative industries as well as the higher employment in the Cultural and Creative industries.

The benefits of individual cultural participation extend beyond the personal level and have a positive impact on communities. Cultural engagement fosters the development of better societies by promoting social cohesion and increased participation in civic life. Additionally, the cultural sector plays a vital role in local and regional development by boosting tourism and revitalizing communities. Recognizing the advantages of cultural goods and services, the public sector supports policies that facilitate their consumption. Governments provide support for arts and culture through two primary channels. Firstly, they offer direct financing in the form of grants and subsidies to organizations, sometimes accompanied by consumer vouchers. Secondly, they utilize tax policies as indirect subsidies. Common examples of tax policies include tax deductions for private supporters of arts and culture and reduced VAT rates for cultural goods and services.

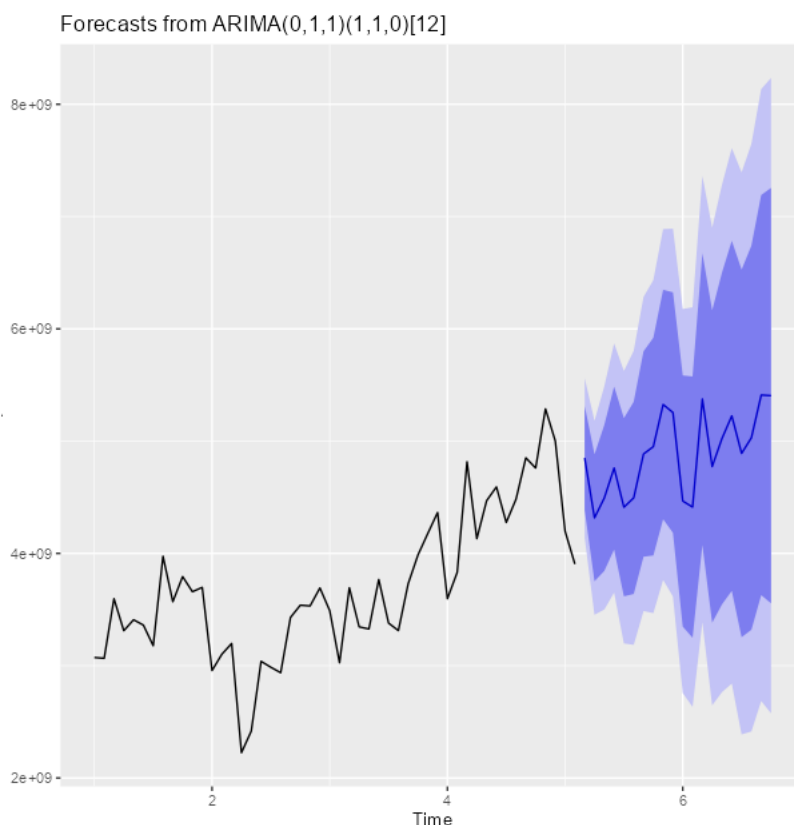


Figure 2: Forecast of Value added (Cultural and Creative Industries) – 24 months

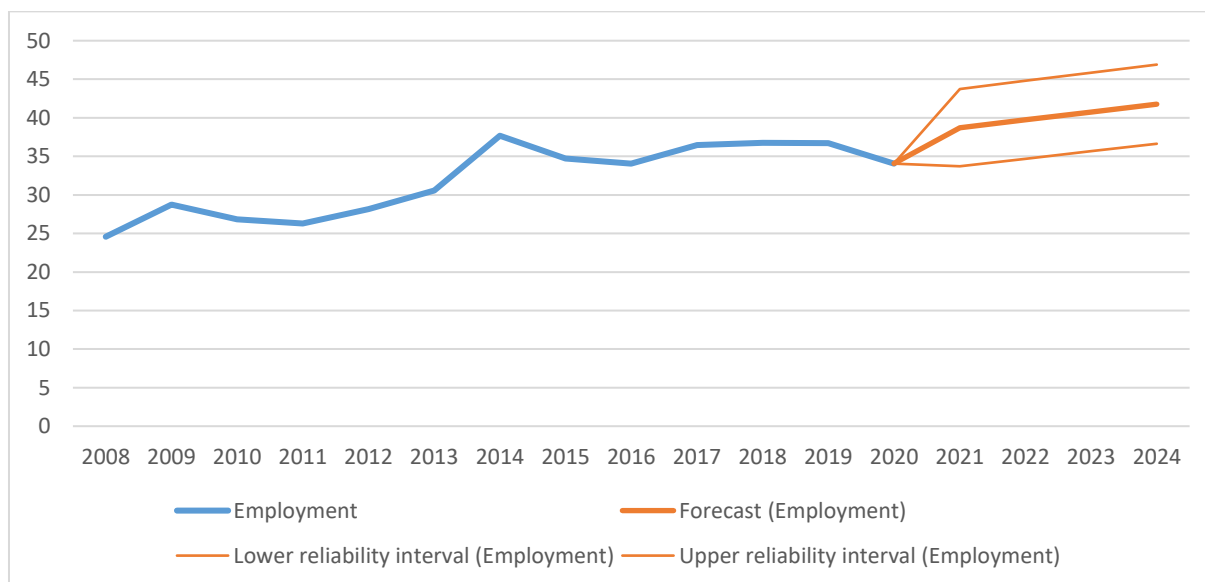


Figure 3: Forecast of Employed persons in thousands (Cultural and Creative Industries) – 48 months

There is no consensus on the ideal fiscal policy tool, as it depends on the government's objectives. Moreover, the economic effects of these policies are not equivalent. Direct subsidies reflect the government's preference for which artistic endeavors should be supported, while consumer vouchers more strongly reflect the population's preferences for cultural services.

4. Conclusion

Reduced VAT rates on cultural services have emerged as a policy tool to stimulate cultural consumption, enhance accessibility, and support the preservation of cultural heritage. The literature review demonstrates the positive outcomes of such policies, including economic growth, increased participation, and cultural preservation. However, challenges related to revenue losses and defining eligible services remain. Future research should address these gaps to inform evidence-based policymaking and ensure the sustainability and effectiveness of reduced VAT rates on cultural services. By doing so, governments can continue to promote cultural activities, support the cultural sector, and foster the broader societal benefits associated with vibrant cultural communities.

These results have considerable implications for both policy makers and policy analysts who understand that culture contributes transversally to many of the UN Sustainable Development Goals including those on inclusive societies and reduced inequalities. While the results tend to validate the implementation of reduced VAT rates for cultural services as contributing to social inclusion through higher attendance, they caution against the straightforward assumption that the benefits of reduced rates are fully passed on to the poorer households (because of lower prices). At the same time, practical application of the results presented here will need to consider a sustainable feature of any indirect funding in general. This kind of financing has a sustainable effect on trans-sectoral activation of all entities on the market to achieve diversified cultural goals.

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Dimensions of Agility and Status Quo

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Abstract: In order to survive, contemporary enterprises must respond to ongoing changes and manage people in a quick, consistent manner. Corporate agility, being characterized by agile values, technologies, structures, agile cooperation within the enterprise, management of change, and human resources who can provide timely solutions, offers a way how the ubiquitous uncertainty should be dealt with. The objective of this pilot study into agility is to analyze its individual dimensions, and search for overlaps between its implementation and the existence of status quo (SQ) bias. To evaluate the research, conducted on a sample of 397 Slovak enterprises, we used the method of descriptive statistics. The results proved that SQ bias plays a significant, although negative, role in implementing agility into decision-making processes. In conclusion, we suggest ways to eliminate the effect of SQ in an enterprise, proposing steps it can take in order not to be limited by its influence. By doing so, enterprises may implement the genuine principles of agility more effectively in business practice.

Keywords: agility, status quo, enterprise, bias, risk-based thinking

JEL classification: D01, D91, M10

Grant affiliation: supported by the VEGA grant No. 1/0642/22 "Risk-based thinking: Creating Opportunities for SMEs by means of Strategic Agility" of the Scientific grant agency VEGA

1. Introduction

In the face of unprecedented technological advancements, which come hand in hand with constantly shifting customer preferences, enterprises are confronted with an increasing wave of challenges, and are forced to respond swiftly to any changes and uncertainties they are facing. This necessitates the cultivation of agility, a concept encompassing various dimensions that enable enterprises to navigate uncertain situations and seize new opportunities. The ability to adapt rapidly and effectively has thus emerged as an absolutely critical determinant of success. As the title of our paper proposes, the concept of agility exists in tension with the status quo, representing the existing and unchanging state, processes, and routines of an enterprise. Understanding the relation between agility and the status quo is essential for explaining and making propositions regarding the adaptation dynamics.

Strategic agility (hereafter referred to as SA), a concept that is rooted in the ability to anticipate, initiate, and respond to change, has gained attention as a means to navigate uncertain situations in the market, and capitalize on emerging opportunities. It is, however, a fact that even though change is deemed essential, enterprises also tend to rely on established routines, processes, and structures

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that embody status quo. The status quo represents the stable and familiar patterns that provide a sense of existing order, i.e. efficiency based on stability.

This paper attempts to delve into the dimensions of agility as defined by Wendler (2014), and the status quo as a bias present in the context of an enterprise. By exploring the nature of agility and the challenges the status quo may be posing in this regard, we aim to suggest the relationship between the two constructs. This is explored within the individual dimensions: agility prerequisites (values and technologies), agility or people (workforce and management of change), and the structures enhancing agility (collaboration, and flexible structures). The research attempted an insight into perception of agility in Slovak enterprises as viewed by their managers, this being done via a questionnaire constructed in line with the defined agility dimensions. For the purposes of this paper, we are analyzing the selected items of the questionnaire that are specifically targeting the status quo bias, to unravel the mechanisms by which agility can be challenged by its presence.

2. Theoretical background

Agile approach to managing enterprises in such rapidly changing environment as we are currently experiencing leads to enterprise growth, including development of its corporate values, structures, and relationships. Any disengagement and stagnation within an enterprise may, however, undermine its dynamics and have a negative impact on outcomes. This is, of course, associated with the potential emergence of new risks related to technological advances and skills, as well as possible communication discrepancies related to culture or psychology-based barriers, i.e. cognitive and behavioral biases that represent a great portion of such limitations. With that said, the concept of strategic agility, being defined as ability to improve performance, not just survive but thrive, amid disruption (Wade, Joshi, Teracino, 2021), appears to be an appropriate way enabling enterprises to recognize the importance of being proactive and responsive to change. By embracing agility, enterprises can thrive in competitive environments, leverage emerging technologies and approaches to their advantage, and effectively navigate the novel business landscape.

On the other hand, the status quo (SQ), by its nature, represents the existing state or current way of doing things within an enterprise (Kubinska, et al.). While maintaining stability and continuity can undoubtedly be valuable, it can also become a barrier to implementing agility. SQ often involves established processes, hierarchies, and cultural norms that resist change and innovation. When an enterprise becomes too complacent with SQ, it may become resistant to embracing change or exploring alternative approaches. This resistance can hinder the ability of an enterprise to respond effectively to emerging opportunities and challenges, thus impeding its agility. Overcoming the status quo requires a shift in mindset, a willingness to challenge the established norms, and a recognition that adopting agile practices can lead to increased competitiveness and improved performance.

2.1. Strategic agility principles

Strategic agility refers to an organization's capacity to swiftly and effectively respond to changes in its external environment while maintaining a clear sense of purpose and direction. It is crucial for organizations operating in dynamic and uncertain environments, as it allows them to seize opportunities, mitigate risks, and maintain a competitive advantage. As stated by Weber and Tarba (2014), SA must not be understood as a simple rearrangement of old products, practices, and processes as it requires inventing new business models and implementing innovative approaches, as most importantly, acceptance of change.

It is essential to point out that strategic agility in an enterprise goes beyond mere operational flexibility or quick decision-making. Hence agile does not equal fast. Agility involves a holistic and forward-thinking approach that enables an enterprise to anticipate and interpret changes, and swiftly adjust its strategies, structures, processes, and mindsets accordingly. Doz and Kosonen (2010) proposed a framework within which strategic agility models could be highly functioning, which is based on three main meta-capabilities: strategic sensitivity, leadership unity, and resource fluidity. This framework has many overlaps with the model we have chosen to apply in our research into acceptance of agility in Slovak enterprises. Defined by Wendler (2014), the model encompasses three dimensions: agility prerequisites, agility of people, and structures enhancing agility. These are further broken down into six subdimensions enabling a more detailed exploration of the matter.

2.2. Status quo as a potential barrier to strategic agility

The status quo bias, or ‘when in doubt, do nothing’ bias (Fleming, Thomas, Dolan, 2010), which we attempted to observe in Slovak enterprises with regard to their agility, refers to the tendency of people to prefer the current state of affairs over any alternative, even if that alternative might be more beneficial or preferable. Having been coined by Samuelson and Zeckhauser (1988), SQ in business context may be interpreted as a reluctance of an enterprise to change or take risks, which can be attributed to a variety of factors, such as fear of the unknown, a desire for consistency, or even a general aversion to uncertainty. For an enterprise, it is essential to be aware of SQ in order to make informed decisions and avoid being held back by the comfort of familiarity. By challenging the status quo, e.g. by proactive behavior and considering new possibilities, which are characteristic of agile approaches, an enterprise can open up to growth and positive change (Ohly, Fritz, 2007).

Having said the above, we can posit that SQ and agility are on the opposing sides as to the approach to challenges that lead to change and innovation acceptance. By dwelling on SQ, an enterprise may be facing several issues, including missing the new and better opportunities, imbalances within its management, processes and structures, stagnation and the risk of becoming obsolete, as well as poor decision-making that results from not giving enough thought to alternative options. Recognizing the bias and being open to novelties that involve risk may paradoxically help an enterprise avoid this risk and lead to positive change rather than remain in the existing conditions. For this to happen, as stated by Holbeche (2019), new approaches to leadership and change management are pivotal.

The concepts of status quo and agility in business are often seen as contrasting or conflicting with each other, SQ representing the existing state, processes, and routines within an enterprise, embodying stability, familiarity, and adherence to established practices, and, on the other hand, SA referring to an enterprise’s ability to adapt, respond, and thrive in a dynamic and rapidly changing environment, involving being proactive, flexible, and open to innovation, anticipating and seizing opportunities, and adjusting strategies and processes accordingly. These are the primary contrasts that have led us to identifying relations between the two constructs within our research presented in the next chapter.

3. Research Methodology

To achieve the scientific objective of the study, a detailed examination of SA in Slovak enterprises was required. In order to obtain relevant information, we used secondary sources dealing with SA in Slovak and foreign business environments, while the focus was on statistics in the field of agility. Based on secondary sources, we determine that there has not yet been a uniformly comprehensive study

conducted in the conditions of the Slovak Republic that focuses on the analysis of agility dimensions in enterprises, or one that relates SA to psychological barriers, in our case represented by status quo.

Primary sources of information were obtained from empirical research, conducted in Slovak enterprises of all types, sizes, and fields of business. We chose to apply a questioning method, specifically the form of online questionnaire. This enabled us to gather information about the state of development of SA in businesses, which along with its relation to SQ was the object of our study. The subject was enterprises operating in the territory of Slovakia. For the purposes of this paper, we focus on analyzing those parts of the questionnaire, i.e. the selected questions, which are specifically targeting the SQ concept, seeking the most relevant dependencies. Concluding the research analysis, we then ponder threats of maintaining SQ in Slovak enterprises and the consequences of potentially biased restraint on implementing agility into corporate environment

The questionnaire we have administered consisted of 35 closed-ended questions. This type was chosen for its clarity, unambiguousness, and time efficiency. Each question described two distinct approaches that may occur in the enterprise, one focusing on the agile approach (A1) and the other on the non-agile approach (A2). Respondents indicated whether: 1. only A1 occurs in the enterprise (which would mean the enterprise is agile), 2. A1 prevails over A2, 3. A2 prevails over A1, and 4. only A2 occurs in the enterprise (the enterprise appears to be non-agile). The structure adhered to the division of agility dimensions and subdimensions as determined by Wendler (2014). Since for the purposes of this paper, we have only selected the responses to questions that were relevant to the influence of SQ on agility within each of the defined subdimensions, the further analysis relates to these specific areas, and does not address the questionnaire as a whole. However, the representativeness of the sample, which has been achieved in our research, is provided to the reader.

4. Research Analysis and Discussion

The used questionnaire was distributed to enterprises in Slovakia via contacts obtained from the Finstat database. The internal consistency of the questionnaire was verified using Cronbach's alpha coefficient (α), indicating that the minimum number of respondents (Slovak enterprises) in the sample should be at least 385. This goal was achieved as our sample involved 392 small (98.74 %), 4 medium-sized (1.01 %), and 1 large enterprise (0.25 %). In terms of industry structure, the research included 12 companies from the tourism sector (3.02 %), 16 companies from the transportation and storage sector (4.03 %), 57 companies from the trade and catering services sector (14.36 %), 14 companies from the agriculture, forestry, and fishing sector (3.53 %), 49 industrial companies (12.34 %), 162 service companies (40.81 %), 72 companies from the construction sector (18.14 %), and 15 companies from the information and communication sector (3.78 %). The representativeness of the sample was verified based on the company size and its industry, using the Chi-square test of goodness of fit. The results indicate that our sample is representative in both characteristics, as the p-value ($p\text{-value}_{\text{size}} = 0.936$, $p\text{-value}_{\text{industry}} = 1$) is higher than the chosen significance level ($\alpha = 0.05$). In evaluating the selected questions, we use a simple method of descriptive statistics – mode, mean, and frequency. The mode represents the value of a quantitative variable in a statistical dataset that has the highest relative frequency, thus occurring most frequently, while our reasoning is as follows: if the modal value is 1, it indicates that the enterprise is highly agile. If it oscillates around 2, it inclines towards agility, while value 3 signifies progression away from agility. The modal value of 4 means that the given enterprise is non-agile. Regarding our selection of questions that target SQ, values 3 and 4 are on the status quo

side of the spectrum, meaning that the enterprise prefers the established ways of doing things and does not opt for change.

In line with the scientific objective of our research and for the purposes of this paper, we have formulated the following hypothesis, where we assume that: H1: *there is a direct relationship between management's support of innovation by training and coaching employees, and the employee's ability and willingness to seek new solutions that improve the processes and activities of the enterprise*. The formulated hypothesis was tested by the Spearman correlation coefficient test.

Within the agility prerequisites, the question observing SA vs SQ in the value subdimension regarded change as innovation and their perception as a corporate value. The agile side, represented by number 1 on the scale, suggested support of innovation and experimenting, while the SQ side, represented by number 4 proposed experience and proven standard to be most important in the enterprise. Both mean (2.6) and median (3) values indicate inclination towards SQ, which can be interpreted as being rather closed towards novel approaches and accepting change by Slovak enterprises, or even as a tendency to focus on values that promote stability and proven practices. The technology subdimension addressed the regularity and flexibility of updating information systems and technologies in the enterprise, producing the mean value of 2.28 and the mode of 2. This indicates tendency towards SA, thus making technology the most agile subdimension. We would not have expected the opposite trend in technological advancement, considering the contemporary development in this field that is affecting all areas of life, business including. A slightly agile tendency (mean of 2.47, mode 2) was proved in the workforce subdimension, leading to a conclusion that Slovak enterprises do employ workforce with agile tendencies, mainly as to their willingness and capability to seek and try new approaches to improve processes and tasks, as formulated in the question. This, however appears not to be the priority of the management where the management of change achieved the mean value of 2.74, and the mode of 3. We conclude that rather than openly supporting creativity and innovative ideas among employees, management of Slovak enterprises adheres to fulfilment of tasks as being planned ahead. As to the last two subdimensions, the values obtained in both incline towards the status quo presence, that being in communication (mean 2.88, mode 3) and structures (mean 2.59, mode 3), which – based on the responses to the questions may be interpreted as unwillingness to let employees participate in strategic decision-making or to make changes to the already existing plans in strategy of an enterprise. Figure 1 provides a simplified graphic interpretation of our findings as summed up from our respondents' sample.

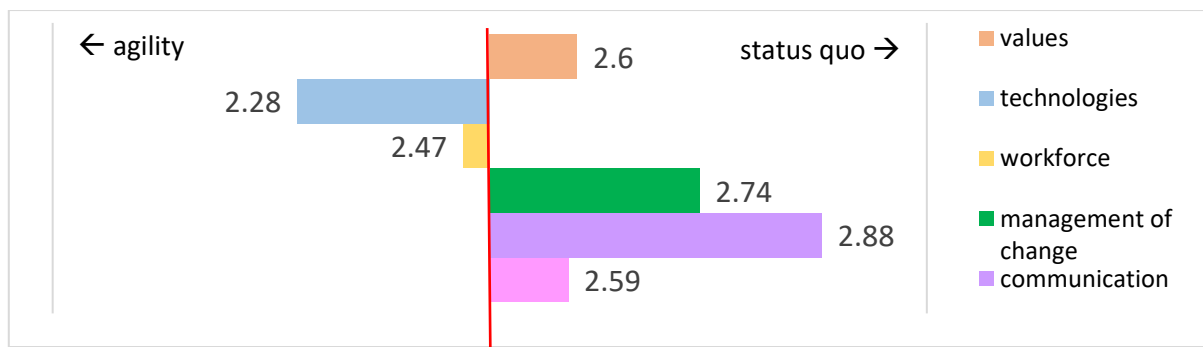


Figure 1: Agility vs status quo within six subdimensions

As seen in Figure 1, it is apparent in which subdimensions Slovak enterprises are leaning towards agile principles (left side), and where they have tendencies to give in to the unconscious influence of the status quo bias (right side), as analysed above. Of the six subdimensions, those that appear to be problematic in achieving agility by maintaining to the 'good old practices of doing things' are communication/collaboration and management of change, while enterprises are leaning towards SQ in determining corporate values, as well as in structuring their hierarchies in ways that do not enable agility at big scale. There are interesting inferences that can be made from this, while for this paper, we have selected to hypothesize about the existence of a direct relationship between management's support of innovation by training and coaching employees towards agility principles, and the employees' ability and willingness to seek new solutions. Leaning towards the opposing poles of the agility scale (management of change clearly towards SQ, workforce slightly towards SA), we assume the existing dependence between both parameters may have significance in tackling potential barriers represented by SQ. Should there be a link between the approach of management towards new challenges and the will of employees to act accordingly, and vice versa, we presume that through proper leadership and suitable management of workforce, as well as with help of appropriate motivation among employees, an enterprise may achieve more agility, and thus adaptability, swiftness, and ability to tackle the new and unknown more easily. Spearman correlation coefficient test has confirmed medium direct dependence between the two variables ($r_s=0.408$), which enables us to formulate a recommendation that management of Slovak enterprises be more open to supporting employees and leading them through training and coaching. This not only provides employees with guidance, but – as obvious from the slight inclination of the workforce towards agility (mean 2.47) under not-so-agile management of change (mean 2.74) suggests already existing independence and willingness of employees to solve situations promptly and flexibly. Implementing additional measures, e.g. creating innovative and self-managed teams and/or structures (Wendler, 2014; Xing, 2020), or advocating and promoting policy of trust as proposed by Reuss (2018), and Nyamrunda and Freeman (2021), will enable flourishing of strategic agility in working environment. To conclude the analysis, it must be pointed out that should the above suggested potential of the enterprise's workforce not be utilized, the management as such may thus function as a barrier to implementing the agility principles. This then leads to an enterprise retaining its original status quo, which, although based on time-proven and stable values and principles, represents an obstacle to adopting agile principles by the given enterprise.

5. Conclusion

In conclusion, the presence of a strong link between management's approach to new challenges and the employees' willingness to act accordingly suggests that effective leadership, proper workforce management, and employee motivation play a very important role in fostering agility within an enterprise. Moreover, as supported by other researchers and their findings, implementing additional measures, such as creating self-managed teams, promoting a policy of trust, and utilizing the innovative potential of the workforce itself, enterprises can cultivate strategic agility in the working environment. However, if this potential is not taken advantage of, management that leans too much towards status quo values can become an obstacle to implementing agility principles. Proposing that further research must be carried out regarding agility principles and potential barriers to its implementation, such as untrusting environment, large hierarchy represented by high power distance, and/or inability to tackle risk because of adherence to uncertainty avoidance principles, we deem important that fostering a culture of agility in enterprises helps them adapt to new challenges

effectively, and that is an absolutely crucial skill enabling or disabling the enterprise's existence in the contemporary technology and challenge-driven business environment.

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Digital transformation of business processes during the coronacrisis

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Abstract: Digital transformation, which was already strategically important, became even more important during the COVID-19 pandemic. The pandemic has accelerated the rise of digital skills, but key groups of workers have not progressed and have not had the same opportunities for upskilling. By switching to a home office, companies changed the style of work, increased the requirements for employees' skills in the field of ICT. ICT have played a significant role in this period, business management has had to ensure that businesses can operate remotely and flexibly, and that employees are confident that they can do this despite minimizing f2f contact. The article identifies the problems encountered by companies in the transition to the home office, the modification of corporate culture due to the pandemic. It points to increasing the specific requirements of information literacy. The article presents the partial results of research carried out among 557 respondents, of companies at the level of operative, tactical and top management. By using a wide statistical apparatus, it provides relevant results and verifies the hypothesis. The results show that, considering the factors, investment in the right technologies is crucial. The focus should be on ensuring that normal business processes can still function effectively despite more workers working partially or fully remotely. Digitization is an important part of preparing for remote work, as teams cannot simply collaborate on physically.

Keywords: ICT, skills, information literacy, management, digital transformation, coronacrisis, COVID-19

JEL classification: M10, M15, M19

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1. Introduction

The COVID-19 pandemic coronavirus spurred the pace of digitisation and digital transformation of businesses. Global spread of the coronavirus infection and deployment of stringent preventive and epidemiological measures, led in many cases to business processes disruption and subsequent paralysis of not only manufacturing enterprises. Enterprises in this period have space to re-evaluate their priorities, but more and more the question of optimising business processes, streamlining production, increasing the efficiency of production processes and the performance of equipment, as well as reducing operating costs is being raised.

Digital transformation, which had already been strategically relevant, became much more important during the coronavirus pandemic. The coronavirus pandemic accelerated digital skills upgrades, but key groups of workers were not progressing and did not have the same opportunities for upskilling. Businesses transitioning to the home office were changing their working styles, increasing the ICT skills requirements of employees. In particular, the need to use certain electronic services became a key factor in improving of ICT during the pandemic. ICT played a significant role during this period; business management had to ensure condition for business to operate remotely and flexibly and for employees to be confident to work despite minimising face-to-face contact with colleagues and clients.

The aim of research presented in this article is to identify the salience of barriers perceived by companies associated with digital transformation of business processes during the coronacrisis. At the same time, to highlight the impact of information strategy implementation in perception of these barriers.

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2. Theoretical background

It is clear from several surveys that these business requirements can be met through digitisation and integration of innovative technologies. Digital transformation (Verhoef et al., 2021) is characterized by the fusion of advanced technologies and the integration of physical and digital systems. Innovative business models, new production processes, and the creation of knowledge-based products and services prevail. In the context of reduction in production outputs, collaboration and interconnection of workforce, production and supply facilities are expected after returning of "usual business." This interaction is a key area in scaling up and down manufacturing as well as other business processes. Digital transformation strategies include integration of innovative technologies and deployment of intelligent algorithms for data analytics. The integration of new technologies and digitalisation of business processes have become one of top priorities for businesses in recent years. The integration of new technologies itself brings a number of benefits, but also risks. Digital transformation and implementation of innovative technologies is closely related to the revision of internal and external processes, without which it is not possible to implement these technologies or to digitise processes.

Thoughtless digitisation of business processes could just have the opposite effect on production, business operations and the company's bottom line. Although digitization is not a new phenomenon, the challenges and opportunities that are associated are constantly changing (Almeida, Santos & Monteiro, 2020). Before the emergence of COVID-19, the challenges posed to digital transformation were essentially focused on the fourth industrial revolution, associated with the concepts of Industry 4.0, Internet of Things (IoT), and Web 4.0 (Almeida, 2017; Fonseca, 2018; Pflaum and Gölzer, 2018).

From our point of view, desired digitisation can be seen from two perspectives: technological and integrative. The technological perspective represents technologies that cause intelligent automation initiatives and the integration perspective represents forms of integration in terms of functional areas and stakeholders.

Significant technologies, hardware and software enablers of digitalisation leading to digital transformation include: sensors, sensing devices, network resources, technical infrastructure, application programs. These tools and their integration enabled the emergence of new platforms, domains, subdomains, models such as Cyber-Physical Systems (CPS) (Baheti and Gill, 2011; Herčák and Štefánik, 2015; Vogel-Heuser et al., 2015) Internet of Things (IoT) (Weber, 2010; Chandrakanth et al., 2014), Internet of services, Big Data (Ohlhorst, 2012; Dumbill, 2012; Hurwitz et al., 2013), Cloud computing, Product Lifecycle Management Systems, Digital Manufacturing (Westkämper, 2007; Chryssolouris et al., 2009; Chen et al., 2015), Digital Twin and many others. The implementation of cyber-physical systems entails high initial investment costs for deployment and for subsequent maintenance too. However, due to diversification and digitalisation of each sector and industry, these costs are gradually decreasing (Kim and Park, 2017).

The crisis caused by COVID-19 modified significantly plans of businesses of all types and sectors. If digitalisation is not among their priorities, businesses will have to rethink their strategic plans if they want to continue operating after the crisis. Businesses also had to put an emphasis on automation. After the end of crisis or easing of measures, it is possible to observe a similar 'boom' trend in automation as we are seeing in digitisation. The focus is now shifting to digital transformation.

In the process of digitalization, digital transformation (Ebert & Duarte, 2018) of business processes, information technology management and information systems, the information strategy of enterprise plays an important role, which has to be aligned with the corporate strategy. Corporate Information Strategy and Management (Applegate, Austin & McFarlan, 2006). examines how information technology (IT) enables organizations to conduct business in radically different and more effective ways. In the process of digitalization, digital transformation (Ebert & Duarte, 2018) of business processes, information technology management and information systems, the information strategy of the enterprise plays an important role, which must be aligned with the corporate strategy. Corporate Information Strategy and Management (Applegate, Austin & McFarlan, 2006) examines how

information technology (IT) enables organizations to conduct business in radically different and more effective ways.

3. Methodology

The research was conducted in two phases: In the first phase we identified the variables/barriers of problems that occurred in enterprises during the digitization of business processes in the pandemic period. This phase was based on the analysis of the theoretical background by structured and semi-structured interviews with managers of selected enterprises who collaborate in the research of the Department of Information Management.

The second phase of research was conducted by random sampling. A questionnaire survey was a research instrument. The significance of each barrier was measured using a Likert scale (0 - insignificant, 10 - most significant). Barriers to digital transformation of business processes associated with transition to home office during the pandemic period are presented in Table 1.

The research sample consisted of enterprises in the Slovak Republic, 557 respondents, percentage representation of enterprises corresponded proportionally to the % representation of enterprises in industries in the national economy. At the same time, enterprises were segmented according to their activity: 71% of enterprises had non-manufacturing activities and 29% of enterprises had manufacturing activities.

Table 1: Barriers to digital transformation of business processes

Variable - Barrier	
B01	Identified insufficient digital literacy of employees
B02	The employer had to purchase technical equipment for employees to work from home
B03	The employer had to purchase software for employees to work from home
B04	The employer had to purchase licenses to expand the software for employees
B05	Training of employees in the field of ICT
B06	Adaptation of business processes to work from home
B07	Adjustment of working hours
B08	Adjustment of employee compensation
B09	Employees had technical problems for working from home
B10	Lack of technical equipment (servers, infrastructure)
B11	Negative attitude of employees towards ICT
B12	Employees cannot work with ICT from home (employees without Internet or slow connection at home, conditions in employees' homes)
B13	Insufficient support from the employer (helpdesk) - the employer's help to the employee when working from home (communication with technical support)
B14	Reluctance of employees to work with ICT from home
B15	Information security (e.g. connection security)

Source: own processing

Within the research model, based on analysis of theoretical knowledge, we assumed that the information strategy of company (whether or not the company has an information strategy, which should be part of the corporate strategy) will play a significant role in individual barriers. We hypothesized that enterprises with a developed information strategy which is aligned with the corporate strategy will differ statistically significantly in their perceptions of individual barriers. Based on this research assumption, we formulated a research hypothesis:

H₀: Enterprises with an implemented information strategy differ statistically significantly in their perception of the most significant barrier to digital transformation of business processes.

H₁: Enterprises with an implemented information strategy do not differ statistically significantly in their perception of the most significant barrier to digital transformation of business processes.

4. Results and discussion

The individual data obtained from the questionnaire survey were statistically analysed in detail. The importance of individual barriers perceived by enterprises is presented in the following Table 2.

Table 2: Importance of individual barriers perceived by enterprises

Barrier	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
B01	2.0414	2.47808	1.207	0.104	0.635	0.207
B02	2.0973	2.99300	1.366	0.104	0.691	0.207
B03	1.8414	2.86459	1.539	0.104	1.241	0.207
B04	2.1802	3.01859	1.271	0.104	0.468	0.207
B05	2.2072	2.49229	0.955	0.104	0.020	0.207
B06	3.1423	3.16392	0.625	0.104	-0.821	0.207
B07	2.6667	3.11203	0.829	0.104	-0.641	0.207
B08	1.7225	2.64482	1.539	0.104	1.404	0.207
B09	2.2631	2.53125	0.997	0.104	0.095	0.207
B10	1.5712	2.38676	1.659	0.104	2.068	0.207
B11	1.1550	1.85127	1.845	0.104	3.066	0.207
B12	1.2523	1.97214	1.828	0.104	2.934	0.207
B13	0.9676	1.81421	2.493	0.104	6.781	0.207
B14	0.8757	1.61134	2.338	0.104	5.939	0.207
B15	2.3622	3.06847	1.166	0.104	0.174	0.207

Note: N = 557, Max = 10, Min = 0

Source: own processing

Within the survey among enterprises in the Slovak Republic we found out what importance of individual barriers is associated with onset of coronary crisis. These barriers were identified by enterprises managers and they were closely related to ICT and transition to home office, or modification of the corporate culture. The aim was to find out how significantly the enterprises had to deal with these issues/barriers. Enterprises considered the three most significant issues to be:

Adaptation and modification of a large number of business processes to work from home (M = 3.14, STDEV = 3.16), which required to create new directives, modification of original documents, adjustment of business processes, and modification of the corporate culture. This modification of business processes was a time-consuming, staff-intensive, and costly task.

Adjustment of working hours (M = 2.67, STDEV = 3.11). This problem was solved by enterprises through various modifications of internal directives, creating of addenda to employment contracts, creating of work schedules in information systems, and rotation of workplaces.

Employees had technical problems for working from home (M = 2.26, STEDV = 2.53). Some enterprises could see the biggest barrier in a fact that they did not have adapted options for working from home (home office), they could not connect to the server, they could not work online, meetings did not take place online, employees did not have sufficient knowledge and skills on how to install some application programs and how use them to work from home.

In the research (research assumption), we observed that lower values to barriers were attributed by enterprises with a developed information strategy, or processes related to the management of enterprise informatics, the issue of information management and the informatics department was a part of corporate strategy. Therefore we investigated whether the implemented information strategy had a statistically significant effect on problems and barriers that appeared during transition to home office.

Table 3: Significance of individual barriers depending on implementation of the information strategy

Barrier	IT Strategy	Mean	Std. Deviation	Std. Error Mean	Sig.
B01	yes	1.8253	2.56306	0.19893	t = -1.343
	no	2.1337	2.43844	0.12363	p = 0.180
B02	yes	1.4277	2.65219	0.20585	Z = -4.281
	no	2.3830	3.08636	0.15648	p = 0.000
B03	yes	1.2952	2.56141	0.19880	Z = -3.718
	no	2.0746	2.95710	0.14993	p = 0.000
B04	yes	1.5602	2.64792	0.20552	Z = -3.545
	no	2.4447	3.12953	0.15867	p = 0.000
B05	yes	1.1265	1.85920	0.14430	Z = -7.228
	no	2.6684	2.58576	0.13110	p = 0.000
B06	yes	2.1506	2.90791	0.22570	Z = -5.312
	no	3.5656	3.17755	0.16111	p = 0.000
B07	yes	2.2771	3.07409	0.23860	Z = -2.509
	no	2.8329	3.11719	0.15805	p = 0.012
B08	yes	1.6687	2.78391	0.21607	t = -0.313
	no	1.7455	2.58655	0.13114	p = 0.754
B09	yes	1.5120	2.17350	0.16870	Z = -5.073
	no	2.5835	2.60676	0.13217	p = 0.000
B10	yes	1.1928	2.10315	0.16324	Z = -2.889
	no	1.7326	2.48303	0.12589	p = 0.004
B11	yes	1.0181	1.91477	0.14861	t = -1.138
	no	1.2134	1.82289	0.09242	p = 0.256
B12	yes	0.8614	1.68381	0.13069	Z = -3.818
	no	1.4190	2.06261	0.10458	p = 0.000
B13	yes	0.7711	1.66479	0.12921	t = -1.669
	no	1.0514	1.87012	0.09482	p = 0.096
B14	yes	0.7831	1.77558	0.13781	t = -0.884
	no	0.9152	1.53667	0.07791	p = 0.377
B15	yes	1.6024	2.70998	0.21034	Z = -4.721
	no	2.6864	3.15728	0.16008	p = 0.000

Note: t – T-test, Z – Mann-Whitney test, p = 0.05

Source: own processing

In testing results in Table 3, it can be clearly observed that enterprises with the implemented an information strategy, or the area of information management, information technology, information

literacy (ICT education of employees) is addressed in the company's strategy, assigned lower values of significance to the individual barriers/problems. Based on the verification of research hypothesis, we state that enterprises with an information strategy were able to perceive the transition to online space in times of coronacrisis easier in all cases of barriers/problems. A statistically significant effect was also confirmed for the three most significant barriers/problems:

Enterprises with an implemented information strategy ($M = 2.15$, $STDEV = 2.91$) were statistically significantly different from enterprises without an information strategy ($M = 3.57$, $STDEV = 3.17$) with the problem of adapting and modifying business processes to work from home ($Z = -5.312$; $p = 0.000$)

Enterprises with an implemented information strategy ($M = 2.27$, $STDEV = 3.07$) were statistically significantly different from enterprises without an information strategy ($M = 2.83$, $STDEV = 3.12$) with the problem of adjusting working hours to work from home ($Z = -2.509$; $p = 0.012$)

Enterprises with an implemented information strategy ($M = 1.51$, $STDEV = 2.17$) were statistically significantly different from enterprises without an information strategy ($M = 2.58$, $STDEV = 2.61$) with technical problems associated with job performance from home ($Z = -5.073$; $p = 0.000$).

Based on the testing of research hypothesis, we conclude that information strategy has a statistically significant effect on significance of problems associated with the transition to home office and the transition of job performance in online space and digitization of individual business processes associated with it. We reject hypothesis H_1 and accept hypothesis H_0 .

From research results, it can be concluded that the information strategy has a very important role in business management, digitalization of business processes and digital transformation. The information strategy describes the long-term orientation of company in the field of information systems and information technology compiled for a period of 2-3, max 5 years. Reasons for its creation are: information systems are nowadays a strategic factor for successful development of the enterprise, current information systems are large and difficult, they are changing the character of business and information systems cannot work without information technology. Both corporate and information strategies have to be integrated and aligned. A well-developed and implemented information strategy has a positive effect on business management, business processes and creates synergies. The IT strategy (Ochs & Riemann, 2019) is a key anchor for the further development of a company-centric information management. For serving as such, existing IT strategies need a regular check and revision to meet the ever-changing requirements of the companies' markets, to fit to the corporate strategy, and to get the most value out of the possibilities new IT technologies offer. The postulate is that all business areas need to think and act "digital." This, of course, does require a "digital agenda" in every business area of a company that needs to be orchestrated based on a digital corporate strategy and supported by an adequate IT strategy. For IT this means that it will move towards the role of a business enabler that delivers the fundamental layer to allow a company to participate in the digitalization trends and get the benefit of the opportunities and manage challenges successfully.

5. Conclusion

In the conducted survey, enterprises identified the significance of barrier and problems during the digitalization of business processes in the period of transition to home office (the coronacrisis period). As the most significant they considered the adjustment and modification of a large number of business processes to work from home which was financially and time-consuming, the creation of new directives, the modification of original documents, the adjustment of business processes, and the adjustment of corporate culture. The second most significant barrier was the regulation of working hours. Enterprises solved this problem by various adjustments to internal guidelines, creating addendums to employment contracts, creating a work schedule in information systems and rotating at the workplace. The third most significant barrier was that employees had technical problems for working from home. Some enterprises found the biggest barrier in a fact that they did not have adapted options for working from home (home office), they could not connect to the server, they could

not work online, meetings could not take place online, employees did not have sufficient knowledge and skills on how to install some application programs and how to use them to work from home. It is interesting that the information strategy has a statistically significant effect on perception of individual barriers. Enterprises with an implemented information strategy clearly assigned lower values of significance. Thanks to properly set processes in the information strategy, alignment with the corporate strategy, they managed this process of digital transformation during COVID-19 period more easily. A well-developed and implemented information strategy has a positive effect on business management, business processes and creates a synergistic effect.

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A new dimension of security management: LGBT+. Strengthening knowledge, competencies, understanding of minority specifics, and improving communication, including increasing their level of trust.

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Abstract: The Czech Republic intensively protects individual rights, including the rights of LGBT+ people, even if their sexual orientation or gender identification remains a social stigma. The article presents the results of a pilot research carried out at the Police Academy of the Czech Republic in Prague, which was inspired by the recommendations of the Public Defender of Rights based on the 2019 research: Being LGBT+ in the Czech Republic. The research is methodologically based on The Conceptual Field of Internal and External Security of the State. Knowledge of LGBT+ people issues, their nature, and their manifestations, should expand the repertoire of managerial competencies for higher performance and effective human resource management in the field of security management.

Keywords: Internal security, LGBT+ people, Ombudsman, police, security management

JEL classification: Z18, J18

1. Introduction

Society's attitudes concerning sexual orientation or gender identity have undergone a significant shift. Even in the 1960s, sexual intercourse with a person of the same sex was punishable by imprisonment in our territory. In recent decades, issues of sexual orientation or gender identity have become an area of increased interest in law, ethics, medicine, sociology, social anthropology, and management, creating a knowledge base for constituting another dimension of diversity management, as "an inclusive workplace allows an employee to feel safe and expend more energy on work productivity and less energy covering up who they are" (Lim, Jones, Paguirigan, 2019, p. 50).

The article opens the issue of LGBT+ in the field of security management with a focus on managerial roles and competencies. The Police Academy of the Czech Republic in Prague prepares managers for the areas of security and public administration, who in their close professional practice will encounter the issue of LGBT+ people more often and will have to respond to them adequately following applicable legal and ethical standards.

The article presents the results of pilot research carried out at the Police Academy of the Czech Republic in Prague in the first half of 2023, which was inspired by the recommendations of the Public Defender of Rights based on the 2019 research Being LGBT+ in the Czech Republic - Experiences of LGBT+ people with prejudice, discrimination, harassment and hate violence and which, among other things, consisted in the inclusion of a training course, course or seminar on basic issues concerning the LGBT+ community in the system of further professional training of members of the Police of the Czech Republic and in negotiations with representatives of the LGBT+ community and the publication

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of a statement for the LGBT+ community to dispel fears of disparagement or trivialization by police officers, respectively to strengthen trust in the police.

The Public Defender of Rights Šabatová notes (2019, p. 96) that "specific research findings in the relationship of LGBT+ people to the police point to a certain paradox", because although the majority of respondents identified the police as a place to turn to with a case of discrimination or harassment, for those who would not turn to the police in case of assault or threats, the second most common justification for this procedure is mistrust and fear of trivialization, hostility or ridicule on the part of the police (likewise Miles-Johnson, 2013).

2. Literature Review and Methods

The starting point of the research is The Conceptual Field of Internal and External Security (Cieslarczyk, Sheptycki in Piwowarski, 2015 edited by Junková, Kný, 2020, p. 54), as issues related to the protection and security of LGBT+ people permeate all four dimensions.

Table 1: The Conceptual Field of Internal and External Security of the State

	1st dimension	2nd dimension	3rd dimension	4th dimension
	Ideals, values, mental wealth of man	Social influences of the organization, legal systems	Material aspects of the human existence	Cyberspace
State forms of protection:	<ul style="list-style-type: none"> Police Army Internal security External security 			
Private forms of protection:	Private/business security services			
The time aspect:	Past – present – future			

Among the managerial roles held by police managers, it is especially the interpersonal role (in addition to the informational and decision-making role) that will significantly contribute to the implementation of the LGBT+ concept, because in it the manager acts as a representative of the organization, a leader and a connecting link.

The competencies of police managers are defined primarily by professional, social, ethical, and performance competencies. Definitions of competencies according to Kropáč (2013, p. 34) "reflect different philosophical, epistemological, research, etc. attitudes. When evaluating them, however, it can be stated that almost all of them express a common feature, namely that they are personal qualities associated with performance". In particular, social competence, such as the ability to interact socially, cultivate a company culture, to create a positive atmosphere, is crucial for the LGBT+ issue. Police managers possessing developed social skills are capable of effective and efficient social interaction, which positively affects the creation and development of the working environment and the system of mutual relations and bonds, and the creation of an atmosphere of trust. The ability to empathize is important, the ability to build, develop, change, and cultivate corporate culture and social norms as its driving forces, and social dexterity is also important for LGBT access. It was shown (Koellen, 2016, p. 1967) that "those organizational practices that lessen the difference between homosexuality

and heterosexuality within the organization are more strongly related to positive psychological climates than those practices that accentuate the difference. Equalization of heterosexual and homosexual partnerships, internal thematization of homosexuality and gay marketing are associated with positive climate perceptions; LGBT networks and mentoring are not".

Ethical competence is essential for the LGBT+ issue. Police managers at the Police Academy of the Czech Republic are trained to demonstrate the ability to be a moral role model and a personal example. The Code of Ethics of the Police of the Czech Republic states that the members of the Police of the Czech Republic are "aware of their mission, which consists in serving the public, based on respect and respect for human rights" and express, among other things, the following principles that they want to share and adhere to: "apply an equal and fair approach to each person without distinction, per respecting the cultural and value differences of members of minority groups wherever there is no conflict with the law".

The research aimed to find out the opinions and attitudes of a specific group of respondents - studying at the Police Academy of the Czech Republic in Prague - on the issue of LGBT+ people and to evaluate selected results in connection with the research carried out by the Public Defender of Rights (2019): Being LGBT+ in the Czech Republic; LGBT+ people's experiences of prejudice, discrimination, harassment, and hate violence. The questions were formulated in such a way that the results could be compared with the Ombudsman's research mentioned above.

The research took place in the summer semester of the academic year 2022-2023. 238 questionnaires out of 239 submitted were included in the pilot research (1 questionnaire was discarded due to incomplete filling). The age of 48 % of respondents was in the range of 19-25 years, 23 % of respondents were in the range of 26-35 years, 21% were in the range of 36-45 years and 7 % of respondents were over 46 years of age. According to the highest completed education: 77 % of the respondents had the highest completed university education and 23 % of the respondents had a secondary school education. 135 respondents, i.e. 57 %, were already members of the security forces.

3. Results

The first question of the research was focused on a general assessment of the position of LGBT+ people in the Czech Republic. As can be seen in Chart 1: General assessment of the position of lesbians, gays, bisexuals, and trans people in the Czech Republic - comparison of the results of a pilot research carried out at the Police Academy of the Czech Republic in Prague in 2023 with the results of the Research of the Public Defender of Rights in 2019 respondents from the ranks of students of the Police Academy of the Czech Republic in Prague overall rated the situation slightly above average: the average rating was 5.9 points. Most respondents rated the position at 5 points: 119 out of 238 respondents rated the situation in the range of 1-5 points (I-V), 119 respondents rated the situation in the range of 6-10 points (VI-X); I - meant a completely unsatisfactory position and X - a completely satisfactory position.

A comparison of the results of the pilot research conducted at the Police Academy of the Czech Republic in Prague with the abovementioned research from 2019 shows that the evaluation of the general status of lesbians, gays, bisexuals, and trans people in the Czech Republic among respondents studying at the Police Academy of the Czech Republic in Prague is lower. LGBT+ respondents from the 2019 research tended to rate their general status in the Czech Republic above average: most of them chose grades 6 and 7; the average assessment was 6.4 points.

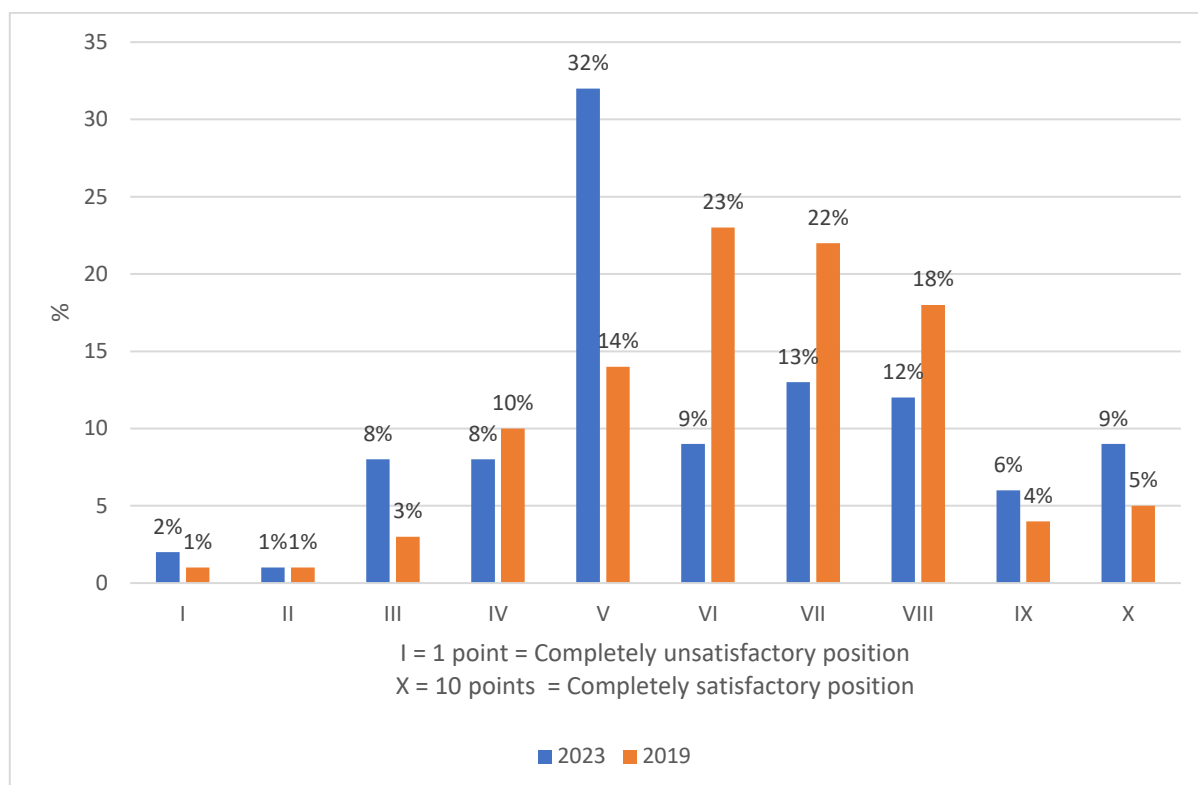


Chart 1: General assessment of the position of lesbians, gays, bisexuals, and trans people in the Czech Republic - comparison of the results of a pilot study carried out at the Police Academy of the Czech Republic in Prague in 2023 with the results of the Research of the Public Defender of Rights in 2019

A more detailed examination of the situation of LGBT+ people in terms of the perception of the threat of criminal acts, discrimination, and other disadvantages (see Chart 2: Share of approving statements on questions related to the life situation of LGBT+ people in the Czech Republic - comparison of the results of the pilot research carried out at the Police Academy of the Czech Republic in Prague in 2023 and the results of the Public Defender of Rights Research 2019: Being LGBT+ in the Czech Republic) leads to the finding that LGBT+ respondents answer less positively than respondents from among students of the Police Academy of the Czech Republic in Prague.

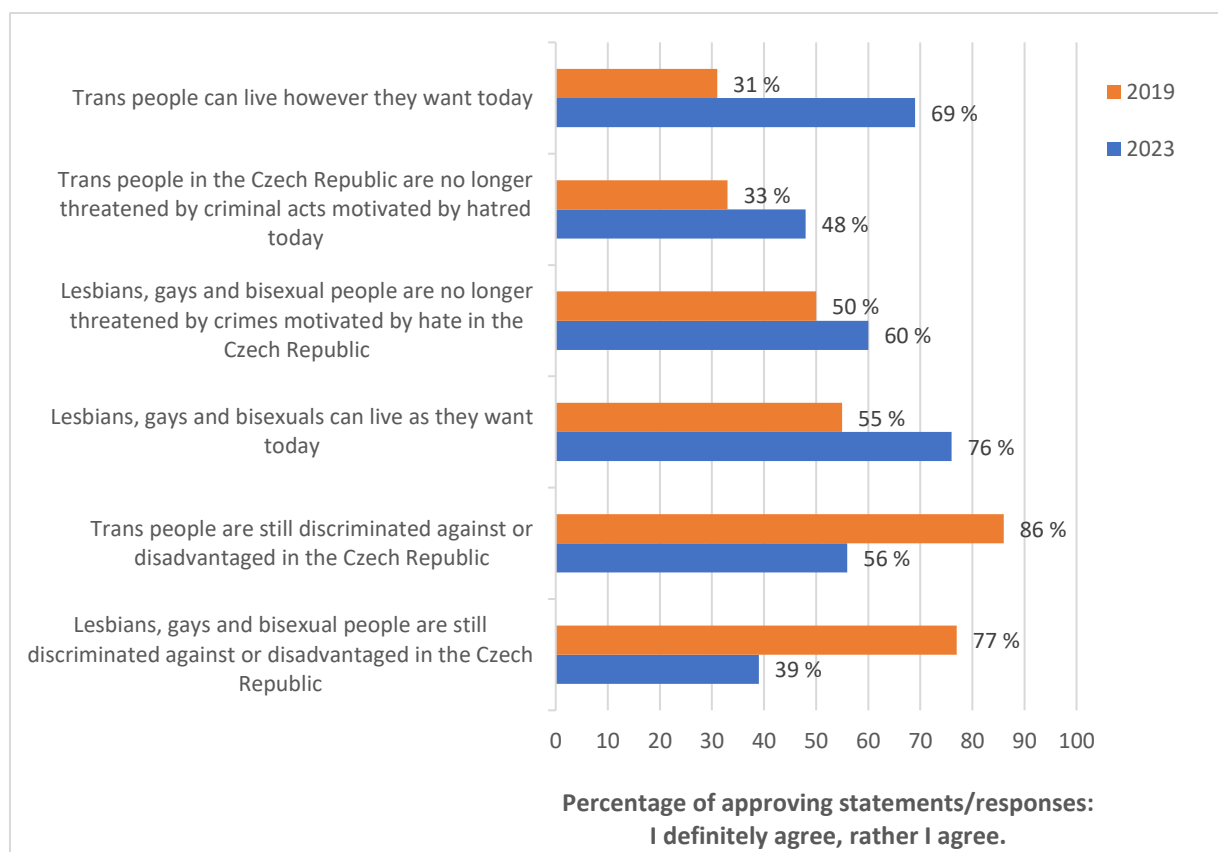


Chart 2: Share of approving statements on questions related to the life situation of LGBT+ people in the Czech Republic - comparison of the results of the pilot study carried out at the Police Academy of the Czech Republic in Prague in 2023 and the results of the Public Defender of Rights Research 2019: Being LGBT+ in the Czech Republic

In general, it can be stated that the view of the respondents of the Police Academy of the Czech Republic in Prague is more optimistic than the view of the LGBT+ community and that both groups probably can be influenced by their utilitarian interests.

It also investigated whether respondents from the ranks of students of the Police Academy of the Czech Republic in Prague have information, knowledge, and skills on how to successfully integrate and manage LGBT+ people in their position of (future) manager. 60.5% of respondents answered this question negatively: definitely not: 15 respondents, rather not: 129 respondents; the affirmative statement was given by: 39.5% of respondents: definitely yes: 14 respondents, rather yes: 80 respondents. The respondents' preferred ways of supplementing this information are shown in Chart 3: Preferred ways to supplement information, knowledge, and skills to successfully integrate and manage LGBT+ people.

Chart 3: Preferred ways to supplement information, knowledge, and skills to successfully integrate and manage LGBT+ people shows that: 31.8% of respondents prefer to complement the information, knowledge, and skills on how to successfully integrate and manage LGBT+ people through dedicated training; 28.3% through HR department; 8.5% through a guide to the integration of LGBT+ people into the workplace in written form, and another 8.5% of respondents during their university studies. Within

the Police Academy of the Czech Republic in Prague, the answer to this social demand can be a special course organized within lifelong learning courses.

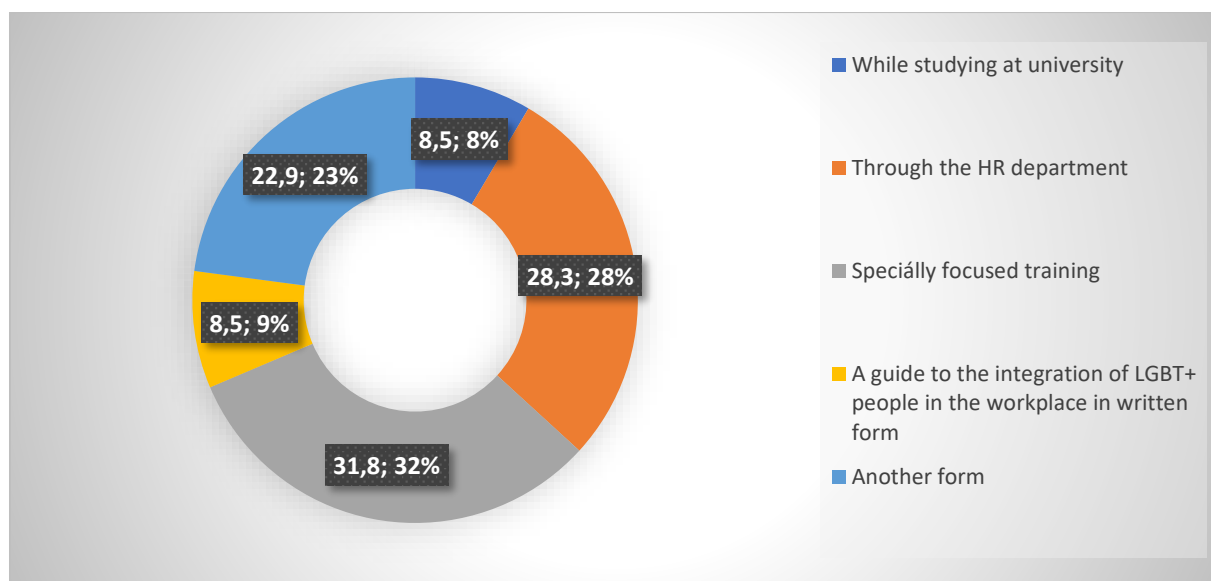


Chart 3: Preferred ways to supplement information, knowledge, and skills to successfully integrate and manage LGBT+ people

4. Discussion and conclusion

The Czech Republic intensively protects individual rights, including the rights of LGBT+ people, even though their sexual orientation or gender identification remains a social stigma. Knowledge of LGBT+ people issues, their nature, and manifestations, should expand the repertoire of managerial competencies (social, ethical, professional) for higher efficiency and effective human resources management in the field of security management and to increase the credibility of the police organization with this community.

According to Sabayová (2021, p. 120) “the rationalized myth that the police organization is evaluated according to its effectiveness in reducing crime is not confirmed by any relevant research”, as the public does not express confidence based on police statistics on the detection and clarification of criminal activity. Trust is related to the relationship between the police and the public made up of different communities, which is mutual. Discrimination based on membership in the LGBT+ community is just as unacceptable and unethical as abusing it for personal gain.

The results of pilot research conducted among students at the Police Academy of the Czech Republic in Prague confirmed the perceived lack of professional preparation for successful integration and management of LGBT+ people, and motivation to acquire the necessary soft skills in this area through specially focused education, which can be perceived as a positive signal from a professional point of view. Activity is primarily expected from HR specialists and HR departments. This means not only their activity in human resources management and close cooperation with managers but also their professional preparedness in terms of personal andragogy.

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Analysis of Disinvestments in CEE countries?

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Abstract: Foreign direct investment was for a long time considered as stable capital flow to the economy with prevailing positive effects on the economic activity. Countries of the central and eastern Europe have received large foreign investment inflows, which help with the transformation process started in early 90's. However, a lot of foreign investment was efficiency seeking, considering the cost of the labour that was relatively well educated and experienced, but lower paid with comparison to home country if investment. Of course, there were also source seeking and location seeking investment, but the cost efficiency has attracted many investors. However, due to the changes in world business environment, foreign direct investment is no more a stable form of investment. It is not rare that foreign affiliation leaves one host country and is moved to another host country with less costly factors of productions. The issue of disinvestment became more common phenomenon bringing negative impact on the initial host country performance. As known, the pandemic has accelerated this process and we observe the increasing trend of disinvestments. The paper deals with the analysis of disinvestment in the central and eastern European countries.

Keywords: foreign direct investment, disinvestment, central and eastern Europe

JEL classification: O32, E22

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1. Introduction

Disinvestment would be defined as the opposite process of foreign direct investment inflow. It is a process, when foreign investor or transnational corporation sell its shares or other assets in foreign entities. Often, disinvestment is mismatched with the foreign direct investment outflow. However, it is not the same. Outflow or investment means that home country investor realizes investment project in other – foreign country. Thus, the capital is flowing out of the home country of an investor to a host country of an investment. The disinvestment means that investor that formerly provide investment in a host country is leaving the business in a host country by selling shares or assets. This process indicates that inflow of the foreign direct investment that was flowing to a host country is returning back to home country of the investor or to another host country. From this point of view, the disinvestment is captured in foreign direct investment inflows as negative number and not in foreign direct investment outflows. It is clear that disinvestment exists since the foreign direct investment is realized. There were and always are investors who have left their business in foreign countries – shift business to another host countries or back to home country or close the business. Foreign direct investment was for a long time considered as very stable capital source as close the business or shift it to another countries is not easy, also bringing a lot of additional cost and uncertainty to investor. The current situation

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indicates that such view is not applicable anymore. Foreign direct investment became very volatile and disinvestment is more common as any time before. Usually, disinvestment is associated with the decline in economic activity and recessions. The lower demand for goods and services forces firms to optimize the production and the disinvestment is also an option. Very often, optimizing cost of the production causes the investor to shift the production from the initial host country of the investment to other host country that is able to produce at lower cost. Such situation is very common for transforming and emerging economies. As a country performs better, the cost became higher and country is losing its competitiveness and cost efficiency. As a result, investor might decide to leave the business in such country as the production is more expensive. Such situation would be applied also for many of the central and eastern European countries as they went through the transformation process to transform from central planning economy to market economy.

2. Literature review

Disinvestment would be defined as the opposite process of the FDI inflow. Investor is selling assets or shares in other companies in host countries or is cancelling the activities or production. The motivation for disinvestment is various including financial management, increasing efficiency, change in strategic goals or necessity to obtain invested capital back to home – investing institution. Disinvestment might be also caused due to changes in regulation and other rules of running business in a host country (Duhaime and Grant, 1984). Mainly in the case of stagnation, recession and the overall decline in the demand would be motive for disinvestment also increasing the liquidity and cash flow of the company as the company would need more sources to pay the financial liabilities that cannot be covered by planned sales of production or providing services (Ivanová, 2013). The reaction to the market condition is also one factor affecting decision for disinvestments. If the market conditions change, investors might decide for disinvestment to minimize the potential loss (Bastyr, 2021). If the investment does not bring expected returns or the production and providing services is not effective, investors often decide for disinvestments and the corporations is not going to support the foreign entity for a longer time period without noticeable success. If this happen, investors shift the sources to other host countries (Novák and Šustr, 2009). The great discourse about the disinvestments appeared during the COVID-19 pandemic and related stagnations or recessions of economies. Not surprisingly, the COVID-19 crisis caused a dramatic fall in FDI (UNCTAD, 2021) with the rapid drop up to 40 % in 2020. The recovery, we have witnessed started in 2022 that would be also the break point for increasing trajectory in FDI inflow. In comparison to previous worldwide fall in the FDI flows caused by the global financial crisis and rapid decrease of world FDI inflow in 2009, the decrease in 2020 was much higher and represented 60% decline since 2015 (UNCTAD, 2021). Data reported by the OECD focusing not at overall FDI flows but on inflows, shows fall in 2020 in comparison to 2019 by 38% (OECD, 2021). The decline of FDI flows in 2020 was reported in the World Investment. A comprehensive analysis of the FDI in Central and Eastern Europe with views of authors from different countries and with different focus and interest is available in publication edited by Szent-Iványi (Szent-Iványi, 2017). The factors affecting disinvestment is often considered to be also factors that are used to analyse investments. However, the factors and the theory of foreign direct disinvestment will be required different analysis and not only reversal conditions to foreign direct investment (Bellak, Leibrecht and Riedl, 2007). For instance, the paper focused on the very specific disinvestment factors is analysed by Strach and Everett (Strach and Everett, 2007) who have analysed the factors through the specific electronic manufacturer in Czechia.

3. Disinvestment in the CEE countries

The central and eastern European countries (CEE) has been in consideration of many transnational corporations (TNC) to implement investments and reach this geographical region. As the countries needed substantial structural changes of their economies to transform from central planning to market economy, the foreign direct investment (FDI) played a crucial role. The CEE countries were struggling with the lack of savings to be used for investment activities and the FDI inflow was important to supplement the sources that were needed. On the other side, investors took the opportunity to reach new growing markets with increasing demand, to invest in regions that are very well geographically located for export to other European countries as well as to look for the efficiency with the regard to relatively low cost of production, mainly the lower labour cost in comparison to developed countries. Another challenge for all CEE countries was the privatization. Countries, respectively governments owned many enterprises, including financial institution, energy plants and others and decided to sell them to private companies in accordance with the liberalization agenda. The privatization process had many peculiarities in individual countries, however, the same feature is that privatization attracted many foreign investors, mostly to financial, banking, insurance, telecommunication and energy sector. Of course, greenfield investment also took place as countries have relative advantages in location, labour cost, natural sources or others. It is very important to mention that the FDI inflow boom in the CEE regions was between two financial crises at the beginning of the new millennium bounded by the dot-com bubble in 2001 and the global financial crisis in 2008. Even the data availability for bilateral FDI inflows is only since 2005, it will not vilipend the analysis of disinvestment as the disinvestment actually emerged more frequently after the global financial crisis. Until that time, for a long period, FDI were considered as very stable investments and its volatility to comparison to other investment (e.g. portfolio investments) was very low. Surely, it is not easy and very costly to leave the business at host country, leave the equipment, infrastructure, buildings, assembly halls or other assets in a host country as there would not be other firm to purchase it or continue in the production. However, as the globalization is still more present, the cost of the shift to other host countries are lower, or selling assets is more easy, transnational corporations are very easily able to move the production or activities from one host country to another host country that offers better conditions, e.g. cheaper production cost or lower wages to be paid to workers. For that reason, disinvestment is currently a usual and common feature of developed and developing market economies.

3.1. Development of the FDI inflow in CEE countries

To start with the assessment of the development of the FDI inflows, the overview of the inflows to EU28 and OECD countries for the period 2005 – 2021 is provided. As seen in Figure 1, the development of the EU27 and OECD FDI inflow is very similar corresponding to world-wide situations and business cycle. After the enormous increasing of the FDI inflows at the beginning of the millennium, the dramatic decline occurred in 2008 and 2009. As clearly seen, the decline in the EU27 was not as deep as in OECD or in World FDI inflows. Its means that most of the decline happened in developing, emerging and less developed countries. From investors perspective, such situation would be expected. Investors usually origin from developed countries and realize investments in those countries and the flows go from developed to other countries. As the world is struggling with the stagnation or recession,

investors are willing to invest less stop foreign investment at all. As a result, the FDI inflow to developing, emerging and less developed countries declined. After the global financial crisis, FDI inflow stagnated with increasing again with two peaks in 2015 and 2019 that occurred after a short decline or stagnation. As in previous case, the development in EU27 shows that even the OECD countries and World FDI inflow was decreasing from 2015 to 2018, EU27 was only stagnating. Another rapid decline in FDI inflow was caused by the COVID-19 pandemic in 2020. To conclude, EU27 seems to be more stable as the OECD and World FDI inflow development. The reason for this more stable development is that most of the EU countries is investors and even if the EU countries are FDI inflow recipients, those investments are not affecting by the business cycle as those FDI inflows to other countries.

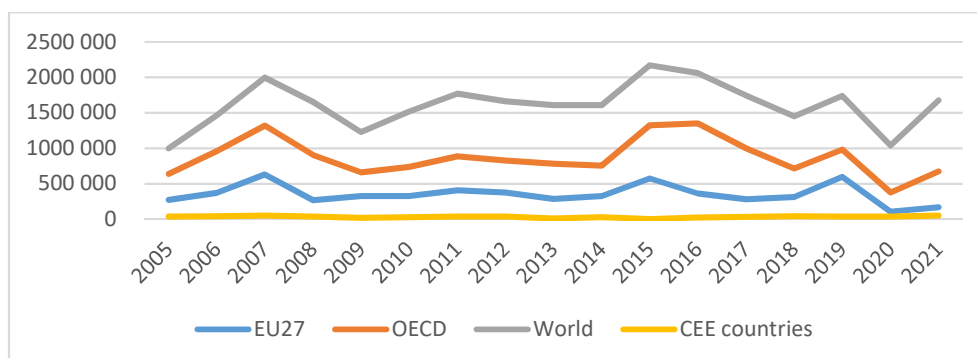


Figure 1: FDI inflow 2005-2021 – EU27, OECD, world, CEE countries (mil. USD, current prices, OECD.Stat)

To compare the CEE countries with the above-mentioned development of the FDI inflow in EU27, OECD and World, Figure 1 also provide the graphical visualization for the CEE countries. As seen the FDI inflow to CEE countries is very small in comparison to EU27.

To see the FDI inflow development for each of the 8 analysed countries from the CEE region, the following Figure was prepared. The CEE countries are characterized with very high FDI inflow volatility, but not always reflecting the global trends. Even the countries belong to the same region, they have many peculiarities that affect their attractiveness for investors and FDI inflow. An unfavourable feature that might be seen in the Figure is that the overall FDI inflow was negative at least in one period in 4 countries out of 8 analysed countries – Slovakia, Slovenia, Lithuania and Hungary.

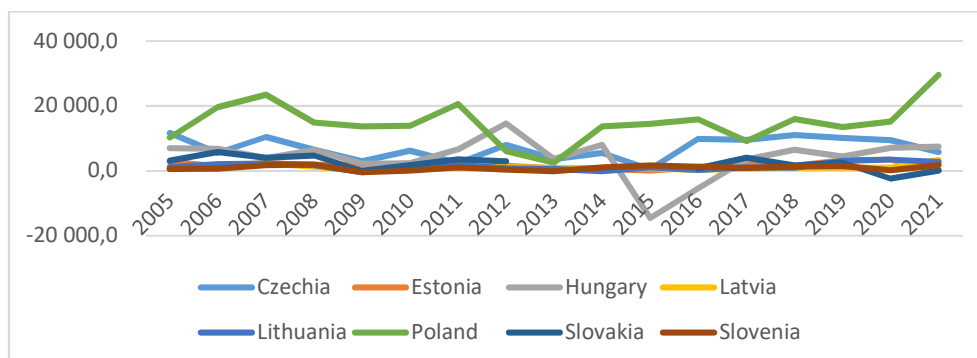


Figure 2: FDI inflow 2005-2021 – CEE countries (mil. USD, current prices, OECD.Stat)

3.2. Disinvestment analysis in CEE countries

The disinvestment became a common feature of the FDI in the CEE countries. Countries are not able to offer the competitive conditions as other – new host countries of the investment and investors leave to run their businesses. The firms and their activities might be overtaken by other foreign companies, by domestic companies or the production or activities are partially or fully cancelled. The last situation is the worst one resulting in the loss of the production and increasing unemployment. For that reason, many countries are willing to support existing investors to keep their business running and spend the public funds for incentives. Investment incentives – formerly using to attract new investors are presently often used also to keep the investor in the country and avert negative consequences of disinvestment. As seen in previous text, countries have faced with the disinvestments on the total level (not bilateral disinvestment) and overall FDI inflow was negative. In such situation, we might say, more investments already entrenched in country is leaving the country than investments flowing to a country from other countries. It is clear that such situation is resulting in lower supply, lower GDP produced, lower production capacity, loss of capital and increasing unemployment. In other words, country struggling with disinvestment (in total) is usually stagnating or facing with the recession.

To analyse disinvestment in detail, we have provided a data analysis of the FDI inflows for the period 2005 – 2021 for the 8 CEE countries also belonging to the OECD. The data and the results are based on the bilateral FDI inflows to the host (reporting) country with other 235 countries (representing investing countries, or home country of investor). Due to the missing data for the Slovakia for years 2013 and 2015, we have 31 490 observation of bilateral FDI inflows. We need to emphasize that many of the observations include zero value meaning that bilaterally, there is not FDI inflow from a particular country to a host country in the CEE region. Also, many reports do not include bilateral data. From the total observations, 54 % are zero FDI inflows. Considering this number means that more than half of the bilateral relations between countries (in terms of the FDI) does not include the capital flow of the foreign direct investments. 21 % of the bilateral relations have positive FDI inflows meaning the reporting country has received capital flow to the economy. 13 % of the bilateral flows are negative. The negative value for the FDI inflow means that there was an investment in a country, but the investor decided to leave the business in the country. Then, minus sign represents the “withdraw” of the investment from a host country. For the rest of observations (12 %), data was not available.

If excluding all zero observations and observations with not available data, we might see (Figure 3) that the number of bilateral positive FDI inflow is just slightly higher as the number of bilateral disinvestments. For the overall period and considering only non-zero and available data observations, disinvestments represent 39,16 % of FDI flows and positive FDI flows are 60,84 %.

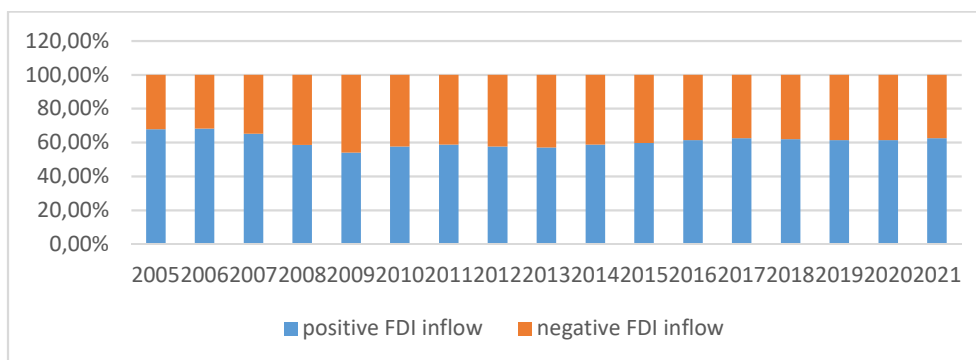


Figure 3: Comparison of positive and negative FDI inflow for CEE countries in 2005-2021

The most important part is to examine the negative FDI inflow, thus the development of disinvestments. As seen in Figure 4, the number of positive FDI inflow as well as disinvestments has increased since 2005 to 2021. The positive FDI inflow is more volatile depending on the actual situation and expectation of investors. Disinvestment would be not as volatile due to the more difficulties to leave the host country of the investment. Although this situation

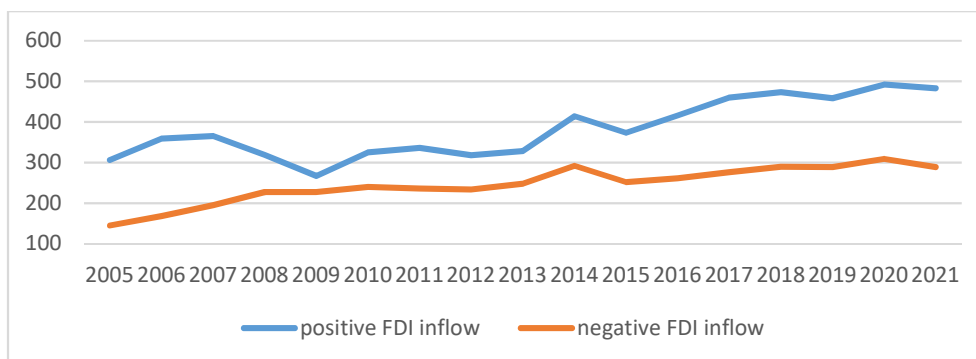


Figure 4: Development of the number of positive and negative FDI inflow to CEE countries during 2005-2021

For all of the analysed countries are disinvestments very volatile (see Figure 5). Probably, the less volatile disinvestments are for the Estonia and Latvia. On the other side, very volatile for Poland. The most disinvestment between 2005-2021 was recorded in Poland (773) followed by Hungary (710) and the less in Latvia (214). Based on the number of disinvestments in 2018, 2019, 2020 and 2021, we cannot confirm that pandemic brought the higher number of disinvestments in the CEE countries. It is true that the global FDI inflow has dramatically decline, but disinvestments were not an issue. The number of disinvestments for analysed CEE countries was 290 in 2018, 289 in 2019, 309 in 2020 and 289 in 2021. There is the small increase between 2019 and 2020, but it might be caused by many other factors and just following the previous increasing trend of disinvestments.

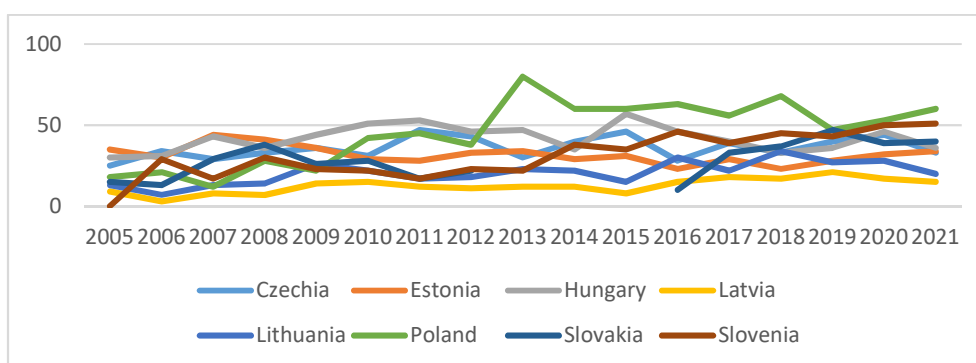


Figure 5: Development of disinvestments in CEE countries during 2005-2021

4. Conclusion

The CEE countries were and still are very attractive for foreign investors to realize investments. Those countries have very good conditions for running the business, very good geographical location as well as knowledge and skilled labour force. The analysed eight countries of the CEE region were very

successful in attracting foreign investors mainly during their transformation processes and related privatization of state-owned companies. As the countries became still more and more developed, some of the advantageous conditions, e.g. relatively cheap labour force have disappeared. Together with financial crises, stagnations, or other globalized problems, countries started to face with the disinvestments. Foreign investors decided to leave the country and cancel the activities or production as the shifting them to other host countries is more efficient. The FDI inflow is not anymore as stable as it was assumed in 90's.

Countries from the CEE region are facing the growing number of bilateral disinvestment and four out of eight analysed countries had already suffered the disinvestment at the national (total) level as the total FDI inflow to a country is negative. Among all bilateral observations, when exclude zero-observations and observations with no data available, the disinvestments represent about 40 % of bilateral FDI inflows.

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"Let me rephrase the question for you" - on the potential effect of question formulation in survey research

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Abstract: Questionnaires and surveys applying different form of open, semi-open and closed questions (single or multiple-choice) and also scale-based questions are a frequent source of data in the research and practice in economics, business and in social sciences in general. The questionnaire as a tool for data input is being used frequently, mainly because it is associated with relatively low administration costs and its ability to reach a sufficient sample size in reasonable time. Questionnaires are a valid tool for data gathering, particularly if the data cannot be measured or obtained from external sources, the appropriate design of questionnaires is crucial for the quality of data obtained and for its relevance to the research at hand. This paper investigates the effects of different question formulations on the data obtained by questionnaires and shows how strong an effect a formulation of a question can have on the results of the research conducted based on questionnaires. It compares the results of actual research with a "modified replication" of the research where the questionnaire was modified to achieve specific changes in the data. The results show that the very formulation of the questions in a questionnaire can have a substantial effect on the data, changing content and interpretation significantly. Based on the presented results we draw general recommendations for the design of questionnaires, specifically for researchers less inexperienced with questionnaire design.

Keywords: questionnaire, design, bias, analysis, methodology

JEL classification: C18, C83

1. Introduction

Surveys and questionnaires are probably now an irreplaceable part of the research in economics, providing qualitative and quantitative data from potentially large numbers of respondents on various topics. In essence a survey or a questionnaire can be understood as a collection of questions to which the researcher would like to know the answers. In some cases the term survey has a more general meaning, also covering the data processing and evaluation steps (that is survey is a research method) and questionnaire is a tool used in surveys to get the data from respondents. In this paper, we will be aiming at the design of the questions in the questionnaire and its effect on the obtained answers. We will also be aiming the main message of the paper to the university students rather than to general social science researchers, as we feel that university students currently need this paper the most. The paper will be written from the perspective of a methodology-oriented teacher and reacting to the issues that have been recently encountered in student theses by the authors of this paper. Therefore, the main recipients of the paper are university students and their supervisors.

Before we proceed, let us start with a disclaimer: We do not claim that all uses of questionnaires in theses are incorrect. On the contrary – there are definitely good theses using the questionnaire tool

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well, with good reasons and reaching valid results. But there is also another group of theses... We are not writing this paper to point to issues with specific theses or to discourage students from using questionnaires in their research. We would, however, like to start a debate on the usefulness of the questionnaire tool, its reasonability and also the needed expertise to use them. And to point out how severe the consequences of incorrect questionnaire design can be for the findings based on data obtained by the incorrectly designed questionnaire.

At this point we need to acknowledge that the motivation to write this paper is, at least for the corresponding author, to take a closer look at the reasonability of the use of questionnaires in our theses and to point out, how difficult it might be to design them correctly. Therefore we set several goals on different levels of generality, each of which is hoped to carry a message to the students of Czech universities. And that message is "Questionnaires are NOT a simple tool to design and use. You need knowledge and also some experience to create them so that they work as needed." And probably most importantly "If you ran out of options and a questionnaire is the only practical contribution you can claim in your thesis, make sure it makes sense, or at least be critical enough to present the obtained results as fuzzy or potentially biased as they might be". The goals of the paper can be summarized in the following way:

- To show that the formulation of the question can influence the answers we obtain
- To show that the choice of an open-ended or closed question can influence the answers we obtain
- To show that the decision concerning which formulation of the question should be used is not a simple one and needs to be well thought through and justified
- To explain that creating a working questionnaire is not a simple task and it requires a lot of justification, clear statement of the problem, knowledge of the basics of behavioral science and behavioral research and also a sufficient knowledge of the basics of questionnaire design.

If researchers want to find a takeaway message in this paper, it will be presented here too. We aim to quantify how large a change in the answers can result from a specific change in the question. In other words we will investigate the size of the effect of an alternative formulation of a question on the data and thus on the findings based on surveys. We therefore add one more goal:

- To quantify how much the formulation of a question can influence the conclusions of the research that are made based on the data obtained through questionnaires. (Note that this easily translates into a more scary formulation of "To show how easy it is to manipulate the research to get the results that you need."). At this point we assume no issues with scientific integrity, and thus the manipulation is assumed to be subconscious and non-voluntary. But this does not make it any less of a problem.

Let us get back to the student and theses context. We think it is safe to say that questionnaires are also very popular with university students. Students seem to favour this tool, and use it quite often in their theses projects. This trend is quite visible and undeniable in social sciences and related fields in the Czech Republic. If we just take a large enough random sample of Bachelor theses in these fields in some of the information systems of the universities, we are bound to find several theses relying on questionnaires or using them as the main data gathering (or even research) method. And we dare to say that in at least some of them the questionnaire would be incorrectly designed, incorrectly administered, incorrectly evaluated or not even the optimal method to get the data (given the research goals and objectives in the theses). One can frequently see the "practical part" of the thesis that is

supposed to report students' own research results and some sort of empirical investigation of the given phenomenon is built around a questionnaire. The motto "I have to do research, let me do a questionnaire" seems to resonate with many students. Sometimes it seems that questionnaire is a default method of choice for the students. And in a way, they are not wrong – questionnaires have the potential to ask any question imaginable and obtain answer to is on a pre-defined scale. There is the element of universality, the element of control (we decide what scales, what precision, what units will be used, how many answers and how long answers can be provided) and there is also the ever appealing option to present the results obtained through questionnaires graphically and to summarize them using basic descriptive statistics (if the types of the scales allow for this) and to do frequency analysis or simple contingency tables. This is where the analysis can start (and unfortunately also frequently ends). But still the results can be valuable and insights into the problem that is being addressed can be made.

The "dark side" of the questionnaires is that they are frequently not measuring anything. The measurement cannot be claimed as questionnaires are based on self report. There is also the limitation of not being able to supply more information or to explain what is needed (particularly with the on-line questionnaires) and the need to deal with different understanding (different perceived meaning) of the linguistic terms being used in the questions and in the answers – just to name a few of the limitations. But the issue of behavioural bias (Furnham and Henderson, 1982), the usual recommendations for the construction of well working and reliable questionnaires and related issues are discussed well in the scientific (and academic) literature (see e.g. Saris and Gallhofer (2014), Bradburn, Sudman and Wansink (2004)) and the research on this topic continues (Beatty et al., 2020). New scales and scale representations are being proposed for questionnaires (Stoklasa et al., 2017), methods for the reflection of the uncertainty of the answers are being proposed (Stoklasa, Talášek and Luukka, 2018; Stoklasa, Talášek and Stoklasová, 2019) and also the issue of information loss by aggregation of the data obtained through questionnaires is being paid attention (Hoang, Stoklasa and Talášek, 2018). Even though there is a lot of development going on in terms of methods for questionnaire design, methods for questionnaire data evaluation and also in behavioral aspects of questionnaire-based research, many of the key topics remain relevant for the psychology and sociology domains and other students of social science disciplines are either not sufficiently trained in the methodology needed for questionnaire-based research or perhaps consider such training/education to be just a forma part of their degrees. But there are good reasons why questionnaire design is a wide area of research with an active research community – it is not a simple topic, and questionnaires are not as simple a tool as they might appear to be. This paper aims to add one small piece of evidence that screams "be careful" during the design phase of questionnaire-based research.

2. The simplicity and convenience trap of questionnaires

Let us now ask a simple question – if it is not so simple to design a good questionnaire, as the authors of this paper would like to convince its readers, how come that laymen and pre-graduate students are using questionnaires? Why is the questionnaire the method of choice? Just a quick recollection of some of the most recent justifications provided by students in favour of the use of questionnaires (we are aware this is not a scientific enough method to provide evidence, but many supervisors and opponents of theses would probably confirm this):

- the method of data collection is simple. This means it is perceived as a “natural” method as we are only asking questions. And everyone can ask questions – we do so every day. So everyone is qualified to construct a questionnaire? – a clear perceived *simplicity trap*
- it is fast and cheap. You just compile a list of questions, you share it through social media and get sufficiently many answers for a subsequent quantitative or statistical analysis. It seems to be a cheap and effortless way (also because “everyone is using it”) and it opens door for statistical analysis if there are sufficiently many answers (let us leave the representativeness of the sample out of the equation for now) – *convenience trap* (“I can always do this, it does not cost me anything, it is fast and gets me enough data for statistics”)

Even if the students remember that there are some guidelines for questionnaire design that were at some point mentioned to them (do not use double-barrel questions, open-ended questions are difficult to process with quantitative analysis,...), the students might not understand the severity of making the wrong call in the design phase. This is why we will attempt a clear quantification of the “cost of a mistake” in questionnaire-based research in this paper. We do not need to elaborate on the fact that the nature of the data obtained through questionnaires, its quality and reliability is obviously dependent on the whole research design and it is significantly influenced by the construction of the questionnaire (inclusion/exclusion of questions, type of questions, selection of scales, etc.), by the topic of the research, by the motivation of the respondents (and their type, mood, psychological characteristics etc.) and also by the selection of the sample. As such, there are really many aspects to consider when designing a survey, and even when designing its data-input tool, that is the questionnaire. Questionnaires should thus not be presented as a tool of choice or a simple solution, but as a tool with assumptions, requirements and expected skillset to be properly used.

3. Methods and data

The approach we have chosen for this paper, as suggested by Eliášová (2023) is a replication combined with deliberate modification. This means that we will choose a questionnaire used in another research, for our purpose we have chosen a questionnaire by Bičanová (2014) on the attitudes of public towards old age. We will identify specific questions used by Bičanová, modify them to achieve a specific outcome and then obtain a set of answers by relevant respondents. For this purpose there are three criteria that need to be fulfilled: 1) the sample needs to be comparable (we will aim on similar size and similar age composition); 2) the modification of the question needs to be done in such a way that the original answers can still be obtained and 3) the effect of the change in the question needs to be anticipated. This also means that if we want to see if a frequency of one answer can be decreased, it cannot be achieved by not allowing that answer (even though that would, by definition, be a clear influence on the data as we would remove the answer from the data completely). Finally we will compare the size of the difference between the answers to the original question in Bičanová’s sample and to the modified questions in our sample and draw conclusions based on these values.

Bičanová administered her original questionnaire in 2014 to people in the age category 55+ and obtained 192 responses (sample denoted as S_0 , F:M ratio in this sample was 58:42). We have obtained a sample of 123 respondents in the same age category (sample denoted as S , F:M ratio was 55:45, based on two-sample z-test for percentages the F:M ratio does not differ from S_0 , $z\text{-TS}=0.4419$, $p=0.65994$; also other inclusion criteria set by Bičanová (2014) were respected). Our samples are slightly different in terms of age composition, as the new sample obtained for this paper contains also

people 80+ which the original sample by Bičanová did not (people 80+ were, however, not apriori excluded from the sample by Bičanová). If we remove people 80+ from our sample (17 people), then the samples can be considered to come from the same population on a 1% significance level (KS paired $TS=0.1866$, $p=0.0147$) and its F:M ratio is 52:48, which is still not significantly different from Bičanová's sample ($z-TS=0.9859$, $p=0.32218$). We can therefore reasonably assume that our sample (S , size $n = 123$) is a reasonable approximation of Bičanová's sample from 2014 in the most relevant characteristics (age, gender), even though based of the KS paired test ($TS= 0.2865$, $p=0.00006$) it comes from a population that is not identical in terms of age distribution, but it is slightly older than Bičanová's sample. We will therefore conduct the analysis on both our samples to compensate for potential age distribution biases when using our full sample S .

4. Results – singling-out and concealment effects

For simplicity, we will now restrict our focus simply on the situations, where the researcher (student) would like to know what part of the sample (and thus population) would choose a specific option.

4.1. Singling-out effect

We will start with a question “*What is your association with (what do you imagine under) the term ‘old age’?*”, where Bičanová (2014) offered a multiple-choice answer selection of: a) *A period of rest and time for hobbies* (36.5%), b) *A period when I can devote myself to family and friends* (32.3%), c) *A period of illness and pain* (24.5%), d) *A period of lack of self-sufficiency and dependence on others* (53.6%), e) *A period of one's own uselessness and loneliness* (23.4) and f) *Other, please fill in* (0%). The numbers in brackets represent the relative frequencies of choosing that particular option in S_0 . As this was a multiple-choice question, we can see that the option d) seems to be the one that is most frequently chosen, as more than 50% of the sample selected it. On the other hand, the option c) received was chosen comparatively much less – by less than a quarter of the sample. From this one could conclude that illness and pain are not key topics for the people 55+ (assuming the representativeness of the sample) and if one had to prioritize where to aim e.g. the next support project, it might be towards the increase of self-sufficiency.

Table 1: The relative frequencies of the ‘illness and pain’ answer in S_0 , S and S_R

Sample	S_0 – a part of the original multiple-choice question, $n=192$	S – a positive answer to the modified dichotomous question, $n=123$ (age 55+)	S_R – a positive answer to the modified dichotomous question, $n=106$ (age 55-79)
Relative frequency	24.5%	92.7%	92.5%
p-value for the z-test of equality of ratios (w.r.t. S_0)	$p = 1$	$p < .00001$	$p < .00001$

If we were predominantly interested in the “illness and pain” issue, we might have asked the question differently. For this research we have rephrased the question to focus only on pain and illness topics, we have made it a closed one and softened its overall formulation slightly. All this was done with the expectation that the “illness and pain” topic would be chosen more frequently. Our modified question was “*Do you agree that the term ‘old age’ can cover also a period of illness and pain?*”. The potential answers were now a) yes and b) no. By rephrasing the question. We have focused the attention of the respondents on the specific issue of ‘illness and pain’ as a part of ‘old age’. The resulting relative frequencies are summarized in Table 1.

As Table 1 clearly shows, the relative frequency of the ‘illness and pain’ answer is significantly larger under the modified formulation of the question. It is even more frequent than the most frequent answer in the original formulation (‘lack of self-sufficiency’, 53.6%). Just by focusing on this single aspect of old age we have managed to increase its selection (confirmation of its relevance for old age) rate from 24.5% to 92.7%. In other words we have made an originally low-frequent answer into a high-frequent one that is chosen by more than 90% of the respondents. None of the original answers in the original version of the question had such high frequency. One potential explanation is that additional answers in multiple-choice setting frame the answer as a prioritization one and even though all the choices can be selected, the respondents tend to choose only the “most fitting” ones. Thus the focus on a specific answer can significantly increase its selection. The question is which of the two relative frequencies – 24.5% or over 90% is more indicative of the actual relevance and importance of ‘illness and pain’ as a topic for old age. We acknowledge, that the modified formulation of the question is more leading and as such discouraged in the literature. And by the above stated results we show that the reason for this might be the ability to increase the relative frequency of the selection of this answer by more than 66 percentage points (that is addition of more than 2/3 of the sample).

Table 2: The relative frequencies of the ‘decrease in physical strength, dependence on others’ answer in S_0 , S and S_R

Sample	S_0 – a part of the original multiple-choice question, n=192	S – concealed in ‘Other, please fill in’, n=123 (age 55+)	S_R – concealed in ‘Other, please fill in’, n=106 (age 55-79)
Relative frequency	73.4%	6.5% resp. 4.9% ^a	4.7% resp. 3.8% ^b
p-value for the z-test of equality of ratios (w.r.t. S_0)	$p = 1$	$p < .00001$ for both	$p < .00001$ for both

^{a, b} – the first value in the cell is the relative frequency of all ‘Other, please fill in’ answers, the second describes the relative frequency of those ‘Other, please fill in’ answers, that correspond with the ‘decrease in physical strength and dependence on others’, mainly ‘illness’

4.2. Concealment effect

Let us now have a look at what happens when a very frequent answer-option is “concealed” into the ‘Other, please fill in’ option. We will use Bičanová’s multiple choice question “*What do you fear the most in old age?*”, with a potential answer selection of: a) *retirement, loss of work collective* (19.8%), b) *children leaving* (2.6%), c) *solitude, isolation* (30.7%), d) *decrease in physical strength, dependence on others* (73.4%), e) *senile dementia* (19.3%), f) *change in physical appearance* (31.8%), g) *change of economic situation* (28.6%), h) *institutionalization* (31.8%), i) *no significant fear* (0%). If we now take the most frequent answer, that would normally be considered to be the most relevant one, decide not to spell it out an instead “conceal” it under ‘other, please fill in:’. We would definitely expect that the frequency of this answer would drop, but how much? If it is a relevant answer, one would expect that it would still be frequently provided. Note, that replacing the answer with ‘other, please fill in:’ option does not prevent the respondents from providing this answer, they are just not led to it by a specific suggested answer choice. The results of this modification are summarized in Table 2.

Based on the results presented in Table 2 we can clearly see that concealing and option and requiring the respondents to spell it out under ‘Other’ drastically decreases the frequency of providing such an answer. In our case the originally most frequent option selected by almost ¾ of the respondents

dropped to under 5% frequency. On the other hand this could mean that if an open answer is frequent, its relevance is potentially high.

5. Conclusion

In this paper we have set out to show how large the effect of different question formulation can be on the answers we can obtain through questionnaires. We have particularly focused on cases where the modification of a question would not make providing the specific answer impossible and at the same time it would still allow the respondent not to provide the answer. On a specific replication/modification study we quantify what we call here a 'singling out' effect where asking about acceptability of a single answer drastically increases its frequency (we report 24.7% -> over 90% increase in relative terms) and 'concealment' effect where hiding the most frequent answer under 'Other, please fill in' virtually removes the answer from the sample (73.4% -> 5% in relative terms). As even these limited results show, just the formulation of the question (and an offer of answers) can determine what data we get through questionnaires and what results it would imply. The formulation of the questions that we finally opt for therefore needs to be well justified and motivated.

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De-internationalization of retail trade. The example of retail chains of the large-format shops in Poland

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Abstract: Divestments are a kind of opposition to the concept of internationalization that dominated in the 1980s. Currently, a slowdown in the internationalization of trade is observed, which is largely due to unsatisfactory financial results. The consequence is the complete or partial withdrawal of commercial enterprises from some foreign markets. Therefore, in the context of retail trade, it seems appropriate to use the term deinternationalization. Deinternationalization in retail is defined as the sale (or liquidation) of the entire format or part of the stores of an entity operating on foreign markets. The saturation of the Polish market with large-format formats made it necessary to reorganize the strategies of international retail chains. Further development is seen in the optimization of formats, changes in positioning, development of ecommerce channels and convenience stores. These changes have also become a premise for the divestment processes of international chains from the Polish market.

Keywords: State a maximum of 5 key words separated by comma (style Intro, font Calibri, size 10pt, justified)

JEL classification: O24, N74

1. Introduction

Disinvestment constitutes a type of opposition to the concept of internationalization that prevailed in the 1980s. Currently, there is a slowdown in internationalization of trade, which is largely due to unsatisfactory financial results. The consequence is complete or partial withdrawal of the retail companies from particular foreign markets. Therefore, in the context of retail trade, it seems reasonable to use the term of de-internationalization. De-internationalization in retail trade is the sale (or liquidation) of the entire format or part of the shops of the entity operating on foreign markets. Saturation of the Polish market with the large-format formats has resulted in the necessity of reorganization of the strategies of international retail chains. Further development can be observed in optimization of the formats, changes in positioning, development of e-commerce channels and convenience shops. These changes have also become the rationale for processes of disinvestment of the international chains from the Polish market. The aim of the study is to identify the divestment process in the country.

2. Definition and causes of disinvestment

Disinvestments, also referred to by the term of divestment, is a process known in the literature as early as the 1970s (Lovejoy 1971, Boddewyn 1976). Synonyms for the term, such as: disinvestment, divestiture, disposition, disquisition, abandonment, redeployment can be found in the English literature. The word 'divest' is translated as: to strip (of something), to dismantle, to free/release (from something), to divest/release (from something), to give up/resign (from something), to deprive/abandon (something) (Wojewodzic T., 2010, p. 98). Divestment is defined as a voluntary, planned or crisis-enforced limitation in the existing scope and scale of the operations of the

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organization by giving up part of its business or getting rid of it, mainly through sale (Osbert-Pociecha G., 1998, p. 11). In practice, disinvestment may consist in the sale of the company's assets, which may be of various types: sale of a subsidiary, a branch, a production line, a part of the subsidiary's shares, a part of the company in a cash transaction for securities or in a settlement that is a combination of both (Wawryszuk-Misztal A., 2012, p.863). Disinvestment may also consist in selling off the entire assets of the company for cash paid to its shareholders (Rao R.K.S., 1995, p.810). The objective of each enterprise is to aim at increasing its resources and size through investment. Investments are often accompanied by divestments, which - contrary to appearances - do not confirm the weakness of the enterprise, however, they are part of the strategy aimed at its strengthening and building up its market position. As Osbert- Pociecha (1995) states, a planned and timely decision to divest should be regarded as a necessary condition for optimizing the size of the enterprise both in terms of financial, physical and human resources and in terms of market opportunities. On the other hand, predictive divestments are often innovative in nature and can have a significant impact on the company's situation. Due to this 'step backwards' (withdrawal, resignation), a part or the entire enterprise is cleared and the resources, thus released, create the conditions for further development (Osbert-Pociecha G., pp. 24-26). It can also be stated that divestments constitute all activities of a planned nature, which involve reducing the scale and scope of the business, or which involve reducing the resources used, yet which lead to an improvement in the financial performance of the company (Wojewodzic T., 2010, p. 98). The two processes, investment and divestment, are closely connected and possess numerous similarities (Wawryszuk-Misztal A., 2012, pp. 862-863):

- the aim of investment and disinvestment is to maximize shareholder value,
- disinvestments often precede investment processes since they enable to obtain the funds necessary for implementation of the investment activities,
- disinvestments and investments are two sides of the same transaction, i.e. a process that is a disinvestment for the seller and an investment for the purchaser.

While analyzing the retail market, disinvestments constitute a kind of opposition to the concept of internationalization that dominated in the 1980s (Grzesiuk A., p.86). Currently, there is a slowdown in the internationalization processes of trade whose causes are mainly unsatisfactory financial results. The consequence is complete or partial withdrawal of the retail companies from particular foreign markets. Therefore, in the context of retail trade, it seems appropriate to operate with the concept of de-internationalization (Karasiewicz G., 2018a, 2018b). De-internationalization in retail trade is defined as the sale (or liquidation) of all or part of the shops of the entity operating in foreign markets (Burt S.L., Dawson J., Sparks L., 2003, 2004, Alexander N., Quinn B., Cairns P., 2005, Benito G.R.G., 2005). While analyzing the process of de-internationalization of retail trade, key findings can be reached (Karasiewicz G., 2018b, pp. 79-80):

- disinvestment from the foreign market can take various forms, but most are related to the exit of the particular entity (retail format) from the geographic market,
- the higher the degree of internationalization of retail trade, the greater the number of decisions related to exit from the specific geographic market,
- the time to exit the foreign market is highly dependent on the specific goods offered by the retailer and/or the retail format (shorter time is recorded for foodstuffs),
- de-internationalization processes are dominated by entities that have entered foreign markets through entry strategies - joint ventures and acquisitions.

While considering the causes of disinvestments in retail trade, the results of the study conducted in the 1980s by Tordjman can be cited. The author identified the reasons for the failure of French hypermarket chains in the US market. The most important of these included (Tordjman A., 1988, pp. 14-16):

- lack of innovation - the basic format of the French hypermarkets in the US market was already familiar to other retailers; offering a wide range of food and industrial products 'under one roof' was not competitive as a result,
- current competition - French chains faced strong competition from national retailers who offered similar formats and were already well-established on the domestic market,
- lack of bargaining power as a result of the scale of operation; due to the manner of entry into the US market consisting of so-called organic growth spread over time, achievement of the returns to scale and a strong bargaining position with local suppliers was too slow,
- buyer preferences - the French hypermarket chains popularized the concept of the 'one-stop-shop' in Europe in the 1980s; however, this concept was not very popular with US consumers,
- management culture - traditional French chains used a decentralized management structure for individual outlets; this style of management allowed relative flexibility to adapt to local conditions; however, this concept did not work in the US market.

Disinvestment is perceived in a similar way by Burt, Dawson and Sparks (2003, 2009). They linked the process of disinvestment to the failure of retail companies in international markets. The authors distinguished four rationales for the failure of retail chains in foreign markets:

- market failure - sales levels did not meet targets; the behaviour of the market players was different than expected,
- failure in terms of competitive positioning - a better competitive position than competitors was not achieved; possibly the impact of regulation on the company's position,
- operational failure - competence and know-how from the domestic market was not suitable or sufficient for transfer to a foreign market,
- business failure - the decision to withdraw from the market is the result of changes in the domestic market environment.

3. Disinvestment of international retail chains of the large-format shops in Poland

The 90s of the 20th century were a period of intense transformations in the Polish trade. The inflow of direct foreign investment constituted a very important element of these transformations. The change of the political system after 1989 became an opportunity for investors who - taking advantage of the shortcomings of the trade infrastructure - introduced modern retail centres to the Polish market (Gosik B., 2016, p.113). Numerous factors contributed to such a rapid development of the modern trade in Poland. These include changes in consumer shopping habits, internationalization of trade, emergence of new players in trade, technological changes and trade legislation (Colla E., 2004, p.51). Foreign investment has focused primarily on development of the large-format retailing.

Commercial chains of the large-format shops perceived Poland as a promising market. As a result, new shop formats, such as supermarkets, discount shops and hypermarkets, began to appear. The increase of new retail outlets located by foreign investors slowed down at the beginning of the 21st century. Saturation of the Polish market with large formats required reorganization of the strategies of international retail chains. Further development began to be observed in the optimization of formats, changes in positioning, development of e-commerce channels and convenience stores. These changes

also became a premise for the processes of disinvestment of the international chains from the Polish market (Grzesiuk A., 2016, p. 93).

4. Analysis and identification of the deinternationalization process in Poland

The aim of the study is to identify and analyze the divestment of large-format retail chains in Poland. The starting point for achieving the aim of the study was the method of analyzing the strategy of commercial chains of large-format stores. The source of the data were official press releases and information on the websites of individual operators. This allowed for an in-depth analysis of the entry and exit methods of the largest retail chain operators in the country to the Polish market. The analysis covers the period since 1990, i.e. since the economic transformation and the related transition from a centrally controlled economy to a capitalist economy.

Table 1. Disinvestment of the large-format retail chains in Poland between 1990 and 2022.

Name of the chain	Years of functioning in Poland	Format of the shop	Home country	Merging company
Globi (GB)	1990-2000	supermarket	France	Carrefour
HiT (Dohle)	1993-2002	hypermarket	Germany	Tesco
Rema 1000 (Reitan Group)	1993-2003	discount shop	Norway	Jeronimo Martins, Food Emporium
Real (Metro AG)	1997-2016	hypermarket	Germany	Auchan
Billa (Euro-Billa)	1990-2001	supermarket	Austria	Auchan
Geant (Casino Group)	1995-2006	hypermarket	France	Real
Jumbo (Jeronimo Martins)	1996-2002	hypermarket	Portugal	Hypernova
Minimal (Euro-Billa)	1996-2006	supermarket	Austria	Billa
E – discount shop E – supermarket (Edeka)	1997-2003	discount shop	Germany	Royal Market
Billa (Euro-Billa)	2006-2010	supermarket	Austria	E. Leclerc
Leader Price (Casino Group)	2000-2007	discount shop	France	Tesco
Albert (Royal Ahold NV)	1994-2006	supermarket	The Netherlands	Carrefour
Plus Discount (Tengelmann Group)	1995-2008	discount shop	Germany	Biedronka
Hypernova (Royal Ahold NV)	1998-2007	hypermarket	The Netherlands	2003 - Carrefour 2005 – Carrefour i Metro Group (Real)

				2007 - Carrefour
Aldi (Franmax UAB)	2012-2018	supermarket	Lithuania	Stokrotka (Maxima Grupe)
Tesco (Tesco Poland)	1995-2022	hypermarket	Great Britain	Netto Indygo (Salling Group)

The source: author's own elaboration

The table shows the data of the 16 most important disinvestments of foreign operators (Table 1). While analyzing the timing of entry and exit of the international retail chains, two time periods were adopted. The first period is the years from 1990 to 2003, i.e. the period beginning with the years of economic transition and the time just before Poland's accession to the European Union. The second time frame is the period after Poland's accession to the European Union until 2022. The vast majority - 14 out of 16 analysed entities - entered the Polish market before the country joined the European Union. Only two entities made the above decision in the period after 2004. This is a very good example to confirm one of the concepts concerning the processes of retail internationalization, according to which attractiveness of the foreign market is largely determined by legal and political conditions (Karasiiewicz G., 2018, p.212). An analysis of the date of exit of the international retail chains from the Polish market does not show such a large disproportion any longer, although the de-internationalization rate is higher in the interval after Poland's accession to EU structures. The main reason is the legislation introduced during this period: Planning and Spatial Development Act of 2003 as amended, tax changes relating to retail chains and restrictions on Sunday trading. More than half of the surveyed foreign entities (8 out of 15 disinvestments) operated on the Polish market for 6 to 10 years. Two foreign chains of the large-format shops operated for more than 15 years - hypermarkets of the Metro AG - Real chain and hypermarkets of the Tesco chain (Tesco Poland). Four of the analysed entities had been in business between 11 and 15 years, and 2 less than 5 years. The average duration of operation was 10.6 years, which means a relatively long period of operation. The main reason for this included favourable environment and favourable conditions for trading in the period immediately following the transformations in the country.

5. Conclusion

Summarising the process of the de-internationalization of trade in Poland, various rationales for the decisions of the particular foreign retail chains of the large-format shops can be identified (Grzesiuk A., 2016, p. 94). The most important ones include:

- misguide locations
- lack of flexibility of operations and failure to adapt operational activities to changing market conditions
- mismatch between the pace of network development and market development
- development of the Polish market exceeding the internal resources of the parent company
- failure to take into account the specifics of the market in operational activities
- management errors, e.g. insufficiently advanced processes in the area of warehouse management or contacts with suppliers
- cultural differences - maladjustment of the shop formula to the local market
- reasons lying on the side of the mother company and resulting from a change in strategy of the head office

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Technology Project in the Industrial Organization

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Abstract: Since automation terminates of many dichotomies, including that between culture and technology, between consciousness and matter, spirit and nature, or reason and emotion, the future of work consists, as Marshall McLuhan observed, of learning a living in the automation age. This article seeks to connect the philosophical works of J. Habermas and A. Bogdanov to the practical domain of project management in industrial organizations with support of AI-powered language model ChatGPT. Its objectives include providing critical analysis, insights into communication, and practical recommendations to enhance project management practices in light of these philosophical perspectives. By combining insights from philosophy and project management, the article can contribute to a more interdisciplinary understanding of the challenges and opportunities of project management in industrial organizations. It may encourage scholars and practitioners to bridge the gap between philosophy and management theory.

Keywords: technology, automation, system theories, project management, industrial organization

JEL classification: L15, M14, Z13

Grant affiliation: None

1. Introduction

As Habermas (1984) indicated in his work, when we use the expression "rational", we suppose that there exists a close relation between rationality and knowledge, our knowledge has a propositional structure; beliefs can be represented in the form of statements (Habermas, 1984). Yet, this proposal has two obvious weaknesses. On the one hand, the characterization is too abstract and on the other, it is too narrow. *"The rationality inherent in communicative practice extends over a broad spectrum,"* writes Habermas, *"it refers to various forms of argumentation as possibilities of continuing communicative action with reflective means"* (Habermas, 1984).

It should also be added, that in context of capitalist enterprise, or in modern state administration, it is the concentration of material means of operation under control of rationally calculating entrepreneur or leader, which is according to Habermas necessary condition for purposive-rational action to be institutionalized.

Habermas writes:

"From a historical perspective too, the 'progress' towards the bureaucratic state, adjudicating and administering according to rationally established laws and regulations is very closely related to modern capitalist development. The modern capitalist enterprise rests (internally) primarily on calculation. It requires for its existence a legal and administrative system, whose functioning can be

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rationaly calculated, at least in principle, on the basis of fixed general norms, just like the expected performance of a machine.” (Habermas, 1984)

Modernization can thus be viewed as societal rationalization, claims the author, and asks the following question:

“How is the institutionalization of purposive-rational action orientation in the domains of social labor possible?” (Habermas, 1984)

2. Method

Connecting the philosophical works of Jürgen Habermas and Alexander Bogdanov to the practical domain of project management in industrial organizations requires an interdisciplinary approach. Both philosophers emphasize the importance of communication, rationality, and the role of individuals in collective decision-making. With help of ChatGPT, and through description of the project stages like project initiation, planning, execution, monitoring, and closure in industrial organization, described from the perspective of Bogdanov’s organizational rationality and system design, where overall efficiency and effectiveness of project management processes is emphasized, I encourage a culture of continuous learning and adaptation within an industrial organizations, which can lead not only to more effective but also ethical project management practices.

3. Project and its constraints

<! -- begin: Contemporary business, as well as science, recognize a project as carefully planned, individual or collaborative activity, carried out by a project team and led by project management to achieve a specific goal. <! -- cont: Accepted definition of a project as *“temporary work effort that produces a unique result”* (Rosenau, Githens, 2005), can be further supplement by the following attributes:

- <! -- cont: Projects are temporary, i.e., there is a beginning and end to the project.
- <! -- cont: Projects are unique, which means that the work product or processes that create it are novel or different.
- <! -- cont: Projects are progressively elaborated, which means that a project proceeds in steps or stages. -->>

<! -- begin: From the project management perspective, a project is a *“time sequence of events, or a collection of interrelated tasks performed over a period within a set budget or other constraints”* (OpenAI, 2023). -->

<! -- begin: A project consists of a specific organized effort motivated by a *“specific opportunity, a specific problem, need, desire or discomfort,”* (OpenAI, 2023) which seeks to create a unique and innovative solution - a product, service, process, or scientific research. -->

<! -- begin: Every project has a beginning and an end and is considered a closed dynamic system performed in line with the 4Ps of project management: plan, processes, people, and power. -->

<! -- begin: Project is also bound by certain constraints such as calendar, cost, and quality standards, each of which can be measured objectively during the project life cycle and exist and operate in an environment that can have a favourable or unfavourable impact on them. -->

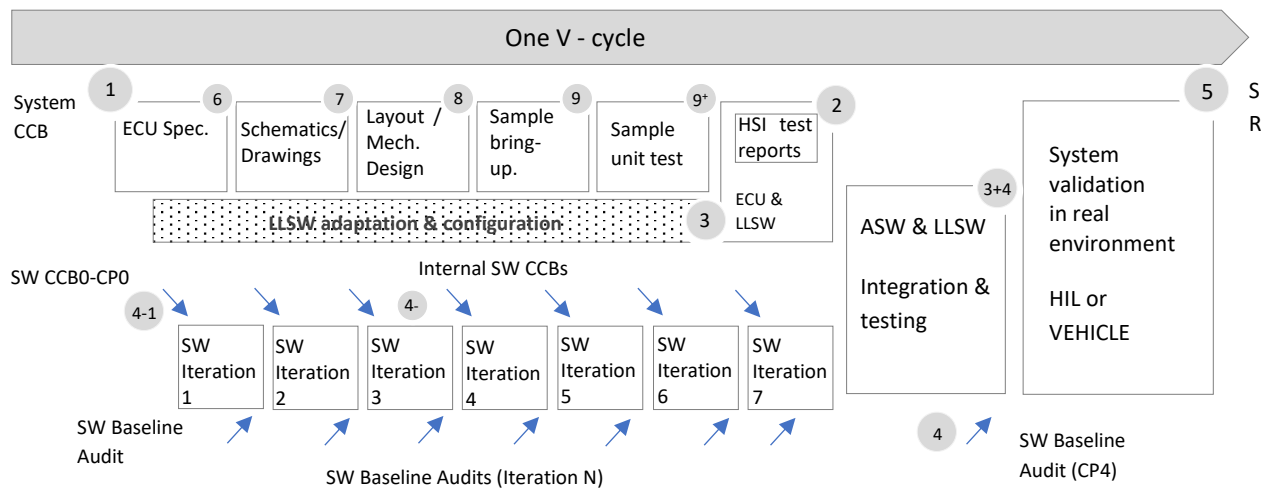


Figure 1: A typical product development cycle in industrial organization (System principles of project management, 2022)

<! -- begin: In business group α, a specific organizational process assets are deployed for the following project categories:

- <! -- cont: P0 – Serial life activity projects.
- <! -- cont: P1 – Customer application projects.
- <! -- cont: P2 – Advanced development & transversal projects.
- <! -- cont: P3 – Request & information projects.
- <! -- cont: P10 – Serial life activity projects using P1 manufacturing process. -->>

<! -- begin: Request and information projects (P3) demonstrate, or contribute to demonstrate, technical feasibility and the market interest, while advanced development & transversal projects (P2) improve existing standard for P1 reuse.

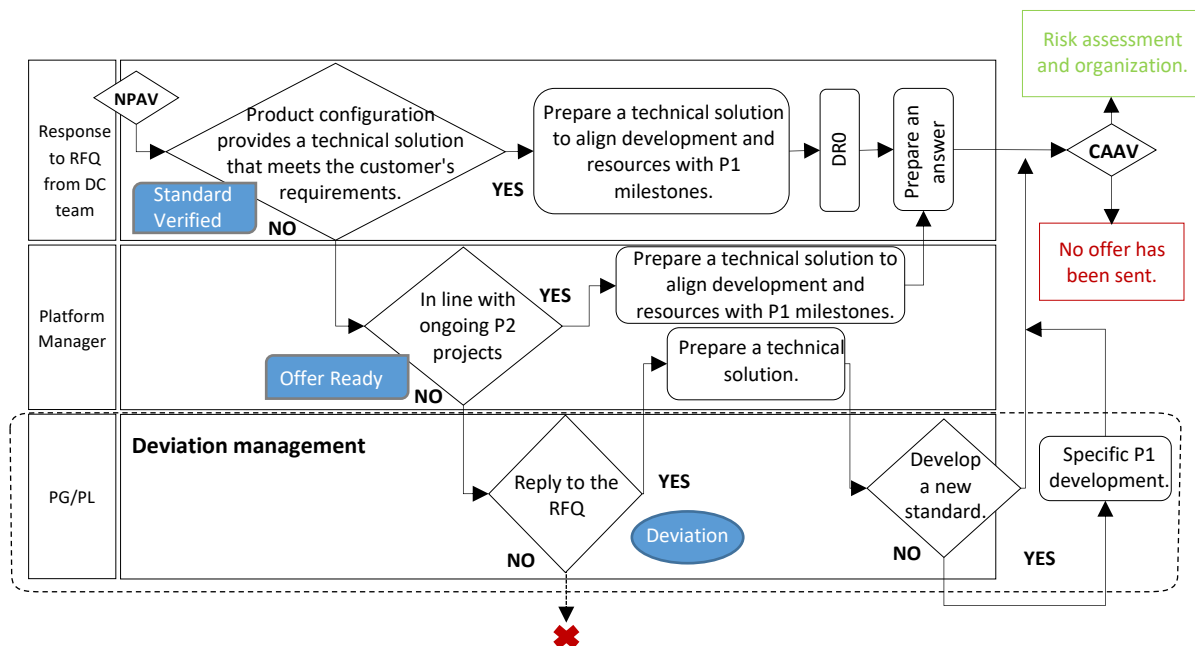


Figure 2: Innovation integration flowchart (CLEAN Project Management R. 3.1, 2022)

<! -- begin: Customer application projects (P1), develop product for serial production, by optimizing the re-use of existing elements, while serial life activity projects (P0) modify a product already in serial production, following the engineering change request/engineering change order (ECR/ECO) process after customer's approval. <! -- cont: Serial life activity projects using P1 process, i.e., P10 projects, modify a product already in serial production in significant way. -->>

<! -- begin: To facilitate effective R&D information transmission:

- <! -- cont: Engineering committees are put in place to ensure engineering disciplines and platforms quick interaction and resolution.
- <! -- cont: Issue resolution (action plans, resource decisions etc.) are submitted to project management and steering committees through R&D representative.
- <! -- cont: R&D operations committee is engaged in engineering assessment prior project steering committee's milestone approval (CPM2, 2020). -->>

Main () {Project management committee - PMC}

<! -- begin: Objectives of the project management committee are to review escalation points from PSC, where technical or economic issues escalated from project steering committee are presented by project manager.

<! -- begin: Project management committee takes also relevant decisions regarding:

- <! -- cont: Business and resources decisions,
- <! -- cont: Portfolio profitability,
- <! -- cont: Project closure (CLEAN Project Management, 2022). -->>

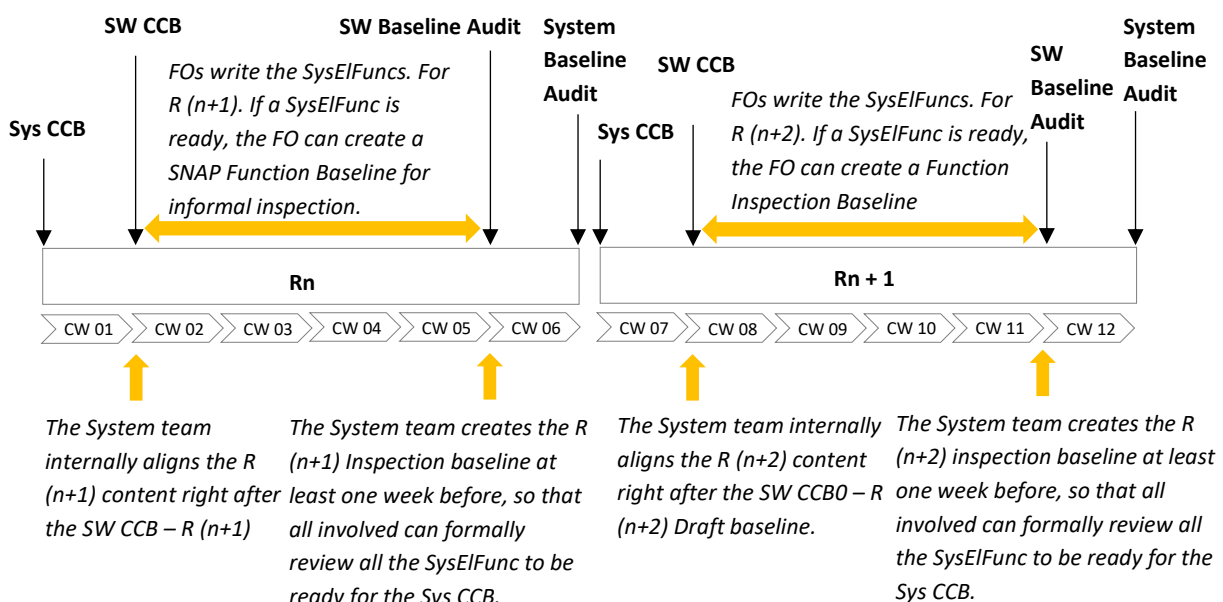


Figure 3: Working mode of the system team (System principles of project management, 2022)

4. Discussion and critical reflection

Tektology as the science of the structure of living organisms was described by Bogdanov (1921), as a general study of the forms and laws of organization of all elements of nature, practice and thought (Gare, 2000). According to him, we, humans, are the organizers of nature, ourselves themselves and their experiences.

According to ChatGPT 3.5, Bogdanov in tektology proposed, that there are universal principles of organization that apply not only to human society but also to nature as a whole. *"He argued that nature itself is an organized system, and humans are just one part of this larger organizational framework"* (OpenAI, 2023).

"Organizational science is characterized primarily and most of all by its point of view," writes Bogdanov (Bogdanov, 1921), adding that all the peculiarities of its problems, methods and results derive from this. According to him, the difference from other contemporary sciences arises as soon as the question is uttered, and establishes two essential moments (Bogdanov, 1921):

- a) From an organizational point of view, any scientific question can be asked and solved, which the special sciences either do not do, or do it unsystematically, half-consciously, or only in the form of exceptions.
- b) The organizational point of view also raises new scientific questions that current special sciences are unable to consider, define or solve.

For example, complexes are combinations of elements with a certain structure that are able to resist the activities of other complexes, where a) if the complex has a greater effect against resistance than its elements, it is an organized complex, b) if it achieves the same effect, it is a neutral complex, and c) if its effect is less, it is considered an unorganized complex (Bogdanov, 1921).

Prof. Zelený commented on Bogdanov's concept of the complex, that it is not only a set, an aggregate (or vector) of components and their relationships'. *"It is a 'process or continuous flow of an independent component production process, chained in self-starting cycles of accumulation and degradation. ... [It] neither exists nor interacts with its environment: it is structurally connected with the environment, and thus develops its own environment and simultaneously evolves with it'."* (Gare, 2000)

From this point of view, tektology could be considered as a transcending, coordinating framework of concepts able to guide and to give meaning to specific research in the entire range of sciences – physical, biological, cultural, social, and psychological (Gare, 2000).

On the other hand, it is also necessary to emphasize, that the ability of Bogdanov's tektology to predict the emergence of systems theories and complexity theories can also be used against it. According to Gare there are several fundamental features of tektology that support its radical potential. *"What is radical about seeing the world as consisting of processes rather than things or substances? What is so oppressive about conceiving the world as consisting of things and substances rather than processes"* (Gare, 2000)?

"The radical aspect of seeing the world as processes lies in its recognition of dynamism, interconnectedness, and temporality, while the oppressive aspect of viewing the world as things or

substances lies in its potential for reductionism, static thinking, objectification, and reinforcing dualistic perspectives” (OpenAI, 2023), answer the question ChatGPT 3.5.

“Tektology is radical because it consistently views the world as a world of processes,” answers the question Gare, “whereas systems theory and complexity theory, if they have been used in the interest of the ruling powers, are inconsistent in this respect and tend to assume that what really exists, whether systems or their components, are things.”

Gare continues:

“To begin with, the dualism that have emerged with hierarchical societies between what acts and what is acted upon, between consciousness and matter, between spirit and nature, or reason and emotion, can be overcome. All can be intelligibly conceived as aspects of processes and their relations.” (Gare, 2000)

However, for this to happen, for it to be possible to realize that the development of society, culture and knowledge are themselves processes in the world, such a conception of the world requires according to Gare first reflexivity. Reflexivity holding up the view that the development of culture and knowledge must be appreciated as part of the self-creation of humanity, involving the formation of relations between people, between society and nature, and between individuals and society (Gare, 2000).

5. Conclusion

The purpose of this article was to give a short description of the management of technology projects in industrial organization and by describing constraints embedded in project management methodology, through critical reflection, indicate to relevant restorative solution. From above it follows, that man and all his extensions constitute one interrelated system.

The interrelationship between man and his extensions, including language, requires therefore to pay more attention to what kind of extensions we create, since the relationship of man to his extensions, as observed also by Edward Hall, is a *“continuation and a specialized form of the relationship of organisms to their environment”* (Hall, 1982). However, when the process becomes extended it is also possible that extension takes over.

Automation in this context is not an extension of mechanical principles of fragmentation and separation of operations, but as Marshall McLuhan noticed, *“it is rather invasion of the mechanical world by the character of electricity”* (McLuhan, 1964). Our new electric technology, and computers in particular, now extends the instant processing of knowledge by interrelation that has long occurred within our central nervous system. It should however be noted, that since extensions are numb, the next logical step would be to build feedback (research) into them so that we know what is happening.

Only then it will be possible to create extensions paralleled by condition of speechlessness, which could confer, as McLuhan noted, a perpetuity of collective harmony and peace.

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Life Cycle Assessment Integration to Improve ESG Reporting: A Path to Sustainable Decision-Making and Stakeholder Confidence

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Abstract: Companies are increasingly adding Environmental, Social, and Governance (ESG) measures to their reporting procedures as sustainability and climate change issues continue to receive attention on a global scale. ESG reporting can be significantly improved by using the Life Cycle Assessment (LCA), a tool that assesses the environmental effects of goods and services from conception to disposal. This is because LCA provides comprehensive and transparent data on companies's environmental performance. This article initially reviews the literature on the concepts of LCA and ESG, then explores the synergy between LCA and ESG, highlights the benefits of integrating LCA into ESG reporting, and proposes a methodology for doing so. Key advantages include improved decision-making processes, better identification and management of environmental risks, and increased stakeholder confidence. By incorporating LCA into ESG reporting, companies can demonstrate a strong commitment to sustainability, strengthen their brand image, and potentially access new market opportunities.

Keywords: Environmental, Social, and Governance Reporting, Life Cycle Assessment, Sustainability

JEL classification: Q01, Q56, M14

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1. Introduction

Sustainability has become an increasingly crucial consideration for businesses, investors, and policymakers worldwide as they work to tackle urgent challenges such as climate change, resource depletion, and the rising expectations of stakeholders. In response, Life Cycle Assessment (LCA) and Environmental, Social, and Governance (ESG) reporting have emerged as vital tools for evaluating and communicating the sustainability performance of businesses and their products (Elkington, 1998; Lokuwaduge, 2017).

LCA is a systematic methodology that evaluates the environmental impacts of a product, service, or process throughout its entire life cycle, from raw material extraction to end-of-life disposal or recycling (ISO, 2006). ESG reporting involves disclosing non-financial information concerning a company's environmental, social, and governance performance, allowing stakeholders to gain a better understanding and assess the organisation's sustainability initiatives (KPMG, 2020). Integrating LCA into ESG reporting, as suggested by Sroufe (2017), and Molnár et al. (2023), presents a promising opportunity to enhance the rigour and credibility of sustainability disclosures. This integration can ultimately foster informed decision-making, drive improvements, and facilitate the creation of long-term value for both businesses and investors. By incorporating LCA into ESG reporting, organisations

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can provide a more comprehensive and accurate representation of their environmental performance (Molnár et al., 2023).

Despite the increasing significance of sustainability and ESG reporting, the incorporation of LCA methodologies in ESG disclosures has been limited. Studies have revealed that only a small percentage of companies utilise LCA in their sustainability reports, and the absence of widely accepted standards or guidelines for integrating LCA into ESG reporting can lead to inconsistent and incomparable disclosures (Jiang et al., 2022; Molnár et al., 2023).

This article aims to delve deeper into the role of LCA within ESG reporting, exploring the drivers, challenges, and potential benefits associated with this integration. It will provide insights into the current state of LCA and ESG reporting and offer guidance on how organisations can effectively incorporate LCA results into their ESG disclosures to enhance decision-making processes, drive continuous improvement, and improve the credibility of sustainability information.

2. Life Cycle Assessment (LCA): a comprehensive tool for sustainability

2.1. Definition and history of LCA

Life Cycle Assessment (LCA) is an integrated technique for analysing the total environmental consequences of goods or processes throughout their life cycle, from raw material extraction through final disposal. It is based on ISO 14040. It entails compiling a list of environmental inputs and outputs, assessing their effects, and interpreting the results. LCA is critical as a decision-making tool, particularly during the early phases of product development, to drive the creation of products and services while accounting for environmental repercussions and interactions throughout the life cycle (Fava et al., 1993; Rebitzer et al., 2004; Khasreen et al., 2009) (as can be seen in Figure 1).

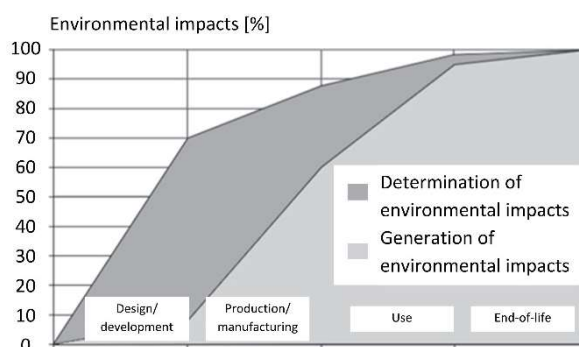


Figure 1: Generalized representation of the (pre)determination and the generation of environmental impacts in a product's life cycle (adopted from Rebitzer et al., 2004)

LCA research began in the late 1960s, primarily focused on energy but subsequently expanding to include resources, pollution, and waste. Although impact assessment approaches were developed in the 1980s, the discipline lacked a cohesive framework until 1990, resulting in a variety of conclusions. In 2002, Society of Environmental Toxicology and Chemistry (SETAC) and United Nations Environmental Programme (UNEP) created the Life Cycle Initiative, which highlighted LCA and gave rise to ideas such as Life Cycle Costing (LCC) and Social Life Cycle Assessment (SLCA). However, methodological inconsistencies continued because of ISO's lack of defined LCA guidelines (Guinee, 2011).

2.2. Methodology and key principles

The ISO 14040:2006 standard defines LCA as a method for evaluating the environmental aspects and potential impacts associated with a product by examining its inputs and outputs within the product system. The standard outlines four primary phases in the LCA process: Goal and Scope Definition, Life Cycle Inventory (LCI), Life Cycle Impact Assessment (LCIA), and Interpretation. As can be seen in Figure 2 illustrates these processes, which have an interactive and iterative structure, allowing for flexibility in cases of missing data, ambiguous results, or discrepancies between the results and the study's objectives.

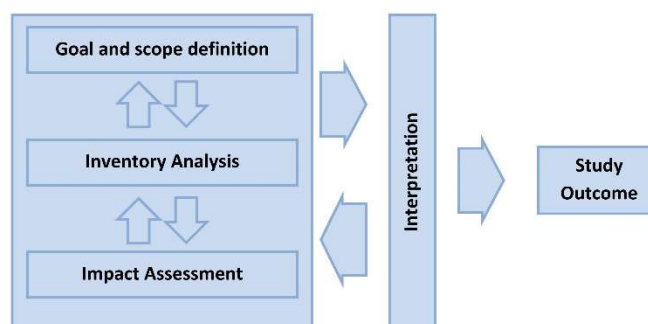


Figure 2: Environmental Management Life Cycle Assessment Principles and Framework (adopted from ISO, 2006)

To ensure the credibility and reliability of LCA results, practitioners adhere to several key principles: comprehensiveness, transparency, consistency, and iterativity. Comprehensiveness involves considering all relevant environmental aspects and life cycle stages. Transparency requires clearly documenting the data sources, assumptions, and methodologies employed. Consistency necessitates assessing similar processes and products using the same methods and data. Iterativity emphasises the need for continuous improvement and refinement of LCA studies (Björklund, 2002).

3. Environmental, Social, and Governance (ESG) Reporting: a crucial component of corporate accountability

3.1. Definition and history of ESG reporting

Companies use ESG reporting to reveal their environmental, social, and governance performance, allowing stakeholders to assess sustainability and ethical issues. The method has grown in popularity as businesses strive to demonstrate their commitment to sustainability and social responsibility. Growing stakeholder engagement, particularly investor interest, has been spurred by the realisation that financial reports alone are insufficient for appraising a company's future. ESG reports are currently in high demand since they have an influence on corporate value and future strategies. ESG performance has been shown to have a favourable impact on investing decisions. ESG reporting is encouraged through mandatory regulations like the EU's Non-Financial Reporting Directive and voluntary initiatives such as the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and Task Force on Climate-related Financial Disclosures (TCFD), which provide frameworks and guidelines for organizations to create and publish ESG reports (Mervelskemper & Streit, 2017; Inderst & Stewart, 2018).

The term "ESG" first appeared in the 2004 UN Global Compact report, which is endorsed by 20 financial institutions, including BNP Paribas, HSBC, and Morgan Stanley, is called for collaboration among

financial institutions to effectively integrate environmental, social, and corporate governance issues into asset management and related services (Compact, 2004).

3.2. Basic elements of ESG reporting

The ESG report includes three core elements: environmental, social, and corporate governance. Cek & Eyupoglu (2020) found that the social and governance pillars positively affect a firm's economic success due to their long-term value for shareholders. Paolone et al. (2022) highlighted that the governance pillar has a particularly stronger impact on market performance compared to the other two. Understanding each element is crucial. as can be seen in Figure 3 provides brief definitions of the categories under the basic dimensions of the ESG score. It is worth noting that there is currently no universally accepted criterion for sub-categories, as mentioned by Refinitiv (2019).

Pillars	Categories	Themes
Environmental	Emission	Emissions; Waste; Biodiversity; Environmental management systems
	Innovation	Product innovation; Green revenues, research, and development (R&D) and capital expenditures (CapEx)
	Resource use	Water; Energy; Sustainable packaging; Environmental supply chain
Social	Community	Equal important to all industry groups
	Human rights	Human rights
	Product responsibility	Responsible marketing; Product quality; Data privacy
	Workforce	Diversity and inclusion; Career development and training; Working conditions; Health and safety
Governance	CSR strategy	CSR strategy; ESG reporting and transparency
	Management	Structure (independence, diversity, committees); Compensation
	Shareholders	Shareholder rights; Takeover defences

Figure 3: Categories included in the basic dimensions of ESG score (adopted from Refinitiv, 2019)

3.3. Calculation of ESG Scores

a)

Step	Description	Sources
Data Collection	Gather data from company reports, news, and databases like Thomson Reuters ASSET4.	Escrig et al., 2017
Indicator Selection	Choose relevant indicators (e.g. emissions, energy efficiency, labour practices).	Calvin & Street, 2020
Data Normalisation	Process raw data for comparability (e.g. ratios, percentages).	Bender, 2018
Weighting and Aggregation	Assign weights to indicators; calculate sub-scores for Environmental, Social, Governance dimensions.	Bender, 2018
Final ESG Score	Combine sub-scores using methods like weighted averages. Understanding methodology is key.	Zhang, 2021

b)

$$E = \frac{1}{\text{total E - weight}} \sum_i \text{raw score}_i \times \text{weight}_i$$

$$S = \frac{1}{\text{total S - weight}} \sum_i \text{raw score}_i \times \text{weight}_i$$

$$G = \frac{1}{\text{total G - weight}} \sum_i \text{raw score}_i \times \text{weight}_i$$

$$\text{ESG} = \sum_i \text{raw score}_i \times \text{weight}_i$$

Figure 4: a) ESG score calculation steps (illustrated by authors); b) Mathematically, calculation of ESG dimension can be represented as (adopted from Zhang, 2021)

Calculating ESG scores involves evaluating a company's performance across environmental, social, and governance factors. ESG rating agencies and data providers employ diverse methodologies to calculate these scores. Some key aspects of the ESG score calculation can be seen in Figure 4.

4. Integrating Life Cycle Assessment (LCA) into ESG Reporting

4.1. Synergies between LCA and ESG reporting

Integrating LCA into ESG reporting can provide valuable insights for companies seeking to improve their sustainability performance. LCA offers in-depth and reliable information on how products and processes impact the environment, enabling businesses to present an accurate and transparent assessment of their environmental performance. The insights derived from LCA can support strategic decision-making, such as the selection of environmentally responsible suppliers, thereby improving the environmental section scores of ESG reports (Zhang et al., 2020). LCA helps companies identify the most significant environmental impacts across their value chains, allowing them to focus their efforts on addressing these critical areas and identifying opportunities for improvement. With the increasing demand for robust environmental information from investors, regulators, and customers, LCA enables organisations to meet these expectations by providing reliable data on their sustainability performance. By generating more reliable ESG reports, organisations can meet stakeholder expectations, thanks to the inclusion of LCA (Zhang et al., 2020; Jiang et al., 2022).

The product lifecycle includes infancy, development, maturity, and decline. Quality starts low and improves until maturity, where it stabilizes. The decline phase needs innovation to sustain. There's a link between product quality and ESG compliance, with potential for exceeding sustainability in infancy through design. Development balances financial and ESG growth. Maturity has untapped potential, while decline restricts growth unless improved (Bellandi, 2022).

4.2. Methodology that integrates LCA into ESG reporting

The following methodology proposed for integrating LCA into ESG reporting can be seen in Figure 5.

1. Preparation	<ul style="list-style-type: none"> a. Define Objectives: State the goals of integrating LCA into ESG reporting (e.g., transparency, reduced environmental impact). b. Engage Stakeholders: Consult with stakeholders to understand their sustainability concerns and expectations. c. Establish Team: Create a team from different departments to manage the integration.
2. Life Cycle Assessment (LCA)	<ul style="list-style-type: none"> a. Definition of Scope: Determine which products or processes to assess and what life cycle stages to include. b. Inventory Analysis: Collect data on resource use and emissions for each life cycle stage. c. Impact Assessment: Calculate environmental impacts using LCA software. d. Interpretation: Analyze results to identify areas with high environmental impact and possibilities for improvement.
3. Integration into ESG Reporting	<ul style="list-style-type: none"> a. Select ESG Reporting Standard: Choose an appropriate ESG reporting framework (e.g., GRI, SASB). b. Social and Governance Data: Include information on social and governance aspects. c. Set Targets: Establish environmental goals based on LCA findings. d. Compile ESG Report: Incorporate LCA data into the ESG report and provide context. e. Optional: Third-party Verification: Engage an external auditor for data verification.
4. Disclosure and Communication	<ul style="list-style-type: none"> a. Publish ESG Report: Make the ESG report available publicly through relevant channels. b. Communicate to Stakeholders: Share the report and its findings with stakeholders.
5. Monitoring and Improvement	<ul style="list-style-type: none"> a. Monitor Performance: Regularly check the company's performance against set goals. b. Update Data: Keep LCA and ESG data current. c. Engage Stakeholders for Feedback: Continuously gather stakeholder feedback for improvement.
6. Documentation	<ul style="list-style-type: none"> a. Maintain Records: Keep records of the data, methodologies, and assumptions used. b. Document Changes and Updates: Keep a log of any changes to methodologies and assumptions for transparency.

Figure 5: Proposed methodology (illustrated by authors)

4.3. Challenges and limitations of integrating LCA into ESG reporting

Despite the potential advantages of incorporating LCA into ESG reporting, organisations face several obstacles and constraints that need to be overcome to fully leverage this integration. The primary challenge in integrating LCA into ESG reports is the difficulty in accessing reliable and comprehensive data on environmental impacts. Companies may be reluctant to share proprietary information or face privacy issues with suppliers, further complicating data gathering (Jiang et al., 2022). Differing methodologies between LCA and ESG reports cause alignment issues. LCA focuses on environmental impacts, while ESG reporting is broader. Adjusting frameworks for consistency is necessary but challenging, especially as evolving products and technologies require continuous updates to LCA data, demanding more time and resources (Molnár et al., 2023).

5. Conclusion

Incorporating LCA into ESG reporting is crucial to providing accurate, transparent, and comprehensive data on organisations' environmental performance. By including LCA results in ESG reporting, companies can effectively demonstrate their commitment to sustainability, make informed decisions, and drive continuous improvement in their environmental practises. The adoption and integration of LCA approaches into ESG reporting are influenced by various factors, such as policies, regulations, market dynamics, and technological advancements. Moreover, emerging trends like digitalization, data management, streamlined reporting, standardisation, and the increasing focus on the circular economy and regenerative practises will shape the future of LCA and ESG reporting. Companies that proactively embrace these trends and invest in LCA and ESG integration will be better positioned to meet evolving expectations from investors, customers, regulators, and other stakeholders. Ultimately, the effective integration of LCA into ESG reporting can contribute to long-term value creation and drive positive environmental, social, and economic outcomes for all stakeholders, fostering a more resilient and sustainable corporate environment.

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Social relationships in the coopetition strategy of cultural institutions – the chance management concept perspective

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Abstract: In the relational approach, the term chance – understood as an opportunity – can be understood as a favourable moment for the organization to take action, bringing benefits to each of the parties involved in the relationship (Jing & Van de Ven, 2018). At the same time, the concept of social embeddedness (Granovetter, 1985) assumes that the decisions and actions of entrepreneurs depend on the social context in which they operate, in particular on the network of social relationships of a given entrepreneur with other entities of the market game. In other words, the entrepreneur's choices are influenced by who maintains social relationships with and how deep these relations are. In the relational approach of strategic management, with much greater dynamics than social relationships, the phenomenon of coopetition is also gaining in popularity. It should be emphasized that there are no good theoretical proposals for taking advantage of chance in coopetition – especially in cultural institutions – not to mention research in this regard. Considering that the social context is of particular or even fundamental importance for the activities of cultural institutions (Elaeva, 2019), the aim of the article is to exemplify the importance of social relationships on the coopetition strategy among cultural institutions from the perspective of the chance management concept. The research contribution is based on the results of qualitative research conducted within Polish public and private museums.

Keywords: social relationships; coopetition; chance management concept; cultural institutions; qualitative research

JEL classification: L320, L890, P130

1. Introduction

In the relational approach based on strategic management, the organization's development path is shaped by the built and developed appropriate inter-organizational relationships. The essence of the relational approach is the claim that the ability to survive or the development of an organization are conditioned and determined by the activities of entities in the external environment and the relationships with them. Among the many perspectives and theoretical approaches explaining the creation and development of inter-organizational relations, there are numerous concepts referring to disciplines other than management science, in particular to sociology. Management literature, including strategic management, increasingly uses in its analyzes the impact of, among others, sociology, which manifests itself in research on the impact of relationships and the relationships they create and social networks on economic phenomena and institutions.

However, despite the fact that social relationships (SR) are more and more often the subject of consideration in the literature of social sciences, including management literature, they are a relatively rarely explored research area. However, the few and fragmentary studies conducted so far have

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revealed significant – positive and negative economic implications – resulting from the established and maintained SR (Uzzi, 1997; Ritala & Ellonen, 2010). Moreover, the importance of SR in business activity is also important because there are many feedbacks between social and business relationships, hence it can be concluded that their impact on business activity is not only significant, but also multidimensional. In this paper, SR are defined as informal relationships between individuals, characterized by a certain degree of emotionality, thus SR are conceptualized as a micro level phenomenon so the managers are relevant key informants (Uzzi, 1997; Granovetter, 2005).

The literature emphasizes that interpersonal relationships are the foundation of the cultural sector's entities functioning, while their activity is based on interactions and building a network of connections with various entities (Ambrose & Paine, 2012). However, so far they have not been considered too often in the context of cultural institutions.

At the same time, despite the fact that cultural institutions are open to cooperation in contacts with the environment, because their goals and interests are often complementary, and joining forces can be beneficial for each party in the context of spreading culture (De Wit & Meyer, 2010), they compete in at least three main areas, i.e. competition for recipients, employees and financial resources (Mariani, 2007). It follows that in order for cultural institutions to successfully function on the market, they must enter into coopetition relationships, but despite the objective market premises emphasized in the literature, suggesting the existence of coopetition, little or even marginal research attention has been devoted to studying this phenomenon among public and non-public cultural institutions (Riquelme-Medina et al., 2022). The literature attributes a strategic character to coopetition, expressed in purposeful design in order to achieve higher operational efficiency and competitive advantage, thanks to cooperation with competitors. The coopetition strategy is thus understood as something that can be managed, planned and directed towards specific goals (Dagnino & Rocco, 2009). However, more and more often there are also spontaneous aspects in the cooperative agreements of rivals (Amata et al., 2022), and sometimes even inertial establishment of coopetition relationships as a result of chance. This means that coopetition can be the result of rational – strategic – decisions as well as accidental factors. In turn, the term “chance” in relational terms can be understood as a favorable moment for the organization to take action, bringing benefits to each of the parties involved in the relationship (Jing & Van de Ven, 2018) and the concept of chance management can be considered as a concept of using and creating promising phenomena or chances occurring in a dynamic and complex environment by the organizations themselves (entrepreneurs/managers) in order to achieve development benefits.

Considering that, firstly, coopetition relationships - similarly to cooperation and competition - although they are exploited at the inter-organizational level (the level of meso-analysis) (Coleman, 1988), are initiated, developed and, above all, implemented on the basis of the activity of people leading or employed in these organizations (Buskens & Van Assen, 2011). Secondly, a chance understood through the prism of chance management can not only be used, but also created by the organizations themselves (the managers). Thirdly, the research described by Skat-Rordam (2003) shows that chances are increasingly important in the development of organizations and, finally, fourthly, that the social context is of particular, or even fundamental, importance for the activities of cultural institutions (Elaeva, 2019), the aim of the article is to exemplify the importance of SR on the coopetition strategy among cultural institutions from the perspective of the chance management concept.

2. Research method

The empirical research was exploratory, and the research process used a qualitative, interpretative approach (Silverman, 2016). The methodology used included qualitative research techniques with the use of qualitative research tools (Bouncken et al., 2021). The study used semi-structured, in-depth individual face-to-face interviews. A total of 42 interviews were conducted – 22 with representatives of public museums and 20 interviews with representatives of private museums (one interview per organisation). This number enabled the so-called saturation effect to be achieved (Suddaby, 2006). Due to the adopted research goals, the interviewees were selected deliberately, taking into account such criteria as: (1) legal form of activity, (2) simultaneous occurrence of cooperation and competition relationships in the activity of the museum, (3) importance of the museum in Poland, (4) range of activity, (5) size of entity and (6) its activity. The snowball technique was used as well. In the case of public museums, the interviewees were mainly directors, their deputies or proxies, and other senior and middle-level managers. In the case of non-public museums, they were the founders, i.e., owners, or presidents of associations or foundations, when the founder of the museum was an association or foundation. Therefore, it should be recognized that in the context of the studied phenomena, the interlocutors were key informants (Kumar et al., 1993). The total duration of all interviews was approximately 47 hours, and the average interview duration was approximately 1 hour and 15 minutes.

The interviews were recorded and after collecting the data, the research material was written down and transcripts of the interviews were made. The text after transcription had a total of 909 pages. The content of the interviews was then encoded using NVivo computer software. The coding of the empirical data was made using deductive-inductive logic, so-called abduction (Auerbach & Silverstein, 2003). To increase the level of research trustworthiness (Guba, 1981), all procedures in the research were documented and a detailed protocol was set up. Also, full transcripts, definitions of codes and their applications were created and checked (Saldaña, 2014). The findings of the research are presented along with chosen quotations from the interviews so as to give a voice to the interviewees themselves, and at the same time increase the credibility of the qualitative research and allow for a better understanding of the research findings (Czernek-Marszałek & McCabe, 2022).

3. Research findings

3.1. Social relationships in the coopetition strategy of cultural institutions

The conducted empirical research showed SR as an important determinant of cultural activity. In the opinion of the interlocutors, SR played a decisive role in the activities of both public and private museums. The importance of SR among museums is well illustrated by the following statement:

The need for contacts and social relationships - as I say when it comes to our activity - becomes something inscribed in the DNA of every museum institution. [3P]

Coopetition, which as a relationship often appeared unintentionally among museums, was often embedded in the social context and the industry context related to it, which is consistent with previous research findings regarding the analysis of coopetition at the inter-organizational level (Bengtsson & Raza-Ullah, 2016). Socially embedded coopetition can be considered as an interactive, dynamic and multi-level social process (Chiambaretto & Dumez, 2016), shaped by both sides of the relationship as a result of the interaction of individuals (Dahl et al., 2016). In the case of museums, SR developed and maintained by the management and employees of museums translated into the recognition of a given institution in the industry environment and its positioning against other institutions of the same type.

Most importantly, research has revealed the essential importance of interpersonal relationships for establishing and developing coopetitive relationships:

Social relationships between people are very important, and then this translates into the relationships between institutions, between the director and other people. This is an extremely important element that builds various relationships and positions institutions in some sort of rank, hierarchy or situates them within the position of institutions in some structures. This is extremely important. At least for me it is very important. [14P]

Interpersonal relationships can stimulate actions or direct in some way, and here, on our example, these interpersonal relationships certainly translate into relationships with other cultural institutions at the local level, but also at a wider level, i.e. we try hard with many institutions in Krakow stay in touch. [8P]

SR between the management staff and other employees translated into: trust, general knowledge of the potential partner, knowledge about his competences and skills, passions, as well as the general perception of the personality of a given person, respect and reputation in the museum environment. SR also determined mutual sympathy or antipathy. All this translated into a positive or negative decision to cooperate with a competitor:

We prefer to know him, if we know him and know what he has at his disposal, for example, I am talking about monuments or people or knowledge, so we turn to him. I think that if such close contacts are established first, such warm contacts with the other party, it is easier to enter into any kind of cooperation at the level of our competing museums. [9P]

The personal knowledge of the coopetitors, based on positive SR, acted as a kind of "glue" on the represented entities, constituting support and justification for the cooperation undertaken with the competitor. It should be noted that it was also the case that SR between museum managers, more than the fact of competing, decided about establishing coopetition between cultural institutions:

Dear Madam, we choose here on the basis of total voluntariness, buddies, even friendship. And this is a different level, a completely different level than anywhere else, in any other industry. [5NP]

In addition, the conducted research allowed to conclude that the intensity of SR between representatives of the examined entities, expressed e.g. declaration of the interlocutors as to the intimacy of contacts or their frequency, affects the final shape of the coopetition relationship, according to the interlocutor:

The intensity of the cooperation relationship with a competitor, I don't know if the number of topics and threads undertaken together, like in the case of normal cooperation, is a derivative of the intensity of personal relationships. [15P]

3.2. Social relationships and chance management in coopetition of cultural institutions

As the conducted research has shown, SR between representatives of cultural institutions turned out to be important for discovering, creating and using chances coming from the environment in the context of establishing or implementing coopetition. Private contacts are often a source of chances for the entities, which manifest themselves in the form of, for example, the possibility of implementing a joint project, exchanging collections, knowledge or experience, organizing joint industry and

educational events, or the possibility of obtaining external funds. This is evidenced by the statement of one of the interlocutors:

It's just like the director of the museum [name of the museum], and privately my good friend, asked me at our outdoor exhibition if we would like to do something together there. Well, we agreed, because she proposed a joint educational project, which was very interesting. I would describe it as simply a friendly inquiry or a request for cooperation on the basis of "we will do something cool, because we are both passionate about you". [15NP]

As the interviewees claimed, various events or a combination of circumstances related to the existing SR created chances to achieve additional benefits for museum in the context of establishing cooperation with competitors. Industry events were cited as an example, such as conferences for museologists and accompanying behind-the-scenes meetings, during which coopetition relationships were often established with other competing museums:

It is usually at the beginning or during some events or celebrations that a conversation takes place which initiates such a sequence of further joint activities. We know each other, many projects behind us, I say "listen, maybe we'll do something together?" And that's how it begins. Nobody thinks it's a competition when the sympathy is undeniable. [12P]

SR are also a source of chances related to lobbying for legislation. Private museums cooperated with each other in the field of joint development of good industry practices for the ministry, applying in certain cases for interpretation of the law and the National Institute of Museology, consulting changes in the field of new law regulations, as well as jointly submitting proposals for changes to the applicable law:

Our cooperation, our association of museologists, was created spontaneously one time, primarily to articulate the common voice of these private museum circles, which has been so little heard so far. There were ideas to change the labour regulations and we started working together on this topic, even though we compete with each other here in the region on a daily basis. [2NP]

Moreover, the decision to establish a coopetition relationship was also influenced by the personality traits of potential coopetitors. Some of the interviewees pointed out that although they run activities with another museum in the same city or region, and their activity profiles and interests are close, due to the personality characteristics of the representative of a given museum, establishing a coopetition relationship was impossible. This indicates that SR with a negative character translates into a decision not to establish inter-organizational cooperation with a competitor or to establish coopetition only in a formal way, as one of the interlocutors points out:

And if there is no chemistry between these two people, if these people do not like each other, then for sure ... if it is to go further, then only formally, on paper, because then there is no trust. And most of the time it doesn't work at all. [10P]

It can therefore be concluded that even when a chance appears in the environment, worth taking advantage of from the perspective of the benefits for the organization, cool or ambivalent SR of the representatives of the museums concerned by the chance become a barrier, or even a blockade, preventing the use of this chance.

4. Conclusion

Adopting the basic assumptions of strategic management, including those regarding the coopetition strategy, the manager is forced to be sure about the content of the set goals and their implementation. Meanwhile, as research has shown, in the course of choosing the preferred strategy of action, managers of cultural institutions discover their goals through experience, and thus during the very process of making the choice. This is helped by the maintained SR, which in the perspective of the chance management concept become of fundamental importance. SR are important for discovering, creating, but also taking advantage of chances from the environment, which is in line with the incremental approach (Juszczyk & Wójcik, 2021) in relation to formulating organizational goals and devising ways to achieve them in conditions of changing environment, but also in the relation to establishing and maintaining coopetition relationships.

The strategy of coopetition from the perspective of the chance management concept appears as "unplanned" and develops rather as an evolutionarily controlled process, implemented on the basis of a "flexible" vision of success or expected benefits that have their source in the changing environment and emerging chances.

The originality of the coopetition strategy among cultural institutions, expressed in its high flexibility and openness to chances coming from the environment, can be seen in the attributes of individual relationships – their social embedding or dynamics, but also in the high flexibility of cultural organization. It should also be emphasized that the creation and use of chances in relation to coopetition has its sources in the ways of thinking and acting of managers in the cultural environment (individual perceptions that translate into actions and motivations) (Wood & McKinley, 2010).

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Consumer Preferences and Environmental Considerations in Clothing Purchases

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Abstract: Climate change is a pressing global issue that affects various dimensions of life on Earth. Altering consumer behavior is considered one potential solution to mitigate its negative environmental effects. This preliminary study aims to identify the factors that consumers consider when purchasing clothes and to assess their willingness to opt for environmentally-friendly clothing. Data was collected from 406 Czech consumers between March and May 2023. The results indicate that price is a primary determinant in clothing purchase decisions. Furthermore, the environmental impact of clothing production is not a significant factor for the Generation Z and Baby Boomer cohorts within the sample.

Keywords: Consumer behavior, Sustainable fashion, Eco-friendly clothing, Clothing purchase criteria, Generation Z and Baby Boomer preferences

JEL classification: D16, M30, M31

Grant affiliation: IGA_FF_2023_024 Entrepreneurial solutions to social problems

1. Introduction

The clothing industry, with its considerable environmental impact, is drawing increased attention due to its production processes and resulting waste. Further intensifying these environmental concerns is the purchasing behavior of consumers. Their decisions, from the type of garments they choose, the materials they favor, to the frequency of their purchases, play a decisive role in shaping the environmental consequences of the clothing industry. While there exists an option for consumers to prioritize environmentally friendly materials, many might overlook the broader environmental implications, inadvertently amplifying waste. Deep-rooted psychological factors significantly influence these purchasing decisions, leading to pronounced environmental outcomes. Vasquez (2022) highlighted a notable trend: a 60% increase in garment purchases between 2000 and 2014. Moreover, these garments now have a lifespan reduced by half. The fashion industry, leveraging aggressive marketing, tempts consumers with a plethora of trendy yet often inferior quality items available at reduced prices. A significant contributor to the rapid growth of this industry is the production of inexpensive clothing using synthetic materials derived from fossil fuels. Overproduction, reliance on subpar textiles, limited focus on reuse and repair, and inadequate recycling mechanisms have rendered the fashion industry both environmentally and socially challenging. Recognizing and understanding shifts in consumer behavior is not just pivotal for the environment but also vital for business strategies. This study seeks to clarify the specific criteria guiding consumers' clothing choices and assess their openness to environmentally conscious options.

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2. Theoretical background

2.1. Behavioral Foundations in Consumer Decision-Making

The field of consumer behavior is extensively covered in academic literature. As posited by Kotler and Keller (2016), for companies to remain adaptive to the evolving societal, economic, and technological landscapes that influence consumer patterns, it is imperative to perpetually scrutinize consumer behavior. Such changes often lead to shifts in the focus and methods of consumer behavior studies, as well as the reasons for studying specific topics. Williams and Plouffe (2007) emphasize the importance of systematic analysis in assessing the progress of knowledge development in the domain of consumer behavior, deeming it vital for its future expansion. MacInnis and Folkes (2010) argue that as the volume of publications grows, it's essential that these works contribute to a deeper understanding of the subjects related to consumers. Blackwell et al. (2006) contend that the nature of consumer buying behavior is intricate and dynamic, making it challenging to pinpoint a routine definition. The foundation of consumer behavior lies in understanding how emotions, attitudes, and preferences guide buying decisions. Consequently, various researchers have offered diverse definitions of the concept. Schiffman et al. (2012), for instance, characterizes consumer behavior as the actions consumers undertake when searching, purchasing, utilizing, evaluating, and discarding products and services they anticipate will fulfill their requirements. Consumer behavior delves into the decision-making processes of individuals as they allocate their resources, such as time, money, and effort, towards consumption-related activities. It encompasses a range of actions: what consumers purchase, the reasons behind their choices, the timing and location of their purchases, the frequency of their acquisitions and usage, post-purchase evaluations, the implications of these evaluations on subsequent buying decisions, and the methods of product disposal. Downes (2013) posits that human behavior, and consequently consumer behavior, is a product of numerous causal determinants. For any specific behavioral pattern, like conspicuous consumption, multiple immediate and potential long-term causes can be identified. Discerning these immediate causes and understanding their interrelations in shaping the behavior in question is a complex endeavor, which remains challenging even when the underlying cause of the behavior is suggested. Kianpour et al. (2017) characterize consumer behavior as the investigation of individuals, groups, or organizations actively selecting, utilizing, and discarding products, services, experiences, or ideas to fulfill needs. This definition also encompasses the consideration of the repercussions these activities have on both consumers and the broader society. The concept of consumer behavior distinguishes between two distinct categories of actors: personal consumers and organizational consumers. Personal consumers acquire goods and services for personal consumption, household utility, or as gifts for others. Such acquisitions are intended for direct utilization by these individuals, often termed as end-users or final consumers. Conversely, organizational consumers encompass entities like corporations, charities, governmental bodies at various levels, and institutions such as schools and hospitals. These entities necessitate the procurement of products, equipment, and services to facilitate their operational functions, as outlined by Schiffman et al. (2012). Wells (2014) posits that for the past half-century, consumer behavior research has predominantly been approached through the lens of behavioral psychology. This perspective is mainly rooted in the principles of classical and operant conditioning, as well as matching. The methodologies employed in behavioral psychology typically involve rigorous experiments with direct observation and measurement of consumer actions. Longitudinal studies, especially in the context of operant experimentation, necessitate extended periods of data gathering, spanning weeks to months, as highlighted by DiClemente and Hantula (2003). Pachauri (2002) points out that classical

conditioning is the most frequently employed behaviorist technique in marketing and consumer behavior research. It involves pairing a stimulus, which naturally induces a response, with another stimulus that initially doesn't elicit any reaction. As the association strengthens over repetitions, the latter stimulus starts to provoke a similar response due to its association with the former. Additionally, Pachauri (2002) references the operant or instrumental approach, where conditioning is used to encourage behaviors linked to positive outcomes and discourage those associated with negative consequences. The focus here is on reinforcing the stimulus tied to the desired response.

2.2. Evolutionary concept of consumer behavior

Griskevicius and Kendrick (2013) posit that a comprehensive understanding of contemporary consumer behavior necessitates a historical lens, drawing insights from an evolutionary standpoint. They suggest that foundational evolutionary drives persistently shape many of today's behaviors, even if their influence isn't always explicitly recognized or consciously acknowledged. These fundamental drivers encompass: evading physical danger, circumventing illness, fostering social connections, attaining societal status, securing a romantic partner, retaining that partner, and nurturing one's kin. A salient takeaway from this perspective is the dynamic nature of an individual's preferences and decisions, which vary based on the dominant underlying evolutionary drive at any given moment. Echoing a similar sentiment, Saad (2007) emphasizes that endeavors to decode consumer behavior should be rooted in its evolutionary trajectory. He delineates four cardinal "evolutionary motives" that anchor consumer behavior: survival, procreation, kin selection, and reciprocity.

2.3. Frameworks for Analyzing Consumer's Eco-Friendly Behavior

Consumer behavior is closely shaped by an individual's self-concept and lifestyle, both of which are molded by a confluence of external and internal determinants. Delving into the psychological dimensions of this phenomenon, Ajzen (1991) formulated the Theory of Planned Behavior (TPB), depicted in Figure 1. This theory endeavors to forecast human actions based on three core tenets: attitude towards the behavior, subjective norms, and perceived behavioral control, all converging to influence behavioral intentions. Emphasizing the multifaceted nature of factors that can sway behavior, TPB underscores the primacy of intentions as the most accurate forecaster of subsequent behaviour.

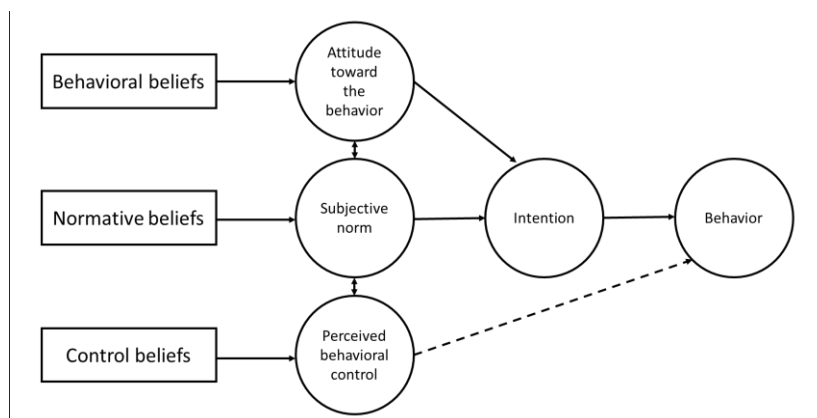


Figure 1: Theory of Planned Behaviour (Ajzen, 1991)

Schwartz (1977) introduced the Norm Activation Model (NAM), a framework that provides insight into altruistic and eco-friendly actions, depicted in Figure 2. The model delineates the primary determinants that steer human inclinations towards behaviors characterized by altruism and environmental consciousness.

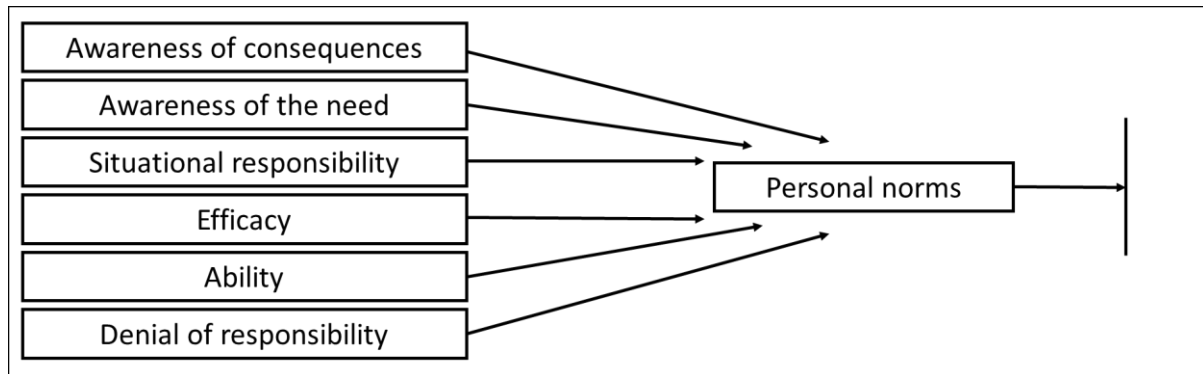


Figure 2: Norm Activation Model (Schwartz, 1977)

Onwezen et al. (2013) combined the NAM and TPB models, concluding that anticipated emotions significantly influenced behavior through the mediation of behavioral intentions. Bamberg and Möser (2007) posited that, in contrast to NAM, TPB is grounded in a more hedonistic understanding of human nature. This perspective views individuals as primarily driven by the dual motivations of avoiding negative outcomes and seeking rewarding experiences. As a result, overarching attitudes emerge from balancing negative and positive perceptions associated with potential outcomes. Ajzen (2015) frequently emphasizes that TPB doesn't purport individuals as inherently rational or their behaviors as consistently logical. Nevertheless, a large number of environmental and consumer behavior research operates under the presumption that individuals engage in calculated decision-making, aiming to increase societal benefits while simultaneously reducing costs, exertion, and discomfort. Xu et al. (2017) expanded the TPB framework in their examination of household waste separation by incorporating perceived moral obligations and perceptions regarding policy effectiveness. Their findings highlighted the significant roles of subjective norms, perceived behavioral control, past behaviors, and intentions in predicting waste separation practices, with historical behavior emerging as the most influential determinant of future intentions and actions. Several versions of TPB have also integrated environmental knowledge, yielding varied outcomes. While certain studies, like those by Kianpour et al. (2017) and Cheung et al. (1999), witnessed a noticeable improvement in the model's predictive capability, others yielded more nuanced results.

3. Methodology

The study employed a questionnaire-based approach to investigate consumer behavior related to clothing purchases. The questionnaire was designed to capture a diverse range of demographic information, including gender distribution and age categorization based on generational distinctions. These distinctions encompassed Generation Alpha, Generation Z, Millennials, Generation X, and Baby Boomers. Additionally, the questionnaire assessed the educational backgrounds of the respondents. Detailed specifics regarding participant demographics and their responses are discussed

comprehensively in the Results section. The preliminary study's questionnaire, beyond demographic inquiries, encompassed questions aimed at determining the hierarchy of criteria that influence clothing purchase decisions. These criteria included: 1) brand preference; 2) price considerations; 3) discounts available; 4) adherence to current fashion trends or designs; 5) comfort or practicality of the clothing; 6) advertisements related to the clothing; 7) preference for natural fabrics; 8) preference for synthetic fabrics; 9) importance of the clothing's country of origin or manufacturing; 10) emphasis on environmentally-friendly production methods; 11) feasibility of online purchase for the clothing item. A subsequent question delved into the motivations for purchasing new clothes, with options such as: 1) replacing outdated clothing; 2) attraction to new clothing designs; 3) replacement of slightly worn-out clothing; 4) tendency to buy new clothes irrespective of need; 5) desire to create a favorable impression on others.

4. Results and discussion

The pilot study drew upon a diverse pool of 406 consumers to gather insights into their clothing purchase behaviors and preferences. A breakdown of the demographic data revealed that females constituted a significant majority at 71.9%, while males represented 28.1% of the sample (refer to Table 1).

Table 1: Gender characteristics

Gender	Frequency	Relative frequency (%)	Cumulative (%)
Female	292	71.9	71.9
Male	114	28.1	100.0
Total	406	100.0	

Age-wise, Generation Z individuals, falling within the 19-26 age bracket, were prominently represented, accounting for 54.1% of the respondents (refer to Table 2). On the contrary, the 56-77 age range, synonymous with the Baby Boomers generation, had the least representation in the sample.

Table 2: Age (generations based) characteristics

Age category	Frequency	Relative frequency (%)	Cumulative (%)
less than 18 years	36	8.6	8,6
19 – 26 years	219	54.1	62.7
27 – 42 years	90	22.1	84.8
43 – 58 years	52	12.9	97.7
59 – 77 years	9	2.3	100.0
Total	406	100.0	

Delving into educational backgrounds, individuals with vocational school qualifications were the most prevalent at 44.3%. Conversely, participants with a basic level of education formed the smallest group, making up 4.7% of the total (refer to Table 3).

Table 3: Education

Education level	Frequency	Relative Frequency (%)	Cumulative (%)
Basic education	19	4.7	4.7
Vocational school	180	44.3	49.0
High school	153	37.7	86.7
University	54	13.3	100.0
Total	406	100.0	

When participants were questioned about their primary criteria for purchasing clothes, 56.3% of respondents indicated that the cost of the clothing was their most significant consideration. Following closely, 31.3% placed the brand of the clothing as their primary criterion. In contrast, only 3.1% emphasized the environmentally-friendly attributes of the clothing as their primary deciding factor, with several other potential criteria receiving no mention at all. Further insights into their preferences revealed that the cost remained a significant factor, with 37.1% of participants ranking it as their second-highest consideration. Environmentally-conscious clothing was the third preference for 6.1% of the sample. It's noteworthy to mention that aspects such as the clothing's eco-friendliness, its country of production, and whether it was made from synthetic or natural fabric were not factors in the decision-making process for this group. In terms of motivations behind their clothing purchases, 31.2% expressed that they bought new items simply because they liked them. Close to this, 30.8% indicated the replacement of old and worn-out clothing as their main reason. Another 15.1% cited minor wear and tear as a motivator, while 10.1% confessed to buying even without a pressing need. Interestingly, 6.4% of respondents were driven by the desire to impress or to keep up with current fashion trends.

5. Conclusion

The primary goal of this preliminary study was to identify factors influencing consumers' clothing purchase decisions, especially regarding environmentally friendly choices. Findings indicated a strong emphasis on price, with eco-friendly attributes often overlooked, especially among Generation Z and Baby Boomers. This suggests a potential disconnect and underscores the importance of more in-depth research to understand the reasons behind such purchasing behaviors.

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Adaptability of work integration social enterprises during times associated with the COVID-19 pandemic

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Abstract: The main goal of this paper is to evaluate the adaptability of work integration social enterprises (WISEs) to the COVID-19 pandemic, following the Devereill and Olsson (2010) typology. The paper primarily focuses on whether WISEs have adapted to the crisis associated with the COVID-19 pandemic. Data were obtained through semi-structured interviews with 18 WISE managers in Czech Republic. Results are compared across three types of adaptability. The first type is a fully adapting organization, the second type is a semi-adapting organization and the third type is a non-adapting organization. The paper highlights the ability/inability of WISEs to deal with unexpected crises and opens a discussion on the adaptability of WISEs in the market.

Keywords: Adaptability, COVID-19, work integration social enterprise, WISE, social enterprise

JEL classification: A103, M210

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1. Introduction

Over the past thirty years social enterprises have gained significant importance in both Europe and the United States of America (Kerlin, 2006). Social enterprises have been on the rise since around the year 1991, when a law was passed in Italy that created a legal basis for social enterprises. It was a so-called social cooperative (Defourny and Nyssens, 2008). Due to this, the interest of academics in these enterprises has also increased. Twenty years ago, social entrepreneurship was not much talked about, but nowadays it is different. In Europe, the concept of social enterprise does not hold the same level of recognition in all countries. In some countries it is fully accepted and supported, in others it is received negatively and is continually misunderstood (Defourny and Nyssens, 2008).

In Czech Republic, social enterprises are defined by the Thematic Network for Social Economy, using the abbreviation TESSEA. This article focuses on work integration social enterprises whose definition in Czech Republic according to TESSEA (2023) is as follows:

"Work integration social enterprise means a social entrepreneurship entity, i.e. a legal entity established under private law or a natural person that meets the principles of a work integration social enterprise."

The important descriptors of social enterprise are, according to Austin et. al. (2006) market failure, mission, resource mobilization and performance measurement. Descriptor that should point to a social enterprise's ability to take advantage of adverse market situations is market failure. One theory suggests that social enterprises are mainly created when there is a market failure (Austin,

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2006). The difference is that a problem for a commercial entrepreneur is an opportunity for a social entrepreneur (Austin, 2006). Here it is possible to point out the assumption of the ability of social enterprises to better react and adapt to the problematic situation on the market.

Social entrepreneurship is still under-researched in the Czech Republic. Due to this fact, it is important to examine various aspects of the day-to-day operation of these enterprises. The main goal of this paper is therefore to evaluate the adaptability of work integration social enterprises (WISEs) to the COVID-19 pandemic, following the Deverell and Olsson (2010) typology.

Literature review

Adaptability expresses the ability to of an enterprise to respond flexibly to risks and opportunities, which is also associated with the ability to utilize opportunities and risks and as such to transform them into one's advantage (Macmillan and Tampoe, 2000). Some authors consider adaptability rather as a set of certain cultural values, performance, and innovation, thanks to which a company is able to adapt well to a changing environment (Gordon and DiTomaso, 1992; Kotter and Heskett, 1992). According to Gordnon and Ditomaso (1992), efficient enterprises are mainly manifested by a strong corporate culture and adaptability, which is supported within the enterprise. Adaptability, as stated by Girneata (2014), cannot be measured objectively, but it is possible to focus on certain activities expressing change. These are five models of change, which include: leadership, program and project management, processes and culture, concrete activity, and change management strategy. This study therefore confirms that the adaptability of the company is correlated with the ability to make a strategic choice, as already has been described by Child (1972) in the 1970s.

Therefore it can be said that the enterprise must have the capability to create new products and adapt old products to customer needs, as well as to adapt its organizational structure to the constant changes in the environment (Girneata, 2014). It follows from the above that adaptability is a certain reaction to a change or crisis. A crisis can be considered a social, political, or organizational deviation, bringing opportunities and organizational change (Roux-Dufort, 2007). The reaction to a crisis is therefore a certain strategic choice, which is also associated with a typology of organizational strategic crisis adaptability (Deverell and Olsson, 2010), which is used in this article within the framework of assessing the adaptability to a crisis associated with WISE organizations. The typology of organizational strategic crisis adaptability according to Deverell and Olsson (2010) is focused on two dimensions, namely strategic adaptability, and organizational adaptability. Organizations can subsequently be fully adapting, semi-adapting or non-adapting, which is associated with the organization's response, see Table 1.

Table 1: A typology of organizational strategic crisis adaptability (Deverell and Olsson, 2010)

	Fully adapting organization	Semi-adapting organization	Non-adapting organization
Strategic adaptability	Strategy change	Strategy change	No strategy change
Organizational adaptability	Managerial and operational adaptability	Inhibited managerial and operational adaptability	Operational routine adaptability

From the above typology, it follows that top managers are a very important component for change, which have a key role in the company's capability to adapt to changes of the environment, which also results from their function (Deverell and Olsson, 2010). The adaptability of specifically WISE's has not been the topic of much research. Therefore, in one part of my research I also focus on this topic. This paper focuses on the WISE enterprise and their managers' capability to adapt their entrepreneurship to the crisis associated with the COVID-19 pandemic. A research question (RQ) was formulated based on previous literature review as: *"What is the capability of work integration social enterprises to adapt to a crisis, according to a typology of organizational strategic?"*

2. Methods

To obtain relevant data for presented case study, qualitative primary research was conducted. The method of semi-structured interviews was used. There are currently around 400 unofficially registered social enterprises in the Czech Republic, but the register of social enterprises contains many duplicates (CSP, 2023). The research was conducted using semi-structured interviews with 18 managers of work integration social enterprises. The research was stopped at the number of 18 WISE's, when the answers to the questions were already being repeated regularly (Creswell, 2007). The WISE's therefore no longer had anything new to contribute to that research. Questions in the interview were focused on the experience, opinion, feeling, knowledge, and perception of managers (Hendl, 2016, p. 172-173). This article uses an interview question focused on the crisis associated with the COVID-19 pandemic, the specific wording of which is: *"Has the time associated with the COVID-19 pandemic affected you in any way in terms of offering services/products/the operation of the organization?"* When asking the question, the manager was subsequently invited to comment on yes or no answer in more detail.

Data collection as part of the research was carried out from February to April 2021. A total of 11 female managers and 7 male managers participated in the interview, and their enterprises were of different sizes. These were micro-enterprises, small enterprises, and large enterprises. The enterprise with the smallest number of employees had only 2 and the enterprise with the largest number of employees had 480 employees. The average length of the interview was 50 minutes and 72 seconds, see Table 2.

Table 2: Basic statistical data on respondents

	Modus	Median	Average	Standard deviation	Maximum	Minimum	Difference
Number of employees	-	15,5	73,67	123,42	408	2	478
Length of business on the market (year)	8	8	8,39	5,5	25	1	24
Interview length (minutes)	36	47	50,72	21,77	122	26	96

Subsequently, the typology of organizational strategic crisis adaptability according to Deverell and Olsson (2010) is used as part of the evaluation of the research results. The approach of each

enterprise is evaluated according to the answers received, and subsequently the companies are classified into individual areas of the typology, see table 1.

3. Results

The following research results contain an analysis of individual interviews with all (18) managers. The type of adaptability is assigned according to the mentioned typology with three types of organisations, according to the content analysis. The first type from the typology is the fully adapting organization, which indicates an enterprise capable of strategic change as well as managerial and operational adaptability during a crisis. The second type is a semi-adapting organization, which indicates an enterprise capable of strategic change and inhibited managerial and operational adaptability during a crisis. The third type is the non-adapting organization, which indicates an enterprise incapable of strategic change and remaining in the normal operational routine during a crisis (Deverell and Olsson, 2010). According to the summary of the results, all but one of the enterprises was affected in some way by the crisis associated with the COVID-19 pandemic. Only one manager responded that his type of business was not affected by the crisis in any way and two managers said that the crisis affected them only marginally. The results were summarized in Table 3, when WISEs were divided and each enterprise (E1 to E18) was evaluated in terms of sentiment positive to negative, graphically +++ -- (Krejčí and Šebestová, 2019). Sentiment is in the form of pluses and minuses, with pluses and minuses highlighted in red. The more pluses are marked, the more positive is the behaviour of the enterprise in crisis. If a minus is marked it is a negative crisis behaviour that will cause demise of the enterprise.

In the second step short content analysis of individual answers was provided. From the short evaluation, it follows that out of fifteen enterprises affected by the crisis, four enterprises were able to completely change their strategy and were thus fully adapting. Six enterprises decided to wait out the crisis and wait for the improvement of the market situation and were thus non-adapting, and five enterprises can be characterized as semi-adapting. These enterprises changed their strategy in certain areas and were able to partially adapt to the situation.

Fully adapting organizations (E7, E11, E14, E16) - Enterprise 7: the company was fully affected by the crisis; the manager took a proactive approach and began to think about where there are opportunities for new innovations and how to become a more self-sufficient enterprise. A large part of the operation stopped, so the e-shop was created, and the website was updated. Above all, the manager decided to change his strategy and focus on the financial independence of the enterprise. **Enterprise 11:** the company was fully affected by the crisis; the manager took a proactive approach as with enterprise 7. This manager focused on expanding the product range, despite staffing issues. The manager switched to a new strategy aimed at adapting to market demands. **Enterprise 14:** the company was fully affected by the crisis; he was at the beginning of the enterprises lifecycle. The manager had a strategy ready, which he changed after the crisis appeared. He focused on a different strategy that would support the start-up's survival on the market, despite its severely problematic conditions. **Enterprise 16:** the company was affected by the crisis; the manager took a proactive approach as in company 7 and 11. The manager described the crisis as a positive influence, as he had the opportunity to start accepting new offers from customers and adapt to the market. There was also an innovation in sales on social networks. The manager changed his strategy during the crisis.

Semi-adapting organizations (E1, E4, E8, E9) - Enterprise 1, 4: the company was fully affected by the crisis, operations had to be closed, only an e-shop was functioning, and the employees could not go to work, which was very frustrating. The expansion of the e-shop and the fact that the enterprise remained profitable were positive. The manager took the initiative to focus on the extension and innovation of the e-shop. **Enterprise 8:** the company was fully affected by the crisis and has the same attitudes as company 1 a 4. For this company, however, the crisis contributed to the creation of an e-shop and the expansion of its scope on the market. **Enterprise 9:** the company was fully affected by the crisis and has the same attitudes as company 1 a 4. In this company, the motivation for product expansion was mainly the unfavourable psychological state of the employees. The manager wanted to give the employees work so that they would not have the opportunity to think so much about the situation associated with the pandemic.

Non-adapting organizations (E2, E3, E6, E10, E12, E15) - All enterprises have been fully affected by the crisis. **Enterprise 2, 10:** the enterprise was not entitled to any financial compensation from the state and lost 90% of its customers. The company is in a stagnant phase, the manager decided to wait for the situation to improve. **Enterprise 3:** the total number of orders from customers decreased, and at the same time there was a decrease in sales. The manager does not take the initiative and does not plan for innovation. The manager took a stagnant attitude and waited for the situation to improve. **Enterprise 5:** has the same attitude as company 1 and 4. The difference is they focus not only on the e-shop, but also on the communication between the employer and the employees. After the crisis, the manager discovered that there was no communication tool between the employees. **Enterprise 6:** has the same attitude as company 2 a 3. The difference is in reducing the number of employees. Some employees had reduced working hours, other employees left their jobs themselves. However, the manager took a stagnant stance. **Enterprise 12, 15:** has the same attitude as company 2 a 3. The manager stated the problem with the unfavourable psychological state of the employees and took the attitude of stagnation.

Non affected by crisis (E13, E17, E19) - Enterprise 13: the manager stated that the enterprise was not affected by the crisis in any way. **Enterprise 17:** the company was only marginally affected by the crisis. The manager stated that there was a decrease in sales due to more frequent closures of the enterprise. However, it did not have a significant impact on the profit. The company therefore had no reason to change its strategy. **Enterprise 18:** the company was only marginally affected by the crisis. The manager stated that there was no reduction in sales, however the crisis affected their capability to take care of their employees and thus there was a breakdown of supplier-customer relations. The company therefore had no reason to change its strategy.

Table 3: A typology of organizational strategic crisis adaptability in WISE

WISE	Strategic adaptability	Organizational adaptability	Sentiment to crisis	Typology of WISE
E1	Strategy change	Inhibited managerial and operational adaptability	+++--	Semi-adapting organization
E2	No strategy change	Operational routine adaptability	+++--	Non-adapting organization
E3	No strategy change	Operational routine adaptability	+++--	Non-adapting organization
E4	Strategy change	Inhibited managerial and	+++--	Semi-adapting

WISE	Strategic adaptability	Organizational adaptability	Sentiment to crisis	Typology of WISE
		operational adaptability		organization
E5	Strategy change	Inhibited managerial and operational adaptability	+++--	Semi-adapting organization
E6	No strategy change	Operational routine adaptability	+++--	Non-adapting organization
E7	Strategy change	Managerial and operational adaptability	+++--	Fully adapting organization
E8	Strategy change	Inhibited managerial and operational adaptability	+++--	Semi-adapting organization
E9	Strategy change	Inhibited managerial and operational adaptability	+++--	Semi-adapting organization
E10	No strategy change	Operational routine adaptability	+++--	Non-adapting organization
E11	Strategy change	Managerial and operational adaptability	+++--	Fully adapting organization
E12	No strategy change	Operational routine adaptability	+++--	Non-adapting organization
E13	-	-	-	-
E14	Strategy change	Managerial and operational adaptability	+++--	Fully adapting organization
E15	No strategy change	Operational routine adaptability	+++--	Non-adapting organization
E16	Strategy change	Managerial and operational adaptability	+++--	Fully adapting organization
E17	-	-	-	-
E18	-	-	-	-

4. Discussion and conclusion

There are as many work integration social enterprises (WISEs) fully adapting to the crisis as there are semi-adapting enterprises, as can be seen in the previous chapter. The largest number of WISEs are those that are not adapting and their response to the crisis is related to strategy of survival by waiting for change. However, more enterprises reacted to the crisis and did not wait for its end. From this perspective, WISEs tend to be adaptive. The question is whether this fact does not depend on the business sector and the characteristics of certain managers. The research also discovers that a large proportion of managers in WISE's in Czech Republic come from social work and not from managing or entrepreneurial backgrounds. As Girneata (2014) argues, adaptability of organisational structures, mindsets, strategies, and processes is inherent to the sustainability of a business in the current process of constant change, but these managers may not be capable of this process. This research shows that WISEs are largely adaptive according to this typology, but very few of these enterprises are fully adaptive. Research may indicate a similar level of adaptability of a crisis as in a

conventional enterprise. A comparison between the adaptability of WISE's and conventional enterprises is a topic for future research.

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CREA – the essential soft skills for the post-2022 world

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Abstract: 2023 has been declared the European Year of Skills by the European Commission. This paper represents a review of the most recent soft skills requirements in the post-2022 world. These requirements are influenced by the declared shift towards Society 5.0 and Industry 5.0, as well as by the increasing availability of artificial intelligence tools. The paper explains the importance of developing these skills for the lifelong employability of individuals and for the sustainable development of society.

Keywords: Industry 5.0, Society 5.0, soft skills

JEL classification: O200

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1. Introduction

There has been a long-standing consensus across academicians and practitioners that soft skills are important. Nevertheless, neither the concept of soft skills itself nor individual soft skills have a single, established definition. Similarly, there is no single categorization or hierarchical model of soft skills. Kubátová et al. (2023) propose to define soft skills as personal qualities, character traits, and interpersonal abilities that enable individuals to effectively communicate and collaborate with others in a variety of settings. Soft skills are transferable across different jobs, industries, and roles and are essential for career success and personal growth. Soft skills also help build relationships, increase productivity, and enhance overall well-being.

There is general agreement that the importance of soft skills persists also in the 21st century. In this paper, we point out that unprecedented societal and especially technological developments in recent times must be considered when determining the soft skills relevant for life in the 21st century. These developments are mirrored in the concepts of Society 5.0 and Industry 5.0. These concepts also imply which soft skills will be particularly relevant in the coming era. The development of these soft skills should then be the focus of both individuals and social institutions.

2. Society 5.0 and Industry 5.0

Society 5.0 was proposed in the Japanese 5th Science and Technology Basic Plan (Government of Japan, 2015) as a future society that Japan should aspire to. In this plan, Society 5.0 is introduced as a super smart society where the various needs of society are finely differentiated and met by providing the necessary products and services in the required amounts to the people who need them when they

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need them, and in which all the people can receive high-quality services and live a comfortable, vigorous life that makes allowances for their various differences such as age, sex, region, or language.

Such a society is expected to, for example, develop and realize an environment in which humans and robots and/or artificial intelligence (AI) coexist and work to improve quality of life. Regardless of Society 5.0 is Japan's growth strategy, it is not limited to Japan, as its goals are the same as the UN SDGs (United Nations, n.d.) and the whole global society faces similar challenges.

Fukuyama (2018) introduces Society 5.0 as a human-centered society. She points out that society is now in a new era, one in which globalization and the rapid evolution of digital technologies such as the Internet of Things, AI, and robotics are bringing significant changes to people and the environment and people's values are becoming increasingly diverse and complex. At the same time, Fukuyama warns, the global society is experiencing a challenging age of uncertainty, with growing complexity at all levels. Fukuyama was right. In 2020, the Covid-19 pandemic struck. In 2022, Russia invaded Ukraine. Technological developments have been and will be influenced by AI, with the landmark release of Chat GPT in November 2023. Hatzius et al. (2023) claim that around two-thirds of current jobs are exposed to AI automation in some form.

In early 2022 the European Commission (2022) published a policy brief entitled Industry 5.0: A Transformative vision for Europe. Industry 5.0 is a complex concept on the future of industry towards a human-centered, sustainable, and resilient manufacturing system. The Industry 5.0 paradigm promotes systems' agility and resiliency with the utilization of flexible and adaptable technologies. Furthermore, it attempts to lead action on sustainability, respects planetary boundaries, and promotes talents, diversity, and empowerment.

Huang et al. (2022) claim that Industry 5.0 and Society 5.0 are two parallel coexisting concepts for future industry and society, and it is crucial to tune their development tracks from the very beginning to better support their future operations. They propose a comparative diagram of the visions of Industry 5.0 and Society 5.0:

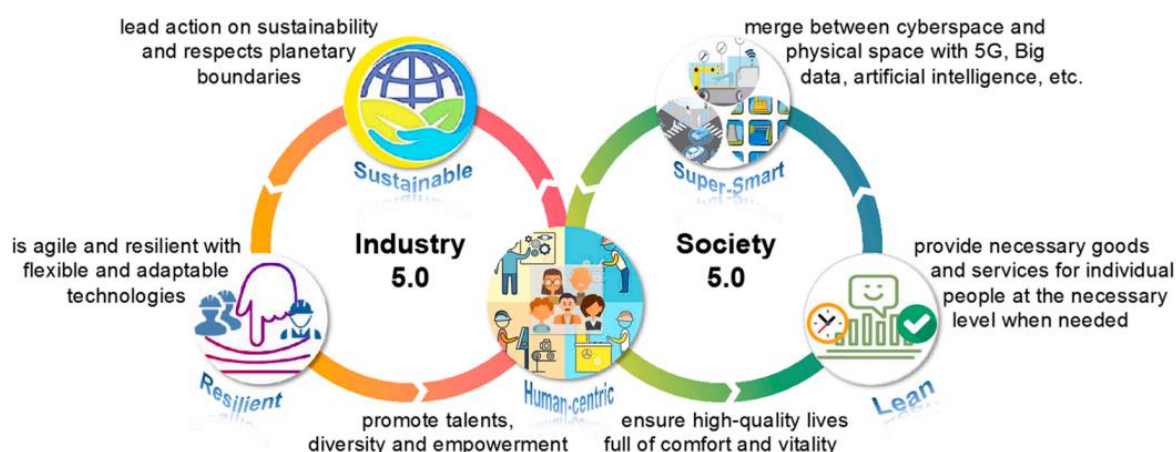


Figure 1: Comparative diagram of Industry 5.0 and Society 5.0 (Huang, S. et al., 2022, p. 425)

Human centricity is an important element in both Industry 5.0 and Society 5.0. Industry 5.0 targets to activate the creativity of humans and to evolve industry to human-centric, resilient, and sustainable

prosperity. The goal of Society 5.0 is to construct a human-centered, super-smart, and lean society with a shared comfortable and viable future for everyone.

Although Industry 5.0 and Society 5.0 are two different concepts, they both lead to human centricity and aim to balance economic development and societal issues. In this environment more and more physical and repetitive tasks will be automated, and many existing jobs will disappear. At the same time, many new jobs requiring new skills will be created. This development seems irreversible, and it is necessary to accommodate the situation efficiently.

3. Soft skills for the post-2022 world

The turn of 2022 and 2023 seems to be a real turning point, especially given the massive increase in awareness of AI, its potential uses, and how it is going to impact many areas, including work. That is why we are talking about the post-2022 world in this paper. It is a world that is moving toward Society 5.0, and Industry 5.0. This direction is now well imaginable, as the use of AI spreads across professions and is no longer the domain of computer science. In this paper, we turn attention to what soft skills will be particularly needed in this post-2022 world. By analyzing documents presenting Society 5.0 and Industry 5.0, we will find out whether they address this question.

Japan introduces the concept of Society 5.0 (Society 5.0, n.d.) on the website of the Cabinet Office. There is also available an infographic Realizing Society 5.0 (n.d.). The issues of the current society are listed in these materials and their solutions are proposed there. The solutions are described technically, but there is no indication of how the workforce requirements will change, nor the indication of the recommended skills that should be developed in the transition to Society 5.0.

The European Commission (2022, p.20-21) deals with skills and mindsets for complex adaptive businesses. According to them „Industry 5.0 implies mind-sets, skills and capabilities, from entry level employees to boards of directors, trained to understand complexity, think in systems, using complexity friendly tools and methodologies, design principles, experiential learning, action and reflection cycles and iterations. Curiosity, adaptability, empathy and responsibility for interdependence and for long-term outcomes will need to become foundational objectives for qualification and for employment.

In this sense, Industry 5.0 would present significant challenges and demand for new contemporary learning and education approaches that can scale and meet the needs of new entrants and re-skilling of the incumbent workforce; as well as a rapid reset of curricula and core tenets of business and economics for new generations of students. Transformation of vocational educational institutions and business schools in particular is particularly pressing and would require a comprehensive overhaul of existing academic programmes to focus on the development of future business and policy leaders with a solid understanding of complex systems and decision-making.“

While the Japanese documents introducing Society 5.0 do not address the necessary soft skills, the European Commission document introducing Industry 5.0 does. Curiosity, adaptability, empathy, and responsibility for interdependence and for long-term outcomes are there presented as the essential soft skills for the post-2022 world. What is missing, however, are the definitions of these skills. This is a problem in relation to the recommendation that it is necessary to focus on their development. Therefore, in the next section of the paper, we focus on the definitions of these soft skills.

4. Do not CAER. CREA!

It is a nice coincidence that if we make an acronym of the first letters of the soft skills recommended in the post-2022 world, we get the word CAER. In Latin, it is associated with the meaning of to fall, to collapse. However, a simple shift of the letters results in a much more positive and motivating CREA - create. This corresponds well with the creation of the new concepts of Society 5.0 and Industry 5.0.

To propose the definitions of these soft skills, we conducted literature review. We searched the Web of Science database for thematic publications in which the names of the relevant soft skills appear. Below we present those that best help to understand the content and manifestations of these skills.

4.1. Curiosity

Curiosity can be broadly defined as a drive for acquiring new knowledge and sensory experiences that can motivate exploratory behavior (Berlyne, 1978; Loewenstein, 1994). Curiosity as an individual difference variable can thus be described as a desire for knowledge, either about relatively abstract concepts or ideas, or about concrete situations or objects, to develop new ideas and solve problems. Individual work-related curiosity is a positive predictor of worker innovation (Celik et al., 2016) and the relationship between individual curiosity and worker innovation is mediated by worker divergent thinking. Pulakos et al. (2000) noted that curious individuals perceive change and novel situations as less stressful, and therefore adapt more quickly than less curious individuals. Goodwin (2014) argues that curiosity is a drive that can be fostered.

4.2. Responsibility for interdependence and for long-term outcomes

Responsibility for interdependencies and long-term results requires a very sophisticated and complex way of thinking and a very holistic view of business to understand the relationships between all stakeholders. This type of responsibility therefore requires a high level of analytical, systems, and emotional intelligence. With these skills, people are able to anticipate the immediate and long-term consequences of actions. They are also able to see the roots of problems, not just the symptoms, and to develop fundamental solutions rather than just symptomatic fixes (Mackey, J., & Sisodia, R., 2014).

4.3. Empathy

According to Goleman (1998), empathy is one of five components of emotional intelligence, along with self-awareness, motivation, self-regulation, and adeptness in relationships - social skills. Emotional intelligence, and thereby empathy, is a teachable and learnable skill. Levenson and Ruef (1992) identified three essential qualities of empathy that appear in the body of literature: the cognitive component (knowing what another person feels), the emotional component (feeling what another person feels), and the responding component (responding with compassion to another person's experience). Shapiro (2002) states that researchers just generally agree that empathy encompasses a variety of processes, skills, and behaviors and can be learned.

4.4. Adaptability

Adaptability is a very complex concept (Park & Park, 2021). Park and Park (2019) propose to define adaptive performance as flexible work behaviors that help employees adapt to change by demonstrating excellence in problem solving, uncertainty/stress/crisis control, new learning, and adaptability related to people, culture, and environment. They argue that employee adaptability can be developed.

5. Discussion and conclusion

The move towards human-centred Society 5.0 and Industry 5.0 can be seen as promising, as they aim to evolve towards comfortable, sustainable prosperity and a super-smart society. Recent technological developments indicate that the technical aspects of these concepts are feasible. The question is whether humanity is ready to accept and apply these concepts for the benefit of all of society. In this paper, we only address the essential soft skills that will be important for lasting employability in this environment. Based on an analysis of two key documents describing the concepts of Society 5.0 and Industry 5.0, we found four: curiosity, adaptability, empathy, and responsibility for interdependence and for long-term outcomes. In addition to these skills, there are many others, such as critical thinking, creativity, and communication to name a few (Kubátová et al., 2023).

However, when trying to define the four skills that were found, we also identified the same problems that are mentioned above. Different authors define these skills differently or talk about them without defining them. When they do define or describe them, they often use other soft skills to do so. Figure 2 illustrates the links between the CREA skills and other associated skills. This diagram is based on only a narrow range of sources used to define these skills in this short paper, and yet it is quite complicated and unclear.

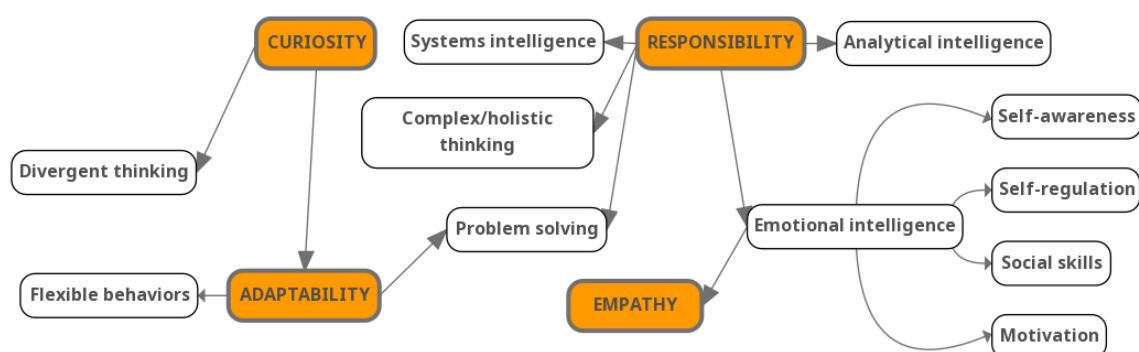


Figure 2: Links between CREA skills and other skills

A positive finding is that there is evidence that all four of the CREA skills can be developed. On the other hand, there are limitations to these pieces of research. If we want to move towards a human-centered society that fulfills the concepts of Society 5.0 and Industry 5.0, it is in the interest of both society and individuals to develop these skills. In this case, further research should focus on defining the necessary soft skills and on the behavioral indicators of their manifestations. Furthermore, possible methods for developing these soft skills should be explored. These methods may vary depending on whether they are to be used by the individual or whether they are to be part of training in schools or companies. In particular, methods and rubrics for assessing these soft skills in specific individuals need to be developed for the purposes of staff selection or performance appraisal.

In light of current developments, it is necessary to keep reviewing which soft skills are important. These reviews should be anticipatory rather than retrospective, given the rapid pace of technological changes. Expert methods, such as the Delphi method, may be appropriate for this purpose.

Despite all the uncertainty and ambiguity in this area, it is reasonable to assume that the soft skills that are likely to be most valuable in the near future are those that complement the strengths of AI applications while leveraging uniquely human capabilities.

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Social entrepreneurship from the perspective of the public in the Czech Republic

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Abstract: Social entrepreneurship is an important area for fulfilling public benefit goals. However, this concept needs to be sufficiently reflected in society. The public's awareness of the concept of social entrepreneurship or their understanding of the concept is identified through a questionnaire survey. 1100 respondents took part in this survey. These respondents are representative by gender, age, education, country, region, and size of place of residence. The investigation focuses on the area of public benefit goals. Also, it includes identifying key disadvantaged groups of people in the labor market. The questionnaire survey confirms that work integration social enterprises are the most well-known type of social entrepreneurship in the Czech Republic. Also, it is discussed the most key positive and negative factors of social entrepreneurship from the public's point of view in this paper.

Keywords: social enterprise, work integration social enterprise, social entrepreneurship, questionnaire survey, Czech Republic

JEL classification: L31, P31, L26

1. Introduction

Social entrepreneurship represents an approach to business that allows solving social, economic, and environmental issues in society. And over the years, it has become a world phenomenon. Research communities are emerging in Eastern and Central Europe (Borzaga et al., 2008). East Asia is just a little behind, including China (Defourny & Kuan, 2011), India, Australia, Israel, and several Latin American countries (Defourny & Nyssens, 2012). However, mainly only two schools of thought on social entrepreneurship are still discussed, namely the American and European schools.

Social entrepreneurship is undergoing enormous development and is looking for its place in individual economies. It makes a significant contribution to the economy and can bring long-term stability. In the Czech Republic, social entrepreneurship began to develop during the millennium. And in 2002, a world conference on the social economy took place in Prague, where the Prague Declaration was adopted (Dohnalova et al., 2016). In the country, this concept has not yet been legislated. Most often, this concept is associated with the employment of disadvantaged groups of people. This type of social enterprise can be described as an integration social enterprise. And often, only this type is perceived by the general public as a form of social entrepreneurship (Dohnalova, 2021).

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2. Methodology

This paper aims to draw attention to the issue of the public's awareness of the concept of social entrepreneurship.

Through literary research in the introduction, the fundamental concepts of social enterprises are discussed. The secondary data are available from world and domestic studies and articles, for example (Defourny & Kuan, 2011; Dohnalova et al., 2016; Borzaga et al., 2008), producing a good information base for implementing the questionnaire survey. The primary data from the questionnaire survey are used to achieve the set goal. The questionnaire survey was attended by 1,100 respondents aged 18-65 years (representative by sex, age, education, region, and size of place of residence. It was carried out in the winter of 2020 and had several sections. For the purposes of this article, selected facts following the public's awareness of the concept of social entrepreneurship or their understanding of the concept, public benefit goals, key disadvantaged groups of people, and well-known types of social entrepreneurship. The questionnaire survey determines the public's awareness of social entrepreneurship, understanding, and perception of its characteristics and principles. Furthermore, the area of public benefit goals, which social enterprises fulfill without a doubt, is considered. Last but not least, attention is focused on our country's most famous types of social enterprises. And whether the assumption that social entrepreneurship is most often associated with integrating social enterprises is valid. And disadvantaged groups of people are identified, on which social enterprises should focus. At least the issue of key strengths and weaknesses faced by domestic social enterprises is also developed. Within the framework of the presented article, the research question is answered: *What is the public's awareness of social entrepreneurship in the Czech Republic?*

Selected statistical methods are used to evaluate the questionnaire survey. MS Excel tools are used for data processing. For example, the Chi-Square independence test assesses a relationship between two qualitative variables measured on elements of the same selection. This test is one of the most frequently used Independence Tests in the pivot table (Rezankova, 2010).

2.1. Awareness and understanding of the concept of social entrepreneurship

At least 70% of respondents have heard of the term. But it is appropriate to focus, from the point of view of the sample's representativeness, on whether there is a relationship between the knowledge of the concept and the essential characteristics of the sample. ***H₀***: *There is no dependence of understanding of social entrepreneurship on age/gender/region/size of place of residence.* ***H_A***: *There is a dependence of knowledge of social entrepreneurship on age/gender/region/size of place of residence.* Outputs are represented in Table 1.

Table 1: Chi-Square independence test – awareness of the concept

Characteristics	p-value	Cramér's V	Result
sex	0,10962	0,07	The null hypothesis is not rejected at the alpha 5% significance level. It was not possible to demonstrate that there is a relationship between gender and knowledge of social entrepreneurship.
age	0,00004	0,11	The null hypothesis is rejected at an alpha significance level of 5%. This is a weak addiction.

education	0,04851	0,07	The null hypothesis is rejected at an alpha significance level of 5%. This is a very weak addiction.
region	0,43870	0,11	The null hypothesis is not rejected at the alpha 5% significance level. It was not possible to demonstrate that there is a dependence between the region and the knowledge of social entrepreneurship
size of place of residence	0,18284	0,07	The null hypothesis is not rejected at the alpha 5% significance level. It could have shown a relationship between the size of the place and knowledge of social entrepreneurship.

As seen from Table 1, it was impossible to demonstrate the dependence of awareness of social entrepreneurship on gender, county, region, and size of place of residence. For age and education, the null hypothesis is rejected. The difference between empirical and theoretical frequency is thus proven. However, this is a weak addiction. It is found that 84% of young people (18-26 years old) have at least heard of the concept. And in the 54-65 age category, only 63% of respondents noted social entrepreneurship. Furthermore, the respondents' education level is also reflected when it is possible to say that 66% of respondents with primary education have at least heard of the term. In comparison, 77% of university-educated respondents answered this way.

In connection with the awareness and understanding of social entrepreneurship, it is possible to track where the respondents encountered the given issue. According to the obtained outputs, 44% of respondents heard about social entrepreneurship from the Internet (e.g., websites), and 34% heard about it from the media (e.g., radio, newspapers). However, only 5% of these respondents said they were introduced to the concept through the scholarly text.

The purpose of the questionnaire was also to verify whether the respondents understood the given concept. Before checking their understanding of the concept, respondents were presented with a definition of social entrepreneurship. The degree of agreement was verified through purposefully created true examples of the fulfillment of social entrepreneurship, where the respondent used a Likert scale to decide whether the statements were true. Outputs are represented by Table 2.

Table 2: Understanding of the concept

Statements	Likert's scale	Absolute/relative frequency
A coffee shop that employs and trains partly medically, socially, or culturally disadvantaged people and provides them with specialized skills in coffee brewing. The profit is primarily reinvested in the company.	definitely agree	446/41%
	strongly agree.	306/28%
	agree	171/16%
	either agree or disagree	123/11%
	disagree	22/2%
	strongly disagree	22/2%
	definitely disagree	10/1%

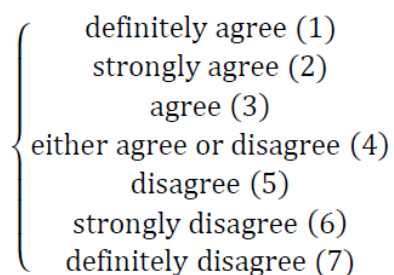
A cider house that deals with gentle cultivation and by processing local and traditional raw materials, it produces excellent ciders. And the profit is primarily reinvested in the company.	definitely agree	131/12%
	strongly agree.	225/21%
	agree	222/20%
	either agree or disagree	208/19%
	disagree	183/17%
	strongly disagree	84/8%
	definitely disagree	47/4%

In the case of the coffee shop, it can be considered interesting from the respondent's level of education. It can prove that 92% of university-educated respondents correctly stated that it is a social business. In comparison, only 82% of respondents with primary education said it is a social business. Also, it was found that 68% of young people identified with the approach to social entrepreneurship in the form of a cider house, while only 44% of respondents aged 54-65 found this entrepreneurial activity as a possible approach to social entrepreneurship.

2.2. Disadvantaged groups of people

The public still associates social entrepreneurship primarily with the work integration of disadvantaged groups of people. Therefore they are more likely to understand an example of a business activity that represents the integration of disadvantaged groups of people (i.e., an integrative social enterprise) than an example illustrating an environmental social enterprise. The respondents primarily associate social entrepreneurship with integrating disadvantaged groups of people. Therefore, attention was focused. And from the point of view of understanding, for them, social entrepreneurship is precisely an integration social enterprise. Therefore, it is essential to identify the significance of the integration of individual disadvantaged groups of people according to the public. The evaluation scale is shown in Figure 1.

Figure 1: Evaluation scale



Based on the evaluation scale, table 3 is compiled, from which it follows that the respondents include persons with disabilities, youth and young adults in a difficult life situation, or persons caring for a close person or other dependent persons the most preferred in terms of integration. These disadvantaged persons should be given the opportunity to rejoin the workforce.

Table 3: Disadvantaged group of people

Disadvantaged groups of people	Average value
persons with disabilities (mental/spiritual/physical/sensory/combined)	1,9873

youth and young adults in a difficult life situation	2,2218 2,2309
persons caring for a close person or other dependent persons	2,2855
victims of crime, victims of domestic violence, victims of human trafficking, and commercially exploited persons	2,3455
persons caring for small children under 10 years of age	2,6055
persons disadvantaged by age	2,6318
homeless people	2,6318
persons leaving institutional facilities (apart from prison)	3,0145
persons without education, with primary education, or with qualifications that are difficult to apply on the labor market	3,1973
long-term unemployed or repeatedly unemployed persons	1,9873
other socially excluded persons or persons at risk of social exclusion	2,2218
persons who have a criminal record	2,2855
persons at risk of addiction or addicted to addictive substances	2,3455
members of national minorities and marginalized communities	2,6055
foreigners, migrants	2,6318

2.3. Public benefit goals

In addition, attention is paid to public benefit goals, i.e., which areas are the most important according to the respondents and whether they believe social entrepreneurship plays a role in their fulfillment. The respondents consider the fulfillment of public benefit goals to be the most important, especially in the area of equal opportunities, which is related to the integration of disadvantaged groups of people. This is once again a confirmation that social entrepreneurship in the country is primarily associated with including disadvantaged groups of people.

Table 4: Public benefit goals

Public benefit goals	Absolute/relative frequency
environmental area	325/30%
cultural area	326/30%
area of local benefit	98/9%
equal opportunity area	502/46%
social area	297/27%
education	349/32%

Table 4 shows that the respondents consider the fulfillment of public benefit goals to be necessary, especially in the area of equal opportunities, which is related to the integration of disadvantaged groups of people in the workplace. It is thus possible to indirectly relate to the fact established from the conducted investigation that social entrepreneurship is primarily connected with the work integration of disadvantaged groups of people, and this public benefit goal resonates the most in society.

2.4. Strengths and weaknesses

The strengths that influence social enterprise can be seen as positive factors. According to respondents, it is favorable for a social enterprise that the entity contributes to improving the quality of life of disadvantaged groups, has experience working with these people and spreading awareness of social enterprise, and contributes to its good image among the public. Conversely, on the other hand, it is possible to identify weaknesses that can be perceived as dangerous factors that threaten social enterprises. These positive factors are listed in Table 5.

Table 5: Strengths

Strengths	Absolute/relative frequency
the ability to respond flexibly to customer needs	169/15%
experience of working with disadvantaged groups of people	444/40%
contributing to improving the quality of life of disadvantaged groups of people	565/51%
offering above-standard quality products/services	122/11%
maintaining stable supplier-customer relationships	122/11%
ties to the local community	238/22%
spreading awareness of social entrepreneurship and contributing to its good image among the public	383/35%
creating active cooperation with the environment (e.g., with other social enterprises)	310/28%
supporting local life (e.g., organizing events), none of the above	265/24%
none of the above	51/5%

On the other hand, Table 6 summarizes the respondents' belief that the social enterprise is most threatened by factors related to lack of money, dependence on an external form of support, problems with administration, and the absence of systematic financial management.

Table 6: Weaknesses

Weaknesses	Absolute/relative frequency
lack of money for long-term investments	422/38%
lack of capacity for promotion and marketing	183/17%
lack of workers	199/18%
executives are chronically overworked	124/11 %
not handling a high level of administration	242/22%
absence of systematic financial management	241/22%
dependence on external support (grants, subsidies, etc.)	389/35%
cannot offer their products/services	233/21%
high employee turnover	237/22%
struggle with everyday operational problems	213/19%
none of the above	76 / 7 %

3. Conclusion

Although social entrepreneurship is a highly discussed concept, especially within the professional sphere, a uniform definition of this concept has yet to be created. Moreover, there is no current national legal framework for social entrepreneurship.

The data from the questionnaire survey show that at least 70% of respondents have heard of the given term. Furthermore, it was found that the public learned about social entrepreneurship from the Internet (44%) and the media (34%). Only 5% of respondents who had at least heard of the concept learned about the concept from a scholarly text. However, it is necessary to add that although the public has at least heard of social entrepreneurship, 61% of respondents still associate it with "a non-governmental, non-profit organization that makes extra money by selling products."

And it is found that if the public has encountered social entrepreneurship, it has most often overlooked the integration of social enterprises (37%). Respondents consider it most important to support integrating people with health problems, youth and young adults in difficult situations, and people caring for a close or dependent person.

Thus, it is possible to conclude that there will be the future direction of business activities. The process of including public benefit goals in business activities is characteristic of social entrepreneurship and its future development of traditional business. Social entrepreneurship is a fundamental topic that can be a source of further exploration.

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Scaleups – Innovative Growth Businesses

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Abstract: Scaleups and startups have very similar business beginnings, but there are significant differences between them. They play an important role in an entrepreneurial ecosystem that is constantly changing and evolving. They are able to respond to changes in the business environment. Scaleups mentor startups with accelerated growth rates that open new job opportunities and impact productivity growth with the intention of expanding into other markets. They started their businesses almost "from nothing" and have grown tremendously in a short period of time. They have revolutionised the global economy with their business ideas. Their exponential growth lies in their scalable business models that work, their non-conformist mentality and their long-term sustainability. Growth is the result of a properly chosen functioning and effective strategy. The aim of this paper is to identify, in the sample of scaleups studied, selected factors influencing their growth strategies that have been able to defy the environment and tend to offer more developed services and products than startups.

Keywords: scaleup, growth strategies, service/product

JEL classification: M10, M13, M19

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1. Introduction

The pandemic has affected all businesses, but the business environment still provides fertile ground for different types of businesses and their subsequent sustainability. These include startups and scaleups, which have very similar business beginnings. Over time, significant differences emerge. They not only have different needs, but also different interests and goals. Businesses that want to be sustainable over the long term rely on innovative business models and effective growth strategies. Companies must not only adapt to the business environment, but also respond nimbly to the triad of sustainability, complexity, and uncertainty. A well-defined business strategy is a prerequisite for sustainability, but it must be continuously improved. It is a major challenge for business in all its aspects. Turbulence in the business environment has a significant impact on the sustainability of both startups and scaleups, which depends on a well-chosen business strategy. At its core is competitive advantage.

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2. Knowledge base on scaleup/startup

As mentioned above, scaleups and startups have very similar entrepreneurial beginnings, but there are significant differences between them. Just like businesses, startups themselves have a vested interest in improving, pushing themselves higher, evolving, and reaching newer and newer goals. When a startup chooses this path, it expands its customer portfolio and fosters its development and continuous growth. It cannot stay a startup forever. As it gradually grows and matures, it becomes a scaleup. Scaleups play an important role in the entrepreneurial ecosystem (Brown & Mason, 2019) as they mentor startups, attract capital, and are a source of spillovers. Unlike startups, scaleups always have a scalable business model and their intention is to continuously expand into new markets, they are not only more organized but also based on more advanced practices than startups, have more specialized human resources, and tend to offer more developed products and services than startups. Scaleups are growing exponentially, but not every startup is clearly destined to become a scaleup.

Scaleups that achieve sustainable growth are able to effectively combine organic growth with growth through new customer acquisition and acquisition (Bohlin, Elia, & Henke, 2018). Scaleup growth is often accompanied by forming strong partnerships with strategic investors and leveraging their network, capital, and experience. Those that focus on generating recurring and predictable revenue are more likely to achieve sustainable growth.

While a startup is still exploring its potential and figuring out how best to present its product or service and to whom, a scaleup has already found its way. So we can only consider ourselves a startup until we have proven our business model. Once that model is proven and we scale our revenue, we become a scaleup (Harnish, n.d.). A scaleup is a startup that has changed its scale and grown to larger dimensions. In order for a startup to succeed and be called a scaleup, it must prove its viability, succeed in stabilizing the proposed business model, and also succeed in industrializing the offering. A startup's prospects are usually limited because it will not remain a startup forever and has an interest in moving forward. There are three situations that can happen in its life - either it goes bankrupt, or it merges with a large group, or it expands, or it becomes a scaleup (Durban, 2021).

One of the main reasons for the interest in high growth and scale-ups (Monteiro, 2019) is that they play an important role in job creation. The second is productivity growth. Entrepreneurship has a stable and significant impact on productivity growth, and there is also evidence of a virtuous circle between productivity and high growth. High-productivity firms have faster sales growth, and high-growth firms have higher productivity growth (Du, & Temouri, 2015).

A scaleup is a development-stage company, specific to high-tech markets, that seeks to grow in terms of market access, revenue, and headcount, while adding value by identifying and realizing wins (van Winden et al., 2020).

The OECD (2010) defines a scaleup simply as a company that has grown at least 20% per year over the past three years. When a startup becomes a "growth" company - that is, when it has completed market research and development and identified a repeatable, scalable business model - it moves up the ranks and into the scaleup phase. At this stage, companies are already consolidating and expanding their market position and looking for additional opportunities to expand. In the scaleup phase, the question "Will it work?" disappears from the life of such a company (Launchvic.org, 2021). We conclude that a

scaleup is simply a startup that has worked on its development and growth and has become successful over time.

The main mission of a startup is to find a repeatable and scalable business model. In the scaleup phase, the company is already expanding its collaboration with other scaleups, trying to sustain its growth, and continuously evolving until it reaches the stage where it becomes a scaler. At this point, its main challenge is to maintain its position in the market and not to fall asleep with its growth.

A key factor in the growth of scaleups is the ability to identify and exploit new market opportunities and innovate products or services (Zott, Amit, & Massa, 2011).

However, startups and scaleups have to fend off unwanted competition. They try to create work that will be very difficult for competitors to imitate and will be creative. This will give them an edge over their competitors. It is also important for a startup to constantly evolve and improve. This evolution makes it increasingly difficult for competitors to catch up and makes the competitive environment tougher. It also ensures the scaleup's potential for development. The pace of process innovation in a company is also one of the factors by which companies can protect themselves. It is therefore a good idea to build better processes than the competition (Kopalko, 2021).

Exponential growth is achieved through a well-chosen business strategy, which for scaleups is characterized by seven elements - what represents your business in the minds of your customers; differentiation of key customers, where it is a good idea to set three commitments that you offer to your customers and monitor whether you are meeting those commitments; the value of the brand commitment guarantee; the strategy of the business in one sentence, which is the way to make a lot of money while blocking the way of the competition; the specific activities of the business that capture the definition of the essence of the strategy; the X-factor of the business, which is to have a 10 to 100 times advantage over the competition; how much profit does your business generate for you (Harnish, 2014).

Facts about scaleups show that the productivity level of scaleups in Europe is only 70% of the level in the US (Hoffmann, 2016). The second fact is that of all the startups created in the European Union in 2017, only 20% reached scaleups (Onetti, 2019). Some authors point to the slow growth of the vast majority of startups. The top ten best performing startups in Slovakia, de facto scaleups ranked by revenue, earned between €0.98 and €8.28 million in 2019, and four of them were in the red; the average return on revenue for profitable startups was 4.94% (Slávik et al., 2020).

We also note that the growth of a scaleup requires the effective use of digital tools and technologies to automate processes and increase efficiency (Wagner, 2016).

Based on the literature review conducted, we conclude that a scaleup is simply nothing more than a startup that works on its continuous development and growth over time, while becoming successful over time and establishing itself in other new markets with its product or service.

There is no doubt that for a startup its team is a very important part of the whole business. During the growth phase, it is especially necessary to engage and improve the team. Just as attention is paid to business and product development in scaleup, the same attention needs to be paid to the people who are involved in the actual growth of the business and drive it forward to reap success in the future years of the business.

Some argue that one of the most important factors in the growth of new ventures is the founder, including his or her professional background, experience, education, and work culture (Farnoodi et al., 2020).

3. Aim, methods and research sample

The aim of the paper is to identify in the sample of scaleups selected factors influencing their growth strategies, which have been able to defy the environment and tend to offer more developed services and products than startups.

We studied a research sample of 146 scaleups, which are small or medium-sized companies that are poised for rapid growth, are in a period of rapid growth, or have gone through a period of rapid and significant takeoff and are currently growing slowly.

Scaleups took the legal form of a corporation and operated in any industry. The study sample of 146 scale-ups was obtained through a questionnaire survey and guided interviews with scale-ups in Slovakia in 2022. The questionnaires were processed and evaluated using mathematical and statistical methods in Excel.

4. Research results and discussion

With regard to the study of growth strategies in Slovak scaleups, we focused on the evaluation of product/service uniqueness and its characteristics. We found that out of the studied sample 48 scaleups, representing 32.88%, were service-oriented. These services represented the excellence of the scaleups. They were service, support, advice, consultation, solutions, and comprehensive services. Product quality seems to be important, where parameters like compliance, recipe, taste, design, know-how, aroma, freshness, innovation were evaluated. The quality of the product and its excellence, which is also a strong competitive advantage, was reflected in 33 scaleups, representing 22.60%. High sustainability, also linked to product durability, influenced by digitalization, use of IT and automation, was recorded in 30 scaleups, representing 20.55%. Ecology (9/6.16%), providing for others (8/5.48%), technology (8/5.48%), process control and management (5/3.42%) or health benefits (5/3.42%) were widely represented. In assessing product/service excellence, we examined evidence of excellence. The first cluster consisted of 75 scaleups (51.37%), in which we included goodwill, profit and revenue growth, customer satisfaction and loyalty, and continuous investment in innovative products (penetration of new markets, including foreign markets). The second cluster consisted of 71 scaleups (48.63%), in which we included awards, certificates, competitions, diplomas, reviews, recommendations (services), product/service comparison with competitors, and also there are few companies with the same or similar portfolio and contracts.

In examining the problems related to production capacity, auxiliary services, suppliers, sales, financing, they also touched on price increases. They had an impact on the increase in production costs, e.g. the energy crisis, there were also problems with production capacity, e.g. lack of employees, skilled labor, redundancies, problems with the onset of the pandemic and the geopolitical problems related to the invasion were also related to price increases and a drop in sales, the problems were also influenced by the current economic situation, or problems related to ancillary services or operational capacity, delivery times for components, which caused problems with supply chains, also the lack of financial capital, problems with financing. 17 scaleups (11.64%) had no problems, which we consider positive. Minor problems were recorded in 49 scaleups (33.56%), major problems in 56 (38.36%) and very

serious problems were caused mainly by the pandemic and invasion in Ukraine, which 24 scaleups (16.44%) had to deal with.

The commercialization of the product was recorded in 68 scaleups (46.58%) through the Internet, social networks (Facebook, Instagram, youtube.com) and their own website. In 37 scaleups, reviews and own paid advertising (advertising campaign), banner ads, professional lectures, courses, events, billboards, TV, radio, fairs, projects were predominant, which accounted for 25.34%. An interesting exploration of commercialization was corporate stores and showrooms in 10 scaleups, accounting for 6.85%. Only 3 scaleups, or 2.05% of the total, had an appealing name or customized product, such as "communist" chips or La Donuteria. Two scaleups used leaflets, which was 1.37%.

The next factor examined was marketing, which was rated on a scale of 1 to 5 (1-very effective, 2-effective, 3-moderate, 4-weak or very weak, 5-no marketing needed). From the above scaling, we concluded that very effective marketing campaigns, convincing not only early adopters but also the early majority of customers, were recorded in 10 scaleups (6.85%), effective in 56 scaleups (38.36%), moderate in 39 scaleups (26.71%), weak or at a very low level in 18 scaleups (12.33%), and no marketing was used in 23 scaleups, which is 15.75% of the total number of scaleups studied.

From the field research conducted and based on the factors influencing their growth strategies in the studied sample of scaleups that have been able to defy the environment and tend to offer more developed services and products than start-ups, we conclude that it is very important what product or service scaleups will offer or develop. However, their uniqueness must be paramount, which also becomes their competitive advantage, and their product/service is exceptionally better/better than what the competition offers. Most of the scaleups have excelled in the product only by the quality of the product where the product requirements, recipe, taste, design, know-how, aroma, freshness, innovation have been followed and in the services they have excelled by providing mainly service, support and comprehensive services, advice, consultation and various other solutions.

The proof of the excellence of the products was mainly the customer satisfaction and loyalty, which resulted in awards, certificates, competitions, diplomas, reviews, service recommendations.

The problems that prevailed in the scaleups were related to production capacity, combined with a shortage of employees or skilled labor, and consequently related to redundancies of human resources. On a smaller scale, emphasis should be placed on teamwork, which influences the growth of the scaleup itself. Team cohesion and cooperation are an integral part of this. The corporate culture also influences the scaleup, which leads to changes in the scaleup management system. Obviously, these changes may not be accepted by the members of the original team. Examining the corporate culture in the sample of 146 scaleups under study, we find that in 80 scaleups, which is more than half of the sample (54.79%), corporate culture has a partial impact on the growth of the company, in 47 scaleups (32.19%), corporate culture has a very strong impact on the growth of the company, which is 32.19%, and in 19 scaleups, corporate culture has no impact on the growth of the scaleups, which is 13.01%. In these scaleups, corporate culture is perceived as an aspect that also influences the growth strategies of the companies.

Scaleup growth strategies are positively influenced by effective marketing, which requires sufficient financial resources. Many scaleups must seek these resources through investors and reassess the factors for sustainability in an unpredictable business environment. Corporate culture is not only an

influencing and supporting aspect of business success, but also a factor that influences the dynamic development and growth of the business in the future. The sample of scaleups studied maintains a competitive advantage through high-quality services and innovative products, which includes the use of digital transformation, automation and IT.

From the research conducted, it is clear that having an exceptional product or service with high quality is key for scaleups. Corporate culture and effective marketing play an important role in their growth and success. Overcoming challenges related to manufacturing, suppliers and finance are also an important part of their sustainability in the market.

5. Conclusion

Looking at the long-term sustainability of companies in an era of turbulence, we conclude that it is influenced by a number of key factors. These influence the growth strategies of companies and the scalable business models of scaleups. These factors need to be continuously reassessed in terms of their strategic sustainability for companies. We highlight the most important factors that generally influenced the sample under study. The first important factor for scaleups is to increase their value by leveraging their original idea and various opportunities to collaborate with established companies. The second factor is the emphasis on human resources and the gradual increase in the number of employees. By creating an efficient team with a constantly evolving corporate culture that tends to grow, expand the market and grow with the original product or service offered. The third factor is capital resources and the constant search for investors. The fourth factor is the entrepreneurial knowledge and management skills that are the engine of growth and continuous innovation.

We conclude that the complexity of the current business environment has been and continues to be affected by the ongoing crisis, as evidenced by the positive experience of communication through social networks. Virtual sales have come to the fore and the Internet has become a place of competition.

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From Order to Disorder - Management and Entropy by Students of the Business Faculty

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Abstract: The paper summarises the results of the survey on Entropy and management among the students of the business faculty of the university in the field of economy and management. Students were asked to watch a BBC documentary video on Entropy (Order and Disorder) and then write a short essay (max 500 words) about the implications of knowledge presented in the video on the concept of management models, the leading concept of their advanced management course. Essays were evaluated from the point of view of adequateness of response and by content analysis.

The results of the survey are interesting – some students misunderstood the task and wrote the essay on different topics, some were creative, and others came up with very innovative ideas. The survey showed that even a simple task may lead to very interesting and surprising results.

Keywords: Entropy, management, management model

JEL classification: M10

Grant affiliation: None

1. Introduction

The paper summarises the results of the survey on the relation between Entropy and management. The survey was done among the students of the business faculty of the university in the field of economy and management. Students were asked to watch a BBC documentary video on Entropy (Stacey, 2012) where Jim al Khalili explains the 2nd law of thermodynamics, Entropy and its impact on human society. After watching the video, they wrote a short essay (max 500 words) about the implications of knowledge presented in the video on the concept of management models, the leading concept of their advanced management course.

Essays were evaluated from the point of view of adequateness of response and by content analysis. The paper provides the results of this small survey.

2. The Course, Management Models, the Birkinshaw Model

The survey was executed in the Advanced Management course that is part of the Master programme of the business faculty of the university in the field of economy and management. The course is focused on the concept of management models as they are understood by Birkinshaw and Goddard (2009), e.g. they are “the choices made by a company's top executives regarding how they define objectives, motivate effort, coordinate activities, and allocate resources; in other words, how they define the work

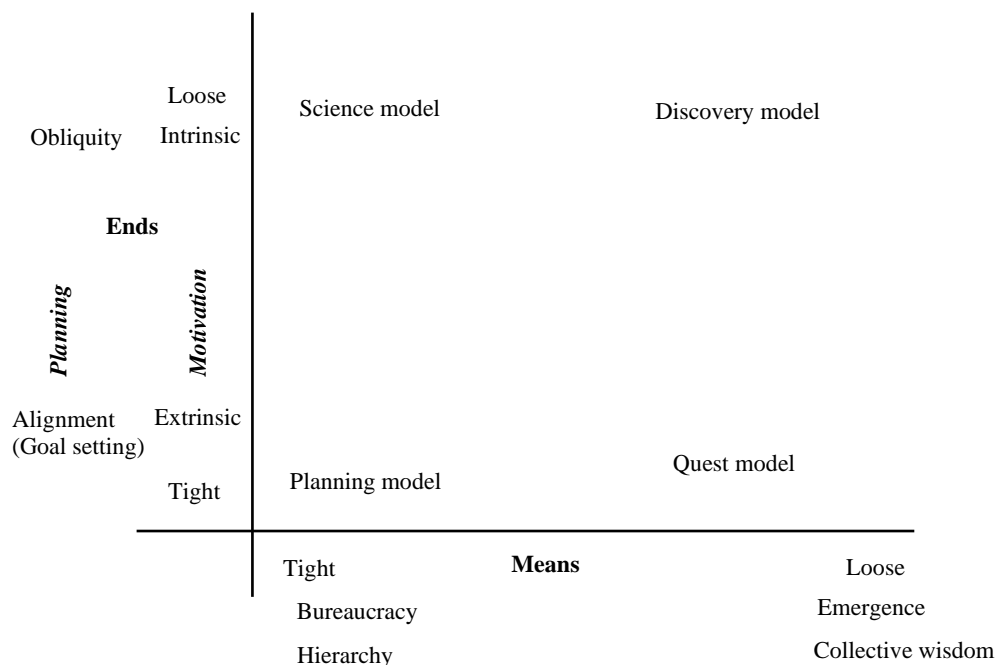
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of management” (Birkinshaw & Goddard, 2009, p. 82). The Birkinshaw model of management models (Birkinshaw, 2012) is a crucial part of the course; other approaches to management models are also discussed but not in such detail.

Birkinshaw developed his model based on the research (Birkinshaw, 2012). In the research, he asked managers which managerial functions are the most important for them. The research identified four leading functions: planning, motivation, deciding and coordinating. There appeared to be two basic ways managers executed these functions, traditional and innovative.

As for planning, the traditional approach is alignment based on direct, clear objectives (typically on objectives focused on profit), and an alternative approach is represented by an indirect, oblique approach to objectives (the company does not focus directly on profit but, for example on happy employees). Traditional motivation is extrinsic (based on external stimuli), alternative approach to motivation is intrinsic motivation (based on internal motives). Traditional coordination is bureaucratic coordination (based on guidelines and normative), and alternative coordination is emergent. Traditional decision-making is based on hierarchy, and alternative one on collective wisdom.

From the point of view of the Birkinshaw model, planning and motivation are so-called ends, e.g. what an organisation wants to achieve. Coordination and decision-making represent so-called means, e.g. functions that help managers to achieve what they want. Ends and means create a separate axis of the model. Their combination leads to four typical managerial models, discovery model, planning model, quest model and science model. These models are convenient for different environments and different types of organisations.



(Birkinshaw, 2012)

Figure 1: Birkinshaw model

To sum it up, the traditional execution of managerial functions is tighter and systematically managed by managers; the alternative execution of managerial functions is in the hands of employees; managers

do not control it, and it is more chaotic. Traditional execution of managerial functions leads to higher order (lower Entropy), and alternative execution of managerial functions leads to lower order (higher Entropy).

The Birkinshaw model of management models is explained in deep detail in the class. First, individual managerial functions are discussed, including examples of companies that use traditional and alternative approaches to functions. Then four typical models are introduced, again, with examples of companies in practice that use them.

3. The Video on Entropy

The BBC video on Entropy (Stacey, 2012) introduces the second law of thermodynamics and the term Entropy. The guide, the British physicist Jim Al-Khalili, explains that “all forms of energy are destined to degrade and fall apart. To move from order to disorder” (Stacey, 2012, 1:47) and that “The whole system has gone from being in a special, ordered state with all the energy concentrated in one place to a disordered state where the same amount of energy is distributed amongst many more atoms” (Stacey, 2012, 39:07) which means that “left to itself, the universe will always get messier. Things will move from order to disorder” (Stacey, 2012, 40:50), and “disorder is the fate of everything” (Stacey, 2012, 42:10).

Even though growing Entropy seems to be an inevitable fate, Jim Al-Khalili is optimistic. “It's possible to harness the natural flow from order to disorder, to tap into the process and generate something new, to create new order and new structure. It's what the early steam pioneers had unwittingly hit upon with their engines, and it's what makes everything we deem special in our world from this car, to buildings, to works of art, even to life itself” (Stacey, 2012, 47:05). He believes that “The reason the earth looks now the way it does is because we've learned to harness the disintegrating energy to maintain and improve our small pocket of order” (Stacey, 2012, 50:32). He argues that “all we are doing is trying to preserve this tiny pocket of order in the cosmos that's falling apart” (Stacey, 2012, 57:14). He hopes “that by understanding the universe in ever greater detail we can stretch this moment for many million maybe for the billions of years to come” (Stacey, 2012, 58:06).

4. The Survey

Students of the course of advanced management in the master programme were asked to watch the video (Stacey, 2012) and write in 500 words on the implication of what prof. Al-Khalili says on Entropy to the concept of the Birkinshaw management models (Birkinshaw, 2012). The task was assigned after the whole Birkinshaw model was completed in the class. The task was executed by 41 students; 25 students gave agreement for the use of their answers in the research. Therefore, this paper is based on the ideas of 25 students.

Essays were evaluated from the point of view of adequateness of response, e.g. we evaluated if the students completed the task as it was assigned. Then the part of assignments where students combined knowledge of video and management models was analysed by content analysis. Some students briefly reformulated the topic of the video – this part of the text was not analysed. The content analysis helped us to capture and organise the ideas of students into codes and codes into categories. In case the code corresponded with more than one category, it was classified only to one of them. Categories of the 1st level were further organised to higher level categories of the 2nd level.

Some of the most relevant and interesting answers of students were translated (the survey was executed in the Czech language) and quoted in the text.

5. Results

The following table shows brief descriptive statistics on the adequateness of answers, e.g. how students understood the task.

Table 1: Adequateness of Answers

Option	Students applied video on the Birkinshaw model		Students applied video on management		Students understood the task incorrectly	
	5	20%	13	52%	7	28%

As for the adequateness of answers, the results of the survey were not optimistic. Only five students from 25 applied the knowledge from the video on the Birkinshaw model of management models as required. Thirteen students applied the 2nd law of thermodynamics to management as such, seven students wrote the text on different, usually general topics.

The thematic analysis of the text where students applied the knowledge from video on the concept of management models (some students briefly mentioned main ideas of the video – this part of the survey was not analysed) identified 37 codes, 7 1st level categories and 4 2nd level categories. First level categories are: Everything is final, Entropy is growing, Change can decrease Entropy, Entropie changes rules in an organisation, Order and disorder apply to different MM in the Birkinshaw model, The role of a manager is to decrease Entropy and Non-relevant ideas. These categories were further organised in 2nd level categories which are: Order evolves to disorder, Entropy is related to changes, Different management models have different Entropy, and the Role of a manager is to decrease Entropy.

Table 2: 1st and 2nd Level Categories

1. Level Category	2. Level Category
Everything is final	Order evolves to disorder
Entropy is growing	
Change can decrease Entropy	Entropy is related to changes
Entropy changes rules in an organisation	
Order and disorder apply to different MM in the Birkinshaw model	Different management models have different Entropy
The role of a manager is to decrease Entropy	The role of a manager is to decrease Entropy
Non-relevant ideas	The 1 st level category was not included in the 2 nd level category as it is irrelevant.

The second level category, “Order evolves to disorder”, indicates that students understood well the knowledge provided in the video. For example, student “1A” writes: “As the energy of the universe is final, organisations also have limited resource capacities and limited ability to use them... It is clear that how the life changes, industries are replaced by others”. Student “1C” concludes: “Entropy is the criteria of chaos and teaches us that everything has its life span and everything gradually vanishes.” Student “1L” writes: “Entropy is the rate of chaos that grows in time. It is omnipresent, which means that everything in the world moves in one direction – from order to disorder.”

The second level category, “Entropy is related to changes”, was developed on two 1st level categories that represent two different types of responses. First, students mention that “Entropy changes the rules in an organisation”. Student “1B” writes: “As in the universe, chaos can be the beginning of the new order – transformed to management, it can provide information for the creation of new rules of behaviour.” Student “1Q” writes: “The move from order to disorder does not have to be bad. The role of management is to monitor changes in the environment and respond to them. It allows to create successful inventions/innovations.” Student “1E” notes: “When creating something new, the energy we put into it changes for something else, even if it is just the change of the structure”. Second, students mentioned that “Change can decrease Entropy”. Student “1C” writes: “Management can use the process of Entropy and transform energy to new opportunities how to use the potential of an organisation.” Student “1O” writes:

Implication of what professor Al-Khalili says for management comes from the definition of Entropy as something that tends to move from order to disorder. We can understand every company in this way. It is necessary to put energy into processes that keep a certain level of order even though the order will not last forever. Entropy does not allow perfection.

Student “1E” sees the following role of changes: “Innovations and changes are necessary to move the system from disorder to order.” Student “1G” writes: “When we start to apply organised changes to the disorganised system, it is possible to develop energy that changes the system to the better one.”

The second level category, “Different management models have different Entropy”, covers answers of students who did what they were asked to and applied the knowledge from the video on the Birkinshaw model of management models. Student “1D” notes: “The process of growing Entropy can be applied to the contemporary 'trend' of new management models where managerial functions are diffused, which can be compared to the move from 'order' to 'disorder'”. Student “1L” writes:

As the second law of thermodynamics says that Entropy is growing, the company is also sentenced to bigger and bigger chaos... The more Entropy the management model allows, the more is the organisation's management chaotic, and the organisation changes more energy with its external environment and therefore gets more information from it. The less Entropy, the more closed management model and less exchange of energy, including information. The amount of Entropy also indicates whether it is necessary to change the discipline in the organisation, for example, to use a planning model in times of crisis or to use of a discovery model for innovation implementation.

The second level category, “Role of a manager is to decrease Entropy”, covers ideas of students about the role of a manager in an organisation. Student “1G” writes:

When applying Entropy to management, we can understand it as a certain disorder in the system that naturally grows which indicates its termination. In relation to Entropy rules, a manager should

be the heat that moves his subordinates to changes and faster movement and gives them the energy.

Student "1K" concludes:

Evolution of management as a discipline in history shows that management approaches move from tightly organised and bureaucratic to more released managerial styles that, as J. Al-Khalili explains in the example of car engines, use disorder to create something new and compact. I am not sure if management will be able to move more and more in the direction of disorder. I argue that we are quite close to the border we can achieve ('in disorder'), but who knows what discoveries and technologies new changes will bring into this field.

6. Conclusion

The survey was a small survey with a limited number of respondents who were asked briefly to connect two concepts, the concept of Entropy and management models. Therefore, its results cannot be generalised. Still, the survey indicates certain conclusions and raises specific questions.

The Birkinshaw model is the crucial core knowledge of the advanced management course and is introduced at the very beginning of the course and then discussed in detail in five weeks of the class in ten 90-minute long exercises. The fact that only five students (20%) were able to connect it with the theory of Entropy introduced in the video is disappointing. This fact raises a few questions on why this happened. Is it because students do not understand the model? Is it because they do not pay attention to what is discussed in the class? Is it because they cannot link two concepts from different fields?

We also see as a warning that the answers of 7 students (28%) indicate that they did not understand the task and their answers had nothing to do with link between Entropy and management models in Birkinshaw understanding. Again, it may be interesting to find out why. Was it because they did not pay attention to the course? Was it because they did not pay attention to their study at all? Or did they fail to do the task because they did not do it honestly and just submitted some text to make the submission?

Furthermore, what about those who wrote that the manager is the one whose role is to bring order into the company? Why do they see the role of a manager from such a perspective after the classes on self-managing management models where the role of the manager is different?

To sum it up, the survey brought a few interesting ideas on the connection between management models, management and Entropy. It also raised a lot of questions concerning the relationship of students to the class, their study and their future profession.

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The Importance of the Business Community and Networking in Social Entrepreneurship

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Abstract: In addition to their business objectives, social enterprises contribute to the communities in which they operate. However, social enterprises do not only build relationships and links with the local community, but also create wider networks of contacts and cooperation. Based on qualitative research, this article answers the question of the importance social entrepreneurs attach to networking and interactions with other social enterprises within the national business community. The research findings show that networking and relationships between social entrepreneurs are important for developing collaboration, mentoring and learning, providing support, preventing burnout, sharing contracts or promoting the enterprise. Recognizing the value of these interactions is essential for stimulating network development and for integrating new entrepreneurs into the network.

Keywords: entrepreneurship development, networking, social entrepreneurship, social innovation

JEL classification: M14, M21

Grant affiliation: Entrepreneurial solutions to social problems IGA_FF_2023_024

1. Introduction

Social enterprises are organizations that, in addition to traditional economic goals, seek to fulfil a social mission (Borzaga & Defourny, 2001), especially in the areas of disadvantaged communities where they often operate (Kročil, Müller & Kubátová, 2023; Sadílek et al., 2022). A number of research studies have addressed the specificities of enterprise specificity, such as the tensions that can arise when trying to achieve multi-stakeholder satisfaction (Besharov & Smith, 2013) or the dilemmas that arise due to the diversity of social entrepreneurship (Dees, 2012; Müller & Vaseková, 2023).

A network can be characterized as a structure that consists of a series of nodes interconnected by fibres. Each market entity is tied with many other units that have their own unique resources and knowledge (Möller & Halinen, 1999). The concept of business networking encompasses the deliberate efforts made by individuals or organizations to modify or enhance the dynamics of their interactions and relationships (Ford & Mouzas, 2013). Networking plays a vital role in managing and ensuring business resilience (Håkansson et al., 2009).

Social entrepreneurship is no exception. Given their social mission to help vulnerable communities or to implement social innovations, social enterprises establish a very diverse network of relationships with a variety of actors (Hazenberg et al., 2016; Joshi & Khare, 2021). As Folmer and Nederveen (2018) show, social enterprises use their networks more than commercial enterprises both in the start-up and

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growth phases, and in the growth phase social enterprises are even more dependent on their networks for sourcing than commercial enterprises.

This study focuses on networking from the perspective of entrepreneurs themselves and extends the literature on social entrepreneurs' approaches to networking. Based on qualitative research, this article answers the following research question: *What importance do social entrepreneurs place on networking and interactions with other social enterprises within the national business community?* By addressing this research question, we want to identify the value of social enterprises' diverse relationships with their communities, and highlight exemplary activities that enterprises are undertaking in this regard.

2. Methods

This study presents research findings based on a sample of respondents from extensive qualitative research on social entrepreneurship in Hong Kong and the Czech Republic. More than 25 interviews were conducted with social entrepreneurs and social entrepreneurship experts in each economy during 2021 and 2022. The research identified the area of networking as one of the emerging themes that merits deeper research interest. Fifteen entrepreneurs were included in this study who exhibited good practices related to networking and establishing relationships within the communities.

This study was developed based on the principles of thematic analysis (Braun & Clarke, 2006). After open coding, seven themes were identified within the analysis that relate to social entrepreneurs' relationship building and networking (obtaining resource, cooperation, mentorship, support, burnout prevention, contract sharing, promotion). These themes form the different sections presented in the results of this study. Comments on networking in general are also collected.

The interviews with the participant lasted 40–120 minutes. More interviews were conducted with some entrepreneurs and experts during the research. All research participants agreed to be included in the research and to the recording of the interview. The characteristics of each participant are shown in Table 1.

Table 1: Participants' characteristics

No.	Participant	Field of business	Country
E1	Female	Barrier-free transport, events organization	Hong Kong
E2	Male	Technological innovations, sale of medical devices	Hong Kong
E3	Male	Second hand shop of brand clothes and accessories	Hong Kong
E4	Male	Involving retired people in social life	Hong Kong
E5	Female	Chocolate production, social services, textile production	Czech Republic
E6	Male	Healthcare products and innovations	Hong Kong
E7	Male	Investor, multiple SE co-owner, SE expert	Hong Kong
E8	Female	Packaging-free trade, food production	Czech Republic
E9	Male	Elderly care services, call centrum, SE expert, investor	Hong Kong
E10	Male	Organisation of sports events	Hong Kong
E11	Female	SE support network, co-working space	Hong Kong
E12	Female	Wood recycling, upcycling	Hong Kong
E13	Male	Educational activities	Hong Kong
E14	Female	Textile production	Czech Republic
E15	Female	Materials recycling, upcycling	Czech Republic

3. Results – The importance of social enterprise communities and networking

For the development of social entrepreneurship in the region, umbrella and support organisations working in the field of social economy are very important. These organisations create networks that help social entrepreneurs both in the start-up and during the course of social entrepreneurship. The importance of building these relationships is well described by a representative of a support organisation in Hong Kong: “So, building the social network, building your personal work network is very important and that gives you credibility, that gives you the recommendations you need, you can do your prototype. It just gives you the better foundation to the company” (E11).

Hong Kong is characterised by close collaboration between universities and the social enterprise sector. Universities often enter this network of relationships and not only participate in social innovation education, but also contribute to entrepreneurship development through incubation programs and other support (Müller & Vaseková, 2022). An example of networking is the field of social services and their relationship to the university environment: “They have a very strong network and all of them, rely on the universities, so let’s say Polytechnic University, that one of the biggest social entrepreneur networks” (E11).

The importance of support organisations is also evident in the Czech Republic. Social entrepreneurs perceive these initiatives very positively and try to engage within this network.

There is a nice community around social entrepreneurship in the Czech Republic, there is peer networking, there are support initiatives and platforms, starting with Thematic Network for Social Economy, through the Social Responsibility Association or various support programmes. We are involved in the Česká spořitelna programme, which does training programmes for social entrepreneurs. The kind of community that has formed around that works very well when you get involved. (E15)

Moreover, social entrepreneurs are aware of the need to create their own local, regional networks.

We know the social entrepreneurship community in the Czech Republic. Personally, we are also trying to create a community of social enterprises within the region, so we have initiated the creation of a kind of public benefit corporation that will help social enterprises to work with each other within a regional area. (E14)

Some social enterprises also enter into an international network of relationships. One example is a Hong Kong social enterprise that deals with intercultural education: “We have a network of interacting people all around the world. [...] When I started that organisation, I became part of the network and understood what other people are doing, joining conferences on social entrepreneurship” (E13).

Entrepreneurs are aware that not every effort to create a partner organisation offering various support workshops for social entrepreneurs is beneficial. The actual impact of such an initiative should always be considered:

There are for example workshops on capacity building but those workshops tend to be repetitive, I’m not sure how effective they are and just some consultancies can earn a lot of money charging the government to run those workshops. And they may not even be so relevant or I feel like sometimes they are more small chambers and support networks than actual social

enterprises are there. So, sometimes money should just go into incubating social enterprise rather than another business centre that tries to help the enterprises. (E13)

In their statements, social entrepreneurs not only reflected on the overall importance of networking, but were able to describe specific situations and the benefits of forming these networks of relationships. In the following sections, we present the most frequently mentioned areas that our research identified.

3.1. Obtaining resources

Numerous literatures mention that networking is very important for securing resources (see for example Brüderl & Preisendörfer, 1998; Butler & Hansen, 1991; Folmer et al., 2018). Securing resources and other benefits from networking significantly increases firm survival and therefore performance (Brass et al, 2004). As a Hong Kong social entrepreneur mentions, her motivation for staying in social entrepreneurship is that “it’s the best channel to maximizing different resources to tackle one social issue (E1)”. Social entrepreneurship helps to combine the resources typical of non-profit organisations with those of for-profit organisations. The social entrepreneur in our example based her business model on philanthropic social entrepreneurship:

We learnt this concept from European Venture Philanthropy Association conference in 2009. The founders are actually the finance guys. They want to use their finance knowledge and network to do the philanthropy. So, they set up EVPA. And we start to learn this concept philanthropy social entrepreneurship from EVPA network. (E1)

3.2. Cooperation

A social enterprise that improves the mobility of people through technological innovation cooperates with other social enterprises: “Besides, our company also have some events organised for elderlies, like we have a Health Alliance, which cooperate with different social enterprise” (E2). This cooperation also consists in the possibility of introducing seniors to their products with training in the use of health aids, which is also important to prevent the misuse of products with negative health consequences. The circular economy enterprise, which mainly reuses luxury clothing brands and operates a second-hand shop, also benefits from cooperation with other companies: “We had some cooperation other social enterprises, that is kind repairing clothes and modifying, restructure clothes” (E3).

One Hong Kong social enterprise acknowledges the significance of fostering connections between individuals in the pre-retirement and retirement age groups, offering activities, services, and employment opportunities to promote a fulfilling old age and harness their valuable potential and life experiences. The social enterprise works in partnership with other businesses, offering the experience of people of retirement age and helping to recognise their employment potential, which they can use in a variety of businesses:

Oh yeah, we cooperate with other social enterprises as well. Say for example, actually we have different kinds of cooperation. One of that is that we help them to hire the retirees because for social enterprise in Hong Kong, they are quite small and they do not, time to time, they do not need full time staff for certain tasks, so we help them to hire the retirees who can help them to do some part time on admin accounting. (E4)

Czech social entrepreneurs also mention the importance of mutual cooperation. A representative of a social enterprise points to the closeness of social entrepreneurs based on their common interest in social good, which brings the enterprises closer together: “We as an enterprise cooperate with all possible institutions, we do not resist at all, we participate in various trainings and meetings of social enterprises. I see it as all social enterprises should pull together. If there was a need to help someone, we would certainly not resist” (E5).

3.3. Mentorship

Mentoring and getting advice and support from experienced entrepreneurs is very important in social entrepreneurship. Social entrepreneurs are aware of the value of this experience. Although some have expressed concern about whether there will be enough of these mentors, the social entrepreneurship expert believes that there are many experienced entrepreneurs:

As for the supply of mentors, I think there are plenty in Hong Kong. Plenty. I don't worry about the availability of them. I'm going to worry about the demand. [...] So it's up to you, the people who want to have mentors to seek out, to find these mentors. And impress them to the extent that these people are happy to support them. (E7)

One of the entrepreneurs mentions that two of his most important mentors are entrepreneurs who are among the pioneers of social entrepreneurship in the region: “They're the first batch of the social entrepreneur, and I'm so lucky that I've been joining them and participating with them” (E6). Czech entrepreneurs are also in contact with mentors, many of whom are members of the Thematic Network for Social Economy: “We are mostly in contact with an expert from TESSEA. Thanks to her, we have participated in training, and got to know other social enterprises (E8).”

3.4. Support

As the network grows, the chances that social entrepreneurs will be supported by someone in the difficult moments that come with entrepreneurship increase. Self-knowledge is also important in this regard, helping entrepreneurs to identify weaknesses and identify areas where the support of others is most important:

So, you can see, that you are not lucky all the way. You have to face challenges, but you have to have a positive mindset and also have an innovative mindset. Explore, try and then be good to yourself. And also find someone to talk to. And one more thing is that as a social entrepreneur, you have to admit your limitation and then you have to expand your network to know other people that can help you. (E9)

3.5. Burnout prevention and finding purpose

Creating a network of relationships and building a business community is important in terms of preventing negative psychological conditions such as burnout. Social entrepreneurship is a very demanding and often exhausting activity that is never finished because there are still people who need help. Both Hong Kong and Czech entrepreneurs are aware of this. An expert on social entrepreneurship mentions the need to supply support to entrepreneurs, to show them their small successes: “I use a lot to help these people is to encourage them to have small wins. Small ones add up to big wins. Wins to let them enhance their confidence that they could do it, that they would. Common now for people to talk about growth mindset. The challenge is to help people really have that mindset (E7).”

Entrepreneurs in the Czech Republic and Hong Kong also agree that the social entrepreneurship community can give them greater purpose and fulfilment:

It is invaluable experience for me to open a social enterprise to accumulate this of network which is, we cannot get from stable life. And also, I think although every day is different and we need to tackle with many problems but that is sort of enjoyment because life is only live for once. So, try more can also make my life more beautiful. (E12)

3.6. Contract sharing

Networking between businesses and establishing mutual trust can also lead to the sharing of contracts. On the one hand, businesses can take on a much larger order that might not be manageable without the participation of a partner, while at the same time also receiving orders in return from clients with whom they do not have an established relationship:

It's very important for me to work with other social enterprises, and I think it is for others in different regions of the country. It's important that you are not alone in this, that there are many social enterprises, we have established cooperation with a local social enterprise here, so we are not afraid of orders that are bigger. We can help each other in some way. And now that we have a bigger contract, we have divided the work and given the work to another enterprise, which is very nice. (E5)

3.7. Promotion

Networking is also important for promotion, as a social entrepreneur with marketing experience points out. Networking is important, but it is not the only requirement for success. The content that is shared through networking and its form is also important:

I think being a starting as a marketing consultant social enterprise, we do have some advantages. We do have our own networks. We already have that experience and networking so, but I cannot say that that is something that is that makes us special. [...] I think a lot of the social enterprise find marketing challenging because they're still treating their organization like the charity. (E10)

4. Conclusion

Although it is well established in the literature that networking is essential for businesses, we know less about how social entrepreneurs themselves view networking and how they use it to start and grow their businesses. The research results showed that entrepreneurs, both in Hong Kong and the Czech Republic, recognise the importance of networking. From the entrepreneurs' statements, we can identify several key areas of how networking contributes to social entrepreneurs. These include sourcing, collaboration, mentoring, burnout prevention, support, contract sharing and promotion. This study has focused on those enterprises that actively use networking to provide an example of good practice. Further research could compare these results with the practices of businesses that do not actively use networking and identify opportunities for improvement.

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Labor Migration Intention of Future Healthcare Workers

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Abstract:

The number of migrating healthcare workers for the purpose of employment is rising and it is necessary to uncover the factors affecting the decision of these professionals, considering already the students of health studies. When it comes to the migrating healthcare workers, studies show that the economic factor which clearly stands out is the low pay rate, and, as for the social factors, it is the poor working conditions. This paper aims to discover whether the students of the Faculty of Health Studies in Ústí nad Labem plan, after concluding their studies, to relocate for work to Germany. Furthermore, it seeks to expose which factors most influence the students' decision to move abroad or to a different region of the country; and investigate the economic and social factors connected to family, friends, environment or public facilities. The research was conducted through a questionnaire with 58 students. The inquiry results reveal that students consider moving for work not only outside of Ústí Region, but also abroad, mainly to Germany. The most important factors which discourage students from working in Ústí Region include factors such as working conditions and growth, remuneration, health system and environment. These results may be of use to medical centers, which can influence these factors. Moreover, the results can also help other structurally affected regions in the prevention of migrating health workforce and thus keep the future professionals in these regions.

Keywords: labor migration, health studies students, economic factors, social factors

JEL classification: J61, O15

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1. Introduction

A great deal of attention is given to the migration of healthcare workers worldwide. The number of migrating healthcare professionals is constantly rising, and this issue remains unresolved. The healthcare profession belongs among the most mobile and highly qualified professions, and especially in Europe it is considered a sector, which is experiencing the greatest labor shortage (Botezat & Ramos, 2020). The direction of such migration within the European Union is the same in most cases, and that is from the east to the west. The problem concerns mainly young healthcare workers, and that is why migration is investigated in many countries already when it comes to students of health studies.

This paper aims to discover whether the students of the Faculty of Health Studies in Ústí nad Labem plan, after concluding their studies, to relocate for work to Germany (RQ1). Furthermore, it seeks to expose which factors most influence the students' decision to move abroad or to a different region of the country; and investigate the economic and social factors connected to family, friends, environment, or public facilities (RQ2).

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2. Migration as a Trend

International migration of healthcare professionals is a significant social issue because of labor shortage in healthcare on a national, regional, and global level.

2.1. The Situation in Healthcare

Foreign-born healthcare workers account for a significant part of workforce in some of the richest countries of the world. In Great Britain, they make up 30% of the healthcare workforce. In the USA, they constitute 26%, and in Norway 16% (Clark et al., 2007). According to the OECD (2010), the number of foreign-born healthcare workers has increased by 70% between the years 2001 and 2008.

Hruška et al. (2016) have investigated this issue in the west of the Czech Republic, reporting an increasing volume of commuters from Czechia to Saxony between 2001 and 2011 from the regions of Karlovy Vary and Ústí. At the end of 2015, Czech doctors made up the largest share of the total number of foreign doctors in Saxony. Similarly, Germany also attracts future doctors from Poland (Krajewski-Siuda et al., 2008).

2.2. The Causes of Healthcare Workers' Emigration

Studies from a series of countries (Botezat & Ramos, 2020; Tupá, 2020; Zuk et al., 2019) show that the main and most common problem is primarily low salary evaluation in the country of origin. Another common problem is poor working conditions, which can include outdated workplace equipment or the work environment, which is also related to workplace relationships. The impossibility of career growth in one's native country (Suciu et al., 2017) and the prospect of a better quality of life abroad (Botezat & Ramos, 2020) also emerged as important factors for migration. Social factors such as friends and family influence migration potential as well (Goštautaitė et al., 2018).

On the other hand, there are also obstacles to migration, such as physical distance from workplace, language barrier or restrictions related to the labor market. Other obstacles include family background and friends, a sense of home or owning real estate in the country of origin (Hruška et al., 2016).

2.3. Migration of Health Studies Students

This problem mainly affects young health professionals, which is why migration is investigated in many countries already among health studies students (Akl et al., 2008; Suciu et al., 2017). If the imprecise intention of students to migrate abroad turns into a definite plan, it can affect the economy and the health system, because at public universities, health training is publicly funded and very expensive (Krajewski-Siuda et al., 2008). Most students of healthcare fields considering migration perceive it as a convenient alternative to continue their professional training (Suciu et al., 2017).

For students, it is mainly about socio-demographic and financial reasons (Goštautaitė et al., 2018), family or friends living abroad, and work climate was also an important factor for students.

3. Methodology and Research Sample

The aim of this paper is to find out whether the students of the Faculty of Health Studies (FHS) at the Jan Evangelista Purkyně University in Ústí nad Labem (UJEP) (N=58) plan to work in the German labor market after their studies. Furthermore, it aims to reveal what factors most influence their intention to go abroad or stay in the Czech Republic. Mainly economic, social, work factors or factors related to the language barrier, the surrounding environment or transport accessibility were examined (Table 1).

Table 1: Determination of factors according to scientific studies

Classification	Factors	Study
Economic	Salary conditions	Tupá (2020)
Social	Friends, family, new collective	Orosova et al. (2018), Pitó (2015)
Work	Employment security, career growth, working conditions	Tupá (2020), Botezat and Ramos (2020)
Language barrier	Improvement of foreign language	Hruška et al. (2016)
Mobility	Transport accessibility, distance from place of residence	Hruška et al. (2016)
Healthcare	Quality of health system	Botezat and Ramos (2020)
Environment	Quality of living environment	Botezat and Ramos (2020)

Source: Own elaboration

This survey sample consists of 58 final year students from FHS, mostly women (76%), full-time students (64%), who have experience with staying abroad for no longer than one month (84%). More than 60% of students indicated their place of residence in the Ústí Region. At FHS, one may study only non-medical fields, and in this sample group, the following master's follow-up graduate program *Organization and development of healthcare facilities* is most represented (45%), followed by *Physiotherapy* (17%, bachelor=bac.), *Midwifery* and *General nursing* (both 10%, bac.).

The work used primary data obtained by the questionnaire survey method collected in 02/2023. The questionnaire mainly contained closed questions and questions using the 5-point Likert scale (1 – worst, least; 5 – best, most). To evaluate the questionnaire descriptive statistics were used for socio-demographic data and intentions to work abroad and planned job locations. Chi-square test of independence was used to determine H1 and H2. The data were not normally distributed, and therefore non-parametric tests (Mann Whitney test – H3, Friedman test – H4, H5) were employed within the SPSS program. A 5% level of significance was set for all tests (marked in tables as *; 1% = **).

3.1. Research Questions and Hypotheses

RQ1: Do FHS students consider migrating for work outside the Ústí Region after their studies?

H1: FHS students of the master's follow-up graduate program think about going abroad for work more than undergraduate students.

H2: Among FHS master's follow-up graduate students, there is more interest in working outside the Ústí Region than among undergraduate students.

RQ2: Which factors to migrate for work prevail among FHS students?

H3: There is a statistically significant difference in the evaluation of the factors depending on the students' experience of staying abroad.

H4: FHS students are most motivated to migrate for work based on the salary factor.

H5: FHS students are most discouraged from migrating for work based on factors related to work and the healthcare system.

4. Results and Discussion

We first asked the students if they were thinking about working abroad. Most students agree with the statement that "they have thought about it a few times" (41%) and "yes, working abroad is attractive to them" (21%). The first two options therefore achieve more than half of the interest in working abroad. The result is relatively low compared to Krajewski-Siuda et al. (2008) and Akl et al. (2008), who report the labor migration plan of health studies students in the range of up to 85-95%. Nevertheless, Suciu et al. (2017) report a lower willingness of future health professionals to move, at 45%.

When students had to decide between Ústí and another region and abroad, 40% chose another region, and when specifying abroad, Germany gained the largest representation with 9%. The selection of Germany is comparable to Krajewski-Siuda et al. (2008), where 12% of respondents expressed their opinion in favor of this destination.

Using the Chi-square test, we investigated H1, where it was confirmed that FHS students of a master's program think about migrating for work abroad more than students of a bac. (Table 2). This is contrary to Goštautaitė et al. (2018), who found a higher willingness among the students of the bac. of General Nursing. As part of H2, it was confirmed that FHS students of the master's program are more interested in working outside the Ústí Region (Table 2).

Table 2: Chi-square test values for hypotheses 1-3 (N=58)

Hypothesis	Pearson Chi-Square Value	Sig.	Result
H1	7,000	0,008**	Supported
H2	5,784	0,016*	Supported

Source: Own elaboration

As part of RQ2, the differences in the evaluation of factors which motivate students to migrate were investigated. When testing H3, if there is a statistically significant difference in this evaluation based on the students' experience of staying abroad for longer than one month, 7 significant differences out of the 12 offered were revealed (Table 3). H3 was partially confirmed.

Table 3: Difference in the motivating factors for students who have and who do not have experience with a stay abroad (N=58)

Factor	Mann Whitney U Test	Sig.	Experience with a stay abroad (Mean Rank)	
			No	Yes
Salary conditions	124,0	0,033*	27,53	40,22
Career growth	133,5	0,054	27,72	39,17
Friends	382,5	<,001**	32,81	11,50
Family	335,5	0,009**	31,85	16,72
Improvement of foreign language	105,5	0,010**	27,15	42,28
Distance from place of residence	404,5	<,001**	33,26	9,06
Good transport accessibility	312,0	0,041*	31,37	19,33

Source: Own elaboration

According to Hruška et al. (2016), experience with a stay abroad is often the motive for labor migration. Moreover, the authors consider salary conditions and career growth significant factors

which influence labor migration in a positive way. These are also motivating factors for FHS students, mainly for the ones with an experience abroad. Another significant factor for students with an experience abroad is the improvement of foreign language skills. On the other hand, they do not cling as much to the geographic closeness to friends, family, and overall, to the place where they were born and not even to good transport accessibility, contrary to the students without an experience abroad.

With H4, we wanted to confirm that attractive salary conditions are the most motivating factor for students to migrate. H4 was not confirmed, for when it comes to their future place of employment, students find most attractive factors related to transport accessibility, family, and job security. Significant differences between factors were evaluated in Table 4 based on the Friedman test and subsequent post-hoc analysis. It was found that the ratings of all factors are significantly different from each other at the 1% level of significance. Post-hoc analysis revealed 3 groups, which the respondents assess equally and are equally motivating for them in their future workplace.

According to Tupá (2020), the most motivating factors for labor migration are salary and working conditions, which differs from the result of this survey. According to Pitó (2015), family and friends belong among important factors motivating migration. For FHS students, family was placed in the first group and friends in the second.

Table 4: Factors motivating migration (N=58)

Group	Factor	Mean	Sig.	Sig.
1	Good transport accessibility	3,72	0,618	<,001**
	Job security	3,71		
	Distance from place of residence	3,60		
	Family	3,60		
2	Friends	3,52	0,268	
	Career growth	3,36		
	Quality of working conditions (equipment)	3,33		
	Quality of living environment	3,31		
	Quality of health system	3,29		
	Salary conditions	3,19		
3	New collective	2,67	0,128	
	Improvement of foreign language	2,38		

Source: Own elaboration

With the last hypothesis, we investigated whether FHS students are discouraged from migrating for work by factors related to work and the healthcare system. H5 was confirmed, FHS students are most discouraged by factors related to unsatisfactory career growth, salary and working conditions (Tab. 5).

Based on the Friedman test and subsequent post-hoc analysis, it was found that the evaluation of each factor significantly differs at the 1% level of significance. Post-hoc analysis revealed 3 groups, which the respondents evaluate equally and are equally demotivating for their decision to leave the region.

Table 5: Discouraging factors at the future workplace (N=58)

Factor	Mean	Sig.	Sig.
Without career growth	2,47	0,913	<,001**

Inadequate salary conditions	2,41		
Low quality of health system	2,41		
Poor working conditions (equipment)	2,40		
Low quality of living environment	2,36		
New collective	2,19	0,964	
Distance from family	2,16		
Distance from friends	2,16		
Job insecurity	2,14		
Poor transport accessibility	1,90	0,597	
Language barrier	1,86		
Distance from place of residence	1,83		

Source: Own elaboration

The survey results correspond with other studies such as Tupá (2020), where the most discouraging factors for staying in the country of origin are poor salary and working conditions. Furthermore, Botezat and Ramos (2020) mention the low quality of healthcare as a discouraging factor. As health studies students, they are aware of the importance of quality healthcare both from the patient's point of view and above all from the expert's point of view. Even according to other studies (Goštautaitė et al., 2018; Hruška et al., 2016) the most discouraging factors for leaving the country of origin are the impossibility of career growth and also the language barrier.

5. Conclusion

We asked Health Studies students, whether they plan to relocate, after their studies, for work to the German labor market or to another region outside of Ústí Region; and what factors most influence their decision. This intention prevails rather among the students of master's follow-up graduate program, who have only a few months left before entering the labor market, and thus there is a small chance that they will change their mind about emigration.

Furthermore, we investigated whether there is a difference in the assessment of the outlined factors depending on the students' experience with a stay abroad. Here, the factors with the greatest differences emerged: distance from place of residence, from friends and family, and good transport accessibility. All the mentioned factors are motivating factors to relocate for work for the students who do not have an experience with staying abroad. On the contrary, career, salary and foreign language are more motivating factors for students with experience abroad.

Regardless of a stay abroad, students are most motivated by factors such as good transport accessibility, job security, distance from home and family, and expected salary. In contrast, students are most discouraged by unsatisfactory working conditions (career growth, salary, working conditions and the healthcare system) and the living environment.

These results may be of use to medical centers, which can influence these factors. Moreover, the results can also help other structurally affected regions in the prevention of migrating health workforce and thus keep the future professionals in these regions.

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Consequences of low financial literacy of the population in Slovakia

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Abstract: The article is prepared on the topic of the consequences of the low financial literacy of the population in Slovakia. The goal of the paper is to provide insight into the microeconomic context between the lower financial literacy of the Slovak population and the growing indebtedness of households on the Slovak financial market. In this paper I will analyse the causes and consequences of Slovak household indebtedness on the base of my personal questionnaire survey. The results suggest the existence of a positive correlation between financial literacy and the level of completed education. Individuals without any form of debt are more financially literate. If individuals are unable to spend their money efficiently and spend it recklessly, it can lead to their debt.

Keywords: Financial literacy, financial illiteracy, survey, indebtedness, households' behaviour

JEL classification: D19, G51, G53

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1. Introduction

The level of financial literacy is associated with several determinants. The most common are gender, age, education, region, marital status, professional status, level of income, knowledge of economics, or of finance, experience and knowledge of financial products, employment, and profession. O'Neill and Xiao (2012) worked on a study consisting of twenty financial questions describing the frequency of conducting the best practices of effective financial management, which assessed the financial behaviour of individuals in relation to the family budget, the financial management of personal loans, expenses, investments, and savings before and after the global financial crisis in of 2008. Klapper et al. (2012) analysed financial literacy using variables such as interest rate, simple and compound interest, inflation, and sales discounts. In his study, Monticone (2010) attributed higher financial knowledge to higher schooling because individuals with higher education have less difficulty acquiring financial knowledge. He also concluded that financially illiterate people more often take out a housing loan under inappropriate conditions. According to Campbell (2006), low-income, low-educated individuals are less likely to refinance their home loans during a period of declining interest rates. Lusardi and Mitchell (2011) focused in their studies on the analysis of financial literacy and financial difficulty among people older than 55 years. This study was primarily focused on this specific demographic group, as it is one of the groups that have a lower financial level according to other conducted studies. In addition, illiteracy has several consequences that are reflected in this age group, such as being less likely to adapt to newer innovations, increasingly complex financial products, and services, more likely to end up with a lower level of wealth when they reach retirement age, with less likely to invest in shares and more likely to opt for more expensive loans. They concluded that people older than 55 show a lack of knowledge of the basics of financial action and risk diversification. Similarly, Lusardi and

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Mitchell (2008) demonstrated that financial literacy greatly influences financial planning and increases wealth realization, confirming a study by Delevande et al. (2008), that financial literacy allows investors to obtain higher rates of return on their assets for any level of risk. Monticone (2010) later concluded that in recent years, financial literacy has been shown to influence a wide range of financial behaviours, including wealth creation, stock market participation, portfolio diversification, indebtedness, and responsible financial behaviour. Regarding the impact of low levels of financial literacy, the same researcher showed that, in general, individuals with low levels of financial literacy tend to have high costs of their financial options. Other authors (Lusardi & Mitchell, 2014) have also concluded that people with a low level of financial literacy tend to get into debt problems. They are also less likely to efficiently accumulate assets and plan for their financial retirement. In the same sense, Bernheim (1996) found that those families who lack basic financial knowledge do not know how to effectively create savings. The increase in the number of people with low levels of financial literacy poses a serious problem for the economic well-being of the nation as well as the well-being of such individuals. Lusardi and Mitchell (2023) have shown that the costs of these low levels are significant to society and can have disastrous consequences for the future.

2. Data and methodology

The aim of the article is to evaluate the links between the lower level of financial literacy and the growing indebtedness of Slovak households by the personal questionnaire survey. The questionnaire was composed of 17 questions. The responses captured the subjects' decision-making on questions related to risk and investment attitudes and universal core concepts that underlie most financial decisions applicable to every context and economic environment. The respondents were exclusively residents of the Slovak Republic, as the target group of the bachelor thesis was focused on the Slovak population. A total of 194 respondents took part in the survey. Using the selected methodology of deduction, we established our own hypotheses, which we verified in the practical part of the paper through the statistical method of probability distribution, the so-called chi-square test, with which we determined the connections between the given variables, based on the results obtained from our questionnaire survey. If the calculated chi-square value was higher than the critical point, we accepted the established hypothesis, on the contrary, if the calculated value was less than the critical point, we rejected the established hypothesis. As another statistical method, we used the t-test to verify the gender gap in the achieved level of financial literacy among respondents. The established hypotheses are as follows:

H1: Women have a higher risk aversion than men.

H2: There is a significant relationship between financial literacy and education.

3. Results

At the beginning, we investigated the self-confidence of the respondents by asking whether the given person considers himself to be a financially literate person. Most respondents consider themselves a financially literate person, which probably means that they have some knowledge of financial literacy, or they already have experience using financial products and services. On the contrary, only 6.7% think that they do not have a sufficient level of financial literacy. 16% are undecided about their financial knowledge, which may mean that the subjects have uncertainty despite some achieved financial knowledge. what degree of financial literacy would the respondents give themselves. The scale was

compiled with numbers from 0 to 5, where level 0 means that the person has the lowest level of financial literacy, or he has no proper knowledge. The highest level of 5 means that the person has the highest level of financial literacy. Grades between 0 and 5 characterize the level of financial literacy, where there is still room for improvement. We found out that even though 77.3% of people consider themselves to be financially literate, more than 7.7% of people chose level 3 or more. In order to evaluate the investment behaviour of subjects, we first determined their relationship to risk (H1: women have a higher risk aversion than men). More than half of the respondents tend to be cautious and avoid risk. 29.7% claim that they are willing to take risks and the remaining 16.7% of respondents do not have a clear attitude towards risk. In order to verify the first established hypothesis, as part of the survey, we created an overview of the data between men and women in a table. For a better comparison, in addition to the absolute values, we also calculated their relative value between women and men. We investigated whether there is a relationship between gender and risk attitude. We established the null and alternative hypothesis: H0: Women do not have a higher risk aversion than men; H1: Women have a higher risk aversion than men.

We processed the obtained data into a table and divided them based on gender and attitude to risk. Out of the total number of women, 77 women are risk averse, and out of the total number of men, 27 men are risk averse. There are 104 respondents in total.

Table 1: Real risk attitude data across gender

Risk attitude /gender	Careful	A risk taker	No attitude	Together
Women	77 (59,2%)	31 (23,8%)	22 (17%)	130
Men	27 (42,2%)	27 (42,2%)	10 (15,6%)	64
Together	104	58	32	194
Ration to the total number of men/women	0,5361	0,2990	0,1649	

Source: own calculations based on results from survey.

After processing the real data, we then created the estimated data. In order to find out the estimated data, we have to assume that there is no difference between the sexes. In this case, we assume that women and men are cautious and avoid risk in the same proportion (53.6%). According to the percentage ratio, we estimate that 70 women and 34 men have risk aversion.

Table 2: Estimated risk attitude data by gender

Risk attitude /gender	Careful	A risk taker	No attitude
Women	70	39	21
Men	34	19	11

Source: own calculations based on results from survey.

Using the Excel program, we calculated the p-value using the CHISQ.DIST.RT function. The value turned out to be smaller than the established level of significance ($\alpha = 0.05$). A lower p-value provides evidence against the null hypothesis because the result would be highly unlikely if the null hypothesis were true. The result is statistically significant, so we can reject the null hypothesis and accept the alternative hypothesis.

Table 3: Chi-square test for the first hypothesis

Chi-square test	7,29
------------------------	------

df	2
p-value	0,026

Source: own calculations based on results from survey.

In this next part of the paper, we tested second hypothesis (H2: There is a significant relationship between financial literacy and education). We proceeded in the same way as with the previous hypothesis 1. First, we processed the data, based on it we created estimated values and then calculated the p-value. The hypothesis is as follows: H0: There is no significant relationship between financial literacy and education; H2: There is a significant relationship between financial literacy and education.

We divided the distribution of correct answers within the testing of the given hypothesis into two groups, if the respondents had less than half of the questions correct and if they had more than half of the questions correct. University graduates achieve the highest percentage (95.8%), which refers to more than half of the correct answers, and the lowest percentage (4.2%), which refers to less than half of the correctly answered questions.

Table 4: Real data distribution of correct answers based on the highest education level

Education /distribution of correct answers	Less than half (1 to 2 questions)	More than half (More than 2 questions)	Together
Elementary school	6 (66,7%)	3 (33,3%)	9
Secondary School	17 (15%)	96 (85%)	113
University	3 (4,2%)	69 (95,8%)	72
Ration to the total number of respondents by education	26	168	194

Source: own calculations based on results from survey.

For the estimated data, we assume that there are no differences between the highest educational attainment. Those who got one to two questions correct were 13.4% and those who more than two correct answers had 86.6% for all levels of education. Based on these data, we calculated the chi-square and p-value. After comparing the values, the p-value turned out to be statistically significant, so we can reject the null and accept the alternative hypothesis.

Table 5: Estimated data distribution of correct answers based on the highest education level

Education /distribution of correct answers	Less than half (1 to 2 questions)	More than half (More than 2 questions)
Elementary school	1	8
Secondary School	15	98
University	10	62

Source: own calculations based on results from survey.

Table 6: Chi-square test for the second hypothesis

Chi-square test	34,12
Df	2
p-value	3,89E-08

Source: own calculations based on results from survey.

We can therefore conclude on the basis of the obtained data that with a higher school education, we achieve better results in financial literacy testing.

At the end of the evaluation of the results of the paper, we prepared an overview of the level of financial literacy based on age category and gender. The following graph shows us the distribution of correct answers for men and women. The average number of correct answers is 4.2 for men and 3.8 for women, which is a gender difference of 10.5%. Assuming that all five questions are answered correctly, which means that they reach a "high" level of financial literacy, more than half of male respondents (54.7%) and only about one third of female respondents (38.5%) have reached this standard, which shows an even higher gender gap (42.1%). We tested all differences as percentages from baseline using a two-sample t-Test assuming equal differences at the 0.05 significance level, which we found to be statistically significant. The proportion of respondents answering each of the questions for men was higher than for women for all questions, with the difference between the sexes

Proportion of correct answers for each question	Interest rate	Inflation	Diversification	Risk	Money illusion	Sum of all correct answers	Average	Median
All respondents	74,2%	89,7%	73,2%	78,4%	75,8%	43,8%	3,9	4
Women	70%	88,5%	68,5%	76,2%	73,8%	38,5%	3,8	4
Men	82,8%	92,2%	82,8%	82,8%	79,7%	54,7%	4,2	5
Gap (% points)	12,8	3,7	14,3	6,6	5,9	16,2	0,4	
Gap (%)	18,3%	4,2%	20,9%	8,7%	8%	42,1%	10,5%	

ranging from 4.2% (2) inflation to 20.9% (3) diversification.

Table 7: Data distribution of correct answers to financial literacy questions

Distribution of correct answers	0	1	2	3	4	5	Average	Median
All respondents	3,6%	4,6%	5,2%	13,9%	28,9%	43,8%	3,9	4
Women	3,8%	6,2%	5,4%	16,9%	29,2%	38,5%	3,8	4
Men	3,1%	1,6%	4,7%	7,8%	28,1%	54,7%	4,2	5
Gap (% points)						16,2	0,4	
Gap (%)						42,1%	10,5%	
Age groups								
Untill 20 years	9,1%	9,1%	9,1%	18,2%	36,3%	18,2%	3,2	3,5
From 21 to 35 years	4,3%	2,1%	1,1%	6,4%	22,3%	63,8%	4,3	5
From 36 to 50 years	0%	3,6%	7,3%	16,4%	41,8%	30,9%	3,9	4
From 51 to 64 years	7,4%	7,4%	7,4%	33,3%	22,2%	22,2%	3,2	3
More than 65 years	0%	28,6%	28,6%	14,2%	28,6%	0%	2,4	2

Source: own calculations based on results from survey.

Table 8: Data distribution of correct answers to financial literacy questions

Source: own calculations based on results from survey.

4. Conclusion

The questionnaire survey provided us with valuable insights into how the surveyed persons understand the basic concepts of financial literacy and how they relate to risk and investments. The results of the survey indicate that there is still a significant lack of understanding in financial literacy among the respondents. Many individuals struggle to understand basic financial concepts such as interest rates, diversification, and investment risk. More than 4/5 of the respondents are employed or work somewhere. All questions were answered correctly by 85 respondents, of which approximately 87% are employed. As part of the work, we investigated the relationship between employment and financial literacy, which we failed to confirm, which can be explained by the low number of respondents. It could be expected that more than half (53.6%) would be risk averse. Exactly half of people think of risk as the probability of loss or reduction in value due to unexpected events or market developments. According to the results, we managed to verify a significant relationship between gender and risk aversion. More women are more risk averse than men and make decisions with a higher degree of uncertainty. Therefore, they prefer a more conservative type of investment and place greater emphasis on advice. In the past, financial advisors were seen as reliable and honest sources of information about investment opportunities and financial strategy. 55.7% of respondents trust and rely on advice. However, this notion may seem less true these days, and many people feel that financial advice is not as trustworthy as it once was. This partly explains why up to 44.3% do not trust financial advice and prefer to rely on their own experience.

A positive relationship was also verified between financial literacy and the highest level of education. Based on the comparison of absolute and relative values, we were able to demonstrate that university graduates achieve a higher success rate of correct answers. This also coincides with several studies investigating this phenomenon. Education helps people acquire critical thinking and problem-solving skills. Looking at the total number of correct answers, less than 50% were able to answer all five questions correctly. In addition to demographic factors such as education or occupation, there are gender differences and differences between age groups. In the above graphs and tables, we can observe. Men achieve a higher average of correctly answered questions than women. When comparing the median values in the group of numbers according to size, the median is 5 for men and 4 for women. In our work, we used a t-Test, which confirmed the gender difference in work at the level of 10.5%. The data also point to age differences, where we can observe that the age category from 21 to 35 achieves relatively the highest results. It can be explained by the fact that this category includes recent university graduates who are also entering the labour market and gaining new work experience. This age category achieved the highest value on average (4.2) compared to the others. Also, based on the average and median values, we can notice how the level of financial literacy develops, the older the population, the lower the success rate.

The use of a questionnaire survey to determine the level of financial literacy is a common practice. It is an effective way of obtaining quantitative data on the level of financial literacy of respondents. It is true that an individual's financial literacy is reflected in his individual financial actions and decisions. It is important to emphasize that financial literacy is not static and can change depending on experience and education. It is therefore necessary for individuals to constantly work on developing financial literacy and improving their financial decision-making.

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Text classification using machine learning methods

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Abstract: In this paper we present the results of an experiment aimed to use machine learning methods to obtain models that can be used for the automatic classification of products. In order to apply automatic classification methods, we transformed the product names from a text representation to numeric vectors, a process called word embedding. We used several embedding methods: Count Vectorization, TF-IDF, Word2Vec, FASTTEXT, and GloVe. Having the product names in a form of numeric vectors, we proceeded with a set of machine learning methods for automatic classification: Logistic Regression, Multinomial Naive Bayes, kNN, Artificial Neural Networks, Support Vector Machines, and Decision trees with several variants. The results show an impressive accuracy of the classification process for Support Vector Machines, Logistic Regression, and Random Forests. Regarding the word embedding methods, the best results were obtained with the FASTTEXT technique.

Keywords: machine learning, automatic text classification, price statistics

JEL classification: C63, C00

1. Introduction

The modernization strategy of official statistics includes the adoption of new methods used in statistical processes and the integration of new data sources in statistical production. Thus a few years ago we started the process of collecting online prices from the main national e-commerce sites, using webscraping techniques in order to use them for Consumer Price Index computation (Oancea and Necula, 2019). The volume of data collected through webscraping is very large: approximately 50,000 records collected each week. In order to be used in a statistical production process, products must be classified according to the categories used for CPI calculation. Manual labelling of these records is almost impossible due to the large volume of data and for this reason we experimented with an automatic classification process, starting with a small set of product categories. Thus, we have chosen 15 categories from the ECOICOP international classification, from the food and household appliances categories.

2. Methods

Experimentation with the automatic classification process began with the random selection of a sample of approx. 2500 products, and we proceeded to manually label these products according to the international ECOICOP classification. Next, in order to be able to use different machine learning techniques for automatic classification, we transformed the product names, which are text-type data, into numerical vectors, a technique called word embedding coming from the field of Natural Language Processing. We used different techniques to build vectorization of product names: Count Vectorization (Sparck, 1972), TF-IDF (Ullman and Leskovec, 2014), Word2Vec (Mikolov et al., 2013), FASTTEXT (Joulin et al., 2016) and GloVe (Pennington et al., 2014).

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Count Vectorization is a simple technique that builds a vocabulary of words that appear in product names, and then builds the number vector corresponding to each name by the frequency of occurrence of each word in the vocabulary.

Term frequency – Inverse document frequency (TF-IDF) basically consists in the calculation of two indicators:

- The normalized frequency of a term (word): measures how often a term/word appears and is calculated as the ratio between the number of occurrences of a word in a document and the total number of words in the document (in our case document = product name):

$$Tf(t, d) = \frac{n_{t,d}}{\sum_{t'} n_{t',d}} \quad (1)$$

where t is the term (word) and d is the document where this term appears

- Inverse of document frequency: measures how important a term is and is calculated as the logarithm of the ratio between the total number of documents and the number of documents in which the term of interest appears:

$$idf(t, V) = \log\left(\frac{N}{|\{d \in V; t \in d\}|}\right) \quad (2)$$

where t is the term (word), V - the vocabulary and N the total number of documents.

The calculation formula for TF-IDF will be:

$$tfidf(t, d, V) = tf(t, d) \times idf(t, V) \quad (3)$$

Both in the case of using Count Vectorization and in the case of TFIDF, when building the vocabulary we took into account, in addition to the actual words, also constructions of the n-gram type, i.e. sequences of n words that appear in the text. Specifically, we built all n-gram combinations with up to 3 consecutive words.

Word2Vec is an algorithm that takes as input a vocabulary (a set of words) and outputs a vector (numerical) representation for each word in the vocabulary).



Figure 1: Word2Vec vectorization

There are two versions of this algorithm: CBOW (Continuous Bag of Words) which starts from a word in the text, considers the words around it (the context) and tries to predict that word and SKIP-GRAM

which starts from a word and tries to predict the words that appear in the text around it (context words). Both versions use an artificial neural network and the vector representation of the words will be given by the weights of the resulting network after the training process. The activation function of the hidden layer of the network is linear and the output function is softmax.

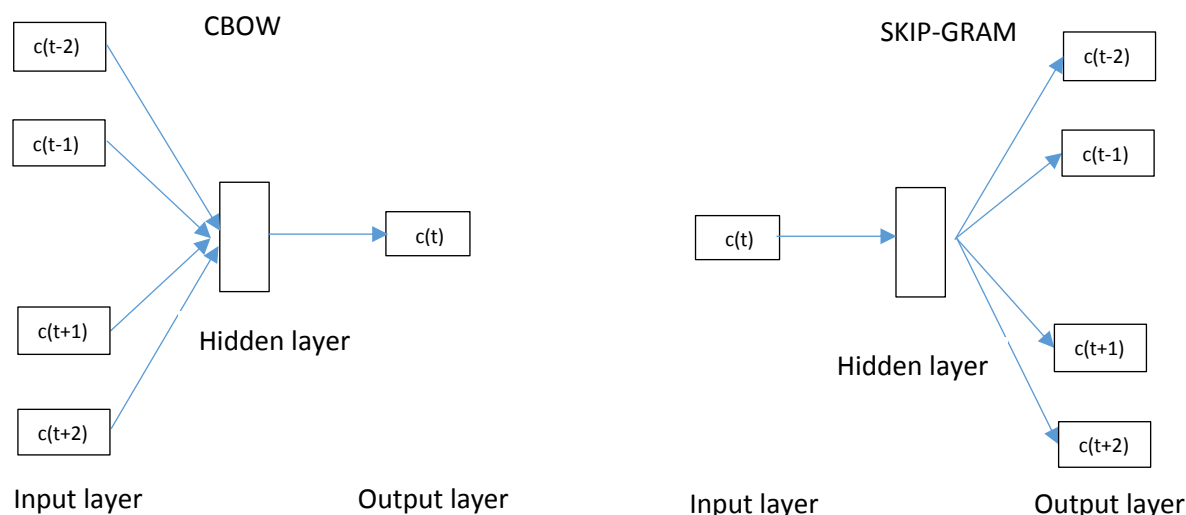


Figure 2: CBOW and SKIP-GRAM versions of Word2Vec

On the right side, the CBOW version with a window of 4 words is represented schematically: the input of the neural network will be represented by the 4 context words and the output by the target word. After the recipe training process, the vector representation of each target word will be given by the weights of the artificial neural network.

On the left we have the SKIP-GRAM version of the Word2Vec algorithm, where the neural network is presented with a word as input and outputs the context of that word (through a window of 4 words).

FASTTEXT is an algorithm developed by the Facebook AI Research Laboratory and has the same two versions as Word2Vec: CBOW and SKIP-GRAM, also using an artificial neural network, but in the training process it uses both words from the dictionary and n-grams (pairs of n letters that make up words). In this way, FASTTEXT can also handle the case of words that do not appear in the initial network training dictionary.

GloVe is an unsupervised learning algorithm for building vector representations of words. The model is trained on global aggregated word-to-word co-occurrence statistics from a vocabulary. The global word-word co-occurrence matrix, counts the frequency with which words appear with each other in a given vocabulary (set of words). Populating this array requires only one pass through the entire vocabulary and is done only once. GloVe is essentially a log-bilinear model with a weighted least squares objective function.

For Word2Vec we built the vectorization of product names in two different ways:

- by adding the vector representations of each word that make up the product name.
- by averaging the vectorizations of each word.

For FASTTEXT, the vectorization of product names was obtained by dividing the vectors of the component words by their L2 norm and calculating the average value only for the vectors with L2 different from zero.

In the case of GloVe we just used the addition of the vector representations of each word that make up the product name to get the vector representation of the name.

For building product name vectorization, we limited ourselves to 3000 dimensions for the Count Vectorization and TF-IDF methods and 50 for Word2Vec, FASTTEXT, and GloVe to keep the runtime within acceptable limits for this experiment. For Count Vectorization and TF-IDF, we considered not only words that make up product names, but also n-grams with a maximum of 3 words. For the Word2Vec and FASTTEXT methods, we applied both the CBOW and SKIP-GRAM approaches. Thus, we've built 9 different vectorizations for each product.

Having the numerical representation of the product names, we continued with a series of supervised learning techniques for automatic classification:

- Multinomial logistic regression (Böhning, 1992)
- Naive Bayes classifier (Xu, 2018)
- Decision trees in the Gini Index and Informational Gain versions to decompose tree nodes (Wu et al., 2010)
- Bagged trees (Abellan and Masegosa, 2010)
- Decision trees C4.5 (Quinlan, 2014)
- C50 decision trees (Kuhn and Quinlan, 2023)
- Support Vector Machines (SVM) with radial and sigmoid kernel (Cortes and Vapnik, 1995)
- Random forests (Ho, 1995)
- K-Nearest Neighbors (Mucherino et al., 2009)
- Artificial Neural Networks (ANN) (Haykin, 2009)
- eXtreme Gradient Boosted Trees (XGBoost) (Chen and Guestrin, 2016).

After dividing the data set into training and testing subsets, we trained each model mentioned above on the training data set and then applied the model to the test data sets. We even implemented a grid search procedure to choose the optimal values for the classifier parameters. However, the grid search procedure is time-consuming and requires the use of special parallel programming techniques to keep the running time reasonable. For this experiment, we used the grid search procedure only for SVM, XGBoost, KNN and ANN. We also used a cross validation technique (10-fold cross validation).

3. Results

For each classification method, we calculated:

- Confusion matrix (confusion matrix)
- Accuracy (number of correctly classified products / total number of products)
- F1 score (used especially if there is an imbalance between classes)

The F1 score was calculated in two ways: as a simple average and as a weighted average of the F1 score for each class. The weights were calculated as (1-class frequency), to mitigate the pronounced imbalance of the number of products in the considered classes.

The results showed an impressive accuracy of the automatic classification with values between 0.76 and 0.99. The best classifiers were found to be Random Forests, ANN and SVM with radial kernel. In terms of vectorization methods, the best results were obtained with Count Vectorization, TF-IDF, GLOVE, and FASTTEXT, while Word2Vec showed the lowest accuracy for almost all classification methods used in our study. All data processing was performed using the software system R ver. 4.2. on an Intel Core i7-8559U processor at 4.5 GHz, 32 GB DDR4 RAM, and a Windows 11 operating system

Table 1 shows all ML methods tested together with the word vectorization technique that gave the highest accuracy. A more detailed description of the results and a discussion on the performance of each method can be found in (Oancea, 2023).

Table 1: Performance metrics for automatic product classification

Classification method	Vectorization method	Accuracy	F1	Weighted F1
Logistic regression	Count vectorization	0.976	0.924	0.859
Naïve Bayes	Count vectorization	0.989	0.943	0.877
Decision trees (Gini)	TF-IDF	0.963	0.961	0.882
Decision tress (information)	TF-IDF	0.952	0.937	0.852
Bagged decision trees	TF-IDF	0.983	0.945	0.879
C4.5	Count vectorization	0.984	0.945	0.880
C50	Count Vectorization	0.984	0.946	0.881
Random forests	GLOVE	0.991	0.971	0.904
KNN	TF-IDF	0.987	0.945	0.880
ANN	GLOVE	0.991	0.975	0.906
SVM (radial kernel)	FASTTEXT SKIP GRAM	0.997	0.988	0.922
SVM (sigmoid kernel)	FASTTEXT SKIP GRAM	0.982	0.931	0.861
XGBoost	Count Vectorization	0.986	0.945	0.880

4. Conclusions

The results obtained are very encouraging, the automatic classification methods tested so far showing very good performance. These performances can be explained also by the fact that product names do not vary greatly from one retailer to another. Once a classification model is applied to a training data set, the test data provided for classification largely follow the same rules for building product names, and the classification will show good results.

However, there are still some limitations that could be addressed in the future. The automatic classification algorithms were run on a small data set, and yet the computation time was high, especially for the methods where grid search techniques were used in order to choose the optimal parameter values. This limitation will be accentuated when we try to classify larger datasets and special parallel programming techniques should be considered.

Another issue we should consider for the future is out-of-vocabulary (OOV) words. While the FASTTEXT word vectorization method can handle such words, the other methods cannot handle OOV words. A strategy should also be devised to mitigate this limitation.

The automatic classification technique has various applications, not only in the field of product names. For example, a statistical survey where the occupation code of the respondent is needed, may ask him/her to enter a description of his occupation in free terms and then using classification techniques to choose the code according to the nomenclature in force.

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Senior citizen population: an easy target for cybercrime

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Abstract: The increasing use of the Internet in everyday matters by people over the age of sixty calls upon the need for adequate cyber security awareness. It is highly important to pay attention to the cyber security awareness of this vulnerable group. A survey of behavior on the Internet was conducted on a group of 110 seniors from one region in the Czech Republic. The present research reveals alarming results pointed to only a very low level of cyber security awareness of people belonging to that age group. By carrying out an online survey consisting of a questionnaire with open and closed questions focusing on key cybersecurity behavior like device securement, proactive checking, and responding to fraudulent messages and phishing it was discovered that older users manifest a very low level of general resilience. The research indicates as well a very low responsiveness on one-off training courses. These findings have implications for the future design of targeted cybersecurity interventions and the development of national policy and practice focused on seniors.

Keywords: Cyber security, seniors, risks, awareness

JEL classification: M530 Personnel Economics: Training, I250 Education and Economic Development

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1. Introduction

An enormous rise of digital technology and its affordability are constantly increasing. Along with this, the cyberspace dangers are amplifying together with aggression, bullying, blackmail, and abuse (Desheng et al., 2022). The seniors belong to that part of the virtual generation being the most vulnerable (Leyland et al. 2001). Protecting them from cyber predators is an area of growing concern. For cyber criminals, senior citizens have never been a bigger target for fraud a typical senior citizen make them attractive to cyber thieves (Qiu et al., 2017). Even when aware of the danger, many seniors don't believe that they themselves would ever become a cyber-victim, and often underestimate the havoc a cyber-attack can create (Mason, 2018).

Various courses and lectures are organized in the Czech Republic for the seniors in the course of the year with the aim to promote the cybersecurity awareness. These courses are organized either by the municipalities or in cooperation with Services of retirement homes and elderly people's homes. The current training courses tend to involve cyber security training in the form of short-term and non-consecutive activities (Venter et al., 2019) notwithstanding the fact that effective cybersecurity teaching programs require both theoretical and practical skills that are necessary for boosting seniors' resilience and ability to resist the threats such including phishing attacks, online harassment or their trust in misinformation (Waldock et al. 2022, Penncheva et al., 2020). Mason et al. (2018) highlight the long history of fake news and its relation to the media technologies in which cultures grow. Current

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iterations of this phenomenon are discussed alongside the effects of social media and offer a preview of the contents of this special issue on media literacy, and the challenge for democracy resulting from fake news. Alwanain (2021) identifies phishing as one of the main crimes perpetrated against internet users, because the sophistication of phishing attacks continues to develop alongside the expansion of internet technology and online services. Celliers & Hattingh (2020) have identified the decrease in cognitive abilities of seniors to be the reason for the fake news spread. Ascoott (2020) asserts that the persistent menace of fake news on the Internet requires real solutions in the form of cyber security awareness programs for elderly people to reduce cyber security attacks and incidents.

Increasing the ability to recognize phishing requires good awareness. The results show the more profound and complex the training is the better ability shows in recognizing legitimate emails. Mcknight (2016) documents six common strategies used across the seven sites and identifies five roles that technology plays in enhancing teaching and learning, moreover they discuss how these strategies benefit teachers and learners. Several research has been published on how vulnerable group experience and manage online risk. Quayyum et al. (2021) conducted a systematic review to identify cybersecurity risks, cybersecurity awareness initiatives, and the evaluation of these initiatives.

2. Purpose of the study

The literature indicates a gap concerning the impact of one-off courses on online safety for seniors. This study presents research to determine the consequences of one-off training organized for seniors on their online behaviour. The research applies qualitative methods based on a questionnaire survey conducted repeatedly for collecting data demonstrating the cyber awareness and the impact of the training on their online behaviour. The research is mainly dedicated to show whether the seniors are responsive in their online behaviour to one-off training lessons in the form of organised workshops. The research studies the effects of short training in cyber security on their online behaviour. The results of the research are supposed to serve cyber security training designers when implementing online safety training. Overall, based on the available literature and on the conception of the possibility to measure cybersecurity awareness Quayyum et al. (2021), this research is guided by two research questions: RQ1: What is the current level of cybersecurity awareness of elderly? RQ2: What is the impact of one-off cybersecurity training on seniors' awareness? The main findings from the research include information indicating the impact of one-off cyber security training lessons organised for the seniors and recommendations for the following research. To be safe in a virtual environment, an appropriate set up of training activities concerning online opportunities and risks, managing harms and threats online is necessary (Giannakas et al., 2019).

3. Method

For the present research, a quasi-experimental approach using data series is designed. The study comprises internet users aged more than 60 years old. The survey was carried out by the researcher in cooperation with the municipalities in Zlín Region, Olomouc Region and South Moravia Region in the Czech Republic and with the local Agencies for Technological Innovation. 110 seniors participated in the form of online questionnaire with closed-ended questions. The data were consequently assembled, analysed, and assessed by the researcher.

The questionnaire was conceived so that it resembles an ordinary online communication. The questions were constructed with an emphasis on the principles of cyber security rules. The

respondents were supposed either to choose the right answers, recognize any form of risky behavior when communicated via social networks, or identify misinformation. The emphasis was given on extortion, blackmailing and misuse of trustfulness. The questioning was compiled and verified by the Czech Bank Association, The National Cyber and Information Security Office, and the Police of the Czech Republic. The aim of the questionnaire was to collect the score of the right answers proving cyber security literacy when keeping a critical mind set: the ability to recognize suspicious messages aiming at sensitive data, resistance to harassing messages, assess security risks when communicating on social network and being aware of the principles of safety connection to the public network. The first questionnaire was filled in by the seniors without any previous educational intervention. One week after the respondents attended two lessons of cyber-security training given by the lecturer in cooperation with the researcher. The training course dealt with topics concerning social media use, mobile device security, passwords and authentication, phishing attacks, public Wi-Fi, Internet, and e-mail use. The training methods were guided by suggestions proposed by Page (2019). The course given to the participants dealt with information literacy, information security, and related areas. The aim of the course was primarily to inform the seniors about the risks of social interactions on the internet and the terms associated and secondly to emphasize risk prevention, namely prevention of data and information loss, prevention of theft and, misuse of personal data. The one-off training took two lessons which are 90 minutes. Consequently, six months later on, the participants were asked to fill in a similar post-test with modified questions. There was another time gap of six months to proceed with the final post post-testing and complete the final part of the research.

To answer the first research question a set of descriptive statistics is exploited. For calculation, the statistical data calculator DATAtab was used. In descriptive statistics, the mean, median and modal values are measures of location. Based on data collected for the sample, the measures of location provide information about where the "center" of the distribution lies. The mean rank is the average of the ranks for all observations within each sample while the median divides the row into equal parts. Compared to the mean, the median is much more robust against scattering. The standard deviation is the average amount of variability in the dataset. Thus information on how far each value lies from the mean is obtained. Further and deeper statistical analysis enables to answer the second research question: What is the impact of one-off cybersecurity training on seniors' awareness? To go into more detail and to find out whether there are statistically significant differences between three rounds of non-parametric Friedman statistical tests were carried out. Friedman statistical test is used to determine whether there is a statistically significant difference between the means of three or more groups in which the same subjects appear in each group or not. As the Friedman test is the non-parametric alternative to the one-way ANOVA with repeated measures, the test for normal distribution is done first. The most common analytical test to check data for normal distribution is the Kolmogorov-Smirnov test. Before proceeding the test for normal distribution the Null hypothesis for testing is given: Null hypothesis $p\text{-Value} < 0,05$, Data are normally distributed, A normal distribution is assumed. The Friedman non-parametric test is applied to test the difference of the research sample in the pre-test, post-test, and the post post-test regarding the score of points that the respondents achieved. The hypothesis is set as by follows:

4. Results

Following lines present the outcomes of the statistical analysis of testing. Table 1 gives an overview of obtained statistical data.

Table 1: Basic statistical data analysis

	pre-test	post-test
Mean	5.36	6.87
Median	5	5
Std. deviation	2.01	1.85
Minimum	2	4
Maximum	9	10

The median divides the number of correct answers into equal parts. In all testing rounds the median stays the same at number 5. That's to say that the level of cybersecurity awareness stays at the interface. In the analysed sample the level of cybersecurity awareness reports balanced values in the course of three stages of testing. The pre-testing shows that seniors are directed consciously or by implicit habits in their online social media behaviour but there are serious risks to be get attacked by any cyber risks mentioned in the introduction (Feng, 2014). As per table 1 the mean slightly increases which can be interpreted as a very moderate improvement in cyber security skills. In the case of pre-testing the standard deviation was the furthest from the mean, while the post-testing and post post-testing showed lower standard deviation. In the case of pre-testing the level of differences in achieving the right answers differed more while after the training the rate of correct answers approaches. The smaller the standard deviation is the more the level of correct answers converges. This indicates that values are clustered closer to the mean.

The following results of tests for normal distribution, spearman correlation, and pairwise comparison enable to answer the second research question. The Kolmogorov-Smirnov test (table 2) was used to assess whether there is a normal distribution of data.

Table 2: Data distribution

Kolmogorov-Smirnov test	Degrees of freedom	p-Value
Pre-test	0.16	.005
Post-test	0.17	.002

If the p-Value is smaller than 0.05, there is a significant deviation from the normal distribution and it is assumed that the data are not normally distributed. In this case, the null hypothesis H_0 is approved, and the Friedman test is employed to analyze the data for the closed-ended questions. The Friedman test tests for differences between the different questioning when the dependent variable being measured is ordinal (Smalheiser, 2017) and whether there are statistically significant differences between three dependent samples: pre-test, post-test and post post-test. In the research sample, the

values are dependent as the sample is drawn from respondents who replied three times. This is the case because the same person was tested at multiple time points.

The described statistical indicators give an answer to the first research question. The level of cybersecurity awareness of seniors stays at medium levels. The seniors have basic knowledge of cybersecurity risks but they are guided more by their intuition as the level of correct answers does not change significantly in the course of three testing levels. Their behaviour in an online environment is directed mainly by the unconscious emotional information emanating from the body or brain such as instinctive thinking or sensation (Khalifa, 2000). This cannot be considered to be the safe method for detecting online risks and has no empirical grounding (Al Zou'bi, 2022).

In response to the second research question, the results of the pre-test identified statistically significant differences between the averages of the measures (pre- and post-tests). The results of this research highlighted only the negligible impact of instructive lessons on seniors' cyber security awareness. This aligns with the findings of research done on adults that used interventions to raise cybersecurity awareness (Amo et al., 2019, Vanderhoven et al. 2015). These studies also performed comparisons on adults between different types of interventions adopted two time-based approaches; one was a 60-minute workshop and the other one was a 5-day long cybersecurity camp. The results show that the longer 5-day intervention demonstrated promising results, whereas, in the short and less intense intervention, the students did not demonstrate growth in cyber awareness. By means of applying the hypothesis testing an insignificant positive impact of even short-time training on enhancing seniors' cybersecurity was revealed. Correlation analysis confirms strong dependence of tested variables which shows only a small effect of the training. Moreover, the cluster analysis demonstrates that the post-testing score is supposed to be very close, similar to the pre-testing score and thus manifest important similarities.

As per Tsirtsis et al (2016), the risks like online harassment, privacy invasion, technology-based threats are significant cyber security risks for vulnerable groups. The significant finding of the current research is: that cyber security awareness among Czech seniors reaches the medium levels. Seniors are aware of risks resulting from the virtual environment but they behave intuitively and do not seize the variety of risks which spreads through the virtual environment. With the short time training, it is possible to focus only on a few specific risks. Thus, the results of the testing confirm that there is an urgent need for more robust, deep and complex interventions in the cyber security training.

5. Conclusion

The senior citizen population has never been a bigger target for cyber crime and fraud. Recent studies and discussions on the need for improving cyber security education show insufficient time to cover relevant topics, lack of a direction on what cyber security policy should aim at in cyber security education, and the pressure to prioritize more survival-focused skills than cyber security (Waldock et al., 2022, Mehta, 2022). The present paper clearly shows the importance and need for cyber security trainings organized for seniors. It shows the insufficient level of their cyber security awareness. The findings are helpful to both the tutors who design the content of training for seniors and the municipalities that organize the training. The present research confirms that it is useful to concentrate on different techniques to raise awareness of various cyber security risks. There is an urgent need for structured and more developed models and frameworks for designing the training including different

approaches along with conventional training or classroom teaching to raise cybersecurity awareness to strengthen, increase or maximize the effectiveness.

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The Vital Role of Soft Skills in Enhancing Automotive Employees' Performance

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Abstract: Nowadays automotive symbolizes a highly competitive environment with a wide range of products and services offered to customers. Besides that, the globalization of the industry presents both opportunities and risks, including the emergence of new automotive suppliers with lower prices. Consequently, automotive brands seek internal solutions to support their businesses and compete effectively. This study aims to investigate the vital role of soft skills training in enhancing the performance of automotive employees and achieving company success. This study explores the significance of soft skills in the automotive industry by analyzing Continual Vocational Training Surveys (CVTS) and related secondary data. It examines enterprises' attitudes towards soft skills training in selected countries and investigates variations over time. The research findings offer valuable insights into the pivotal significance of soft skills in the automotive sector and raise intriguing research questions regarding organizational investments in employee training and development.

Keywords: Training, soft skills, automotive, development

JEL classification: M12, M16, M53

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1. Introduction

In today's dynamic business environment, organizations encounter numerous circumstances that significantly impact various aspects of their operations, particularly their personnel. Employee motivation and staff loyalty have emerged as key factors in ensuring the success and competitiveness of companies. Due to the mentioned above reasons, nowadays companies are investing more and more costs to the development of its personnel (Dolan & Capell, 2015; Shirinkina, 2023). In response to the aforementioned factors, contemporary companies are allocating increasingly significant resources to the development of their personnel (Sheehan, 2014). In particular, automotive brands are proactively restructuring their employee development pathways to align training activities with the current business demands. They recognize the need to adapt to the evolving landscape of the automotive industry, which is characterized by rapid technological advancements, changing consumer preferences, and shifting market dynamics (Hašková & Zatkálík, 2018; Hermawati et al., 2014; Shaikh et al., 2016; Valiente et al., 2020). Various researchers and authors have identified a diverse range of training demands within the automotive industry. These demands encompass both technical and non-technical aspects, aimed at enhancing employee proficiency in different areas, such as product, technical and systems skills (Abdurrahman et al., 2022; Aquino & Garcia, 2023; Ayub & Kusumadewi, 2021; Canonico et al., 2018). Indeed, in addition to technical and job-specific skills, many authors highlight the significance of soft skills in the automotive industry. Soft skills refer to personal attributes, interpersonal skills, and communication abilities that facilitate effective interaction and collaboration in the workplace. These skills are considered essential for the success in today's dynamic business environment (Aquino & Garcia, 2023; Firmansyah & Soeharto, 2020). Holt (2018) categorizes the

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essential soft skills needed within the automotive industry into five groups based on the personal qualities that support employees in working more efficiently. According to the author, the most crucial set of soft skills includes communication, problem solving, teamwork, employee attitude, and work ethic (Holt, 2018). Changkajonsakdi & Kaewkuekool, (2019) expand on the previously mentioned soft skills by including creative and analytical thinking as important attributes within the automotive industry. These skills enhance employees' ability to think critically, generate innovative ideas, and analyze data effectively.

Indeed, soft skills and the related training are crucial for employee development in the automotive industry. This sector plays a significant role in various economies, and having well-trained and prepared personnel is essential for the success of automotive brands in the competitive market. Soft skills enable employees to effectively communicate, collaborate in teams, solve problems, exhibit a positive attitude, and demonstrate a strong work ethic. By investing in soft skills training, automotive companies can equip their employees with the necessary abilities to excel in their roles, provide exceptional customer service, and contribute to the overall success of the brand (Aquino & Garcia, 2023; Changkajonsakdi & Kaewkuekool, 2019; Firmansyah & Soeharto, 2020; Hašková & Zatkálík, 2018).

2. Methodology

The primary objective of this paper is to examine the significance of soft skills training in the automotive industry. The literature review indicates that the automotive sector is currently confronted with various circumstances that directly impact its employees and their attitudes. Consequently, the performance of these personnel can have a direct influence on the company's strategy, goals, and competitive success. This research paper is based on a comprehensive literature review, analysis of previously observed factors, and quantitative data investigations derived from the Continuing Vocational Training Survey (CVTS) conducted by Eurostat. By leveraging these research methodologies, the study aims to shed light on the role of soft skills training in the automotive field and its implications for organizational outcomes. The primary objective of the Continuing Vocational Training Survey (CVTS) is to gather data from European enterprises and analyze their investments in the ongoing vocational training of their employees. By investing in vocational training, organizations aim to optimize the performance and capabilities of their workforce, enabling them to contribute effectively to the attainment of organizational goals (Hašková & Zatkálík, 2018). The findings presented in this research paper are based on a quantitative analysis that compares data from the reference years 2015 and 2020. The data was collected and organized using the Eurostat online data browser. For the purpose of this research paper, the author selected 27 European states for future data analysis. Two countries, namely Malta and Cyprus, were excluded from the subsequent data analysis due to their minimal and insignificant contribution to the overall dataset. The decision to exclude these countries was made as their inputs were deemed inconsequential and would not significantly impact the subsequent analysis conducted in this research paper.

In order to examine the relationship between the role of soft skills training and the conceptualization of the automotive industry, the author utilized two datasets from the Eurostat Data Browser. The first dataset primarily consisted of annual enterprise statistics within the industry and construction sectors. To focus specifically on the automotive industry, three specific statistical positions were chosen based on the Statistical Classification of Economic Activities in the European Community. For the purpose of

this research paper, the selected data pertained to the following classifications: "Manufacture of motor vehicles (C291)," "Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers (C292)," and "Manufacture of parts and accessories for motor vehicles (C293)." These classifications adhere to the Eurostat Classification of Economic Activities (NACE) classes and are relevant to the automotive industry. Building upon the aforementioned steps, the author primarily focused on analyzing two key economic indicators within the selected NACE classifications. These indicators were the number of employees and personnel costs associated with the relevant activities in the automotive industry. The second dataset utilized in this research paper focused on the main skills targeted by Continuing Vocational Training (CVT) courses, categorized by skill type and NACE activity. By examining this dataset, the author aimed to gain insights into the types of skills emphasized by enterprises and their strategic approach to employee development. For the purposes of this research paper, the author specifically concentrated on the top five automotive markets: Germany, France, Spain, Italy, and Sweden. Within this dataset, a total of twelve employee skills were analyzed, with particular emphasis on three key skills. By examining the targeted skills in CVT courses, the author aimed to better understand the training priorities of enterprises the industry. The final dataset pertained to the costs of continuing vocational training (CVT) in European enterprises. Similar to the previous dataset, the author's focus was on the aforementioned five markets and specifically on the direct and net costs associated with these training programs within organizations.

Based on the literature review and secondary data analysis, the author has formulated two main research questions that seek to investigate the organizational perspective on the development of soft skills, particularly within the automotive industry.

- RQ1: How has the number of enterprises offering soft skills training for teamwork, problem-solving, and management skills changed during the decades?
- RQ2: How does the development of costs for CVT in the industry correspond to the emphasis placed on such training, and are there any variations in these costs within observed periods?

3. Results and Key Findings

To address the aforementioned research questions, the author conducted an extensive analysis of relevant literature and utilized data from the CVT Survey to compare the inputs of organizations and identify key variations across the observed survey periods.

3.1. Changes in Soft Skills Trainings within European Enterprises

Based on the available data from the Eurostat Data Browser, it is possible to analyze and compare employment in the automotive industry across EU member countries. The data reveals significant variations in the number of employees within this sector. Germany stands out as the country with the highest number of employees in the automotive industry, with over 559,654 individuals employed in this sector. France and Spain follow in the rankings, with 115,988 and 70,529 employees respectively. These numbers specifically pertain to the three NACE classifications focused on in this research, namely C291, C292 and C293. On the other end of the spectrum, Lithuania, Estonia, Greece, and Bulgaria have the lowest numbers of employees in the automotive industry. One of the key factors contributing the highest number of employees in the automotive area in Germany, France and Spain is their economic directions with a wide range of automotive brands on the market. These companies have made substantial investments in production facilities, technology, and skilled labour, creating employment opportunities in various automotive-related roles.

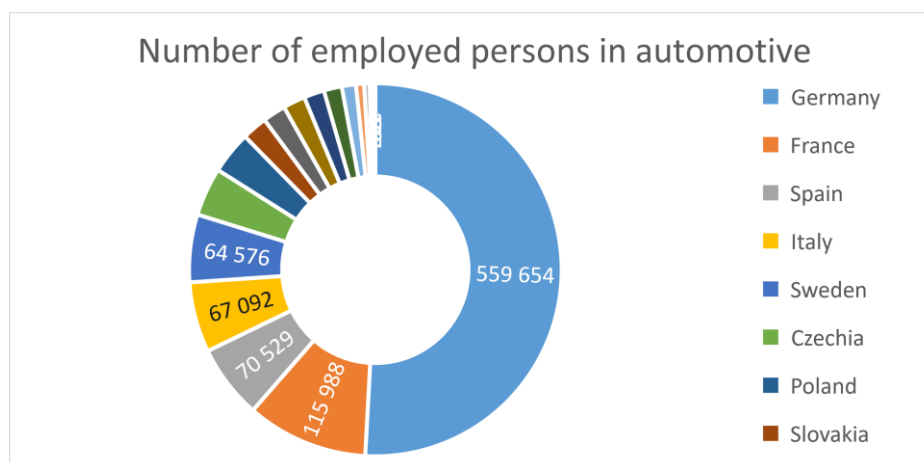


Figure 1: Number of employed persons in automotive

Based on the findings concerning the employment figures in the automotive sector, the researcher opted to focus on the top five markets with the highest number of employees. Consequently, the subsequent analysis primarily concentrated on Germany, France, Spain, Italy, and Sweden. It is noteworthy that these selected markets are situated in distinct geographical regions within the European Union, thereby enabling the examination of varied enterprise attitudes based on the characteristics of Southern, Northern, Eastern, and Central European regions.

Based on the analysis of data obtained from the Eurostat Database regarding the primary skills targeted by European enterprises, the researcher compiled an overview indicating the percentages of enterprises offering training programs, with a particular emphasis on selected employee soft skills. This comprehensive overview provides a clearer representation of the variations observed over the years, illustrating the shifting focus of enterprises on different skills within similar timeframes.

Table 1: Main skills targeted by CVT courses by type of skill and NACE activity (in %)

Main skills targeted by CVT (in %)	Germany	Spain	France	Italy	Sweden
Management skills	22,9	14,2	35,9	42,4	23,1
Team working skills	12	19,8	7	12,4	12,3
Customer handling skills	16,8	10,8	13,7	9,5	10,8
Problem solving skills	12,1	5	6,2	13,3	9,8

The author examined the training programs targeting management, team working, customer handling and problem solving. These skills were deemed crucial for the research paper's objectives and will be further explored in relation to their development and variations over the specified timeframes. The highest results are demonstrated by Italy, where almost half of enterprises are train its employees on this type of skills. The lowest numbers are demonstrating by Spain, where only 14 % of enterprises providing their employees with management skills CVT courses. The skill of team working holds great significance in contemporary industries, as there is a growing emphasis on motivating employees to collaborate effectively within their respective sectors (Holt, 2018). Within the automotive industry, team working is particularly crucial, especially within sales and after-sales teams (Weidenbach et al., 2019). The current crisis situation and its associated challenges have intensified the need to foster a strong sense of "team spirit," brand loyalty, and cooperation among automotive brands. This has

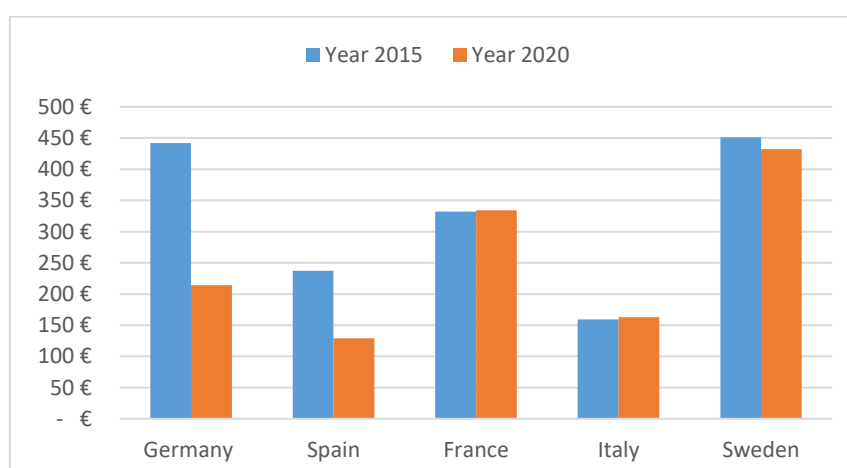
resulted in a notable increase in the availability of CVT courses that aim to enhance the efficiency, transparency, and overall effectiveness of team working dynamics. Among the analyzed European countries, Spanish enterprises displayed the highest demand for team working training, with a result of 19.8%. Germany, Sweden, and Italy showed relatively similar results, with a percentage of 12%. These findings align with the results of another survey conducted in 2022, the Future of Jobs Report, which highlights global trends in the working environment. According to this report, these stable markets demonstrated a similar level of interest, with an average of 12% focusing on the development of the "working with others" skill (Battista et al., 2023). Customer handling is another critical soft skill closely linked to team working in the automotive industry. In this sector, effective customer handling and persuasive sales argumentation play a vital role in fostering brand loyalty among customers. Moreover, it also contributes to the satisfaction and loyalty of employees. Consequently, customer handling is among the top five soft skills that companies in the automotive industry prioritize and seek to develop.

To better understand the changes in demand for soft skills training over time, a comparison was made between the enterprise demand in 2015 and 2020. The analysis shows that the global crisis and the ongoing pandemic have had a significant impact on the demand for these skills in the automotive industry. One notable observation is the decrease in demand for problem-solving skills training. With the exception of Sweden, all five markets experienced a negative development, indicating a lower interest in problem-solving skills. On the other hand, there was a positive trend in the demand for management skills training. Italy and France showed the highest increase in interest, with Italy experiencing a 26.6% increase and France a 16.1% increase compared to 2015. In terms of team working skills, Germany, Italy, and Sweden demonstrated relatively similar results. However, when comparing the years 2015 and 2020, there was a downward trend with a decrease of 1.5% on average across these markets. Despite this decline, team working skills remain crucial for the success and strategic goals of automotive brands, as they are closely connected to brand loyalty and employee efficiency (Battista et al., 2023; Holt, 2018).

3.2. CVT Costs Variations over Selected Years

To assess the impact of CVT costs on employee development, an analysis of the costs associated with CVT courses was conducted using data from the Eurostat Database. Figure 2 presents the findings of this analysis, providing an overview of the CVT costs per the analyzed markets.

Figure 2: Costs of CVT courses per person in EUR



In 2015, Germany and Sweden had the highest costs of CVT courses among the analyzed markets. However, there was a significant decrease in average costs per person in the German market in 2020, dropping from 442 € to 214 €. Similarly, Spain experienced a substantial decline in CVT costs per employee, with costs decreasing from around 237 € in 2015 to 129 € in 2020. These changes in CVT costs can be attributed to the impact of the global pandemic and the subsequent restrictions on in-person trainings. The COVID-19 outbreak in 2019 led to the prohibition of personal trainings in many companies, forcing them to explore alternative and more cost-effective methods of conducting CVT courses. Nevertheless, However, the remaining markets, namely Italy, France, and Sweden, experienced a relatively stable situation during the same period. The costs of CVT courses in Italy and France showed a slight increase, while in Sweden, there was a minor decrease from 451 € to 432 €. These variations may be attributed to factors such as changes in training methodologies, adjustments in course content, or fluctuations in the availability of training providers. Nonetheless, compared to the significant decreases observed in Germany and Spain, the changes in these markets were relatively modest.

4. Discussion and Research Limitations

This research has several limitations that could be addressed to further enhance and diversify the exploration of soft skills aspects. Firstly, the reliance on secondary data from European enterprises limits the depth of analysis. Future research should consider incorporating primary qualitative and quantitative data to gain a better understanding of the related consequences within enterprises. Secondly, the analysis was based on secondary data from the year 2020 (CVTS 6) and earlier periods. The most recent CVTS 7 survey conducted in 2022 has not yet been published on the Eurostat Data Browser. This limitation restricts the examination of the most up-to-date trends and developments in soft skills training. Furthermore, a more in-depth analysis of CVT courses and related costs within the specific NACE industry classifications, such as C291, C292, and C293 for the automotive industry, was not feasible due to the limitations of the Eurostat Data Browser. Future research should explore alternative data sources or methodologies to obtain more precise insights into the soft skills consequences within the automotive industry and to capture the specific differences over time and across geopolitical entities.

5. Conclusion

Through the analysis of secondary data from Continual Vocational Training Surveys (CVTS), the study has confirmed the significance of proactive development of soft skills. The findings of this research highlight the evolving nature of soft skills training practices within the industry. Furthermore, the research has also explored the financial aspects associated with soft skills training, recognizing the influence of local market dynamics and the external economic and social environment on training costs. The observed variations in costs over the analyzed periods underscore the complex financial landscape surrounding soft skills training in the automotive sector. Overall, this research contributes to the growing body of knowledge on the significance of soft skills training in the automotive industry. It emphasizes the need for a holistic approach to employee development, encompassing both technical skills and soft skills. The insights provided by this research can inform industry practitioners, policymakers, and training providers in designing effective training programs that foster the growth and performance of automotive employees. By investing in soft skills training, organizations can create a competitive advantage, enhance employee engagement and satisfaction, and ultimately achieve sustainable success in the dynamic automotive industry.

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Job performance and flexible forms of work: theoretical aspects

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Abstract: The measures aimed at limiting the spread of the COVID-19 epidemic have suddenly altered the working conditions of many individuals in terms of their working hours and locations. This has resulted in a rise in the utilization of flexible forms of work, particularly home office work, among knowledge workers. The aim of this paper is to map out the basic categorization of job performance that is necessary for further research on job performance, and to present relevant studies that focus on researching the topic of flexible forms of work and their relationship to job performance.

Keywords: job performance, flexible forms of work, knowledge workers

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1. Introduction

With the progression of available technologies, new flexible forms of work have gradually developed. The COVID-19 disease pandemic brought an intensification of this development. All economic subjects as well as governments had to adapt to new, so far unexperienced situation. Hackney et al. (2022) state that the COVID-19 pandemic led to a change in the use of flexible working practices, especially teleworking. The principal goal of this paper is to investigate and determine the existence and characteristics of any perceptible correlation between flexible forms of work and job performance of knowledge workers. This includes, of course, a mapping of the theoretical basis of flexible forms of work and work performance of knowledge workers, including historical aspects and a basic categorization of job performance. This study also indicates that it will still be desirable to investigate the impact of flexible forms on job performance.

2. Theoretical background

2.1. Flexible forms of work

The definition of flexible forms of work is relatively complicated. Defining flexible forms of work and defining them is attempted by Hill et al. (2008). He characterized flexible forms of work as the opportunity for workers to participate in decisions that affect when, where and how long they work. Masuda et al. (2012) focus on what they believe are the most frequently used forms of work and identify four types of flexible working arrangements: flexible working, compressed working week, teleworking and part-time.

2.2. Job performance

The topic of job performance forms a significant part of work psychology. Defining the concept of job performance is essential because it subsequently influences the way job performance is measured and evaluated (Mottowidlo & Kell, 2013). The authors of publications and studies approach the process of defining the concept of job performance by considering the purpose of their research. Therefore, the definition of the term differs with respect to the area of research. Campbell et al. (1993, in Conte &

Landy, 2007) provide definitions of three concepts - job performance, efficiency and productivity. Job performance is an activity or behavior (positive or negative) that is relevant to the achievement of the organisation's goals and is measurable in terms of the skills of the employee. Effectiveness is defined as an assessment of performance outcomes that are often driven by factors outside of the individual's actions. Productivity is defined as the ratio of efficiency (output) to the cost of achieving that level of efficiency (input). Davies et al. (2000) adds to the definition by suggesting that an employee's job performance is closely related to personality traits and dispositions, that determine the success/failure of an employee in performing assigned tasks. It is characterized by four important aspects: (1) it is behavioral, (2) it is episodic, (3) it is assessable, and (4) it is multidimensional. Motowidlo and Kell (2013), mention the fundamental idea of job performance - it should be useful for a wide range of strategies and interventions that the discipline of industrial-organizational psychology can use to improve human performance in work organizations. Organizations define strategies that include recruitment and selection, training and development, or motivating workers. Within Motowidlo and Kell's (2013) definition of job performance, job performance is a behavioral characteristic and represents an expected value for the organization. Conte and Landy (2018) mention the need to differentiate between the behavior of an individual and the behavior of other workers in different situations.

2.3. History of research on job performance

The first phase of research on job performance involves a relatively long period of time and encompasses studies conducted from the early 20th century to the mid-1980s. As early as 1976, Hackman and Oldham (1976) addressed the topic of setting up an efficient work model that leads to task achievement by the worker under certain conditions. Hackman and Oldham (1976) propose a model that specifies the conditions under which individuals become intrinsically motivated to perform. Studies conducted during this period were characterized by primary studies in which researchers examined the relationships of individual scales from numerous personality inventories to various aspects of job performance. It was in the mid-1980s that there was a dramatic change in the perspective on researching job performance. Barrick et al. (2001) conducted a study and quantitatively summarized the results of 15 previous meta-analytic studies that examined the relationship between personality traits according to the Five-Factor Model (FFM) or Big Five. Barrick et al. (2001) examined the relationship between the five-factor model (FFM) and job performance. As a result, conscientiousness was confirmed as a valid predictor across performance measures in all occupations examined. Emotional stability was also found to be a generalizable predictor when overall job performance was the criterion, but its relationship with specific performance criteria and occupations was less consistent than for conscientiousness.

2.4. Categorization of job performance

Motowidlo and Kell (2013) mention an essential condition for examining job performance, and that is the categorization of job performance through the organization. This is closely related to the possibility of positive or negative evaluation of employee behavior. Related to this is the problem of identifying behaviors that have a positive or negative expected value for the organisation. This is closely related to the need to create a taxonomic structure of the performance domain (Motowidlo & Kell, 2013). Over the years, a large number of taxonomies of overall job performance have been developed. For

review, consider Campbell his multifactor model (1990, in Motowidlo & Kell, 2013), which defined eight behavioral dimensions of performance: 1. knowledge of job-specific tasks, 2. knowledge of non-job-specific tasks, 3. written and oral communication, 4. demonstrating effectiveness, 5. maintaining personal discipline, 6. facilitating team and collegial performance, 7. supervision, and 8. management and administration. However, these eight factors do not have the same form. They have different patterns of sub-factors and their content varies from job to job. Motowidlo and Borman (1993, in Motowidlo & Kell, 2013) make a difference between task and contextual performance in their model. This is due to the concern of prioritizing only a part of performance and other parts that are important for the resulting organizational effectiveness would be downplayed. According to Motowidlo and Van Scotter (1994), task job performance can take the form of two types of behaviors: 1. activities that are directly involved in the transformation of raw materials into individual products and 2. activities associated with the distribution of needed materials. Task job performance generally forms the technical core of an organization (Motowidlo & Van Scotter, 1994; Motowidlo et al., 1997). Contextual performance focuses on behaviors that contribute to organizational effectiveness through their effects on the psychological, social, and organizational context of work. Individuals can contribute through the context of work in several ways. One way is by influencing other individuals in the organization to increase the likelihood that they themselves will perform organizationally valuable behaviors. Contextual job performance indirectly influences technical performance through shaping the organizational, social, and psychological environment (context) by facilitating task activities (Motowidlo and Van Scotter, 1994; Motowidlo et al., 1997; Motowidlo and Kell, 2013). Van Scotter (1994) divided contextual job performance into job dedication and interpersonal facilitation. Interpersonal facilitation is defined as the degree to which an employee helps others, supports their task performance, or helps through the social and psychological climate. Behaviors related to job dedication are supported by the individual's will and trust in the meaning, value, and substance of the work performed (Van Scotter, 1994). Motowidlo and Kell (2013) state the possibility of influencing individuals in an organization to increase the likelihood that they themselves will perform organizationally valuable behaviors. These individual behaviors promote positive affect in others, reduce hostility and conflict, and promote interpersonal trust. This behavior is expected to have positive organizational value because its effects on the social context of work improve interpersonal communication and cooperation and facilitate the coordination of individuals' efforts to perform interdependent tasks (Motowidlo & Kell, 2013). Motowidlo and Borman (1993, in Motowidlo & Kell, 2013)) described five types of contextual actions: 1. Voluntary performance of task activities that are not formally part of the job; 2. Persistence with extraordinary enthusiasm or effort when necessary to successfully complete one's task activities; 3. Assistance and cooperation with others; 4. Adherence to organizational rules and procedures, even when personally inconvenient; and 5. Endorsement, support, and advocacy of organizational goals. Although these are behaviors with positive organizational value, they also include behaviors with negative organizational value. According to Motowidlo and Borman (1993, in Motowidlo & Kell, 2013), this is a behavior that is at the lower end of the contextual dimensions mentioned. For example, ignoring standard procedures when it is personally inconvenient for workers, questioning the judgement of supervisors, etc.

Contextual job performance is associated with Organizational Citizenship Behavior (OCB) (Motowidlo & Kell, 2013). Loosely translated, OCB is pro-organizational behavior. The two concepts of contextual job performance and OCB have similar characteristics, differing only in a few aspects. In both cases, they are interpersonal behaviors. In the context of contextual job performance, no distinction is made

as to whether the behavior is rewarded in any way, whereas in the case of OCB it is directly stated that there is no reward attached to the behavior (Podsakoff et al., 2000). OCB is a helping and cooperative behavior (it has a positive expected value). In contrast, Counterproductive Behavior CBB (Organ, 1997) is a behavior that is performed to hinder the creation of positive values, (has a negative expected organizational value). After the year 2000, the question of the importance of personality traits in relation to job performance has been raised. In a study conducted by Hough and Ones (2002), the topic of the influence of an individual's personality on job performance emerges. The authors looked at predicting job performance according to the Big Five factors, also referred to as the Five Factor Model (FFM). Hough and Ones (2002) found that the Big Five may be a useful framework for describing various aspects of personality but may not be as accurate in predicting job performance. A prominent personality trait-based theory of job performance was developed by Tett and Burnett (2003). In 2000 Tett and Guterman (2000, in Tett & Burnett, 2003) argue that the premise is the behavioral manifestation of personality traits, with the assumption that a personality trait will only manifest behaviorally in situations where signals relevant to that trait are present. A personality trait is activated when the environment provides appropriate signals and opportunities. Distractors are traits that divert workers' attention away from effective behavior. Stimulus activating traits come from three sources: task cues, social cues, and cues from the culture and climate of the organization.

3. Methodology

The primary objective of this literature review was to ascertain the presence and nature of any discernible relationship between flexible work forms and job performance among knowledge workers within the contemporary occupational landscape. Through a comprehensive analysis of existing scholarly works and empirical research, this study sought to elucidate the potential impact of flexible forms of work on the overall performance of employees in various organizational settings.

The sources for the literature review were the major recognized academic text databases Web of Science, Scopus, APA PsycNet, and professional publications by S. J. Motowidlo and H. J. Kell (2013), Davies et al. (2000), Conte and Landy (2018). The criteria for the selected scholarly sources were 1) the thematic focus of the research (flexible forms of work, job performance), 2) the research was conducted in at least two different countries, and 3) a minimum of 500+ citations. This criterion is problematic for more recent sources, where it was not possible to achieve a higher number of citations, 4) sources published since 1980, as the 1980s is a period when research in this field intensified, 5) sources related to flexible forms of work and job performance published between 2020 and 2022, which are related to the COVID-19 disease epidemic.

4. Results and discussion

4.1. The impact of flexibility on knowledge worker performance

Job performance among knowledge workers is an area that has been researched for many years. Significant interest has been given to this phenomenon since the 1980s. A study conducted by Pierce and Newstrom (1983) attempted to empirically investigate the relationship between a number of attitudinal variables and employee behavior with different elements of flexible working arrangements. As a result of the study, a positive correlation between work schedule flexibility and performance was confirmed, and the association was confirmed with a reduction in employee absenteeism. The length and distribution of working hours was addressed in a study by Kogi (1991). The author mentions new working time models, in particular a model to extend working hours beyond the normal working days

with flexible options for workers (compressed working week). However, he is aware of the potential safety and health risks associated with possible working time adjustments, such as fatigue, disturbed sleep, disrupted social life and ill health due to excessive working hours or irregular schedules. In order to promote a more systematic choice of flexible working systems, it is essential to develop strategies for change. A study by Masuda et al. (2012) examined flexible work arrangements and performance by having managers assess their workers on the following factors: performance, intention to leave work, and work-family conflict in different country groups in Anglo-American, Latin American, and Asian clusters. This study found that cultural context plays a very important role in the use of flexible work arrangements. Orhan et al. (2016) conducted research in the context of the rise of teleworking and reported that current working conditions allow people to work remotely and interact with others through electronic means of communication, but at the same time there is a lack of face-to-face contact. According to the results of the study, there are statistically significant relationships between performance and turnover intention in organizations. The authors of the study also point to a number of unknown variables related to the effects of teleworking that have not yet become apparent. The impact of teleworking and flexible working hours on the performance of teams in new product development projects was investigated by Coenen and Kok (2014). The result found that teleworking has a positive effect on performance. However, a basic level of face-to-face contact is necessary to offset the negative effects of teleworking and affects the quality of knowledge shared. The authors emphasise that when using flexible working tools, it is necessary to ensure supportive resources and a sufficient level of personal contact. The study by Zackery et al. (2022) revealed areas related to the strategic management of organisations that require further attention. It mentions the need to review and revise existing corporate practices such as management support, building an inclusive culture and integrating informal flexibility within the organisation. In 2021, Wiatr (2021) published a study focusing on the use of flexible forms of work before the COVID-19 epidemic and summarizes the state of knowledge on the development of flexible forms of work organization and points to new standards for communication and collaboration and changes in leadership with a focus on remote leadership.

4.2. Unclear theoretical background

The evidence from the aforesaid shows that a large amount of research has been carried out in the past on the topic of job performance and flexible forms of work. What is realistically lacking is a theoretical and scientifically based definition of flexible forms of work. In the literature reviewed, there is no single concept to draw on. The authors settle for a definition that is close to their research area.

4.3. Confirmation of the positive correlation between flexible forms of work and job performance

The research on job performance among knowledge workers and its correlation with flexible working arrangements has seen significant attention over the years, particularly since the 1980s. Researches such as those by Pierce and Newstrom (1983), Kogi (1991), Masuda et al. (2012), Orhan et al. (2016), Coenen and Kok (2014), and Zackery et al. (2022) have shed light on the various aspects of flexible forms of work and their impact on performance.

One consistent finding across these studies is the positive correlation between flexible work schedules, including options like compressed working weeks and teleworking, and employee performance. Flexible arrangements have been associated with reduced absenteeism and improved performance. However, as researches show, it is essential to highlight the potential health and safety risks, such as fatigue and disruption to social life, associated with changing working hours and formats and the need

for further research on this topic. Further, studies find a lack of sufficient confirmation of the extent to which it is appropriate to use flexible forms of work to maximize or at least maintain job performance in the positive expected value of behavior as reported by Motowidlo and Kell (2013).

5. Conclusion

In summary, although existing research demonstrates a positive relationship between flexible forms of work and job performance, it is clear that definitions need to be refined, potential risks addressed and further studies conducted to maximise the benefits of flexible forms of work for knowledge workers and organisations. This ongoing research is essential for making informed decisions and formulating effective strategies in modern working environments.

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Evaluating user-accessible artificial intelligence in optimizing performance advertising campaigns

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Abstract: This research analyzed the effectiveness of online advertising campaigns using artificial intelligence and machine learning. Three business entities were selected for the research using the A/B test. The primary indicator studied was ROAS, according to which it was found that ads created by a specialist that minimized the influence of AI are better for all three subjects. This can refute Google's claim that AI is always better than humans. In addition to ROAS, campaign trends and other metrics such as amount spent, sales generated, clicks, and cost per click were also tracked, suggesting some synergy between humans and AI, and the highest efficiency can be found in the collaboration of the two. Based on this, a model of the optimal strategy for incrementally integrating AI into campaigns to maximize long-term performance was described.

Keywords: Human-AI synergy, Online advertising campaigns, ROAS, A/B testing, Performance Max

JEL classification: M3

1. Introduction

In recent years, artificial intelligence and machine learning in online advertising campaigns have developed significantly. This article aims to analyze the impact of these technologies on the effectiveness of advertising campaigns and compare the performance of standard and automated campaigns with artificial intelligence. For this purpose, an A/B test methodology will be used, comparing the results of campaigns with maximum involvement of artificial intelligence and machine learning versus maximizing the involvement of a specialist with minimal use of these technologies. In addition, a model will be presented that summarizes a strategy for incrementally leveraging both specialist and AI work to maximize the long-term performance of advertising campaigns. This paper will provide an expert perspective on the role of artificial intelligence and machine learning in creating successful online advertising campaigns.

2. Artificial intelligence and machine learning in digital advertising

Artificial intelligence is vital in current marketing trends in marketing activity analysis software, internal communication systems, search engine optimization, and chatbots. Many companies rapidly implement intelligent technology solutions within their marketing departments to boost operational efficiency while improving the user experience. These intelligent solutions often take the form of marketing platforms with artificial intelligence.

Google has been pushing the use of artificial intelligence on its Google Ads platform to create online advertising campaigns. Some of Google's claims suggest that if marketers rely predominantly on AI instead of their judgment, they will get higher campaign performance. To this end, Google has introduced a new type of campaign based on machine learning and providing room for minimal human intervention, called Performance Max campaigns.

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It explores the idea of replacing manual work in ad creation with artificial intelligence. It is looking for an optimal solution generally applicable in an enterprise environment; this research explores the impact of using user-accessible artificial intelligence in optimizing performance-oriented online marketing campaigns on Google's interface.

2.1 Prerequisites for automated ad placement

Simply put, the principle of operation of targeted advertising algorithms is based on the correct matching of the correct data. Advertising platforms take information about the product and the target audience on the one hand and the people who view the web content on the other. An ad will be displayed if there is a match of interests, purchase intent, demographics, and others.

However, many advertisers are competing for the same users on advertising platforms. According to Munro et al. (2023), advertisers enter an auction to reach their potential customers. In ad auctions, it is not only the size of the bid that decides the winner but also other factors that determine who wins the auction for display advertising (Osadchuk, 2021; Google Support, 2023): budget, relevance, interaction, match, quality, and context. Artificial intelligence and machine learning are processing complex information in large volumes to create intelligent advertising solutions based on AI.

2.2 Performance Max campaigns

Google Ads: Performance Max campaigns are a new type of goal-based campaign using AI at its most enormous scale, replacing most manual marketer activities. Performance advertisers can use all their Google Ads ad space from a single campaign. Their purpose is to complement keyword-based search campaigns and help find more converting customers across all Google channels, such as YouTube, Content and Search, the Discovery channel, Gmail, and Maps, based on defined conversion goals (Google Support, 2023).

Performance Max campaigns were gradually released on select Google Ads accounts in the second half of 2021 in beta testing, with the full version available in early 2022 on most accounts (Indacochea, 2021). As this is a relatively new type of campaign based on new principles, no independent research is available that compares the results of this campaign against a manually created set of traditional search and content campaigns. For example, SearchEngine Journal beta tester Bishop (2021) and online marketing systems trainer and co-founder of Loves Data Mangold (2022) comment positively on the campaign's results.

3. Comparison of the performance of standard advertising campaigns versus automated campaigns

Google argues that its campaigns use artificial intelligence to replace manual human labor, increasing the return on investment in advertising. To do this, it offers various tools accessible to small and medium-sized businesses. The latest tool on the Google Ads platform, Performance Max Campaign, should almost single-handedly and universally cater to all processes related to performance advertising.

The research compared two unlimited options: a Performance Max campaign that maximizes AI and minimizes manual intervention in the process versus a campaign that is run as much as possible manually with minimal AI intervention.

3.1.1. Methodology

For the research, all companies and persons with telephone contact, e-mail, and website were filtered from the Merk database, which contains over 4 million entities from the Czech and Slovak Republics. From this list, 50 subjects were randomly selected and contacted to participate in the research. Arrangements were made to work with three entities, referred to below as Entity A, Entity B, and Entity C. These subjects agreed to participate in the research, publish the results anonymously, and meet the basic technical requirements for the research.

The research lasted a total of 3 months. Two approaches were measured for each subject in the form of an A/B test, a campaign maximizing the involvement of artificial intelligence and machine accounting and, in contrast, a campaign minimizing the involvement of machine principles. The absolute results after the end of testing AND the interim trends and evolution of the campaigns in the A/B test were evaluated.

Based on the literature search supported and the practical outcomes of the measurement, a model of the optimal strategy for building advertising campaigns involving machine learning was constructed and described.

3.1.2. Results

Table 1 shows the results of empirical testing of two different campaigns with the same budget, tested in as similar an environment as possible to keep both tests as equal as possible, e.g., same target, same website, same account, input data, and regular alternation of both campaigns during testing (since it is not possible to run both campaigns at the same time without one becoming automatically superior in the account).

The Performance Max campaign (also called PMAX) was set up, essential inputs were provided, and no intervention was made during the campaign except for budget optimizations. In contrast, the standard campaign was monitored and optimized after complete setup.

Table 1: Results of the benchmarking of the subjects' campaigns in aggregate for the whole period under consideration

Campaign / Tracked Metrics	Subject A		Subject B		Subject C	
	PMAX	Standard	PMAX	Standard	PMAX	Standard
Totals spend	18 000 CZK	18 000 CZK	25 400 CZK	30 700 CZK	87 634 CZK	28 688 CZK
Average CPC	5,22 CZK	1,73 CZK	2,01 CZK	2,56 CZK	5,35 CZK	2,15 CZK
Number of clicks	3450	10400	12610	11974	16375	13315
Turnover	18 900 CZK	99 900 CZK	84 994 CZK	140 100 CZK	1 503 650 CZK	552 900 CZK
Conversion	1	3	91	150	1769	582
ROAS	1,05	5,55	3,35	4,56	17,16	19,27

If we choose ROAS (Return on Ads Assets Spent) as the critical metric, see Equation 1, the superior performance of standard campaigns over automated PMAX campaigns is visible across all subjects. However, the ROAS indicator does not consider the total Campaign revenue generated by the total campaign costs. Subject A, experienced budget constraints in both campaigns. Subject B's automated advertising needed to display more to reach the budget cap, and manual settings too constrained Subject C's campaigns.

$$ROAS = \frac{\text{Total Campaign Revenue}}{\text{Total Campaign Cost}} \quad (1)$$

The measurement shows that AI-maximizing campaigns are only sometimes better performing than standard campaigns, as Google claims and recommends.

More exciting data provides trends. There were significant differences for all Subjects, especially in the first few days after the campaigns were launched. The main reason for this difference is the first days after the campaign launch, where machine learning could not determine the optimal bid, audience, or cost-per-click, which were up to 12 times above the average for the entire campaign duration in the first days. Overall, what is evident about Entity A and C is that the automated campaign could not make up for this initial inefficiency.

4. Discussion

The findings of this research study shed light on the effectiveness of online advertising campaigns using artificial intelligence (AI) and machine learning. The analysis focused on three businesses using an A/B test methodology to compare the performance of ads created by a specialist using AI versus those created solely by a human. The primary metric, return on ad spend (ROAS), was used to evaluate campaign effectiveness. Interestingly, the results suggest that ads created with the help of AI outperformed ads created solely by humans for all three subjects. This finding challenges the general notion that artificial intelligence is always superior to human skills in advertising.

While ROAS was the primary metric, the study also examined other metrics such as amount spent, sales generated, clicks, and cost per click to comprehensively understand campaign trends. These secondary metrics provide valuable insights into the synergy between human expertise and AI technology. The analysis suggests that the highest efficiencies can be achieved by collaborating with humans and AI rather than relying solely on one or the other. The research results refute Google's claims that AI is generally superior to human creativity and decision-making in advertising. Instead, they demonstrate the importance of balancing human insights and using AI to maximize campaign performance.

Based on the results, the study proposes a model for gradually incorporating AI into advertising campaigns to achieve optimal long-term performance. This model recognizes the value of human creativity and expertise while leveraging AI technology to increase campaign effectiveness. It highlights the potential for a symbiotic relationship between human advertisers and AI algorithms, leading to better business results.

5. Conclusion

The previous chapter provided a view of two different situations - maximizing AI involvement and minimizing AI involvement. A practical solution can be found in the collaboration of AI and humans. A Performance Max campaign would be much more effective if it had historical account data collected manually.

If all advertisers could improve their campaign performance by simply switching to an AI-powered solution, there would be no one to differentiate themselves in the ad market and stand out above the competition. It knows the customer and your business, which is the key to driving AI to succeed and improve business bidding strategy across channels. Using AI in this way can multiply the results of a marketing campaign while AI learns from the marketer.

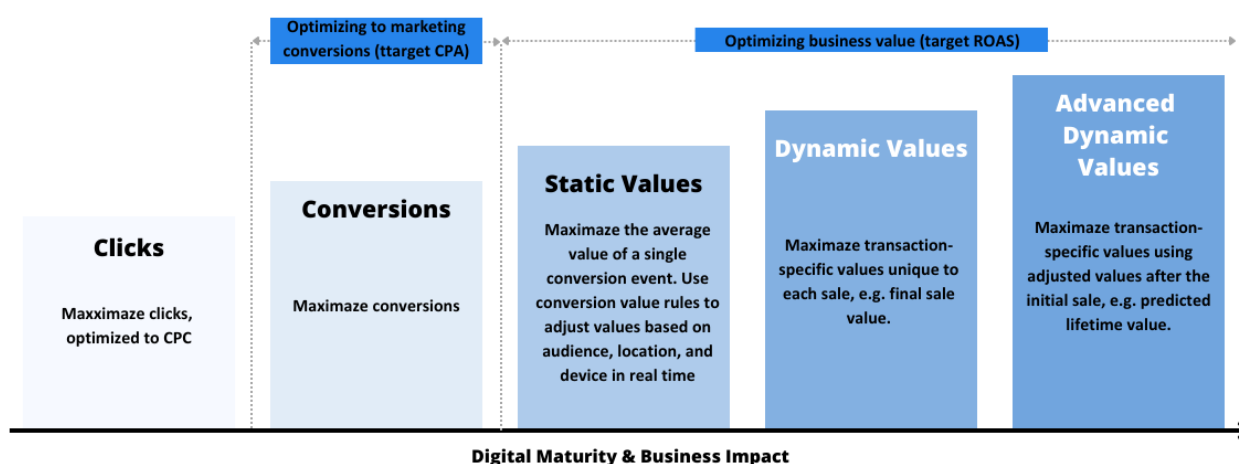


Figure 1: Progressive optimization of strategies based on the digital maturity of the advertising account and business.

A robust conversion measurement strategy is one of the essential things that can be done to help AI maximize value. To this end, it is advisable to collect a historical number of conversions (in practice, 30 conversions over a month can generally be derived as optimal). Immediate engagement strategies to maximize conversions have nothing to bounce off, and such a campaign could still be very ineffective. That is why it is a good idea to start with a click maximization strategy that allows the marketer to track which ads and their creatives are working and what audience is interacting with the site based on them (Google Support, 2023). Once the advertiser identifies effective messages and attractive audience segments, they can change the strategy to conversion-based targeting.

A conversion is any triggered desired action by a website visitor. In the case of an e-shop, purchasing a computer cable for tens of crowns can be counted as a conversion, as can purchasing an entire PC set for tens of thousands of crowns. The algorithm would not differentiate between these cases and could outbid the conversion revenue by offering a price per click.

Thus, the advertiser will get more value from the measured data by focusing on a strategy based on conversion value, e.g., maximizing conversion value ideally complemented by a ROAS target (Google Support, 2023). Defining the value of different conversions to the business will help the AI understand which conversions are most important and should be prioritized in bids. It is essential when scaling marketing across channels to achieve consistent quality and value of conversions (Google Support, 2023). The described process of adopting strategies over time based on the available data is shown in Figure 1.

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Online Education in Slovakia: the practical insight and the students' perception.

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Abstract: The paper covers fundamental and key aspects of online education during the COVID-19 pandemic. The online space and the internet world are essential parts of people's daily lives, as well as, their job and academic lives. Hybrid forms of education have also been transferred to the educational process, while interest in the use of online tools and interactive applications has increased. The purpose of the article is to point out the possibilities of their effective use and thus ensure an attractive educational process. The research included a research sample of 153 students, and the qualitative and quantitative analysis in this paper is primarily focused on identifying the strategic benefits and drawbacks of online education, as well as tools and methods that are effective for ensuring future quality education of managers.

Keywords: online education, interactive tools, strategic benefits, attractiveness of education

JEL classification: I20, I21, A23

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1. Introduction

Online education has become a common teaching method as technology is being used more and more in education. With the help of advanced technologies, the active use of e-learning is on the rise. Many educational institutes have shifted their learning activities from physical classrooms to virtual classrooms. The Covid-19 pandemic also brought a significant dynamic shift to the education system and the need for implementation of flexible, modern, and online tools and solutions. On a global scale, according to the report of the World Economic Forum from 2020, the pandemic has directly affected the teaching process of more than 1.2 billion pupils and students. Education has changed dramatically, teaching has started to take place online, remotely, and the interest in e-learning and digital platforms has grown enormously.

Research has indicated that online education is more flexible, less time-consuming and has had a positive impact on the level of information retention, so that certain forms of it can be maintained in the post-pandemic era of education. Even before the pandemic, there was an increase in the use of technology in e-learning. In 2019, investments were approximately at the level of USD 18.55 billion, while globally, investments in this segment are expected to increase to USD 350 billion by 2025. Investments primarily include the implementation of language applications, virtual tutoring, online educational software applications and the use of video conferences. While some authors and

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practitioners believe that the unplanned and rapid transition to online education with almost no preparation and without special training does not benefit the quality implementation of technologies in education, the other part is sure that in the post-pandemic era a new hybrid model of education will emerge, which will bring significant benefits to interested parties and will be the beginning of building a new level of education in society.

2. Theoretical framework of the online education

The term online education is often associated with Internet education, virtual education, cyber-learning, and asynchronous learning. Ascough (2002) suggested that online education provides a learning experience different than in the traditional classroom because learners are different, they communicate via computers, and it caused the changes in social dynamic of the learning environment. Kearsly (2000) points out the following themes that shape online education: collaboration, connectivity, student-centeredness, unboundedness, community, exploration, shared knowledge, multisensory experience, and authenticity. Although the use of online education specifically coincides with the Covid-19 pandemic, the phenomenon is not new. At the same time, as information and knowledge spread, people today must become lifelong learners. Online education aids in this process by making learning more accessible. In the COVID-19 era the online education helped to build the engagement of the students (Unger, & Meiran, 2020; Hollister, 2022). It also developed the innovative ways for learning, the new skills were increasing (Cuschieri & Agius, 2020), and benefits for good communication for better student-teacher relationship were showed (Truzoli *et al.*, 2021; Stachteas, & Stachteas, 2020), all these improved the complex educational process and caused changes that are crucial for education in the future.

Many students prefer online learning because it offers flexibility and supports students in setting their own pace of study. It helps fix the habit of self-discipline and time management and gives them access to an unlimited number of educational resources. Students can easily set their own learning pace as long as they have the right equipment and access to a good internet connection. Several nominal advantages increase the attractiveness of distance learning, including program selection and time efficiency (Wladis *et al.*, 2015). Students have the opportunity to obtain a high quality education without major restrictions on work and family life and with maximum elimination of travel costs. They have the freedom to communicate with professors and classmates, get study materials and solve tasks from any place available on the Internet (Paul, & Jefferson, 2019).

Research indicates that the experience of online education on an individual level can be different, individuals can perceive it as highly positive but also highly negative. Research on qualitative and quantitative satisfaction analysis of traditional offline education and online teaching showed that when quantitative feedback was implemented, satisfaction with the online form was lower than with the offline form. In feedback using qualitative data, satisfaction with was similar between both forms of instruction (Werhner, 2010). Another research shows during the process of receiving online education, participants gained both positive and negative experiences, although their experiences tended to be more positive (Yang, 2004). Based on the development of technologies, demands for knowledge is increasing. New trends in the field of education are gradually being adapted and improved so that they are in line with the current needs of the labor market. The literature presents various innovative possibilities of educational approaches that can have an impact on the quality of education, such as mobile learning, micro learning, virtual reality, gamification, 3D technologies or

project based education (Jámborová et al. 2019; Chesser, 2019; Marr, 2021). The fact is that these methods and their application in practice is very important and necessary in online education.

There are a couple of crucial areas and factors of online education that has to be analyzed in regard of the education development. However, it is necessary to know which tools and methods from traditional education system are consider helpful to improve also online education. Knowing the crucial advantages of this system of education and perception of attractiveness of modern tools can create the essential basic for next improvement and successful implementation of the online education in general.

3. Research sample, methods, and data analysis

The research sample included 153 students, and the structure of the research sample was created of 90 of them are women, 63 of them are men. According to study level, the research samples contains 94 bachelor students and 54 master students. Data collection was organized via online questionnaire from October 2021 to March 2022, the students of University of Economics in Bratislava were involved into this survey. The questionnaire was created by open and closed questions. For closed questions the Likert scale (from 1 - minimum to 6 - maximum) was used to measure attractiveness and perception of students accurately.

The qualitative and quantitative analysis in this paper is primarily focused on identifying the strategic benefits and drawbacks of online education, as well as tools and methods that are effective for ensuring future quality education of managers. For the purposed of this paper was used the descriptive statistics to analyze data from the used questionnaire. The tables in the next chapter synthesize the results for the entire sample (N=153) and are expressed through average and mode, at the same time the tables also contain the results of comparative gender analysis (comparison the differences of perception between men and women).

4. The research results

The purpose of this research paper is summarizing the partial areas of the research focused on improvement of the education and study programs for universities with consideration the digital age and possibilities of online education and hybrid models of education.

The tables in this chapter contains the complex results for 3 partial areas:

- attractiveness of the used education methods,
- key benefits of online education,
- the impact of innovations on increasing the attractiveness of online education.

Students had also the opportunity to comment on their preferred structure of education during the winter and spring semester 2021/2022. The highest rated was standard education system divided into the weeks based of the schedule during the semester (4.1 points), followed by project education (4.0 points). The least preferred was the intensive education system - education in blocks (3.5 points).

Table 1 represents students' perception of attractiveness of selected used methods in education. The most attractive are learning by example and interactive discussions. In online education the less attractive are rated work with textbook and lectures. The women evaluated all the methods higher

than men. The biggest difference was showed in area of teamwork in the small group (the difference between the evaluation of men and women was up to one point).

Table 1: Perception of the attractiveness of using methods in education

Attractiveness of the methods in education	Average of evaluation (N= 153, scale 1-6)	Mode (N=153)	Average – men (N=63)	Average – women (N=90)
Lectures	3.0	4.0	2.9	3.1
Learning by examples	5.3	6.0	5.2	5.5
Interactive discussion	4.7	6.0	4.6	4.8
Case studies	4.3	5.0	4.4	4.3
Readings and work with textbooks	3.1	2.0	2.9	3.2
Demonstration and instruction	4.4	5.0	4.5	4.4
Teamwork in the small groups	4.4	5.0	3.5	4.5

Students also evaluated the key advantages of online education. Compared to traditional teaching methods, online education brings key advantages related to time and flexibility. The highly evaluated were minimalizing travel time, efficient time management and flexibility (Table 2). Despite the fact that online education is often associated with modernity and trendiness, students do not consider this fact important. Trendiness of online education was rated on average.

Table 2: Key advantages of online education – students' perception

Key advantages of the online education	Average of evaluation (N=153, scale 1-6)	Mode (N=153)	Average – men (N=63)	Average – women (N=90)
Advantages of home environment	5.2	6.0	5.1	5.3
Flexibility	5.5	6.0	5.3	5.6
Efficient time management	5.5	6.0	5.2	5.6
Increasing costs	4.8	6.0	4.6	5.0
Improvement of technical skills	4.0	6.0	3.6	4.3
Online education is trendy	3.0	1.0	2.6	3.3
Saving time associated with travel	5.6	6.0	5.5	5.6
Improved understanding of topics	3.1	3.0	2.9	3.3

In our research we tried to identify also key innovations that are perceive as an attractive and trendy in regard of the educational process. In Table 3 is summarizing the perception of selected types of innovations. The smart technologies, online application and digitalization are considered as the most

attractive. However, external guest from management practice was rated with the highest score at all (4.8 points).

Table 3: Perception of the innovations to increase the attractiveness of education

Type of innovations	Average of evaluation (N=153, scale 1-6)	Mode (N=153)	Average – men (N=63)	Average – women (N=90)
Online applications	4.5	5.0	4.5	4.5
Digitalization and virtualizations	4.6	5.0	4.4	4.8
Gamification	3.7	3.0	3.7	3.8
Social networks	3.7	4.0	3.7	3.8
Modern case studies	4.5	6.0	4.5	4.5
External guests from practice	4.8	6.0	4.5	5.0
New and modern textbooks	4.0	5.0	3.7	4.2
Smart technologies	4.6	5.0	4.6	4.7
3D technologies	3.9	4.0	3.7	4.0

5. Discussion

The Covid-19 pandemic has perhaps most recently affected the quality, form and method of education. We offer an overview of the most important findings in connection with online education during the Covid-19 pandemic in the following overview, which contains the aggregated responses of respondents (the most frequently occurring responses in a sample of 153 students) to the open question: *"What do you consider to be the most important lesson/findings in connection with online education during the COVID19 pandemic in the past year?"*:

- Online education requires efficient personal management (mainly in regard of self-discipline and motivation in home environment).
- An increased need for technical skills (PC and online applications) has been shown.
- Limited social and in-person contact and minimal socialization – the biggest disadvantage.
- Technological security, and quality of Internet connection - one of the key factors for ensuring the quality of online education.
- Decline of the social skills and the quality of communication.

In regard of benefits of online education our results are similar to a couple of research studies, when authors showed that flexibility of class participation time, self-paced study and cost-effectiveness of online class was perceived as a positive experience connected with online education (Aisha, & Ratna, 2022; Yang, & Cornelius, 2004). Based on the results, it can be argued that students in general prefer modern tools during the online education, especially interactive online tools and applications. It is also necessary to keep in online education interactive discussion and learning by example, which were rated as highly attractive. However, even during the online lecture, students consider external guests from practice as very valuable experience how to keep the attractiveness of the education.

The research has a couple of limitations, first at all, data collecting includes just one university, however, this results are important in regard of the main goal of university project, it doesn't synthesize the environment and situation of Slovak university environment in general. The size of the research sample is quite good, but for the next research double or triple the sample size can be significantly more accurate for data processing.

From the practical implications point of view: The results of the questionnaire survey brought valuable information that will be incorporated into the curriculum of the courses at the university. At the same time, these results can serve as inspiration for universities in general. Online education is becoming a common part of the university education and is also typical for business education and employment training. Knowing the perception of the attractiveness of tools and methods, the advantages and disadvantages of online education and the attitudes of students in this area helps to create suitable and effective forms of education for future generations.

6. Conclusion

Education is the key to personal development and at the same time to the healthy development of society. Introducing trends into the educational process is a strategic tool for maintaining the attractiveness and quality of education also within the higher education process. In the case of monitoring and implementing trends in education, it is also important for universities and colleges to follow global and European challenges and policies. According to the European Commission, "adult education can play an important role in shaping the future, as it enables people to acquire the knowledge, skills, attitudes and values necessary to become responsible and engaged citizens who can then influence their environment and create an inclusive and sustainable a future for all." Trends show that the integration of online technology into education will continue to accelerate and it will have caused the fact, that online education will become an integral part of the educational system of countries around the world.

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Seeking for a new entrepreneurial driver: A literature review

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Abstract: Every entrepreneur has its own entrepreneurial behaviour. Therefore, during its business cycle, they try to actively influence its internal factors to its advantage. The success of these efforts is unclear and depends on the variety of circumstances. The aim of this paper is to present personality typology as a new driver through bibliographical sources. The practical point of this paper is to present a new non-negligible factor that affects all entrepreneurs and can contribute to the understanding of the issue of entrepreneurial behaviour. The contribution of this article is to reopen the discussion on this issue and to build on previous research that will be needed in the future.

Keywords: entrepreneurship, entrepreneurial behaviour, internal factors, personality typology

JEL classification: L26, M21

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1. Introduction

Entrepreneurship research (Bi et al., 2021) has long been interested in examining what differentiates entrepreneurs from the rest of the population. By Douglas et al. (2021) there are many forms of entrepreneurial behaviour, the result of diverse individuals interacting with diverse entrepreneurial opportunities. Entrepreneurial intentions and opportunity identification are key characteristics of potential entrepreneurs (Karimi et al., 2016). Although several dynamic forces (Toma et al., 2014), such as technological disruption, fluctuating economies or demographic changes, have caused have brought new opportunities and threats to organisations and transformed societies around the world, relying solely on seizing opportunities is not enough. There are a variety of other factors. The aim of this paper is to present personality typology as a new driver through bibliographical sources.

2. What makes an entrepreneur

A growing body of academic research (Baron, 2006; Welpé et al., 2012) has identified various socio-cognitive traits such as self-efficacy and fear of failure as important determinants of entrepreneurial action. It is believed that entrepreneurs are different, and such differences matter when attempting to create a fundamental understanding of why some individuals choose to start new ventures while others do not (Bi et al., 2021). Risk-taking is key to business. It is therefore important to identify yourself (Radu-Lefebvre et al., 2021) and answer the question of “Who am I?” Entrepreneurship scholars (Mitchell et al., 2000; Simon et al., 2000) have thus shifted their investigations to examine patterns of cognition and behaviour that account for unique entrepreneurial actions. The cognitive

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and behavioural approach has shown more promise, with evidence indicating that entrepreneurs think and behave differently from others (Burmeister et al., 2007).

Inspiration

In entrepreneurship (Wartiovaara et al., 2019), practitioners often witness and refer to moments of inspiration that have enabled the recognition and exploitation of major entrepreneurial opportunities. Extensive research suggests that inspiration plays an essential role in the creative process (Thrash et al., 2010; Thrash et al., 2010; Milyavskaya et al., 2012). Wartiovaara et al. (2019) interestingly, limited attention has been paid to spontaneous inspiration and its easy but fundamental and transformative impact on everyone involved in the entrepreneurial process. Thrash and Elliot (2003) recognized that individuals are more likely to be inspired if they exhibit high openness to experience, mastery of work, and high levels of creativity.

Creativity

The term creativity has become a buzzword (Soh, 2017; Grigorenko, 2018) in economic, social and educational contexts. In education, the nature and definitions of creativity remain elusive and inconsistent (Harris and Ammermann, 2015). Creativity is in a state of discord (Arend, 2023), which is bad for the development of its study and the study of entrepreneurship. But creativity is particularly challenging because of its many facets. For example, Cheng et al. (2010) studied the specific relationship between creativity and personality (through Myers-Briggs Type Indicator (MBTI) dichotomies) of individuals. Summarising these correlations, according to Hemdan et al. (2023), creative individuals tend to lean more toward innovativeness than practicality, just as they tend to be spontaneous rather than organised.

Motivation

To explain the motives of entrepreneurs it has become increasingly common to distinguish between “necessity” entrepreneurs pushed into entrepreneurship because all other options for work are absent or unsatisfactory and “opportunity” entrepreneurs pulled into this endeavor more out of choice to exploit some business opportunity (Aidis and Mickiewicz, 2006). This necessity-opportunity dualism (Shymko and Khoury, 2023) characterizes individual dispositions and motives for entrepreneurial pursuits primarily in terms of relations between structure and agency. Viewed through a different sociocultural lens, such an approach reinforces the conventional division between extrinsically and intrinsically driven entrepreneurs as two distinct categories of agents.

Passion

Bao et al. (2017) studied the relationship between entrepreneurial passion, opportunity recognition, and entrepreneurial behavior. The results showed that entrepreneurial enthusiasm had an important influence on opportunity recognition and entrepreneurial behavior. Many experts (Baum and Locke, 2004; Chen et al., 2009) because thinking and acting entrepreneurially arguably requires a strong passion that fuels the personal agency, proactivity, creativity, risk-taking, aspiration, resilience, and persistence that are needed in entrepreneurship. Moreover, entrepreneurial passion seems to be important in social interactions, because entrepreneurs who display passion are perceived as potentially more successful by investors, clients, and employees agree that passion is “at the heart” of

entrepreneurship. For entrepreneurs, their entrepreneurial goal is to improve enterprise performance and achieve entrepreneurial success.

2.1. New entrepreneurial driver – personality typology

At different times, individuals make personal, social, behavioural and emotional adjustments. The foundations of prosocial self-behaviour have biological, psychological and social links. Physiologically, the neural structures (Hecht, 2014) that support self-monitoring are located in the left hemisphere of the brain. Prosocial leader behaviour can be understood in terms of biological, psychological, and social motivations. Hecht (2014) goes on to argue that physiological differences in the brain suggest that neural structures supporting prosocial behaviour are primarily concentrated in the right hemisphere. It is also evident (Jirasek et al., 2021) that the psychological qualities of particular individuals are an important part of the problem, as personality type is significantly related to a number of personality traits and behaviours that have a direct impact on the educational process, but also on success in practice. As an example, personality traits are one of the main non-intellectual variables predicting academic success in higher education (De la Iglesia and Solano, 2019).

Since self-employment is a riskier career choice, a positive attitude towards risk appetite is assumed (Cramer et al., 2002; Ekelund et al., 2005). The decision to start a firm (Caliendo et al., 2016) should be positively related to extraversion (indicating higher levels of ambition and optimism, seeking leadership roles) and openness (higher levels of creativity) and negatively related to neuroticism (higher levels of self-esteem and self-worth, less susceptibility to psychological stress in the face of challenges). Conscientiousness may become more relevant after the establishment of the business, so the influence on the decision to start a business is ambiguous. The same is true for agreeableness, where both extremes of the factor can have both positive and negative effects on the decision to enter. The internal locus of control is expected to have a positive association reflecting that individuals who believe that their own actions determine their future outcomes are more likely to actively seek out new business opportunities (Rauch and Frese, 2007).

In addition, there are other studies (Table 1) that refer to the interconnectedness of personality typology with entrepreneurship.

Table 1: Summary of studies on the impact of personality typology on entrepreneurship

AUTHOR	THE IMPACT OF PERSONALITY TYPOLOGY ON ENTREPRENEURSHIP
Reynierse (1997)	confirmed
Brandstätter (1997, 2011)	confirmed
Leutner et al. (2014)	confirmed
Mattare (2015)	confirmed
İrengün and Arikboğa (2015)	not confirmed
Montiel Campos et al. (2015)	confirmed
Mei et al. (2017)	confirmed
Obschonka et al. (2019)	confirmed
Feng a Chen (2020)	partially confirmed
Putri (2022)	confirmed

Source: own processing

3. Discussion

The prevailing view is that there is a link between personality typology and entrepreneurship. The literature review is supportive that this may be the case. It has been shown that personality typology could be classified as a group of factors influencing entrepreneurship. Through the mentioned internal factors, the cycle of a business can be illustrated (Figure 1) where each one factor is linked to the personality typology which determines the direction of the following factor.

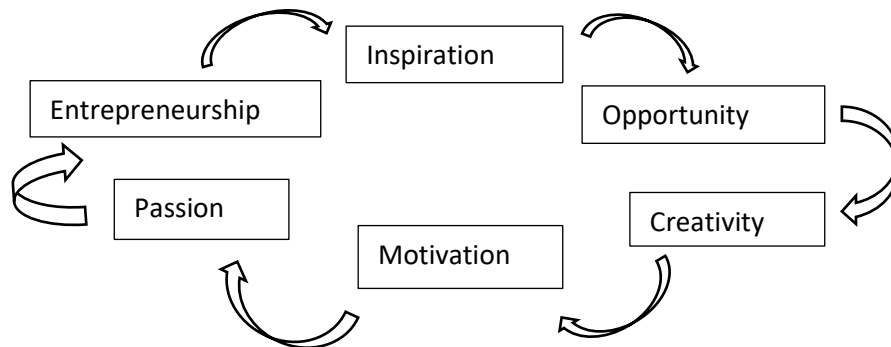


Figure 1: The cycle of a business

Source: own processing

The cycle starts with inspiration, which is transformed through opportunity into a business plan what motivates and gives passion to the entrepreneur in his work. This further inspires the entrepreneur and the cycle repeats again.

A limitation of this research is the limited number of internal factors and these are mainly psychological factors. Further, the research does not consider the external factors which along with internal factors play a very important role for the entrepreneurship.

4. Conclusions

The business environment is very dynamic. Entrepreneurs face many challenges. Today, it is all the more important to be prepared for these challenges. New factors, such as creativity or inspiration, are coming to the fore for discussion, which have not been a research interest among economics academics so far. This makes the role of entrepreneurs difficult in the current situation. Not everyone is prepared for this role, and although most authors agree that entrepreneurship is about 'seizing opportunities' even this is often not enough. For this reason, future research will be conducted where participants will be subjected to the MBTI psychological test. In the context of this research, entrepreneurs can lay the foundation stone of their work and benefit from the certainty that this stone offers, since personal development is a lifelong process with an uncertain outcome at the end. Entrepreneurs are in trouble and it is difficult to get out of it. Yet it is not necessarily only financial problems that are most common. So, there is a need to help entrepreneurs whether they are at the beginning of their journey or trying to grab the reins and restart a passion that has slowly faded.

Personality typology has been found to have an impact on entrepreneurship. This is evidenced by the results of various independent authors and therefore this finding needs to be further investigated in the context of scientific research. It is currently not established whether future entrepreneurs are born with certain predispositions for this activity or whether they acquire entrepreneurship only as a result

of their development and upbringing. There are suggestions that this may be the case, but it is too early to confirm or refute this claim and further research in this area will be needed.

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From Challenge to Change: Navigating Social Entrepreneurship with Bricolage in Turbulent Times

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Abstract: Social enterprises have been increasingly recognized for their ability to create social impacts by employing innovative resourcing behaviors in resource-constrained environments. While bricolage – the transformation and reconfiguration of resources at hand – has been viewed as a viable resourcing strategy of SEs in penurious contexts, there is limited understanding of practices and mechanisms of bricolage in social entrepreneurship at the micro-level. To fill the research gap, this proposed study will adopt a grounded theory approach and address two important questions: What types of bricolage behaviors are enacted by SEs in times of turbulence? How do bricolage practices help SEs achieve their resilience? Semi-structured interviews were conducted with 15 SEs in Hong Kong to understand how they mobilize and reconfigure resources in response to the pandemic. The findings of this study contribute to the social entrepreneurship literature and advance our understanding of the nature and roles of SEs' resourcing behaviors for creating social value in a time of turbulence.

Keywords: Social enterprise, bricolage, resourcefulness, COVID, pandemic

JEL classification: D2

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1. Introduction

Social enterprises (SEs) are characterized by their ability to create social impacts through innovative strategies, even within the context of resource scarcity typically associated with the social sector (Di Domenico et al., 2010). They often encounter resource constraints in their operation because social enterprises prioritize a social mission to create value and organize to serve their social pursuits rather than merely maximizing profits (Kwong et al., 2017). SEs typically respond to these challenges by employing a wide range of resourceful behaviors that allow them to 'doing more with less', such as bricolage, improvisation, and bootstrapping (Di Domenico et al., 2010). This unique ability to generate value in constrained environments, known as the resourcefulness of SEs, enables social entrepreneurs to explore novel avenues and seek opportunities where others may perceive only insurmountable barriers (Bacq et al., 2015).

Importantly, the resourcefulness of organizations has been found to be closely associated with and as a key antecedent to an organization's performance (Di Domenico et al., 2010; Liu et al., 2021). Scholars have highlighted that the creative use of limited resources allows entrepreneurs to successfully cope with and return to a stable state following a disruptive event (Purnomo et al., 2021). For instance, Leiblein (2011) highlighted that an organization's ability to mobilize social resources, such as forming strategic partnerships and exchanging knowledge resources, can help organizations reduce risks and manage turbulence. Similarly, Purnomo and colleagues (2021) also stressed that when organizations face disruption to their existing business models, their continuity relies on entrepreneurs' resourceful

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behaviors, such as recombining existing resources, sharing resources with other entities, and seeking new resources.

However, existing research in social entrepreneurship has often focused on the bricolage and resilience of SEs in isolation (e.g., Littlewood & Holt, 2018; Barraket et al., 2019) or examined SE resourcefulness as a static concept. This narrow focus has resulted in overlooking the dynamics and complexity of the mechanisms through which resourceful behaviors translate into resilience, especially during turbulent times. Given that some firms not only survive but also prosper, and new firms even emerge during times of constraint, we ask these questions: What types of bricolage behaviors are enacted by SEs in times of turbulence? How do bricolage practices help SEs achieve their resilience?

2. Resourcefulness and Bricolage in Social Enterprises

In social entrepreneurship research, resourcefulness considers how entrepreneurs generate value in a resource-constrained environment (Barraket et al., 2019). Typically, SEs are closely associated with communities characterized by limited resource access (Peredo & Chrisman, 2006) and need to respond to the lack of facilities and services in those communities (Di Domenico et al., 2010). Resourcefulness is grounded in the assumption that resources are scarce; thus, social entrepreneurs must be resourceful in their use (Baker & Nelson, 2005). Social entrepreneurs need resources to sustain and grow their social ventures (Bacq et al., 2015). The resource constraints push social enterprises to be creative in resource mobilization and utilization to implement social interventions to fulfill their social objectives (Di Domenico et al., 2010). Consequently, social entrepreneurs often engage in a series of practices of integrating, reconfiguring, renewing, and recreating their resources and capabilities in response to the changing social landscape, reflecting the resourcefulness of the enterprise (Baker & Nelson, 2005).

Among a wide range of resourcefulness behaviors demonstrated by social entrepreneurs, bricolage - making do with the means at hand for new purposes (Lévi-Strauss, 1967; Baker and Nelson, 2005) – stands out as a prominent practice. This resourceful strategy captures the dynamic processes of how social entrepreneurs engage their environments, highlighting ongoing transformations and reconfigurations of organizational resources in entrepreneurial activities (Di Domenico et al., 2010; Lanzara & Patriotta, 2001). The trait of ‘making do’ is often found among social entrepreneurs due to their distinct challenges. As they are often located in areas where private markets function poorly, SEs must innovate and grow with limited resources (Di Domenico et al., 2010). One example of bricolage SE is New Toy (in Hong Kong), a recycling social enterprise that utilizes discarded cardboard to create environmentally friendly toys and offers decent income to scavengers. Notably, the practice of bricolage in SEs transcends mere resource scavenging or repurposing unwanted or discarded materials (Desa, 2012). Rather, it represents a dynamic and innovative resource utilization strategy that refuses to be constrained by environmental limitations. Through bricolage, social entrepreneurs create new possibilities in social value creation (Basu & Desa, 2014; Di Domenico, Haugh, & Tracey, 2010).

3. Methods

This study adopts a constructionist framework of understanding the resourcefulness and resilience of social enterprises as the outcome of a process of rejecting or renegotiating the limitations of resource environments (Baker & Nelson, 2005). Given that there is limited knowledge about the bricolage behavior of SEs in a time of crisis, the methodology used in this research is grounded theory, which will allow us to study and examine a phenomenon and discover new dimensions and theories from the collected data (Corbin & Strauss, 1990). We selected the COVID-19 outbreak as the research

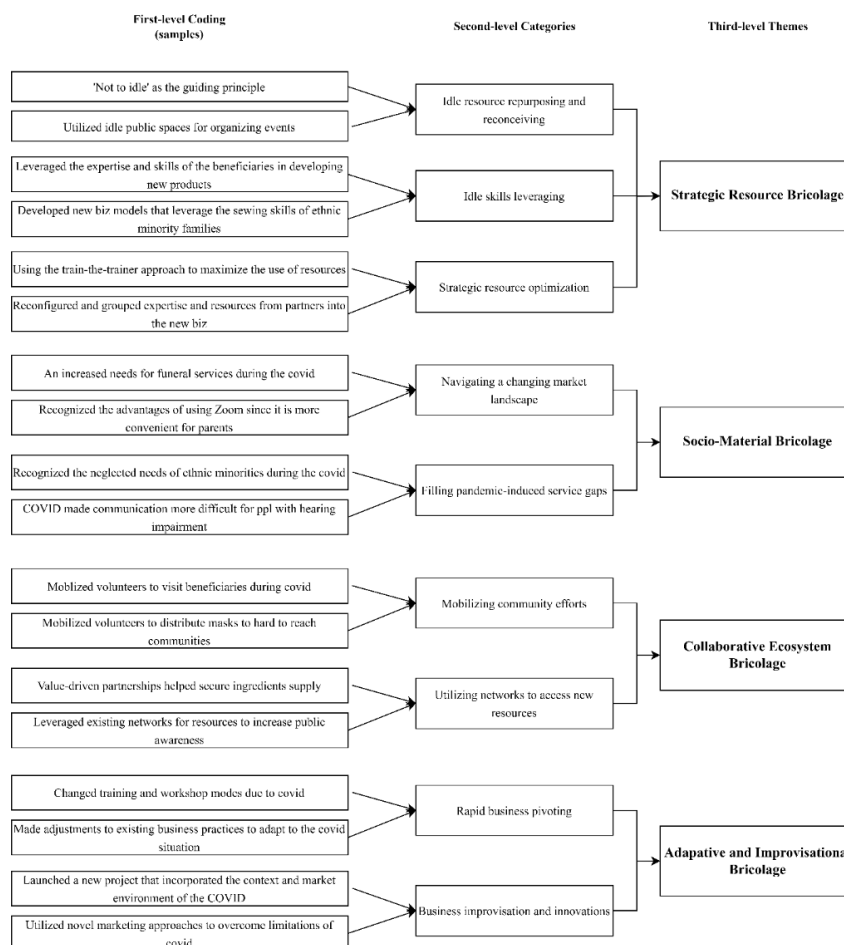
context, as the pandemic poses significant challenges to individuals and communities, requiring more innovative resourcing strategies of SEs to meet sudden social change.

Our sampling approach is guided by the potential of cases to expand and enrich the theoretical lenses of resourcefulness (Corbin & Strauss, 1990). The sample frame utilized was an online SEs directory of approximately 700 social enterprises in Hong Kong, compiled by the Social Enterprise Business Centre (SEBC), a social enterprise supporting platform under the Hong Kong Council of Social Service. We sent interview invitations to 30 SEs that have successfully survived the turbulent times and navigated challenges brought by the pandemic, and 15 agreed to participate in this study. Semi-structured interviews were conducted in Hong Kong between January 2022 and May 2023, using Cantonese, the participants' preferred language. The interviews focused on SEs' responses and practices during the COVID-19 pandemic, including their coping strategies, changes in the social value creation process, and challenges. Each interview lasted between 60 minutes and 90 minutes. Table 1 below summarizes case characteristics.

Table 1. A Summary of Case Characteristics

No.	Nature of SE	Yrs Since Establishment (by 2023)	Legal Forms
1	Retail, Sales	4	Registered as private company limited by shares
2	Services, Workshops	3	A charity under Section 88
3	Restaurant	10	Registered as private company limited by shares
4	Services	5	Registered as private company limited by shares
5	Restaurant	5	Registered as private company limited by shares
6	Production	3	Registered as private company limited by shares
7	Legal Services	3	Registered as private company limited by shares
8	Workshops	6	Registered as private company limited by shares
9	Retail, Sales	15	A charity under Section 88
10	Workshops, Services	4	Registered as private company limited by shares
11	Services, Education, Retail	4	Registered as private company limited by shares
12	Services, Events	6	Registered as private company limited by shares
13	Bakery	3	Registered as private company limited by shares
14	Services	8	A charity under Section 88
16	Services, Sales, Events	13	Registered as private company limited by shares

The data analysis was conducted using RQDA (Chandra & Shang, 2017). We initiated our analysis by employing open coding, following the methodology outlined by Gioia et al. (2013), to identify SEs practices and behaviors associated with bricolage. After capturing a broad spectrum of activities of SEs to sustain their organizations, we subsequently utilized axial coding to explore these bricolage practices' relationships and organize them into coherent themes. This involved closely examining connections and patterns that began to emerge from the data. Finally, we distilled these themes into aggregated dimensions by iteratively referring to the existing literature and carefully aligning our findings with the broader theoretical constructs in bricolage literature. Figure 1 below shows the data analytical process.

Figure 1. Data Analytical Process

4. Findings

Generally, our data analysis revealed that bricolage manifests in four major forms within SEs in response to the challenges brought by the pandemic, which include (1) strategic resource bricolage that involves the innovative reconfiguration and purposeful utilization of available resources, (2) socio-material bricolage in which social enterprises capitalize on emergent societal shifts – such as increased public awareness of digital tools and crisis-triggered social needs – to adapt or innovative their products and services, (3) collaborative ecosystem bricolage that involves social enterprises engaging with their broader networks and relationships with stakeholders to access new resources and opportunities, and (4) adaptive and improvisational bricolage which focuses on the dynamic adaptations and improvisations social enterprises make in their business practices. These four dimensions of bricolage reveal the complex and multi-faceted nature of SEs practices in navigating the unique challenges posed by constrained and rapidly changing environments like those seen during the COVID-19 pandemic. We will delve into each of these dimensions in greater detail in the following sections.

Strategic Resource Bricolage: Our study identified strategic resource bricolage as a key principle enabling social enterprises to adapt and innovate during the COVID-19 pandemic. This involves a multi-faceted approach that encompasses repurposing idle resources, leveraging untapped skills, and optimizing existing assets. Examples include SE #5's transformation of vacant restaurant space into a second-hand bookstore and SE #14's repurposing of unused hallways into exhibition areas. Beyond physical resources, SEs also capitalized on underutilized human capital, such as SE #13's utilizing employees' baking skills to diversify their product line and SE #16's activating sewing skills within ethnic minority communities to produce cloth face masks. The enterprises operated under the core

belief that no resource should remain idle, particularly during challenging times. This focus enabled them to not just “make do” but to innovate, thereby contributing to their sustainability and mission during the pandemic.

Socio-Material Bricolage: We observed that social enterprises also engaged in ‘socio-material bricolage,’ a practice that extends beyond merely repurposing existing resources. This approach capitalizes on external shifts in social and material landscapes, such as changes in public behavior, emerging societal trends, and new social needs, to create opportunities. Examples include SE #8 and SE #12, which leveraged the increased adoption of digital tools like Zoom during the pandemic to continue serving their communities in innovative ways. Additionally, socio-material bricolage allowed SEs like SE #11 and SE #7 to respond to heightened public awareness of life-and-death issues, thereby enhancing their service offerings. Importantly, some SEs identified and filled gaps in existing services that were exacerbated by the pandemic, such as SE #2 addressing the needs of individuals with communication barriers, and SE #16 focusing on the unique challenges faced by ethnic minorities in Hong Kong. This adaptive and strategic behavior allowed these organizations to survive and thrive and further their missions in the face of pandemic-induced challenges.

Collaborative Ecosystem Bricolage: In addition, social enterprises of our study also engaged in ‘Collaborative Ecosystem Bricolage,’ strategically leveraging their existing networks of volunteers, donors, and other stakeholders for additional support and resources. This approach manifested in two ways: mobilizing community efforts and utilizing networks for new resources. For instance, SE #12 harnessed its volunteer base to aid underprivileged ethnic minority families, thereby strengthening its community connections. SE #2 similarly relied on its volunteers to bring diverse skills to the table, allowing the organization to focus on its core mission. Additionally, SEs used their professional networks to access essential resources. SE #8 benefited from its relationship with its incubator, which offered critical resources like Zoom accounts and event spaces. Another example is SE #10, which utilized financial and mentorship support from an SE competition and leveraged its founder’s prior network with NGOs to expand its reach. These collaborative strategies helped SEs navigate the crisis and positioned them for long-term success.

Adaptive and Improvisational Bricolage: Finally, we found that social enterprises employed “Adaptive and Improvisational Bricolage,” rapidly pivoting their existing business models and innovating new ones to suit the evolving landscape. These SEs exhibited agility by fine-tuning operations and customer engagement strategies to stay afloat. For instance, SE #9, a second-hand clothing store, transitioned from a traditional walk-in model to a reservation and rotation system to balance operational and safety concerns. SE #4, a design studio employing people with disabilities, shifted from face-to-face customer engagement to mailing custom-designed postcards, a strategy that resonated well with their target audience. Beyond mere survival, SEs also seized opportunities to innovate and address emerging social needs. For example, SE #5, a restaurant employing individuals with disabilities, expanded into food delivery by modifying the wheelchairs of its employees to function as delivery vehicles. These adaptive and improvisational tactics allowed SEs to navigate the crisis and opened up new avenues for social impact and revenue generation.

5. Conclusion

The existing body of research has increasingly recognized the capability of SEs to effectively ‘make do with everything available,’ a form of resourcefulness that enables social enterprises to balance the dual objectives of fulfilling social missions and maintaining financial sustainability, particularly in resource-constrained environments (Liu et al., 2021; Hota et al., 2019). However, most existing studies have framed bricolage within social enterprises as carefully planned and tactical organizational

strategies aimed at economic growth (e.g., Di Domenico et al., 2010; Bacq et al., 2015) while largely overlooking the dynamic and fluid nature of bricolage, and how bricolage practices interact with the environments in which SEs operate. Moreover, there is a gap in our understanding of how bricolage can be translated to organization resilience, particularly in assisting SEs to navigate and respond to unexpected challenges. To fill the research gap, this study draws upon the bricolage literature (Di Domenico et al., 2010) to explore how SEs enact bricolage during times of turbulence.

This study adopts a qualitative inductive method and draws on the perspectives of 15 SEs that have successfully navigated the challenges of the COVID-19 pandemic, sustaining both their financial viability and social missions. Through our analysis, we deconstruct SEs' complex and multi-dimensional bricolage behaviors in response to unexpected and sudden disruptions brought by the pandemic. The four dimensions of bricolage that we identified from this study reflect how SEs activate bricolage at the organizational level – leveraging available internal resources (Kwong et al., 2017) – and at the systemic level – through external partnerships and networks (Baker & Nelson, 2005), knitting together both organizational strategies and broader environmental dynamics. Additionally, these dimensions also expand our understanding of the resources utilized in bricolage, ranging from tangible assets like human capital, physical facilities, and funding (Kwong et al., 2017) to symbolic resources such as shifts in public perceptions and changing market dynamics.

Consequently, this study advances the bricolage literature in social entrepreneurship by responding to calls for deconstructing social enterprises' dynamic, multi-faceted use of bricolage (Hlady-Rispal & Servantie, 2018). The backdrop of the COVID-19 pandemic offers a unique and intriguing lens through which to examine the topic. It allows us to provide a better contextual understanding of how SEs enact bricolage when faced with sudden and unexpected disruptions. This focus provides fresh insights into the symbiotic interactions between SEs and their macro-environment (Crupi et al., 2022). Moreover, our study extends the existing conversation surrounding bricolage as a pre-planned strategy for launching or scaling a SE in a resource-scarce environment (e.g., Sunduramurthy et al., 2016). By situating our study aimed the disruptive challenges of the pandemic, we offer new insights into how SEs deploy bricolage as a dynamic and reflexive mechanism that allows them to respond in real-time to environmental pressures (Hota et al., 2019).

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Generation Z and Soft Skills Needed in European Companies

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Abstract: Businesses of all sizes constantly react to changes, communicate with stakeholders, and solve problems, all to keep their competitiveness. Therefore, developing employees' soft skills is still necessary. Using literature research and analysis of data from the European Continual Vocational Training Survey (CVTS), the paper presents findings on what competencies regarding companies' needs are essential for European enterprises. Moreover, this article focuses on the perspective of the young Generation Z on the importance of soft skills in a business environment. A pilot survey with 84 respondents presents the attitude of Generation Z towards competencies and soft skills needed in European companies. The main goal of this article is to compare firms' and their potential Generation Z employees' expectations of soft skills needed in the European enterprise context. Using comparative methods of primary and secondary data reveals the companies' view and the view of potential Generation Z employees on soft skills training and development in European organisations.

Keywords: enterprise, soft skills, Generation Z, CVTS

JEL classification: M12, M53, O15

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1. Introduction

The need to learn and develop, even in a professional career, is mentioned in the literature (Dachner et al., 2021; Schneider & Langen, 2021). It also applies to enterprises. Due to the current trend towards digitalisation and automatisisation, different technical skills must be considered, but a holistic approach to employee training is also necessary (Loumpourdi, 2021). Related to this is the growing importance of soft skills, which need to be developed within the company and in higher education before starting to work (Coelho & Martins, 2022). Bogdány et al. (2023) examine the gap between university students and companies' needs in the Human Resource Management field. This research shows that communication, professional knowledge and digital competencies are the most preferred competencies. With the ongoing Industrial Revolution 4.0, employees and companies are increasingly required to develop their skills (Machová et al., 2021). For example, communication skills and team leadership have been identified for the success of companies using virtual teams (Maduka et al., 2018). There are different approaches to determining which competencies are essential for companies (Štefanić & Šimić, 2021; Waiker et al., 2022). A company's competencies are also reflected in recruitment (Karimi et al., 2019) or talent management (Kaur & Singh, 2022). In the case of this paper, we work with a list of competencies used in the Continual Vocational Training Survey (CVTS), which covers more than 113,000 companies in Europe (EUROSTAT, 2023).

Each generation of employees has its characteristics and approaches a particular competency from its perspective (Brindha & Priyadarshini, 2020). From the definition of a generation as a group of people influenced by significant life events in the same year of birth (Brindha & Priyadarshini, 2020), the people born between 1997 and 2013 are identified as Generation Z (Schroth, 2019). This young

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generation is now entering the labour market. The technology around them heavily influences the Generation Z (Machová et al., 2021). On the other hand, Generation Z should strengthen their analytical skills and pay attention to the impacts of their problem-solving (Schroth, 2019). From this perspective, companies need to be aware of these different approaches, especially for employees. In case of Generation Z, companies can expect an emphasis on independence, a preference for pictorial and rapid forms of communication, and less teamwork (Brindha & Priyadarshini, 2020).

2. Methodology

As part of investigating attitude of Generation Z to corporate training, the author created an electronic questionnaire on corporate training from the perspective of a potential employee, which maps the views on training and development in companies from the employee's perspective with focus on Generation Z.

The pilot questionnaire is based on the long-established European Continuous Vocational Training Survey (CVTS), which investigates training and development needs from the perspective of enterprises. The survey is under the co-ordination of Eurostat and is compulsory in the countries of the European Union. The CVTS covers companies with more than nine employees across almost all business sectors and is carried out every five years. Aggregated data from the reference year 2020 from 29 European countries were published in January 2023, with 113,000 enterprises responding. Eurostat is responsible for the overall assessment and for the statistical data relevance.

The results of this paper are based on secondary data as well as on primary data. The primary data was collected by the CAWI (Computer Assisted Web Interview) method. The survey aimed to determine how Generation Z as potential employees perceive corporate training in view of competency needs. The pilot questionnaire was created by the author based on CVTS and answered by students of the Human Resource Management course at the Technical University of Liberec in the Czech Republic, which was conducted in April 2023 as part of an introduction to the topic of labour competency and corporate training. Out of 116 possible respondents, 84 students answered, the return rate was 72%.

2.1 Respondent Profile of the pilot questionnaire

The average age of the respondents was 22.33 years, with a standard deviation of 0.17 years. The median age of the respondents was 22. The age group of respondents corresponds to Generation Z. Figure 1 shows the work experience of the respondents depending on their age. Corresponding with the median age of 22, more than half of respondents claimed some work experience. Younger respondents still need to gain direct work experience.

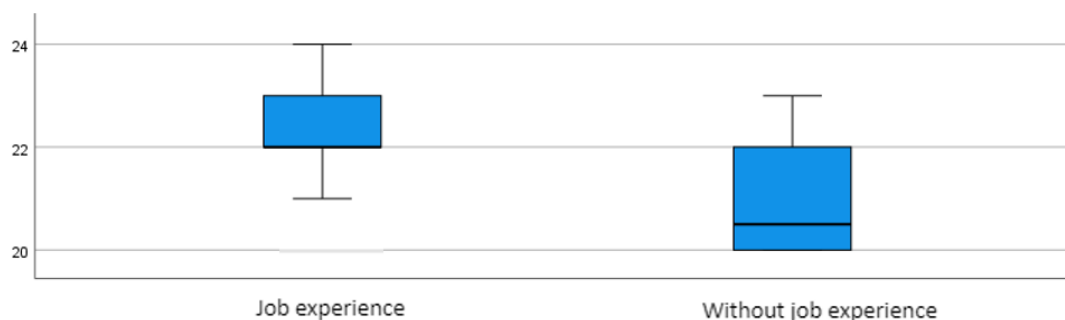


Figure 1: Respondents profile according their age and job experience, author's own

3. Results

The primary and secondary data analysis findings indicate, in line with the literature research, that competence development and training for business is still necessary. The paper's objective is to compare the view of Generation Z and the view of enterprises on the competencies needed in the corporate environment. The Generation Z perspective, as potential employees of firms, was extracted from primary data. The business view is based on the secondary data analysis of the last CVTS survey among 29 European countries.

Figure 2 visually depicts the main results of the comparative analysis. Generation Z consider communication skills (71.4%), general IT skills (52.4%) and competencies related to problem-solving (45.2%) as the most needed competencies in the labour market. In contrast, companies identify technical and vocational-specific competencies (43.7%), competencies related to teamwork (41.9%), and business negotiation (36.5%) as the main skills needed.

The most significant difference, namely 65.1%, can be seen in communication skills, which Generation Z perceives as the most important competence in the current labour market. On the contrary, only 6.3% of companies identified these skills as necessary in their corporate environment. The slightest difference is for administration-related competencies (0.1%) and management skills (0.7%).

The most needed skills from the perspective of European companies are technical and professional knowledge, reported by 43.7% of enterprises, in contrast to 10.7% of Generation Z respondents.

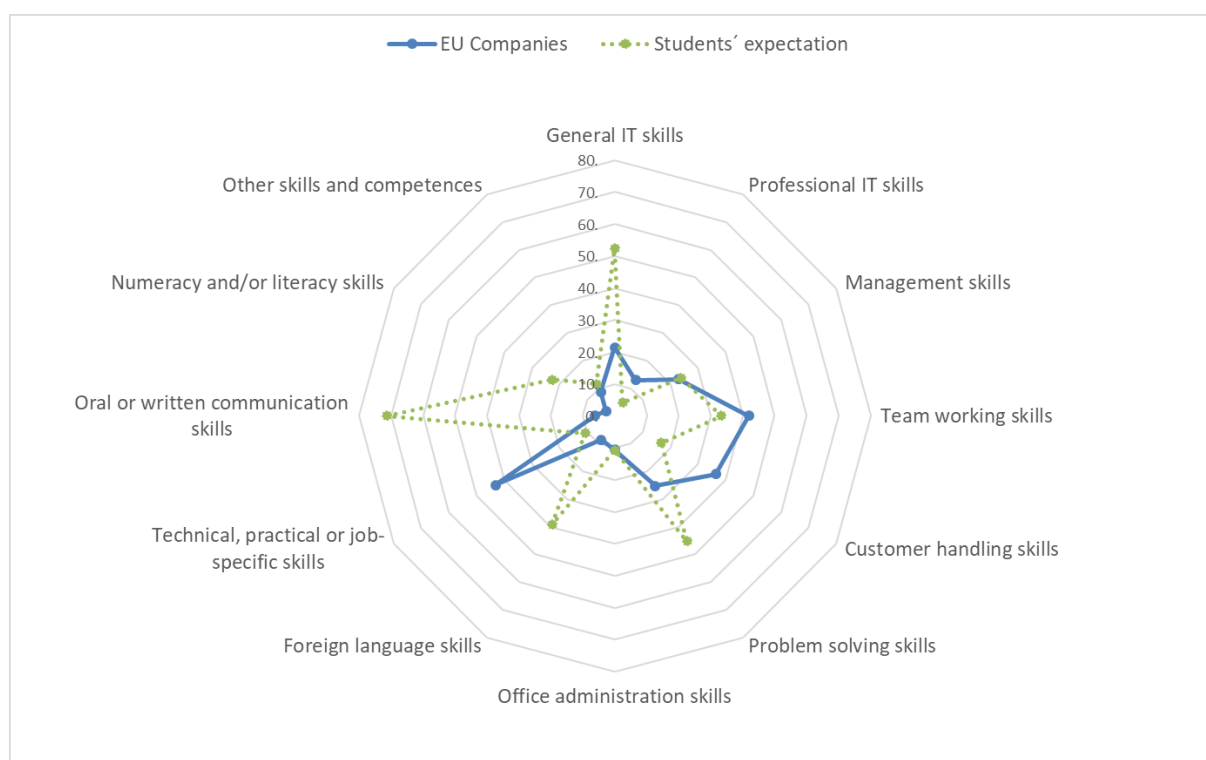


Figure 2: Main skills needed for the development from the point of EU companies based on CVTS 6 and Czech students (Generation Z), in % of all respondents, author's own

The next significant discrepancies (30%) show general IT knowledge and foreign language skills, which Generation Z considers relatively essential for the current labour market. From the view of companies, 21.5% of firms see the importance of general IT skills, while in the case of foreign languages, only 8.5% of European enterprises.

On the other hand, companies perceive competencies related to professional IT skills in programming or web application development as a competitive advantage. 13% of companies identify these skills as necessary. In contrast, only 4.8% of Generation Z see this need, the lowest of all mentioned competencies. However, this may also be related to a different understanding of general and professional skills. Generation Z, who have grown up fully with technology (Machová et al., 2021), may already consider these skills as general IT skills.

4. Conclusion

This paper aims to find out the perspective of Generation Z respondents on the competencies needed for the current labour market and compare them with the European companies' view. The comparison of primary and secondary data shows significant differences. Generation Z considers communication, general IT skills and problem-solving as critical competencies for the European labour market. In contrast, more than a third of companies identify technical and professionally specific skills, teamwork and customer handling skills as the most needed competencies. The most significant difference of 65.1% is in communication competencies. Technical/ professional specific skills, general IT skills and foreign languages show significant differences of over 30%. On the other hand, the highest consensus shows competencies related to administrative work and managerial skills.

Despite the limitations of the research, these findings provide insight into the current need for competencies in the labour market. The main limitations of this paper include the limited number of respondents, which only covers students of one selected university in the Czech Republic. The analysis was based on only one pan-European survey and respondents could understand answers differently. Asking for one to three answers from a given list of competencies also limits the use of statistical methods for data analysis, which was initially intended. Nevertheless, comparing primary and secondary data can be an exciting starting point for further research investigation compared to the literature review.

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Genetically modified humanity – SOCIETY 5.0 - sci-fi or near reality?

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Abstract: The bioethical view of the world has long been overlooked. We have developed technologies that help humanity, dramatically reduce child mortality. We do not give birth at home; we don't die at home; We get to know our loved ones through phone screens. We are subject to a wave of technological possibilities that science offers. Under the great idea of doing good, we as humanity have decided to intervene in our development. We have significantly reduced the birth rate. We prefer the qualitative model of reproduction to the quantitative one. Over the last 30 years, we have made a technological leap in genetics, from genetically modified foods to genetic doping or cloning to the first genetically modified people. We already know the first types of children on request. And what about the emergence of a new race? Where will humanity move? What about the relationship between you and me? Are women still having children, and are we ready for a targeted DNA change for environmental reasons, survival, or space travel?)

Keywords: DNA, CRISPR, designer babies, You & I relationship

JEL classification: Z130, I150, H150

Grant affiliation: VEGA 2/0002/19, VEGA 2/0167/19

1. Introduction

Bioethics deals with the ethical dilemmas surrounding life. However, since the 1960s, medical technology and peaceful means have been employed to promote peace. We now possess the power to control life through means such as hormonal contraception, artificial insemination, prenatal diagnosis, safe abortion, infertility treatment, surrogacy, intensive care, hemodialysis, organ transplantation, stem cell research, body modification, transhumanism, cloning, and euthanasia, or genetically modified food.

2. Genetics and gene doping

We have a primary division. Genetic **doping** or gene **therapy**. Both are functional and measurable. However, they differ in the length of the effect and probably the consequences. Gene therapy is long-term, results are long-term, and detectability is long-term. On the other hand, gene doping is short-lived; The effects may be significantly higher than gene therapy, and detectability will also be relatively short. Why these differences? What sport? Athletes often expect immediate, even temporary effects and long-term consequences. Today's genetically modified preparations are not

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found even during a routine blood test after 8 hours. The athlete has a significantly shifted pain threshold or performance muscle matter.

And what about intelligence and mental doping? Modafinil - an anti-sleep drug for jet lag survival. Attention drugs for ADHD, such as Concerta, Methylin, and Ritalin, increase brain activity or mental performance in a "healthy" population. It is estimated that 20% of American university students do so mentally unethically. Except mentioned pharmacy enough increase express the NR2B gene and we have five times more brain forces. But we forget the risk that originated in mice (rats Hobbie) tested with this genetic currency in laboratories. Mice then can't forget negative experiences and are unbelievably shy.

Manipulation of the embryo has a bioethical view on two planes.

A. The derivation of embryonic stem cells, which is considered acceptable in many countries. It is a treatment, only somatic cells (tissues, organs) are modified, which are manifested by hereditary diseases (lymphocytes, liver, mucous membranes) in "born" patients or cells of "adult" strains such as hematopoietic bone cells - marrow. In no case does the patient pass this adjustment on to the offspring, and the so-called yes takes it to the grave.

B. Reproductive cloning is prohibited mainly for security reasons. This adjustment is germinal lines. Either direct editing germinal cells (eggs, sperm, germline, tribal cells) or wound embryo. All cells in the body are modified; modification may transfer to offspring (affected they are and reproductive cells). They arise here primarily from bioethical problems type non-therapeutic improvement.

2.1. CRISPR / Cas9

J. A. Doudna and the scientific team with the Czech Prof. M. Jínek, at the University of Berkeley, and team E. Charpentier, suggested the method of Clustered Regularly Interspaced Short Palindromic Repeats (Jínek et al. 2012). This is the same way bacteria can fight viruses. An essential part of the gene-editing tool is CRISPR / Cas9, an enzyme found in Nature as a weapon for bacteria to disrupt the genetic code of viruses, divide the virus, and destroy it. This method makes it possible to find a specific place in DNA using guide RNA; by double-cutting, we remove from the virus a genetic modification, inherited code, or an error in a given position in the DNA that we do not want to pass on. This, in combination with the leader RNA, precisely "cuts" the strand of DNA at the desired site, separates the unwanted sequence, and CRISPR then provides the cell with a substitute for other genetic information. The search algorithm is based on 20 letters and allows us to find precisely between the 3 billion characters of the DNA string we want to replace. It is much more accurate than previous experiments; aftermath-type leukemia, formerly caused by inaccurate interference with DNA, is minimal. However, the crackdown on the scientific world should not have taken place soon.

2.2. Frankenstein He JianKui and children without HIV

In China, just before the extraordinary international Congress (November 27-29, 2018) on Genome Modifications in Hong Kong, He JianKui announced on November 25, 2018, that two children were born in China who focused on inherited information in all their cells, including proliferating cells. A violation has occurred in Oviedo declarations and endangered we are future generation genetic mutations. In the case of twins, two embryos obtained from two parents when the father had HIV were engineered to make the children immune to HIV. In the embryos that his team edited,

the researchers did not try to delete the correct 32 bp; instead, the team proposed that CRISPR cuts the natural deletion of CCR5 by a base pair at the other end (Wang, 2019). CRISPR, an error-prone cell repair mechanism that relies on complete gene deletion, then removed 15 base pairs from one copy of Lulu's gene, but none from the other. Nana added a base to one copy of CCR5 and deleted the other, probably blocking both genes and conferring resistance to HIV. He inserted the genes into the CRISPR machine almost immediately after creating each embryo through in vitro fertilization. This may be a genetic "mosaic" of some unaffected cells with normal CCR5 and may not have protection against HIV. To avoid transmission of HIV to the fetus, HIV-positive fathers can produce healthy children using established artificial insemination (ART). Therefore, most people should avoid the potential risk of HIV exposure when considering immunity against future HIV infection. Furthermore, Jiankui's genetic modification was useless, as research by HIV student Paul Connon (Cyranoski 2018, 607-608) questions the focus on the CCR5 gene alone, noting that some strains of HIV use CXCR4. lightning However, it is a great idea to make people in rural China where up to 30% of them are infected with HIV-1 and therefore have professional and existential medical problems with HIV-1. There are several conflicting answers to the question of whether CCR5 gene deletion harmed or helped babies (Cohen, 2019).

He Jiankui has the next successor. One official is Denis Rebrikov of Russia, who also has permission from the authorities - again blocking the CCR-5 virus from HIV-positive mothers and addressing the correction of the Tmc1 gene causing hearing loss (hereditary deafness).

3. Genetically modified humanity

Genetically modified humanity has specific crisis scenarios. George Daley of Harvard Medical School (and President of International research companies tribal ISSCR cells) to the previous Congress in Hong Kong in 2018 outlined (Daey, 2018) that we make a revolution in evolution. When we run genetic improvement improvements, parents will begin to transmit to children. Of course, these people will have higher incomes and can further invest in gene development. Evolution is not natural, but it will be affected. Cognitive improvements accelerate expanding or improvement our general cognitive abilities = our ability to gather, process, and organize information. This then concerns improving our perception (gathering information), attention (selection), understanding (representation), or memory (storage). Today we have different procedures for improvement.

A. Conventional methods such as mental exercise and training, with accelerators such as caffeine, nicotine

B. Unconventional methods have the potential to lead to more radical improvements. For example, transcranial magnetic stimulation (TMS) is a non-invasive method that can reduce or increase cortical excitability and improve motor learning or working memory, but with the risk of epileptic seizures, not to mention long-term effects. Current biomedical enhancements can increase cognitive abilities by approximately 10-20%.

C. Genetic modifications that officially we test on mice have experimented on improving memory with sub effect of higher pain sensitivity. The results of human learning or human-machine cooperation can be improved by about 1000%, but only in specific tasks.

Bioethics has a significant role in development, time and place borders, what is still positive, and what is risky, unethical, and forbidden.

3.1. Motivation + qualitative, not quantitative, reproduction of humanity

Human genetic improvement is expected in population development and ethics despite huge risks. Like the only animal on the planet, man has, unlike other animals, fewer offspring when it has better conditions. **Birthrate** dropped, and let's go in the **qualitative** (not quantitative) direction of **reproduction**. We concentrate effort, energy, and resources into one maximum of two descendants. The team naturally solves the issue of the demographic growth of the planet. We want the best for our offspring, and there is room for genetic improvements that will be difficult to resist. Holders of BRCA viruses will undoubtedly have a different view of the issue. Endurance against cancer is the hottest theme of genetic development. A new topic in genetic engineering is the provision of replacement body organs. Both directly genetically engineered and mainly in combination with 3D printing, transplantation from natural relatives (chimpanzees, but the heart, kidneys, and liver are small in size, and there is a huge risk of transmitting other HIV-like viruses) and acceptable animals (mostly pigs, but for some religions ethically). But in the US, at least 100,000 patients have been waiting for a transplant for almost two years, and if you survive dialysis without a kidney for only a few years of "acceptable" life, the ethical approach goes away. This also indicates how much infertile couples are willing to spend on their future offspring. A large study involving nine donors was conducted in Sweden in 2013 to provide offspring to families where the uterus had to be removed due to cervical cancer. Further experiments are taking place with animal embryos (lambs, pigs), (Solerte 2020) which is the first step toward humanized meat production. When will this be used in humans? We can still perceive increased performance in genetically modified people, already mentioned improved productivity or educational skills in the future.

3.2. Risk Interventions in Genomes

From a bioethical point of view, we have four segments of interventions in the genome.

A. Interventions that "failed." These are interventions in the genome to treat the patient, but the patient's interventions, such as CRISPR, did not accept them and considered him a virus. (And he'll record it in his DNA record, so this gene change is likely to be ineffective in the future). We also have unwanted modifications when we affect the transformation with something different than we intended. Chimera 46, XX / 46, XY = Chromosomal mosaic, (Gordon et al. 2020,748-749) Trophectoderm biopsy, transgenerational changes associated with accelerated growth, endothelial dysfunction, and high blood pressure from an early age. (Zandstra 2020)

B. Unethical changes desirable in terms of development or survival. These are interventions to create people whose goal will be a long space flight and life on other planets. Natural adaptation to other survival conditions is lengthy, problematic, and often impossible. If we want to colonize Mars, all we have to do is build technology for 20 years and at the same time modify the embryos now, wait 20 years for the modern colonizers to reach adulthood, and we are "ready." Do we want it and what about not managing climate change, keeping life on Earth in much worse living conditions?

C. Misuse of technology. From a current perspective, the apparent misuse of gene technology involves dramatic changes in physical fitness. Eleven characters in the DNA code are enough (myostatin); we have a strong bull creature with muscles that New Year's Eve Stallone will envy. Revealed military tests mention mice with elevated production of paraoxonase = increased resistance and sarin. Increased expression of genes for the correction of radiation damage = resistance to radiation diseases.

D. Gene hacking (Condliffe, 2017). These are situations where enthusiasts/hackers buy laboratory equipment and start experimenting with modifications, mostly on their bodies. We find similar "experts" in the Czech Republic and try, for example, to imitate a case with a myostatin attack.

We have already crossed the line of applied experiments, and the interface methods between the brain and the computer have naturally begun to be used. However, a paralyzed patient can control a computer by implanting electrodes in the brain and robotic limbs or applying various tools such as the Internet. The Internet is the most powerful tool, but often with the limitation that not all people have access to information.

3.2.1. Gene Drive

Gene drive (Alphey, 2020) is a script mutagenic chain reaction that violates inheritance laws, without Gene drive modifications. (in Nature, this occurs at a negligible per mille population). Similarly, we can ensure that when genetically enhanced people combine with non-genetically enhanced people, only genetically enhanced people are created, and the genetically modified population predominates on Earth. But what if, with the help of Gene Drive, we spread a deliberately faulty or just a defective version of a gene? Will the population just die out? Who decides?

3.3. Designer babies

The offer will be a girl/boy tall, blue-eyed blond, highly intelligent, IQ 130-150, strong, empathic, with better vision and night vision. These are often the wishes of parents for their offspring. Today's eugenics = prenatal genetic diagnosis of unborn children. 90% of pregnancies with a child due to congenital Down syndrome are terminated. In the future, it is far from just non-therapeutic use of medical technologies = enhancement, aesthetic surgery (hair color, eyes), but possible choices of intelligence, charisma, sports, or creative abilities.

We have a lot of **questions**, of which we have a list of the **most controversial**:

- A. Who and how decides what is expected from next-generation people and what is not?
- B. Should people be able to choose the characteristics of their offspring?
- C. Protection against genetic diseases and what is considered a disease?
- D. What will be the consequences?
- E. What impact would change to the inherited genome have on society?
- F. Adapted children only for the rich? And what about the poor? Will they be liquidated, or exterminated, or a few people remain on the reservations?
- G. Segregation of society?
- H. Moral and ethical differences for CRISP in disease treatment x human improvement?
- I. Preparing humans for survival in unsuitable conditions (climatic, toxic, unfit for life, significant dust emissions, poisons, toxicity), space flight, survival on Mars

3.4. The division of humanity

From these questions can be deduced what will happen to humanity? AD questions lead to the crucial one. Where is the line between treatment and improvement? Answers to EG issues are three Society segregation scenarios that can redraw the planet as we know it.

Scenario A. Will humanity be divided into genetically modified and remaining? Of course, there are still possible degrees of improvement! The probable scenario is the division of society into a genetically modified population elite and the rest of the population. At this point, we would be violating the rules of ethics and biology, which say that populations can multiply; we would have two or more kinds of people who could not reproduce at the same time. But in the next phase, which can occur quickly in 1-2 generations, there may be a problem where a person without modifications will live in reservations, be considered more of a Neanderthal, and be deprived of the right to vote.

Scenario B. The division of humanity according to the stages of development of genetic modifications. Won't we all be very similar? Will individuality disappear? In terms of intelligence, we have a Gaussian-shaped distribution in the population, and there are not many people with IQs above 130. But the genetically modified ones might all be IQ140. This may accelerate the creation of new social strata where the transition between strata will be impossible. On the one hand, the impossibility of mutual reproduction (marriage is historically the more common option for movement between layers), on the other hand, the impossibility of financing or achieving a higher level of genetic enhancement.

Scenario C. The unification of humanity. Uniform, homogeneous populations with average characteristics, easy to manage and control, and extremes with higher education or IQ will be eliminated (or reserved for the ruling elites). Third, it is fundamentally related to economics and demography. Around 2050, China will become an apparent global power, both economically and militarily, if America and Europe do not collapse properly. According to current models, India will have a demographic dividend of about 3-500 million working people compared to China. Ruling China will lack this population. The birth rate on the African continent is high, but it has a declining trend, and at the same time, there is a high infertility rate (estimated at up to 30% of the population). China's economic influence (road construction and other infrastructure) can thus implement the modern Marshall Plan in the form of IVF under "favorable" conditions or directly on government spending for free, such as He JianKui, in a few decades. With artificial insemination, it is not a problem to do a mass preset genetic modification (it can be claimed that it is a vaccination), + with the help of a gene, the drive has a unified population, just like in the movie *Sexmiser* (1983).

Scenario D. Preparing a person for survival in unacceptable conditions. If we cannot manage global warming or if there is an external intervention (pandemic, meteorite, war), then humanity may have no choice but to increase its resistance to emissions, poor-quality water, all nano-plastics, or space travel - survive on Mars. And we have to go to other planets to transport the whole person. Not enough for his robot clone?

Genetic modification is a strong attraction for humanity, both scientifically and politically, commercially, and in its consequences. Science fiction films such as *GATTACA* (1980) and *Surrogates* (2009) came very close to the near future realities, and we didn't even notice. Genetic modifications approach us as both positive and controversial. Changes in the human genome expected further development of gene engineering and applied research in this area from a medical, economic,

and especially bioethical point of view will be analyzed in terms of treatment of rare diseases, modern vaccines, prolongation of human life, controversial topics such as the impact of genetics on the COVID-19 pandemic, and the current sci-fi editing of humanity or children on request. From today's perspective, genetic improvement in society is technically possible; it will soon be safe, there will undoubtedly be demand for it, and supply will gradually emerge. And will women still want to give birth? And when will they stop wanting to give birth to women? In 30 years, the reality will be some form of genetic modification of humanity, both in terms of survival in a polluted environment and the possibility of long-term space. There is also a risk of abuse by totalitarian governments, and it is necessary to reach a global agreement on what will still be possible and what will not.

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