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# NAŠE GOSPODARSTVO

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The Impact of Structural Transformation on Global Value Chains in the MENA Countries

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Abstract

Several studies on economic transition propose that structural change in developing countries, that involves reallocating from less productive to more productive sectors, might enhance participation in global value chains (GVCs). However, there is a lack of empirical work on this claim. This study explores the factors affecting global value chain (GVC) participation in the Middle East and North Africa (MENA) region while considering structural transformation from 2000 to 2018. By applying the system GMM empirical research method, we found that structural change significantly contributes to facilitating the position of MENA economies under consideration. Specifically, the service and industry sectors play pivotal roles in these countries. This study also postulates that if we want to strengthen the participation of companies in GVCs, access to the internet, and a high level of education tertiary are necessary Also, environment and policies conducive to investment and direct investment abroad are important. The study posits positive commercial and financial links, and population size as important factors in promoting this position.

Introduction

The shift in the sectoral composition of economies towards industries and services draws all countries throughout the development process. This fact is well-known and widely studied in the literature on the importance of structural change (Herrendorf et al., 2014).

Structural transformation refers to an economy's shift from low productivity and labour-intensive to high productivity and skill-intensive activity. Structural transformation is driven by productivity changes in the modern manufacturing and service sectors (UN-Habitat, 2015). The workforce transitions from labour-intensive to skill-intensive activities. Labour mobility is impacted by opportunities in

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skill-intensive sectors. However, sufficient training is necessary for workers to transition to a new industry.

The analysis of structural transformations is now a crucial topic in development economics and is the foundation of primary work. It has received much attention among economists and inspired much of the theoretical comprehension of structural problems since classical economics specialists such as Lewis (1954), Myrdal (1957), Hirschmann (1958), Rostow (1959), Kuznets (1966), Kaldor (1967), Chenery & Taylor (1968) to more contemporary approaches predicated in the neoclassical tradition; such as Herrendorf et al (2014), McMillan, Rodrik & Verduzco-Gallo (2014), Diao, McMillan & Rodrik (2017). Economic development is developed as a process of economic modernization. It is based on the reallocation of production factors from the traditional agricultural sector which has low productivity and decreasing returns, to a sector with high productivity and increasing returns. This reallocation is done by the transfer of resources from agriculture to industry and services (World Bank, 2020).

Several economists, such as Hausman et al. (2007), Serigne & Fousséni (2019) and Busse et al. (2019) examined the link between structural transformation and economic development. Some have focused on sector diversification, measured by value added or employment, while others have studied exports as an indicator of structural change, emphasizing the importance of export sophistication in economic development. Theories of structural change advocate the diversification of productive activities, while theories of international trade support the specialization and sophistication of products in which the country has comparative advantages, even in primary activities. Then, the key indicators have included sector shares in total employment and total value added, export diversification, and export sophistication. Deudibe et al. (2020) suggest that structural transformation leads to economic development and welfare improvement.

Structural transformation is indeed crucial for economies, especially in regions like MENA. It offers various benefits, including economic diversification which makes countries less vulnerable to external shocks. In addition, it promotes job creation, reduces inequalities, and strengthens competitiveness on the global stage. In MENA, where the demand for diversifying economies and creating new opportunities is pressing, structural transformation is essential for sustainable and inclusive growth (Busse et al., 2024). So, this process has entered a phase of progress and strength over the last two decades in most MENA countries. Literature shows that structural changes have a profound impact on GVCs. These transformations, such as sectoral developments or technological advances, are redefining how countries and companies participate in GVCs (Ayadi, 2024). Additionally, technological changes, such as automation and digitalization, are changing global value chains' production and management processes. In response to these changes, government policies often aim to strengthen the competitiveness of countries and companies, thereby influencing their participation and positioning in GVCs (Fernandes et al., 2021).

MENA region has been heavily incorporated into the globalization process over the past few decades. Some countries in this region have emerged as competitors on a global scale. With globalization, these countries tend to cross national borders on an ever-increasing scale and are known as GVCs. Integration into global value chains (GVCs) offers various benefits to the MENA region. First, it can boost exports, which have stagnated in recent years (Jaud & Freund, 2015). Second, SMEs' access to GVCs could promote their growth and improve their productive structure (Mancini et al., 2024). Additionally, the MENA region has attractive assets for foreign investors, such as competitive labour costs and preferential trade agreements (Abushady & Zaki, 2021). Finally, participation in GVCs could boost employment and help resolve the region's structural challenges (Ayadi, 2024).

Additionally, despite the benefits of GVCs, the strategic geographical position of MENA in the Mediterranean, and cost advantages relative to the Northern shore, the MENA region has struggled to integrate into GVCs (World Bank, 2020) fully.

Our contribution unfolds in three distinct parts, each bringing a new perspective to the existing literature and offering precise answers to the research questions.

First, we enrich the empirical literature on the determinants of participation in global value chains (GVCs) by providing new evidence for selected MENA countries. By examining the specific factors that influence integration in GVCs in this region, we contribute to filling existing research gaps and better understanding the underlying dynamics that shape MENA countries' economic participation globally.

Second, we take an innovative approach using Eora and TiVA input-output tables to construct and analyze the intermediary trade network of MENA countries. This approach offers a unique perspective on both intra-regional and extra-regional trade links. By examining these trade flows in detail, we shed light on the economic interactions between MENA countries and the rest of the world, highlighting previously unexplored dynamics.

Finally, our most significant contribution lies in demonstrating the impact of structural change on improving the position of MENA countries in GVCs. By highlighting the mechanisms by which structural developments in these economies influence their integration into GVCs, we offer valuable insights for policymakers and researchers interested in the economic regional, and global integration of MENA countries.

In summary, our research is structured around these three axes which complement each other to offer an in-depth and comprehensive analysis of MENA countries' participation in GVCs, highlighting new perspectives and significant results for literature and practice.

The rest of the article is organized as follows. Section 2 reviews the literature on the relationship between GVCs and structural transformation, highlighting other factors that influence the position of Mena countries in GVCs. Section 3 presents the data and describes the measures and methods used in the paper. Section 4 presents the econometric approach and the results. Section 5 presents the conclusion and discusses the policy implications of our study.

Theoretical Background snd Literature Review

The scarcity of econometrics and empirical studies on integrating GVCs is linked to the lack of exchange of input-output databases in countries. This problem was solved by the creation of databases which were built by the OECD, UNCTAD, and the WTO. Several studies have recently examined the determinants of GVCs. Some studies analyze the fundamentals of GVCs to estimate the impact of structural transformation.

Structural Transformation and GVCs

The impact of structural transformation in the position of MENA countries in GVCs is a critical topic because, as noted above, countries are increasingly competitive, and governments are considering improving their stakes in GVCs to promote economic growth and development. However, it has received little attention and needs to be demonstrated.

A limited number of empirical studies have studied how the industrial sector affects the country's position in the global value chain. According to Tinta (2017), theory shows that robust manufacturing sectors are positively correlated with countries' participation in global value chains (GVCs). Creating manufacturing complexes and industrial networks represents an opportunity for countries to further integrate into GVCs. Additionally, higher industrialization allows countries to improve their integration within these value chains. The study by Sharma & Arora (2023) proved the positive role of technological progress, domestic capital, and industrial capacity in promoting the level of participation in GVCs.

The industrial sector represents an opportunity for India to become a new GVC hub in the Asia-Pacific region.

Several works have highlighted the role of the service sector in GVC's participation. Promoting GVC participation and transforming it into more advantageous forms through process or product upgrading is crucial for efficient services (OECD, 2013).

Gölgeci et al. (2021) establish the link between service and GVCs, fastening the phenomenon of service GVCs. They thus argue that service promotes participation in GVCs. Kersan-Skabic (2019) uses dynamic panel data methodology (GMM) and indicates that the share of services in GDP and the share of high-tech products in exports are important drivers of GVC participation.

The study by Lee (2018) investigates how liberalizing services can encourage involvement in international value chains. It looks at how services trade agreements affect global value chain commerce (backward and forward participation in products) and gross trade. It does this by using the gravity framework. The study concludes that although the consequences of services trade agreements are varied, they primarily support global value chain commerce, especially for exporters from developing nations. Furthermore, agreements for services that permit the export of goods without a physical presence in a country are crucial for encouraging involvement in international value chains.

Other determinants of GVCs

Cheng et al (2015) chose the dependent variable as the logarithm of the share of domestic value added (DVA). They showed that countries with greater economic complexity can capture a greater share of the value added from GVCs than those with lower economic complexity. Also, they showed that countries with higher tariffs on intermediate goods cannot increase their participation in GVCs.

Lopez-Gonzalez et al. (2015) carried out several estimations to analyze the determinants of participation in GVCs in a sample of 152 countries. They find that the larger the market size, the greater a country's upstream commitment, and the higher the per capita income, the greater the downstream commitment. They thus show that the protection of intellectual property, the quality of infrastructure, institutional quality, FDI, and regional trade agreements have a strong impact on integration in GVCs.

The IMF (2016) study is based on an unbalanced panel of 185 countries and the period between 2007 and 2011. With the least squares (OLS) method, this study shows deeper integration in GVCs. Participation in GVCs is measured by the share of value added in total exports. This participation is associated with better indicators of human capital and availability, while higher tariff levels and difficult business environments hamper it.

Tinta’s (2017) study shows that an increase in FDI and positive changes in intra-community trade are positively related to increasing backward participation. However, the level of development negatively affects insertion into GVCs. It also shows that changes in industrialization (manufacturing value added) and domestic value added per capita are associated with negative changes in the degree of backward integration, suggesting that there is a substitution between domestic value added and foreign value added.

Fernandes et al. (2020) measured participation by gross exports. The results suggest that factor endowments, geographic distance, political stability, trade policy, FDI, and domestic industrial capacity are all very important in explaining GVC participation.

The structural transformation of economies, characterized by a transition from agriculture to industry and services, is crucial for their integration into global value chains (GVCs). The literature review highlights that this development favours specialization in sectors with high added value, thus strengthening competitiveness in the market. At the same time, GVCs provide opportunities for technological learning and access to new markets for developing countries. The empirical analysis highlights the concrete impact of structural transformation on the participation of MENA countries in GVCs. It reveals the upscaling of certain industrial sectors results in ameliorating integration in GVCs. In addition, it shows how policies to promote innovation and economic diversification support this dynamic.

By linking these elements, we better understand how structural transformation shapes the position of MENA countries in GVCs. This explicit connection between the literature review and empirical analysis highlights the importance of this transformation as a driver of regional and global economic integration for the MENA region.

Data and Empirical Methodology

Data sources

We use panel data regression with 16 MENA countries for the period 2000-2018. The dataset comes from different sources. The variable of interest explained in this study is the position index of countries in GVCs, calculated based on new databases provided by the OECD and UNCTAD. However, the data is not available for a uniform duration for each country. Therefore, the number of observations is expected to vary across countries, leading to unbalanced panel data estimates.

Indicators of GVC participation

There is no precise measure to identify the positioning of economies in GVCs. The indicator proposed in recent literature is the GVC participation index based on new value-added trade measures. This indicator is calculated based on new databases provided by the OECD and UNCTAD.

The OECD (2024) developed the TIVA database, which provides data on the value added of gross exports, distinguishing backward and forward integration. UNCTAD-Eora (2024) database integrates more developing African countries and covering 187 countries from 1970 to 2011 with information on 25 to 500 industries depending on the country.

The main conclusion of the UNCTAD-Eora database is a set of principal GVC participation indicators that consider exports in foreign value added (backward integration) and exports in national value-added integrated into the production of other countries (forward integration).

A country's position in the GVC, influenced by its specialization, can fluctuate and affect the gains it derives from its participation, particularly with high-value-added activities such as research and development. The value-added content of gross exports is broken down into several categories: direct local value added (DVA), which is the direct contribution of an industry to production intended for export; indirect local value added (DVX), representing the indirect contribution of national suppliers; re-imported local value added (RVA), which is the domestic value-added re-imported goods from another country; and finally, foreign value added (FVA), which is the foreign value added embedded in gross exports.

Our key variable (IPC) is then defined as the position index in GVCs by Koopman et al. (2010) who reveal whether a country specializes in the early stages of the production chain or at the end. Thus, this index is calculated by the ratio of the use of intermediate goods supplied by a country in the exports of other countries and the use by the country of imported intermediate goods in its local production.

Data on structural transformation

For structural transformation variables, we use a set of indicators taken from the World Development Indicators (WDI) database of the World Bank (2024). Six indicators were selected: (1) the value added by agriculture as a % of GDP (VAJ-AGR), (2) the value added by industry as a % of GDP (VAJ-IND), (3) the value added by services as a % of GDP (VAJ-SER), (4) employment in agriculture as a % of total employment (EMP-AGR), (5) employment in industry as a % of total employment (EMP -IND), (6) employment in services as % of total jobs (EMP-SER).

Other data

To assess the strength of the independent link between structural transformation and GVC participation, we control for other potential GVC determinants in our regression.

More precisely, we consider the most used variables in empirical theory taken from the World Development Indicators (WDI) database of the World Bank defined as follows: foreign direct investment (FDI), gross fixed capital formation (GFCF), tertiary enrollment rate (EDU-TERT), users of the Internet as a % of the population (Int), the population growth rate which informs us about the fertility rate in the countries (POP).

We present the main descriptive statistics of the retained variables in Table 1.

Table 1
Descriptive statistics

Variables	*Number of observations*	*Mean*	*Standard deviation*	*Minimum*	*Maximum*
IPC	304	3.783	3.795	0.547	18.912
EDU-TER	275	0.102	0.098	0.785	1.195
EMP-AGR	304	0.198	0.181	0.011	0.621
EMP-IND	304	0.258	0.100	0.090	0.596
EMP-SER	304	0.544	0.544	0.277	0.824
GFCF	301	0.277	0.087	0.125	0.579
FDI	303	0.037	0.062	-0.009	0.551
INT	302	0.347	0.287	0.002	0.997
POP	304	0.028	0.030	-0.009	0.175
VAJ-AGR	297	0.070	0.059	0.001	0.249
VAJ-IND	276	0 .409	0.148	0.169	0.748
VAJ-SER	304	0.453	0.133	0.277	0.824

Source: Authors' work

Methodology

The principle of the empirical study is based on the following equation, and we estimate them with a two-step GMM-system estimator:

$$IPC_{it} = \beta_0 + \beta_1 IPC_{it-1} + \beta_2 X_{it} + \beta_3 ST_{it} + V_t + U_i + \varepsilon_{it} \qquad (1)$$

Where $IPC_{i,t}$ is the GVC Position Index for country i in period t, $IPC_{i,\, t-1}$ is the lagged value of $IPC_{i,t\text{-}1}$, X_{it} is the vector of baseline controls variables, ST_{it} represents the variables related to structural transformation; U_i represents the specific country effect, V_t represents the specific temporal effect, and ε_{it} is the error term.

Results and discussion

We now turn to the empirical results after introducing the variables and the model specifications. To begin with, we present the benchmark results for estimations in Table 2.

The regression coefficient estimates are generally consistent with previous theoretical and empirical analyses. However, in all our model specifications, the Hansen test cannot reject the null hypothesis that our instruments are valid. The coefficient associated with the lagged current account (L.IPC) has a positive coefficient and statistically significant impact on the position of the MENA region in GVCs.

Our empirical analysis indicated that the industrial sector (VAJ-IND) and (EMP-IND) positively affect the insertion in GVCs. Although the theory establishes a positive relationship between the industrial sector and GVC integration, our results are justified. The industrial sector appears to play a distinct role in GVC commerce because of its unique potential to cultivate domestic suppliers and enable countries such as China to advance value chains (by growing national added value). This result is consistent with the results of Fernandes et al (2020).

Table 2

The relationship between the position index in GVCs and structural transformation

Varibles	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
L.IPC	0.990***	1.034***	1.002***	0.979***	0.985***	0.979***
	(0.016)	(0.017)	(0.008)	(0.016)	(0.020)	(0.039)
FDI	0.014***	0.087***	0.034***	0.006***	0.007**	0.021**
	(0.005)	(0.019)	(0.006)	(0.002)	(0.004)	(0.010)
GFCF	0.503***	0.515**	-0.447**	0.325	-0.208	-0.023
	(0.163)	(0.602)	(0.195)	(0.393)	(0.559)	(1.143)
EDU-TERT	0.001	-0.269	0.147	0.294	-0.227	0.983**
	(0.051)	(0.259)	0.281	(0.229)	(0.251)	(0.396)
INT	0.232***	0.769***	0.248***	0.205*	0.363**	0.607***
	(0.038)	(0.207)	(0.091)	(0.108)	(0.143)	(0.223)
POP	-0.304	0.115**	0.399	0.913*	0.809***	0.268***
	(0.568)	(0.066)	(1.057)	(1.529)	(0.535)	(2.057)
VAJ-IND	0.595**					
	(0.273)					
VAJ-AGR		0.711***				
		(0.229)				
VAJ-SER			0.462**			
			(0.247)			
EMP-IND				1.203**		
				(0.498)		
EMP-AGR					-0.819***	
					(0.535)	
EMP-SER						-0.591***
						(1.479)
Constant	-0.176	-0.489**	-0.486**	-0.111	-0.325	3.313***
	(0.136)	(0.217)	(0.201)	(0.209)	(0.325)	(0.998)
Observations	234	253	258	258	258	258
Number of countries	16	16	16	16	16	16
AR2 (p-value)	0.284	0.339	0.277	0.218	0.231	0.215
Hansen (p-value)	0.812	0.430	0.726	0.332	0.477	0.506
F-stat (p-value)	0.000	0.000	0.000	0.000	0.000	0.000

*Notes: Hansen's over-identification test and the AR(2) test confirm the validity of delayed variables as instruments. Standard errors in parentheses. *** stands for p<0.01, ** for p<0.05, and * for p<0.1*

Source: Authors' calcalation

The coefficient value added in industry (VAJ-IND) is 0.595. This means that increased industrial value added is associated with improved integration into GVCs. A high value-added indicates robust regional industrial development that can deserve international standards, thus growing the attractiveness for integration into GVCs. Strong industrial development that satisfies international standards boosts integration into GVCs. The industrial employment coefficient (EMP-IND) is 1.203. This means that increased industry employment is linked with increased GVC integration. A high coefficient for industrial jobs suggests that the increase in the labour force in this sector is strongly linked to better integration into GVCs. This may be due to a skilled and abundant workforce that draws international companies to integrate these workers into their value chain. An

industrial sector with high employment can soak up economic shocks and fluctuations in global demand, ensuring stability and reliability which are crucial factors for GVCs in MENA countries.

The estimation results identify those structural changes in the services sector due to positive variable coefficients (VAJ-SER) and (EMP-SER) are enough to increase the position of MENA countries in GVCs. The service sector promotes the establishment of new ecosystems and joint structures in GVCs, decreases the fragmentation of the overall network structure, and enhances integration within GVCs. Our results are consistent with Gölgeci et al. (2021) and Du & Agbola (2024) conclusions.

The value-added coefficient in services (VAJ-SER) is 0.462. This means that an increase in value added in the services sector is associated with an increase in the integration of MENA countries into GVCs. A high VAJ indicates that local services are innovative and competitive, meeting international standards. This attracts GVC partners, promoting deeper integration. High-added value services contribute to the creation of new economic ecosystems, promoting international collaborations. By developing complex and interconnected services, MENA countries can reduce the fragmentation of GVC networks and improve their integration.

The coefficient of employment in services (EMP-SER) is -0.591. If increased employment is not accompanied by improved skills and productivity, this may undermine the ability of MENA countries to integrate effectively into GVCs. To improve their position in GVCs, MENA countries need to focus on improving the skills and productivity of employees in services, rather than simply increasing employment. Large numbers of employees in services without a corresponding increase in productivity or quality can harm the competitiveness of services, thereby reducing their attractiveness to GVCs. The quality of employment in services is as important as the quantity. To improve their position in GVCs, MENA countries need to focus on improving the skills and productivity of employees in services, rather than simply increasing employment.

Agriculture is regarded as a strategic sector, yet its impact on macroeconomic indicators lessens as countries' socioeconomic development progresses.

The coefficient of value added in agriculture (VAJ-AGR) is 0.711. An increase in agricultural value added indicates the adoption of more efficient technologies and practices. The coefficient of employment in agriculture (EMP-AGR) is -0.819. This means that a 1% increase in agricultural employment is associated with a 0.819% decrease in the integration of MENA countries into GVCs. High employment in agriculture is often associated with a labour force and low productivity. Agricultural employment does not contribute positively to the competitiveness necessary for integration into GVCs which require skilled labor and high-value-added jobs. The apparent contradiction between the negative effect of agricultural employment and the positive effect of agricultural value added can be explained by the distinction between quantity and quality. high employment in agriculture without productivity gains reflects an inefficient use of human resources and a reliance on traditional methods. An increase in agricultural value addition indicates qualitative improvements such as the adoption of advanced technologies, improved skills, and innovation.

Our panel regression results show that the role of FDI is found to be positive. our result is in line with Fernandes et al. (2020) result which found that FDI is positively associated with retrospective participation of these African countries in GVCs, both at the level of company analysis and the national level. This consistency persists when FDI is measured in values and when it is represented by foreign ownership of firms in the WBES data. By attracting FDI, countries can overcome the relative scarcity of capital, technology, and knowledge, and integration into the (GVC) can be achieved. The relatively low coefficient of Foreign Direct Investment (FDI) for MENA countries, with a value of 0.087, suggests that despite a positive association, the impact of FDI on integration into Global Value Chains (GVCs) for this region might be limited. Here is a detailed analysis of this coefficient: A low coefficient may indicate that MENA countries still have untapped potential to attract more FDI. This may be due to factors such as less attractive investment policies, political instability, or structural constraints in the economy.

For tertiary education (EDU-TERT), the coefficient on this indicator is positive and statistically significant. Governments are obliged to consider the level of education in their country, especially when they want to develop their position in GVCs. The implementation of international agreements requires the strengthening of flexibility and education of the workforce (Cattaneo et al. 2013). The positive and significant coefficient of 0.983 tertiary education indicates a strong correlation with integration into global value chains (GVCs). A well-educated, flexible, and innovative workforce is crucial for businesses and attracts foreign investment. Therefore, MENA countries prioritize tertiary education in their economic development strategies to improve competitiveness and attract investments.

The quality of infrastructure (INT) has a favourable impact on internet usage, indicating that communication infrastructure is crucial for both forward and backward GVC. Improved infrastructure in MENA nations may lead to increased participation in local value-added exports to direct and indirect trade partners. The findings agree with (Soliman & Elobolok, 2022; De Melo & Twim, 2020; Mouanda-Mouanda & Gong, 2019). The coefficient of 0.607 for Internet infrastructure indicates the importance of this factor in a country's integration into global value chains. For this reason, governments in the MENA area need to enhance communications infrastructure to boost their share of local value-added exports and fortify their standing in GVCs.

The findings investigate the role of investment effort (GFCF) in helping MENA countries participate in GVC. Speakman and Koivisto (2013) argue that the state must initiate simultaneous and coordinated investments in many sectors to support self-sustaining industrialization in a country and to improve its position in international trade. The coefficient of 0.503 for investment (GFCF) highlights the importance of this aspect in the participation of MENA countries in global value chains. Governments in the region must therefore prioritize policies aimed at stimulating productive investment in key sectors of the economy to strengthen the competitiveness and international integration of their industries.

Empirical results reveal that population (POP) has a positive and statistically significant effect on the comprehensive indicators of a MENA's GVC position. Larger nations have greater industrial capability, which lowers the GVC and increases the GVC participation by reducing the utilization of imported inputs relative to locally sourced inputs. The result is consistent with Wu et al (2024). The coefficient of 0.809 for population suggests that it has a significant effect on the position of MENA countries in the GVCs. Governments can use these findings to design policies to strengthen industrial capacity, promote local production, and boost domestic demand, thereby contributing to better integration into global value chains.

Conclusion

In this article, we study the determinants of countries'participation in GVCs. In particular, the study provides empirical evidence on factors affecting MENA countries' participation in GVCs. The study attempted to answer the impact of structural transformation on MENA countries' participation in GVCs.

From previous literature to our knowledge, few studies focus on the position of MENA countries in GVCs, and almost no study on the impact of structural transformation. So, our article, therefore, contributes to the literature by identifying the main GVCS determinants of MENA countries and the effect of structural change on our students' objectives over the period 2000-2018 using the GMM system method.

We contribute to the literature by showing that positive changes in services and industry (value added and employment) increase the insertion of the MENA region into GVCs. The model also proves the positive impact of the process of structural transformation of boosting the position of the Mena region on GVC. Specifically, industry and the service sectors play important roles. The results also highlight the importance of investing in the industrial sector to increase local value added and employment. For better integration in the CVM, MENA countries must develop specific strategies that can force local capacitance in the production industry and increase employment in this sector. Public policies concentrate on the most advanced technologies, professional training, and industry innovation. Also, MENA countries should encourage investments in high-value-added services, such as information technology, finance, and professional services, to improve the competitiveness and attractiveness of local services to international GVC partners. A focus on continuing education and skills development in the service sector is crucial. This ensures that increased employment translates into increased productivity and quality, thereby increasing the attractiveness of local services to GVCs. MENA countries need to foster service innovation and the integration of local service ecosystems with global GVCs to reduce the fragmentation of GVC networks and improve local service integration.

However, agriculture may not be a less effective means of boosting competitiveness in these nations. MENA countries must encourage the adoption of new agricultural technologies and practices to increase value-added and reduce dependence on a large but unproductive workforce. Train agricultural workers so that they can adopt and use new technologies effectively, thereby increasing productivity. MENA countries must also promote the transition of workers from agriculture to higher value-added sectors such as industry and services, to improve integration into GVCs.

The main finding proves that the model is significant and correlates with the theoretical model. FDI, GFCF, tertiary education, Infrastructure, and Market size are important determinants of GVCs. Given these results, our research highlights the following policy implications.

Firstly, MENA countries need to focus on attracting foreign direct investment (FDI) by putting in place attractive tax and regulatory incentives. They should also direct FDI towards manufacturing industries to promote participation in global value chains (GVCs). This will strengthen the competitiveness of their economies and further integrate their industries into the global economy. Secondly, MENA countries need to focus on human capital development and innovation. They must invest in training programs to develop workforce skills and encourage innovation through research and development (R&D) incentives. Also, these countries need to focus on human capital development and innovation. They must invest in training programs to develop workforce skills and encourage innovation through research and development (R&D) incentives. Thirdly, MENA countries need to improve their infrastructure to support their economic growth. This involves modernizing and expanding transport networks, ensuring reliable and sustainable energy supplies, and developing robust digital infrastructure. These measures are essential to facilitate trade and foster innovation and integration into the global economy. Finally, MENA countries need to increase the value-added of their service and industrial sectors in GDP. This can be achieved through targeted investments in technology, infrastructure, and innovation, as well as by implementing policies that support entrepreneurship, promote trade, and enhance the competitiveness of these sectors on a global scale.

This study is subject to certain limitations. Due to limited data availability, our analysis cannot incorporate innovation. We must therefore for this sample (MENA countries) determine the factors that improve their position upstream and downstream in the GVCs.

Future research could further explore the impact of institutional quality by examining governance, transparency, and political stability influencing MENA countries' participation in GVCs. A detailed exploration of specific industries helps identify sectors where MENA countries have a comparative advantage. The use of advanced modelling techniques, such as dynamic econometric models and machine learning approaches, would provide more robust results. Furthermore, analyzing the effects of trade policies and free trade agreements, as well as the impact of technological innovation and training policies, would be essential to understanding economic dynamics. Finally, regional comparative studies would help identify specific success factors and obstacles, thus providing strategic recommendations for better integration into GVCs.
Despite its limitations, this study adds value to the literature by presenting findings on the determinants of structural transformation.

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Vpliv strukturne preobrazbe na globalne vrednostne verige v državah MENA

Izvleček

Številne raziskave o gospodarskem prehodu ugotavljajo, da lahko strukturne spremembe v državah v razvoju, ki vključujejo prerazporeditev iz manj produktivnih v bolj produktivne sektorje, povečajo udeležbo v globalnih vrednostnih verigah (GVV). Vendar pa empričnega dela v zvezi s to trditvijo primanjkuje. Ta študija raziskuje dejavnike, ki vplivajo na udeležbo v globalnih vrednostnih verigah (GVV) v regiji Bližnjega vzhoda in Severne Afrike (MENA), pri čemer upošteva strukturne spremembe v obdobju 2000–2018. Z uporabo empirične raziskovalne metode sistemskih GMM (angl. system generalized method of moments) smo ugotovili, da strukturne spremembe pomembno prispevajo k izboljšanju položaja obravnavanih gospodarstev MENA. Storitveni in industrijski sektor imata ključno vlogo v teh državah. Ta študija predlaga, da če želimo okrepiti udeležbo podjetij v GVV, sta ključnega pomena dostop do interneta ter visoka raven terciarnega izobraževanja. Okolje in politike, ki spodbujajo domače naložbe in naložbe v tujini, so prav tako pomembni. Študija navaja pozitivne trgovinske in finančne povezave ter število prebivalcev kot pomemben dejavnik pri spodbujanju tega položaja.

Ključne besede: Globalne vrednostne verige, GMM, MENA gospodarstva, strukturna transformacija

Diagnosing the Issue: Understanding and Combating Medical Brain Drain in Bosnia and Herzegovina

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Abstract

This study investigates emigration patterns among healthcare professionals in Bosnia and Herzegovina, examining the underlying reasons for emigration and proposing actionable solutions to curb this trend. A mixed-methods approach is employed, combining quantitative data from surveys administered to medical and health studies students with qualitative insights from interviews with governmental officials, language educators, and statistical agencies. The findings reveal significant dissatisfaction with socio-economic and political conditions, prompting healthcare professionals to seek opportunities abroad. Major reasons for going abroad include political instability, low wages, and poor working conditions, while better pay and career opportunities are attracting factors. While the study is limited by the lack of comprehensive official statistics on emigration, the implications of this research emphasize the need for policy interventions aiming to improve local working conditions and reform educational systems. The study provides valuable insights for policymakers and stakeholders to effectively address the issue of brain drain.

Introduction

In the global context migration can be defined as the movement of a person either across an international border or within a state for more than one year irrespective of the causes, i.e., if it is voluntary or not and irrespective of the means (IOM, 2019). However, migrations are not a new phenomenon. Throughout history people have always migrated, sometimes in groups or as individuals and it was due to multiple reasons. They were running away from war or from poverty, political instabilities, or religious intolerance, or they were just looking for better workplaces and better opportunities for themselves and their families (ETF, 2022). Today migration of the workforce has become one of the most dominant forms of migration trends as knowledge has become one of the most valuable resources in economies (WFD, 2020).

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Migrations of the people from the former Yugoslavia to Western European countries began in the 1960s, as a result of the agreement with the leaders of Austria, Sweden, Germany, and France. The trend lasted up to 1978 after the gradual decrease was recorded. Nevertheless, war led to an increase in migrants and refugees and this trend lasts until today, and there are no signs that there will be significant changes (WFD, 2020). As the migration trend and related issues deepened, many countries around the globe also faced the phenomenon of the brain drain. Brain drain is generally defined as a massive and permanent outflow of highly qualified individuals (researchers, academics, and scientists) from home to foreign (or so-called 'receiving') countries (Horvat, 2014).

Focusing on the health sector, employment opportunities are recording its strongest growth over the past few decades, and the health sector itself is absorbing about 10% of the workforce (OECD, 2019). Despite the rising employment, shortages are already evident (Mara, 2020). The European health system is facing the issue of the retirement of baby boomers, the rise in life expectancy and the ageing of the population which is further increasing the demand need for health professionals (Jurić, 2021a). These supply and demand imbalances are generating an endless battle among countries to attract health professionals. Developed countries are fighting this issue by immigrating health workers, especially from Western Balkan countries and they are benefiting at the expense of poorer countries (Glinos, 2015; Mara, 2019; 2023). The phenomenon of the medical brain drain is a very complex issue, and it is related to the large scope of economic, institutional but also linguistic, cultural and factors of geographical proximity (Adovor et al., 2019). In addition, due to the lack of available data among Western Balkan countries (Jurić, 2021b) researchers' ability to investigate and better understand this phenomenon is severely limited.

Despite limited official statistics for Bosnia and Herzegovina (BiH), there are available estimates. Nearly half of those born within its borders, or 1.6 million, now live abroad compared to 3.2 million inhabitants in Bosnia and Herzegovina (Bosnia and Herzegovina, Agency for Statistics estimate) (Halilović et al., 2018). In addition, the country has recently experienced an alarming scale of emigrations with almost half a million people that left the country since 2013 according to the research conducted by the Union for Sustainable Return and Integration of BiH (2019). Emigrations are mostly linked to the health and IT sector that are considered as key ones for overall country human capital, development, and productivity growth (IOM, 2022). Alarmingly, the country ranks among the highest for population loss, at 1.5% annually (VOA, 2022). BiH is a country with the 'lowest low' fertility in the world (1.25), followed by prominent levels of migration and population ageing, as well as deeply rooted gender inequalities and it is expected that by 2070, such demographic trends and inequalities will lead to a reduction of the total population by over 50% (UNFPA, 2020). Among the identified drivers of emigration, political factors are considered the most influencing ones followed by a lack of employment opportunities, wage differences, an inefficient health system and an education system that does not meet the demand of the labour market (IOM, 2022). If we focus on the emigration costs of skilled and young people, WFD (2020) study results imply that due to the BiH inability to prevent the departure of one citizen through provision of the productive employment, the country GDP loss is approximately 21,000 euros per person.

Considering the adverse impact of emigration on Bosnia and Herzegovina's socio-economic landscape, particularly in the health sector, a thorough analysis of current emigration patterns and their effects is crucial. The main focus of this research is the substantial and persistent emigration of healthcare professionals from Bosnia and Herzegovina. This exodus poses a considerable threat to the integrity of the nation's healthcare infrastructure and its socio-economic stability. Despite heightened awareness of this issue, a comprehensive understanding of the specific push and pull factors that motivate healthcare workers to leave remains elusive. Furthermore, there is a recognized necessity for evidence-based strategies to mitigate this trend. This study addresses these gaps by analysing the reasoning behind the emigration of healthcare professionals, evaluating the influence of socio-economic and political conditions, and proposing actionable solutions to retain essential healthcare talent within Bosnia and Herzegovina. Accordingly, the main aim of this article is to provide an overall analysis of current emigration trends and consequences and to provide solid ground for future strategies, policies and feasible solutions that could prevent this trend.

On migration trends in Bosnia and Herzegovina

The 2013 census listed Bosnia and Herzegovina's population at around 3.5 million, but estimates from some sources indicate it might be under 3 million (ASBIH, 2018). The substantial Bosnian diaspora, with 1.6 million people, plays a crucial socio-economic role, marking it as a key macroeconomic factor.

Accurate data collection on labour migration in the country presents an everlasting challenge, primarily due to the fragmented responsibilities among different ministries at the state level. The Ministry of Security is tasked with aggregating migration data, while other institutions are mandated to furnish pertinent information to this central authority. Annually, the Ministry conducts a comprehensive analysis of the country's migration profile.

According to available data from the Ministry of Security of BiH, in the period from 2016 to 2020, almost 20 thousand people deregistered their residences (Table 1). Data for 2021 and 2022 are still not available, but according to unofficial data, the COVID-19 pandemic has led to a drop in the number of changes in residence registration. The most common countries for emigration from Bosnia and Herzegovina are European Union countries, primarily Germany and Austria, followed by Slovenia and Croatia.

Bosnia and Herzegovina's recent two decades have seen unprecedented and complex migration flows, with worker mobility being just one aspect of this multifaceted phenomenon. This raises the question: why are people leaving? Research indicates that a mix of push and pull factors reveals the primary reasons behind the emigration of health workers from BiH.

Table 1
Five-year review of residence registration changes in Bosnia and Herzegovina

Year	*2016*	*2017*	*2018*	*2019*	*2020*	*TOTAL*
Number of residence changes	4,034	4,270	4,113	4,044	3,489	**19,950**

Source: Ministry of Security of BiH

Push Factors: Researchers highlight economic, political, and social factors as the main drivers prompting emigration from BiH. Poor working conditions, corruption, nepotism, low-quality public services, and the aspiration to provide a better future for their children emerge as crucial push factors. Studies by Domazet et al. (2020) and Čičić et al. (2019) underscore the consistent prevalence of these factors, with variations in emphasis across regions.

Pull Factors: Primary pull factors motivating people to leave Bosnia and Herzegovina encompass better opportunities abroad (Mara, 2023), a supportive legal framework, family reunifications, and various forms of network migration. Efendić et al. (2014) assert that pull factors outweigh push factors as drivers of emigration, with better opportunities abroad being the dominant reason cited by respondents (ETF, 2022). Family reunification, marriage, education, and improved job prospects also play pivotal roles, signalling a shift from push to pull factors (Halilović et al., 2018; Kadušić and Suljić, 2018).

Health Workforce Drain: Factors and Implications of Nurse Migration from BiH

The exodus of healthcare professionals from Bosnia and Herzegovina (BiH) significantly challenges its health system, affecting both service accessibility and quality. Skilled practitioners are leaving for better pay, working conditions, and growth opportunities unavailable locally, creating a persistent supply-demand imbalance in health services.

According to data from the Federal Bureau of Statistics, nurses/technicians are educated at five public and four private colleges that have an organized study program in health care/nursing. In the 2020/2021 school year, 1.651 students were enrolled in the study program at public faculties, while 330 students were enrolled at private faculties in the same period. In 32 secondary schools that have a course for nurses/technicians, in the 2020/2021 school year. 1.616 students were enrolled. The education of an individual in Bosnia and Herzegovina, including primary, secondary, and higher education, costs around EUR 29,000 (IOM, 2021). The departure of over 5,000 nurses in the past seven years alone has had economic repercussions for the country. The loss of healthcare professionals and the investments made in the healthcare system harm Bosnia and Herzegovina's economy and economic development. The burden of high education costs, population ageing, and expensive healthcare systems remains in Bosnia and Herzegovina, while professionals spend their money in other countries.

It is important to mention that a continuously increasing supply of graduates from medical secondary schools in Bosnia and Herzegovina is observed. The average annual increase of 403 graduates is expected to lead to about 6,220 new graduates from 2020 to 2025. Thus, the inflow of nurses to the labour market in Bosnia and Herzegovina is expected to create a significant surplus and hence an increased offer for these particular labour mobility programs (IOM, 2021).

However, even though the number of educated health personnel is rising, they are not staying in the country. There are unofficial statistics according to which between 150-200 medical personnel leave Bosnia and Herzegovina every year. There is a similar pattern as with general emigration of the population, where the most common immigration destinations are EU countries such as Croatia, Slovenia, Germany and Austria. Germany emerges as the primary destination for health workers, particularly young nurses, as highlighted by a report from the International Organization for Migration (IOM) in 2022. Following this, the emigration of health workers and nurses to neighbouring countries like Serbia and Croatia tends to be temporary. In contrast, the migration to European Union (EU) countries such as Germany, Austria, and Slovenia is predominantly permanent. This trend has raised concerns among health workers and patients, with communities facing the imminent risk of being left without any healthcare professionals. The emigration of healthcare workers is further intensified by the decline in the total population, leading to a reduced demand for healthcare professionals, especially in primary healthcare.

Many hospitals and healthcare facilities are finding it difficult to meet patient demands due to an absence of medical staff, especially qualified nurses with extensive experience. As a result, the healthcare system is currently under strain and patients must wait longer for treatment. This issue has become particularly evident during the COVID-19 pandemic (Jurić, 2021a), when doctors with limited or no experience were tasked with caring for critically ill COVID-19 patients. All respondents from an investigation done by IOM in 2021 unanimously agreed that highly experienced doctors and nurses, who had accumulated years of valuable knowledge and expertise, are leaving the country. While it may be possible to fill the numerical gaps left by their departure, it is impossible to compensate for the extensive knowledge and experience they acquired over the years. (Domazet et al., 2020).

Attempts to mitigate the brain's migration

Health authorities at all levels in Bosnia and Herzegovina have failed to acknowledge emigration as a challenge to the health sector's development, neglecting to address the detrimental effects of health worker emigration. It seems that they do not recognize or underestimate the potential negative impact of emigration on the health system, and the quality and availability of health care. Policy documents related to the development of the health sector and the provision of health care do not address health workers' emigration issues at all.

Existing research and policy studies on emigration from Bosnia and Herzegovina (Vračić, 2018; Čičić et al., 2019; Domazet et al., 2020; Begović et al., 2020) and the Bosnia and Herzegovina diaspora (Efendić et al., 2014; Halilovich et al., 2018) offer a range of policy recommendations to curb emigration and mitigate its negative effects. These studies offer guidelines for policymakers to try to mitigate the problem of the brain drain of skilled workers.

Čičić et al. (2019), Domazet et al. (2020), and Begović et al. (2020) focus on policy recommendations targeted at Bosnia and Herzegovina authorities. They propose social and economic reforms to improve living standards, create a better business environment, and enhance the retention of highly skilled personnel. These reforms include improving access to housing, education, and healthcare, strengthening the country's positive image, implementing targeted retention policies, and improving working conditions in the public and private sectors. Domazet et al. (2020) also advocate for political reform towards Euro-Atlantic and global integration, social justice reforms, environmentally sustainable economic growth, and macroeconomic reforms to increase wages and productivity.

Begović et al. (2020) prioritize enhancing the quality of public services and combating corruption to reduce emigration, particularly among the youth. Furthermore, both Domazet et al. (2020) and Čičić et al. (2019) recommend an improved diaspora engagement strategy. This involves enhancing institutional cooperation with the diaspora, supporting educational institutions, strengthening cultural and humanitarian cooperation, and regulating the employment status and dual citizenship of emigrants. They also emphasize the importance of systematic data collection on emigration through cooperation with receiving countries and Eurostat. Halilović et al. (2018) suggest establishing a State-level institution for diaspora affairs, mobilizing diaspora investments, facilitating political participation, promoting cultural exchanges, and advancing diaspora tourism to mitigate the negative effects of emigration.

These policy recommendations provide valuable insights and potential strategies for curbing emigration, improving living conditions, and engaging the diaspora to mitigate the brain drain in Bosnia and Herzegovina.

Methodology

Understanding the reasons for the emigration of health personnel from the countries of the Western Balkans, with a special focus on Bosnia and Herzegovina, is crucial to enable the government to adequately respond to this escalating challenge. As part of this research, quantitative and qualitative studies were carried out to determine the primary factors that encourage emigration, as well as investigate the possibility of the return of the emigrated workforce to Bosnia and Herzegovina.

The quantitative analysis included secondary medical school students and students of medical and health studies, with the sample selected using the random sampling method. For this research, a customized questionnaire inspired by existing instruments was developed, which contains 21 questions divided into four basic categories: socio-demographic data (Santrić-Miličević et al., 2014), attitudes towards the current situation in Bosnia and Herzegovina (Šeherčehajić & Ramić, 2022), motives and reasons for emigration (Santrić-Miličević et al., 2014), and steps taken in the emigration process (Suciu et al., 2017). The questionnaire was distributed to 39 secondary schools and 8 higher education institutions, resulting in 102 fully completed responses.

After the quantitative analysis, a qualitative research segment followed with a focus on an in-depth understanding of the experiences and perspectives of key actors related to the emigration of health personnel. To get a comprehensive picture, different groups of participants were interviewed and using the method of semi-structured interviews, the aim was to collect detailed information about the perception and experiences related to emigration, including the challenges faced by health workers, the potential benefits and risks of emigration, as well as the perspectives of a sustainable return. They also discussed the role of educational institutions in the preparation of health workers for work abroad, the influence of government policies on emigration trends, and the strategies that health institutions and employment agencies use to retain talent within the country or facilitate the emigration process.

This approach enabled a holistic view of the phenomenon of medical brain drain, integrating quantitative data with qualitative insights to understand the complex motives and processes behind the decision to emigrate healthcare workers from Bosnia and Herzegovina.

Attempts to mitigate the brain's migration

Characteristics of the population

Table 2 shows the socio-demographic characteristics of the respondents. Most respondents are male (56%), while slightly less than half (44%) are female. The most numerous age group is that of 19 to 24 years, which makes up 49% of the sample, while young people aged 16 to 18 are represented by 39%. There are fewer of those in the 25-30 age group, who make up 12% of the sample.

In terms of education, the majority of respondents are students at the Faculty of Health Studies (47%), followed by medical students in high school (45%). Medical faculty students make up a smaller part of the sample with 8%.

When it comes to the household, the majority of respondents (37%) come from households with 4 members, while the same percentage belongs to households with more than 4 members. Smaller groups are those who live alone (3%) and those who live in households of 2 members (5%). Those who come from households with 3 members make up 27% of the sample.

As for household income, none of the respondents comes from a household with an income of less than 500 KM. A smaller part of the sample (10%) has an income between 500 and 1,000 KM, while the majority of respondents come from households with incomes between 1,000 and 2,000 KM (36%) and 2,000-3,000 KM (38%). Households with an income of more than 3,000 KM make up 16% of the sample. According to the data of the Agency for Statistics of Bosnia and Herzegovina, the average net salary in 2023 was 1,263 KM, and the consumer basket was 2,768 KM.

In the analysis of respondents' income in relation to the average net salary and expenses for the consumer basket, we notice that 36% of the respondents have incomes above the average salary, but face financial challenges due to expenses close to the consumer basket. An additional 38% of respondents can cover the costs of the consumer basket but with little room for financial flexibility. On the other hand, 10% of respondents with incomes at the lower limit are significantly below average, which could encourage thinking about emigration for better financial opportunities. In contrast, 16% of households with an income of more than 3,000 KM enjoy significant economic stability, exceeding the average salary and cost of living.

Satisfaction with the situation in Bosnia and Herzegovina and desire to emigrate

When the respondents were asked about satisfaction with the situation in Bosnia and Herzegovina (Table 3), 46% of them expressed dissatisfaction, pointing out political instability, corruption, socio-economic situation, inadequate education system, as well as poor working conditions and limited opportunities for professional development as key reasons. A significant majority of respondents (70.59%) were thinking about leaving Bosnia and Herzegovina, while only about a third planned to stay and build a future within the country. Approximately a quarter of respondents (29.41%) are ready to leave the country if they do not find employment within a year, while a significant part (38.24%) decides to emigrate immediately after completing education or after specialization (20.59%). Also, slightly more than half of the respondents (54.90%) declared that the type of their emigration would be permanent.

Table 2

Sociodemographic characteristics of the respondents

Sociodemographic Characteristics		*N*	*%*
Gender	Male	57	55.88%
	Female	45	44.12%
Age Group	16-18	40	39.22%
	19-24	50	49.02%
	25-30	12	11.76%
Education	Medical student at secondary school	46	45.10%
	Student at the Faculty of Medicine	8	7.84%
	Student at the Faculty of Health Studies	48	47.06%
Household members	Living alone	3	2.94%
	2 members	5	4.90%
	3 members	28	27.45%
	4 members	38	37.25%
	more than 4 members	28	27.45%
Household income	Less than 500 KM	0	0.00%
	500 – 1,000 KM	10	9.80%
	1,000 – 2,000 KM	37	36.27%
	2,000 – 3,000 KM	39	38.24%
	More than 3,000 KM	16	15.69%

Source: Authors' calculation

Table 3

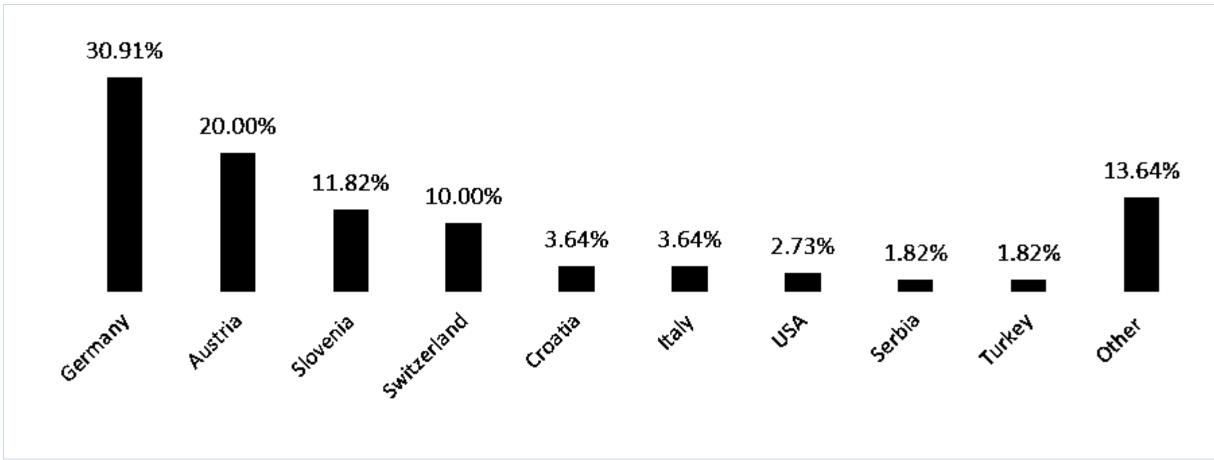
Satisfaction with the situation in the country and intention to emigrate

Variables	*Responses*	*N*	*%*
Situation in Bosnia and Herzegovina	I am extremely dissatisfied	15	14.71%
	I am mostly dissatisfied	32	31.37%
	I am neither dissatisfied nor satisfied	33	32.35%
	Mostly satisfied	7	6.86%
	Extremely satisfied	2	1.96%
	I don't know	13	12.75%
Willingness to leave	Yes	72	70.59%
	No	30	29.41%
Emigration timeframe	Immediately after finishing high school/college	39	38.24%
	Immediately after completing the specialization	21	20.59%
	Within a year if I fail to find a job	25	24.51%
	Without response	17	16.67%
Type of emigration	Permanent	56	54.90%
	Temporary	46	45.10%

Source: Authors' calculation

Analyses of demographic characteristics on the tendency to emigrate did not show statistical significance, suggesting that willingness to emigrate exceeds differences in gender, education and socioeconomic status. This points to the conclusion that the decision to emigrate is more motivated by the general situation in the country than by the personal circumstances of the respondents. The most popular countries for immigration (Figure 1) are mainly Central European countries such as Germany (30.91%), Austria (20%), Slovenia, and Switzerland (11.82%). As the main motives for emigrating to the mentioned countries, the interviewees cited better working conditions, greater opportunities for professional development, quality of life, gaining new experiences and the impossibility of finding employment in Bosnia and Herzegovina.

Figure 1
The most popular countries for immigration



Source: Authors

Actual Emigration Strategies

Determination and actual preparation to leave are different; an expressed desire to emigrate does not necessarily imply the realization of that plan. Therefore, we analysed the specific measures taken by the respondents in connection with the planning of emigration from Bosnia and Herzegovina. The results of the Chi-square analysis in Table 4 indicate that certain preparations for emigration have a significant connection with the respondents' intention to leave Bosnia and Herzegovina. In particular, enrolling in a foreign language course ($p = 0.019$), certifying a diploma and collecting the necessary documentation ($p = 0.046$), talking to a doctor from abroad ($p = 0.005$), and leaving the country with a family or friend ($p = 0.006$) and independent departure ($p < 0.001$) showed statistically significant links with migration intention. In contrast, additional professional preparation, searching for a job online, visiting job fairs, accepting a lower-than-qualified position, and working outside the health sector did not show a significant statistical association with emigration intention. These findings highlight which specific actions can be indicators of the respondents' real willingness to emigrate.

Results of qualitative analysis

Following the quantitative analysis, a qualitative research phase aimed at deeply understanding the experiences and viewpoints of key stakeholders regarding health personnel emigration was conducted. To gain a holistic view, interviews were held with diverse participants, including government officials, foreign language centre staff, young health professionals abroad, medical students overseas, health institution managers and employees, and private employment agency representatives.

Medical students and workers in Austria/Germany

We interviewed final-year students studying abroad to understand why they left Bosnia and Herzegovina instead of pursuing medical studies locally. They identified several push factors: low salaries, substandard working conditions, limited career advancement and training opportunities, corruption, nepotism, and political instability. These medical professionals sought better professional development, training opportunities, employment flexibility, and security abroad. They were particularly drawn to countries with stronger healthcare systems offering permanent positions. The pervasive political issues, corruption, and nepotism back home, coupled with poor pay, were major deterrents driving their decision to seek opportunities overseas.

Table 4

Tabular Comparison of Departure Readiness and Emigration Intentions

Preparations for emigration		*Migration intention*		*χ 2*	*p*
		Yes	*No*		
Enrolled in a foreign language course	Yes	59	18	5.5115	0.0002
	No	13	12		
Done additional professional preparation	Yes	46	19	0.0028	0.0096
	No	26	11		
Certified diploma and necessary documentation	Yes	57	18	3.9969	0.0005
	No	15	12		
Searched for employment online	Yes	46	15	1.6993	0.0019
	No	26	15		
Visited fairs offering employment in the health sector	Yes	39	16	0.0059	0.0094
	No	33	14		
Talked to a doctor from abroad	Yes	48	11	7.8158	0.0001
	No	24	19		
Left the country with a family or friend	Yes	50	12	7.7021	0.0001
	No	22	18		
Left the country alone	Yes	54	11	13.4615	0.0000
	No	18	19		
Accepted a lower job position than qualified	Yes	25	6	2.1696	0.0141
	No	47	24		
Worked outside the health sector	Yes	27	9	0.5216	0.0047

Source: Authors' calculation

We inquired about the differences in medical education, training, working conditions, and employment opportunities between Bosnia and Herzegovina and Austria/Germany. Respondents noted that despite challenges such as doctor shortages and high workloads in Austria, the situation is more manageable than in the Balkans. In Austria, doctors, especially specialists, enjoy better pay and employment without political strings. The educational environment is more supportive, with a well-structured curriculum focusing on practical skills. Employment opportunities are also more abundant in Austria and Germany, with a seamless blend of practical and theoretical learning, flexible schedules, and a wide range of elective subjects.

In Austria, work hours, leave, and overtime are fairly compensated and legally regulated. Another key difference highlighted was the freedom in choosing specializations in Germany and Austria, contrasted with the restrictions and potential financial penalties in BiH. This has led many to seek better education and work environments, exposure to different cultures, and opportunities to broaden their perspectives.

In our inquiry about initiatives or programs that could encourage healthcare workers to remain and work in Bosnia and Herzegovina, respondents offered diverse perspectives. One respondent cited a lack of familiarity with the working conditions of medical staff in Bosnia and Herzegovina and found it challenging to provide specific suggestions, as their decision to leave at 18 was solely for educational purposes. However, they recommended increased practical training and clinical exposure, communication exercises with patients and colleagues, and simulations of various clinical scenarios and emergencies. Another respondent expressed scepticism about the feasibility of such programs, noting that many remain only on paper. They emphasized that implementing meaningful change would require a complete overhaul of the healthcare leadership, which, in the case of Bosnia and Herzegovina, would entail a protracted and challenging political process. Other respondents suggested more flexible working conditions, student exchanges during secondary and tertiary education, as well as the adoption of newer technologies to aid in their work.

In exploring if Bosnia and Herzegovina's healthcare can leverage the expertise of expatriate healthcare workers, opinions were mixed. Some advocated for engaging these professionals through seminars and workshops to exchange experiences and apply their skills and new methods back home if improved and politically neutral work conditions were provided. However, others doubted the feasibility of reintegrating expatriates into the local healthcare system, stressing the importance of curbing the youth and professional exodus instead.

Regarding the potential return to Bosnia and Herzegovina, many expressed reluctance, doubting the country's ability to create a conducive socio-economic environment for professionals to return and thrive. Factors like family and homeland ties were deemed less compelling compared to the advantages of developed healthcare systems abroad. One respondent, adapted to the medical system and life in Austria, preferred to specialize in the EU and contemplated returning to Bosnia only for personal reasons, possibly to start their practice.

Language institutions

Results of interviews conducted with language institutions reveal certain trends. While exact statistics were not provided, institutions reported a decline in enrolment in adult courses. The primary motivation for learning German was identified as migration to Germany, driven by factors such as employment, family reunification, or education. Institutions do not typically collect data on students' professions or educational levels at the time of enrolment, as these are not considered relevant to the registration process.

It was estimated that approximately 80% of adult participants in language courses are learning German intending to migrate to Germany. Among these participants, it is believed that around 60% are seeking to emigrate as qualified labour, while the remaining participants are aiming to reunite with family members in Germany. Additionally, the Goethe-Institut offers specialized courses tailored for specific projects aimed at ensuring a qualified workforce in Germany, particularly focusing on professions in medicine and crafts, such as plumbing, electrical work, and metalworking.

Statistical agencies

We have conducted semi-structured interviews with representatives of statistical agencies in Bosnia and Herzegovina to understand the intricate hierarchy of these agencies. We found that while the main statistical agency is the Statistical Agency of Bosnia and Herzegovina, there are also employment agencies at the entity level, such as the Employment Bureau of Republika Srpska and the Federal Employment Institute, which contribute to the decentralization of governance and pose challenges for information and statistics coordination.

The Employment Bureau of Bosnia and Herzegovina clarified that labour and employment policy is managed by entities and cantons due to the country's constitutional structure, limiting its role in the domestic labour market. It relies on entity bureaus and the Brčko District for labour data, including unemployment records and analysis. Its main international role involves mediating employment for secondary medical school graduates in Germany, a program active since 2013. Interest in this migration has waned post-COVID-19, reducing applications and placements. The Bureau lacks data on medical personnel emigration to other countries, as it doesn't mediate these moves and departing individuals aren't required to report their exit.

Furthermore, they have data on the number of medical workers registered as unemployed who are eligible for mediation through their program (general and pediatric nursing) from entity employment bureaus. The mediation structure to Germany since 2017 has been: FBiH 84%, RS 15%, and BD BiH 1%. Males account for 35%, while females account for 65%.

Ministries of education and healthcare

We contacted education ministries for information on enrolment policies in medical education. The Ministry of Education and Culture of the Republika Srpska did not reply. The Federation of Bosnia and Herzegovina directed us to cantonal authorities, and the Sarajevo Canton shared that enrolments in secondary medical schools have been stable over the last five years.

When asked about future enrolment plans, the Sarajevo Canton intends to analyse policies with local employer associations to align with market needs. They deny that their educational policies drive healthcare workers abroad, attributing the exodus to better job prospects and conditions in Western Europe. The Sarajevo Canton government acknowledges the issue and sees increasing healthcare salaries and staff employment as key to improving services and retaining workers.

Conclusion and recommendations

For decades, Bosnia and Herzegovina has witnessed a significant pattern of emigration. This initial wave gradually evolved into a consistent flow of economic migrants heading to wealthier countries, motivated by the prospect of better living standards and quality of life. In recent years, the country has experienced a shift in migration trends, notably with an increasing number of young individuals leaving with no plans to return. This shift poses profound implications for the country's social, economic, and demographic landscape, signalling a critical phase in its migration history.

This study utilized a mixed methods approach to examine emigration patterns in Bosnia and Herzegovina's health sector. It uncovered that a significant number of healthcare workers are contemplating leaving due to dissatisfaction with political instability, corruption, and poor socio-economic conditions. While a minority hopes to stay and make a future in the country, others plan to emigrate soon after completing their education or specialization, often viewing this move as permanent. The desire to leave was consistent across various demographics, highlighting that the decision to emigrate is influenced more by national circumstances than by individual situations. Central European countries are the preferred destinations, selected for superior employment conditions, quality of life, and professional development opportunities.

The qualitative research confirms Bosnia and Herzegovina's surplus of medical personnel, leading to their emigration. Notably, nursing ranks high among professions with high unemployment rates. However, insights from medical professionals abroad suggest a significant potential to improve local healthcare through their Western-acquired knowledge and skills. Implementing incentives such as grants, subsidies, and supportive conditions for opening private practices could encourage their return, enhancing the healthcare sector and benefiting the overall population.

In summary, the theoretical framework presented is linked to the empirical findings of this study. The research highlights a significant gap between the working conditions and the socio-economic environment in Bosnia and Herzegovina compared to the countries that attract these professionals. This supports the established theories about the push and pull factors, where unfavourable conditions in the home country (push factors) and favourable conditions in the destination countries (pull factors) encourage emigration. The empirical findings are consistent with these theoretical concepts (Efendić, 2014), showing that political instability, low wages, and poor working conditions in Bosnia and Herzegovina are significant push factors, while better compensation, career prospects, and improved working conditions abroad are strong pull factors.

The practical implications of this research provide concrete guidelines for policymakers to develop strategies to curb brain drain. This could involve specific proposals for reforms in the healthcare and education systems, such as improving working conditions, increasing salaries, and ensuring opportunities for professional development. Enhancing the workplace environment and aligning educational policies with labour market demands could significantly reduce the emigration of healthcare workers. The following findings are in line with existing literature, among others: (Efendić et al., 2014; Halilović et al., 2018, Čičić et al., 2019; Domazet et al., 2020; Begović et al., 2020).

The limitations include the lack of comprehensive official emigration statistics, which may affect the accuracy and scope of the findings. Additionally, the sample of respondents might be limited and not necessarily representative of the entire population of healthcare workers. Future research should involve longitudinal studies to monitor the effects of implemented policies on brain drain. Comparative studies between different countries would also be useful to identify best practices in retaining healthcare professionals. Additional research could include a more detailed analysis of the specific factors contributing to the emigration of particular groups of healthcare workers and the effectiveness of various intervention strategies.

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Diagnostika problema: Razumevanje in boj proti begu možganov med zdravstvenimi delavci v Bosni in Hercegovini

Izvleček

Ta študija preučuje vzorce emigracij med zdravstvenimi delavci v Bosni in Hercegovini, analizira temeljne razloge za emigracijo in predlaga izvedljive rešitve za omejitev tega trenda. Uporabljen je kompleksni raziskovalni pristop, ki združuje kvantitativne podatke iz anket, opravljenih med študenti medicine in zdravstvenih ved, ter kvalitativne vpoglede v intervjuje z vladnimi uradniki, jezikovnimi pedagogi in statističnimi agencijami. Ugotovitve razkrivajo veliko nezadovoljstvo s socialno-gospodarskimi in političnimi razmerami, kar zdravstvene delavce spodbuja k iskanju priložnosti v tujini. Glavni razlogi za odhod v tujino (dejavniki odbijanja) so politična nestabilnost, nizke plače in slabe delovne razmere, medtem ko boljše plačilo in karierne priložnosti delujejo kot dejavniki privlačevanja. Čeprav je študija omejena zaradi pomanjkanja celovitih uradnih statističnih podatkov o emigracijah, poudarjajo implikacije tega raziskovanja potrebo po političnih intervencijah, katerih cilj je izboljšanje lokalnih delovnih pogojev in reformo izobraževalnega sistema. Študija ponuja dragocene vpoglede za oblikovalce politik in drugih deležnikov za učinkovito reševanje problema bega možganov.

Ključne besede: emigracijski trendi zdravstvenih delavcev, socialno-gospodarski izzivi, beg možganov, Bosna in Hercegovina

Application of Digital Tools Assessing Information Risk in the Control Activity

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Abstract

The paper discusses digitising the leading information flows in control activities. The focus is on applying technology and its integration in implementing forms of control. The aim is to argue for practical approaches to minimise information risk in pre-ongoing and post-control to ensure the accuracy and veracity of financial and non-financial information. Evaluating the effectiveness of data ensures integrity, consistency, validity, completeness and timeliness - applying digital risk assessment tools to control activities. To prove the hypotheses, the cross-tabulation method is applied, focusing on the relationship between the use of verification, inspection, audit, revision and supervision, and the digital tools applied in the control institutions implementing financial control in the public sector of the Republic of Bulgaria. The study evaluates the effectiveness of data management practices, emphasizing the importance of maintaining integrity, consistency, validity, completeness, and timeliness. The study acknowledges that the use of advanced digital risk assessment tools could improve the effectiveness of control activities in various areas. The approach supports the sustainability of financial control and is in line with modern management standards, promoting a culture of accountability and precision in the management of public finances.

Introduction

The paper examines the impact of digital tools on the assessment of information risk in control activities by analyzing and evaluating their role in implementing forms of control. Risk assessment is part of the overall process related to organisations' integrated risk management framework (Kostova, Krumov, & Vatkova-Milusheva, 2020). The framework comprises a set of policies and procedures through which senior management controls the compliance of activities and operations with regulatory requirements at different hierarchical levels. The risk assessment identifies the key and "critical points" in the

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processes subject to control. Developing an adequate risk assessment requires that external and internal risks are examined, identified, and ranked in terms of their impact and effect to mitigate them adequately to an acceptable level (Eliana, Astuti, Ivana, Suryafatma, & Juned, 2023).

The leading resource used in a control system is information; therefore, control bodies should apply tools for identifying and assessing information risk. Risk assessment methods and their impact on the information flow feeding the companies' business processes are examined (Eboigbe, Farayola, Olatoye, Nnabugwu, & Daraojimba, 2023).

The article is focused on financial control and auditing, as the goal is to analyze the application of digital tools in the control process to reduce information risk. The authors achieve the goal by setting the following two hypotheses:

H1: To reduce information risk to an acceptably low level, digitization in control activities must be consistent with the pace of digitization in business organizations.

H2: Financial control and audit institutions in the public sector have various digital tools which need to be optimally used when implementing specific forms of control.

The paper is organized as follows: Section 2 reviews the academic literature on information risk assessment and the adaptation of control actions for information collection, selection and processing. Section 3 describes the methodology used in the research paper to find the relationships between different indicators characterizing the degree of digitization of processes in control institutions. Section 4 contains a cross-analysis of the relationship between forms of control and the digital tools used. Finally, the conclusions are summarised in Section 6.

Literature Review

Assessing information risk

The development of the control system is directly linked to the state and level of information security. Due to the ongoing and increasing number of threats to information security, the requirements on control institutions are aimed at continuously improving their system (Berdyugin, 2018). Managing control processes requires accuracy, reliability and effectiveness of the information they use to substantiate their findings. It makes it possible to set up a system for continuously identifying, assessing and developing options for countering risks of misconduct (Zhelev, 2022). On the one hand, mistakes in risk identification can lead to correct assessments and, consequently, to appropriate conclusions and recommendations for the undertakings audited. On the other hand, having a properly functioning information risk management and assessment system at the audited establishments is also necessary. The relationship between these is one of the essential elements for improving the effectiveness of control processes (Shevchenko, H., 2021).

Mayer et al.] (2018) accept that business process optimization lies in the practical assessment of information risk. Lei (2011) views information risk assessment as a set of actions taken and implemented to minimize risk costs and thereby optimize processes. Also, Zhang (2009) reasons the fact that process optimization should consider the criterion that characterizes the balance between the costs of information risk management and the losses from its possible application. Therefore, to assist control bodies in assessing information risk, it is necessary to implement digital tools in their information systems adapted to the specificity of their processes.

Digital tools in control activity

The application of digital tools in financial control directly relates to companies' financial and non-financial information (Zhelev & Kostova, 2024). Minimising information risk and reducing factors that threaten financial stability is essential. It is necessary to apply digital tools adequately, on the one hand, to the nature of financial relations aspects of economic activity and, on the other, to the specific nature of the control activity carried out (Manita, Elommal, Baudier, & Hikkerova, 2020).

Digital tools contribute significantly to increasing the efficiency, accuracy and speed of the control process. Technologies such as specialised software, analytical tools, and cloud platforms provide convenient access to a large amount of data and facilitate financial information collection, processing, and analysis. According to Bierstaker et al. (2014) digital technologies are essential in implementing control procedures, especially in big data environments. Overall, computer technology dramatically facilitates and improves processes, allowing auditors to focus on risk analysis and detection, increasing the accuracy and efficiency of audits. The collection, processing, transfer and interpretation of information in specialised software and tools should be subject to different selection criteria to systematise financial and non-financial information (Cristea, 2020).

Procedures that can be performed using digital tools in financial control include comparisons, horizontal, vertical, trend, factor analysis, etc (Ionin & Prylutskyi, 2023). To carry out control procedures, it is necessary to calculate financial ratios based on which it is possible to derive the relationships between the various indicators of financial reporting and financial and non-financial information (Kostova, 2022). Famous foreign financial researchers (Thottoli & Thomas, 2020; Qasim, Khan, & Majeed, 2021) emphasize the importance of financial ratios while pointing out their limitations and scope of use, referring to their overestimation, misuse, danger of mechanical analysis, etc. The simplicity and logic of their calculation make them popular and widely available for practical use.

The widespread use of financial analysis in analytical practice, audit, financial management, and the formation of a mandatory standard set of information, especially at the corporate level, cannot but affect the issue of unification (typification) of analytical indicators and their alignment to a single form of comparability. On the one hand, there is very often no uniform terminology and, on the other hand, analytical indicators with the same name are calculated in different ways, which affects their content and, consequently, the field of application.

Using digital tools to work with data, analyse financial information, and perform analytical procedures has a significant impact on the control process. Such procedures are mainly applied to check at the beginning and end of the reporting period, to identify unusual or atypical transactions with assets and liabilities, to check the existence of transactions related to the depreciation of fixed assets in the accounts, and additional procedures. The control activities provide for the application of complex analysis using statistical methods that enable the implementation of optimisation, statistical methods and risk assessment models. Control bodies use these tools to assess financial and non-financial data objectively, ensuring a high level of reliability and accuracy in implementing financial controls.

Methodology

Descriptive statistics and cross-tabulation methods are applied on the basis of a survey conducted by the authors. The respondents are part of the control institutions that carry out financial control in the public sector of the Republic of Bulgaria. In Tables 1 and 2, the interrelation between two survey questions is partially examined by connecting the respondents' answers about the applied form of control to their answers about the digital applications used.

The survey was distributed among over 453 specialists working in financial control institutions at the national level: the National Revenue Agency, the Customs Agency, the State Audit Chamber, and the State Financial Inspection Agency. Cochran's method was used to determine the sample size (Cochran, 1977), considering the data for the confidence interval (Z = 2), the selected percentage (0.5) and the mean error rate (c = 21). The obtained results are based on a guaranteed probability equal to 95% and a guaranteed factor of Z = 2, which requires a minimum of 437 respondents for the representativeness of the sample. The first two are the primary revenue administrations, collecting 80% of the total revenue in the state budget. The State Audit Office and the State Financial Inspection Agency inspect 90% of organizations that dispose of budget funds. The aim is to get an idea of the current state of the technological integration of digital tools for implementing control procedures. The questions are formulated to reveal how digital tools support the stages of information collection, processing, and protection and how they affect the overall effectiveness of financial controls. In the study, we investigated three groups of nominal variables: digital tools, elements of the information management process, and forms of control.

The analysis aims to provide an objective overview and comparison of different digital tools and forms of control. Using cross-tabulations, a systematic method of comparing the key features, functionalities and benefits of technologies is provided. The analysis includes examining the characteristics of the forms of control and the features of the tools applied to collect and process information. Each of these categories is evaluated and compared through the lens of different digital tools. The aim is to clearly and objectively identify the most appropriate digital tools versus forms of control to reduce information risk. The analysis will be helpful for organizations and institutions to make effective decisions for their tasks and challenges and to determine whether observed differences between groups are statistically significant or simply the result of chance.

Results

In today's environment, digital tools and forms of control play a crucial role in operating and managing various aspects of business and the public sector. With the variety of technologies and software solutions available, the need arises for analysis and comparison to identify the most appropriate tools to achieve their specific objectives. The study of the digital tools used to carry out inspection, monitoring, supervision, audit, check, and revision found that the digitalization of the control processes primarily refers to their organization. The highest percentages are Microsoft Office Suite, Google Workspace, Video conferencing tools, and Specialized software, and they are strongly significant only in monitoring and checking (Table 1).

Table 1
The interrelationship between forms of control and applied digital tools (Part 1)

			Digital Instruments			
			Microsoft Office Suite	Google Workspace	Video conferencing tools	Specialized software/s
Forms of control procedures	Inspection	Count	78	60	69	60
		%	17.2%	13.2%	15.2%	13.2%
	Monitoring	Count	204	126	228	216
		%	45.0%	27.8%	50.3%	47.7%
	Supervision	Count	57	42	54	48
		%	12.6%	9.3%	11.9%	10.6%
	Audit	Count	33	18	48	42
		%	7.3%	4.0%	10.6%	9.3%
	Check	Count	198	126	186	180
		%	43.7%	28.5%	41.1%	39.7%
	Revision	Count	27	18	24	18
		%	6.0%	4.0%	5.3%	4.0%
Total		Count	357	231	348	318
		%	78.8%	51.0%	76.8%	70.2%

Source: Author`s work

From public data for research on the digitalization of business in the Republic of Bulgaria as of March 2023, dynamic development and implementation of digital tools to improve business processes, collection and protection of information is established (Bulgarian Industrial Association (BIA), 2023). The majority of surveyed enterprises indicate that the digital technologies they use are sensors for recording information (77%), enterprise resource planning systems - ERP (70%) and customer relationship management systems - CRM (69%). The percentage of those using mobile applications (65%), cloud computing (59%) and, digital connectivity and/or the Internet of Things (51%) is also relatively high. 42% of the respondents declared that they use software and systems for cyber security and 36% - cyber-physical systems.

ERP and CRM systems in inspection

From the study, it was found that there needs to be a higher adoption of ERP (Enterprise Resource Planning) and CRM (Customer Relationship Management) systems (Table 2). When carrying out inspection activities, their use can assist inspection bodies in terms of more effective information management. ERP systems integrate an organisation's different functions and processes by collecting and processing data from different functional levels and systems. It allows control bodies to gain a holistic view of the activities of inspected entities by having access to up-to-date and accurate information on their operations, financial status, resource availability, etc. In terms of analysis and monitoring, ERP systems provide tools for data analysis and tracking, allowing control bodies to detect anomalies, inconsistencies or risks in the activities of the audited entities. They create individual reports to perform trend analyses and monitor compliance with various regulatory requirements.

CRM systems allow control bodies to monitor relationships with inspected entities and to maintain effective communication with them. They can track the history of interactions and manage contacts with them, which can improve the quality of inspections and trust between parties in the inspection process. The use of ERP and CRM systems can facilitate the process of collecting and providing information on the activities of inspection bodies, leading to greater transparency and accountability. They can provide stakeholders with easy access to data and reports on their activities, contributing to increased openness and trust in the work of inspectors. Therefore, using ERP and CRM systems can improve inspection bodies' efficiency, accuracy and transparency, helping them carry out their functions more effectively and efficiently.

Table 2

Interrelationship between forms of control and applied digital tools (Part 2)

			Digital Instruments				
			ERP systems	CRM systems	Artificial intelligence	Data encryption, hashing and caching technologies	Software for processing large databases
Forms of control procedures	Inspection	Count	3	3	6	9	12
		%	0.7%	0.7%	1.3%	2.0%	2.6%
	Monitoring	Count	24	12	27	57	75
		%	5.3%	2.6%	6.0%	12.6%	16.6%
	Supervision	Count	9	9	9	21	24
		%	2.0%	2.0%	2.0%	4.6%	5.3%
	Audit	Count	0	0	6	15	12
		%	0.0%	0.0%	1.3%	3.3%	2.6%
	Check	Count	9	6	12	24	45
		%	2.0%	1.3%	2.6%	5.3%	9.9%
	Revision	Count	0	3	0	0	9
		%	0.0%	0.7%	0.0%	0.0%	2.0%
Total		Count	24	15	27	66	93
		%	5.3%	3.3%	6.0%	14.6%	20.5%

Source: Author`s work

ERP and CRM systems in Audit

ERP and CRM systems can benefit auditors, assisting the audit process and ensuring more efficient task performance. Regarding centralised access to data, ERP systems integrate different functions and data from different parts of the organisation into one aggregated system resource. It allows auditors to access a wide range of information, including financial data, operational processes, etc. They can easily retrieve and analyse the data needed to conduct an audit.

Because information is inextricably linked to risk management, ERP systems can help auditors identify and assess potential risks across an organisation's processes and functions. They can use the system to monitor and analyse these risks, helping them to focus on critical areas during audit activity. Using ERP systems automates many of the organisation's operations and reduces manual data entry. It leads to greater accuracy and reliability of the data that auditors use. The systems can support the data verification process and provide easier access to historical financial information. The application of CRM systems can be helpful to auditors in managing client relationships, including with the organisations being audited. They can help track communication with clients, manage contracts and gather feedback from them, which can improve the audit process.

ERP and CRM systems under revision

The implementation of ERP and CRM systems is also low in revision activities. Incorporating these systems can be extremely useful for control authorities, helping them carry out their revision activities more effectively and efficiently. ERP systems integrate various functions and data from different sites and processes of the organisation by making a logical link between the data of the past accounting period and the current year. The collected information is systematised into different cuts by dividing it into financial operations and operational processes. The auditors can extract information according to set criteria, both from documents processed in the past period and to project future trends through the extrapolation method.

As the revision covers historical information, identifying risks and weaknesses in management systems is essential. The ERP systems contain critical information about the internal controls and procedures in the organisation. Control authorities can use the information to identify potential risks and weaknesses in management systems and focus on critical areas during the audit. ERP systems offer tools to automate revision processes, which helps auditors perform their procedures faster and more efficiently. They can use the system to generate reports, run tests, and analyse data, reducing manual input of information and improving results' accuracy. Tracking communication with auditees, managing control procedures and collecting feedback can be enhanced, improving the revision process.

In terms of reducing information risk, using ERP and CRM systems can increase transparency and accountability of the organisation's processes, which is essential for control authorities. They can monitor and analyse transactions and operations in real time, providing greater visibility into the organisation's operations.

Artificial intelligence and its application in various forms of control

It is evident from Table 2 that artificial intelligence (AI) needs to be sufficiently used to implement various forms of control. It can be effectively applied in the analysis of large volumes of data. Through artificial intelligence, the processing of large databases has high speed and accuracy, which is essential for control bodies in the analysis of financial information and operational processes of the organisation. It can identify abnormalities, trends, and anomalies in the data, which helps the controlling authorities to perform more effective checks.

In predicting risks and adverse events associated with information, artificial intelligence can analyse historical data and build models to predict risks and anticipate potential adverse events for control objects and entities. It allows control authorities to identify potential problems and take appropriate risk management measures. In optimising routine and repetitive inspections, AI can automate routine processes such as checking compliance with policies and procedures, producing reports, etc. It allows inspectors to focus on inspection activity's more strategic and analytical aspects.

A significant application of AI can also be sought to improve data accuracy and reliability. The AI can improve information by automating the processes of information verification and validation. It can detect and correct errors in data, resulting in better quality information for verifiers. Thus, artificial intelligence can speed up and optimise the verification process by reducing the time and resources required to conduct verifications. It allows more detailed inspection procedures to be performed in a shorter timeframe. Therefore, using artificial intelligence can assist control authorities by providing them with innovative tools and technologies that can improve their control activities' efficiency, accuracy, and reliability.

Control authorities can use data caching to speed up the process of retrieving and analyzing information during controlling activities. It will increase data security by preventing unauthorized access or manipulation of data. The digital tools can facilitate the process of verification and analysis of data by control bodies, ensuring its integrity, reliability and immutability.

After comparing the level of digitization of business and the study of the application of digital tools in the control institutions of the Republic of Bulgaria, it was established that business is ahead of financial control. It confirms the first hypothesis that control institutions should more actively adapt to the requirements of digitalization. As a result of the above and the results of the survey, it was found that control bodies need to sufficiently implement ERP and CRM systems and AI, which confirms a second hypothesis that control bodies do not optimally use a variety of digital tools. It leads to several difficulties related to inefficient use of financial, human and material resources and increased information risk.

Future research directions

The research will be a fulcrum for exploring in-depth digitisation of primary information flows in control activities. The focus will be on the correlations and dispersion of the application of digital tools in the information-gathering and processing stage. The survey will target business organisations to compare the extent of digitisation of the control system and the business. Opportunities will be sought to apply different tools for processing and checking large databases. The authors will mainly focus on researching the possibilities of artificial intelligence and its integration into control activities. The aim is to argue for practical approaches to identify errors and fraud to ensure the accuracy and veracity of financial and non-financial information. Evaluating the effectiveness of data will ensure integrity, consistency, validity, completeness and timeliness.

Conclusion

The practical application of digital tools is essential to reduce information risk in the control activity. They help identify potential threats and reduce their negative impact on control procedures. Their implementation, in the form of control, should be carried out by building clear policies and procedures to secure control information. Digital tools are applicable in various aspects, such as access protection, data encryption, regular checks, etc. The dynamics of the digitalization of business and the optimization of business systems for collecting and analyzing financial and non-financial information require control institutions to implement adequate digital tools promptly. Implementing digital tools requires regular updates to the software and systems that support the digital tools.

As a result of the data from the digitization of the business, it is necessary to pay special attention to the combination of ERP and CRM systems in implementing the forms of control, which will help increase its efficiency. The research established that these digital tools have the weakest manifestation in all forms of control, and they need to be applied in the audit. The control institutions should direct their attention to those digital tools through which transactions and operations can be monitored and analyzed in real time, providing greater visibility of the organization's operations. On the one hand, the combination of ERP and CRM systems can support the control bodies managing the audit by providing them with easier access to information, and on the other hand, it can increase the efficiency of the audit processes and increase the transparency of the organization's activities. It is essential to protect control procedures from potential loopholes. These activities can be optimized by implementing monitoring and rapid response systems that detect non-conformities at an earlier stage. Encryption can protect confidential information from unauthorized access during the audit. Combining the above measures can significantly reduce information risk in the control system.

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Uporaba digitalnih orodij za ocenjevanje informacijskega tveganja pri kontrolnih dejavnostih

Izvleček

Prispevek obravnava digitalizacijo vodilnih informacijskih tokov v kontrolnih dejavnostih. Osredotoča se na uporabo tehnologije in njeno integracijo pri izvajanju oblik nadzora. Namen prispevka je zagovarjati praktične pristope za zmanjšanje informacijskega tveganja pri predhodnem in naknadnem nadzoru, da se zagotovi točnost in resničnost finančnih in nefinančnih informacij. Ocena učinkovitosti podatkov zagotavlja integriteto, doslednost, veljavnost, popolnost in pravočasnost - z uporabo orodij za digitalno oceno tveganja pri kontrolnih dejavnostih. Za dokazovanje hipotez je uporabljena metoda navzkrižne tabele (angl. cross-tabulation method), ki se osredotoča na razmerje med uporabo preverjanja, inšpekcije, revizije, revizijskega pregleda in nadzora ter digitalnimi orodji, uporabljenimi v kontrolnih institucijah, ki izvajajo finančni nadzor v javnem sektorju Republike Bolgarije. Študija ocenjuje učinkovitost praks upravljanja podatkov, pri čemer poudarja pomen ohranjanja integritete, doslednosti, veljavnosti, popolnosti in pravočasnosti. Študija ugotavlja, da bi z uporabo naprednih orodij za digitalno oceno tveganja bilo mogoče izboljšati učinkovitost kontrolnih dejavnosti na različnih področjih. Pristop podpira trajnost finančnega nadzora in je v skladu z modernimi upravljavskimi standardi, s čimer spodbuja kulturo odgovornosti in natančnosti pri upravljanju javnih financ.

Ključne besede: Orodja za digitalno oceno tveganja, informacijska integriteta, upravljanje z javnimi financami, optimizacija, odgovornost

Analysis of Workers' Perception and Demographic Factors - An Insight Into the Slovenian Gig Economy

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Abstract

This study examines the gig economy in Slovenia, with a particular emphasis on the perceived benefits and challenges for gig workers within this emerging labour model. The research aims to capture the implications of flexible, project-based employment in a smaller European context, as this trend becomes increasingly prevalent globally. A quantitative approach was employed to survey 34 gig workers in Slovenia. The survey analysed their demographic characteristics, reasons for engaging in gig work, and the benefits and challenges they experience. In the findings, 64% of respondents specifically identified schedule flexibility as a predominant benefit of gig work. However, it also uncovers substantial challenges, including increased market competition and a lack of social benefits. Moreover, the research suggests that perceptions of the gig work benefits are widely acknowledged across various age groups and educational levels, with no significant variation. Nevertheless, the findings indicate a gender disparity in gig work perceptions, with males perceiving higher levels of financial freedom and professional development than women. This research suggests the need for policies aimed at ensuring equity and further research into harmonizing gig work with supportive labour market policies.

Introduction

Self-employment is a growing trend that provides an alternative to traditional employment. As noted by Bögenhold & Klinglmair (2016), it is also known as *independent entrepreneurship* and enables individuals to pursue their desire for independence and achieve their entrepreneurial aspirations. Global trends indicate that an increasing number of self-employed individuals are joining the so-called gig economy, which is based on flexible, project-based work (Henley & Lang 2017; Karlsson & Wranne, 2019). As the gig economy allows

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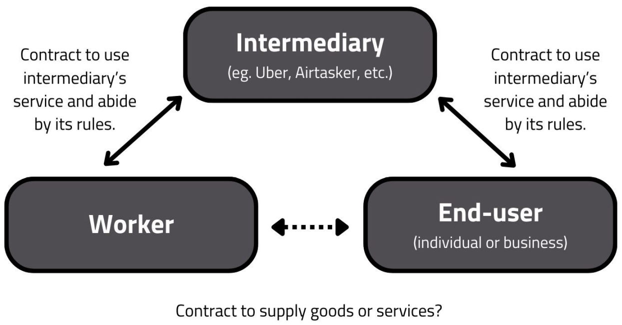
individuals to focus on projects that best match their skills and interests, this trend demonstrates the growing popularity of the independent path (Poon, 2019). This working model not only supports the desire for autonomy and flexibility but also provides opportunities for innovation, professional development, and creativity within the labour market.

The gig economy is an economic model that connects independent workers with clients through an intermediary web platform or application (Figure 1). It is a labour market that offers short-term jobs, with workers engaged on a contractual basis or for specific projects (Hauben et al., 2020; Huđek & Širec, 2023). Independent workers in the gig economy rely on digital platforms to access a global market and connect with potential clients efficiently.

Figure 1
The gig economy model



Source: Stewart & Stanford, 2017

Independent workers in the gig economy are not affiliated with any company and have the freedom to arrange their working hours. This allows them to work whenever they want and on multiple projects simultaneously. The algorithms of digital platforms facilitate *matchmaking* between workers and clients, considering skills, ratings, availability, and workers' engagement history (Wood et al., 2019).

Statista's Research Department (2022) forecasts steady growth for the gig economy. From 2018 to 2022, its value nearly doubled from $204 billion to $401.4 billion, indicating its transition from a temporary trend to a staple in the modern work environment, offering alternatives to traditional employment. A study by Gómez-Rey et al. (2021) highlighted the substantial growth of the gig economy, attributing this expansion to technological advancements and changing work preferences among younger generations. It mentioned that by 2021, gig workers represented 35% of the workforce, amounting to 57 million workers and over 1 trillion USD in annual market size. Another study by Subbiah (2023) discussed the gig economy's scale and its potential to serve up to 90 million jobs in India, suggesting a global trend toward gig work.

Moreover, the influence of technology on the gig economy is significant. Nearly 80% of independent entrepreneurs state that technology makes it easier for them to find work (Upwork, 2022). According to data from the company Payoneer, over 70% of independent entrepreneurs primarily find work through online platforms. This new digital collaboration opens up an unexplored area in the field of employment, prompting companies to adapt rapidly to the new reality of gig work (Kulach, 2023).

Many experts believe that the COVID-19 pandemic has been particularly stimulative for this ecosystem. According to Umar et al. (2020), the gig economy has been significantly impacted by COVID-19, resulting in an increase in gig work due to economic disruptions. Additionally, the pandemic has created a greater need for flexibility and digitalization of business operations, leading to an increased demand for flexible and project-based work. Furthermore, the pandemic has brought about a change in perspective regarding remote work, which is now widely considered to be the future of work (Forbes et al., 2020). With an increasing number of gig workers operating from home or shared workspaces, a new concept of workspace and worktime organization is emerging (Malhotra, 2021).

Despite the growing trends in the gig economy and future work trends, there is currently no official register of gig workers, and uncertainties regarding the classification of this type of work remain. However, interest in gig work is gradually increasing. Therefore, our study aimed to explore the gig workers in Slovenia, including their sectors of activity, reasons for choosing this form of employment, significant advantages, and challenges faced. Furthermore, the research aimed to identify any demographic differences among gig workers who pursue this career path. The aim was to gain a more profound comprehension of the dynamics of the gig economy in Slovenia and to provide insights into the specifics that characterize this increasingly popular form of work. Addressing the question of who constitutes the gig workforce presents a complex challenge, as a variety of variables influence an individual's likelihood of engaging in gig work. However, according to demographic trends, younger individuals, seem to be more inclined towards gig work due to their preference for flexible employment and receptiveness to technology (Upwork, 2023).

According to Churchill & Craig (2019), there is also a gender disparity in the gig economy, with men outnumbering women. Women represent only around 30% of gig workers, while men represent 70%, and are less likely to engage in gig work. However, in recent years, there has been a notable increase in women's participation in the gig economy, contributing to greater gender equality. The flexibility and autonomy offered by gig work appeal to both genders, leading to a significant rise in mothers opting for freelance work. This flexibility enables workers to manage their work and personal responsibilities, including caregiving duties (Duggan, 2022).

Previous studies have shown a distinction between more and less educated individuals in gig work (MacDonald & Giazitzoglu, 2019). It is important to note that the gig economy is commonly associated with employment in sectors such as food delivery and transportation services, and can be linked to job precarity. However, it is important to note that the gig economy encompasses not only low-skilled labour, but also highly skilled professionals, so-called freelancers, or self-employed creatives. This diverse group includes independent consultants, IT specialists, translators, graphic designers, financial analysts, creative workers, engineers, marketing and communication experts, and even healthcare providers and lawyers. It is worth noting that while they may not be physically present on the streets, they offer their services to a global clientele. This segment has the potential to drive future economic development and innovation, which has yet to be fully realized (Upwork, 2023).

Accordingly, the paper evaluates various aspects of the gig economy, such as its occupations and reasons for choosing non-traditional employment. It focuses on assessing how gig workers in Slovenia perceive the benefits of this work and whether they outweigh potential drawbacks, such as income instability, lack of social and employment protection, and difficulties in acquiring clients and projects independently. The study used the Mann-Whitney U test to examine potential disparities in gender, age and educational attainment to confirm the inclusiveness of this new career path.

The purpose of this paper is to provide preliminary empirical evidence that could serve as a foundation for policy formulation and guide businesses about the current conditions and possible future trends of the gig economy in Slovenia.

The article is structured in a manner that initially addresses theoretical starting points and research hypotheses, followed by a description of the methodology implemented in conducting the research. Subsequently, the research results are presented and discussed, and the conclusion encompasses the key findings, limitations of the study, and suggestions for future research initiatives.

Theoretical starting points and research hypotheses

As mentioned in the introduction, the gig economy is a labour market where temporary and part-time roles are predominantly occupied by independent contractors or freelance entrepreneurs, as opposed to full-time, permanent employment positions. In addition, this structure enables employers to save money by avoiding expenses related to benefits like health insurance and paid leave. Some employers may offer specific benefits to gig workers while outsourcing administration and management responsibilities to external agencies (Vallas & Schor, 2020). The gig economy is driven by the desire for autonomy and flexibility. It offers a diverse range of opportunities for flexible work and entrepreneurship, which is highly attractive to many. However, it is crucial to acknowledge the trade-offs that come with it. Participants must navigate a flexible landscape that lacks job security (Rani, 2021).

Opportunities in the gig economy

In the gig economy, individuals have the opportunity to earn money either as their primary source of income or as a supplementary source without being bound to full-time hours (TeamStage, 2023). The job market has undergone significant changes since the pandemic in 2021, resulting in a shift in employment statistics. While full-time permanent positions were generally more valued than gig work in the past, the current job market offers a range of opportunities for individuals to pursue their career goals. The idea that gig economy work is always a secondary option is no longer accurate. Recent studies show that 61% of independent individuals consider it a choice rather than a necessity. As the number of self-employed workers continues to rise, the need for a collaborative workspace will become essential. Workers will seek comprehensive solutions for easy job searching, while employers will aim to connect with skilled professionals without barriers. The gig economy provides a greater space for each person to develop their talents and abilities, instead of expecting individuals to dedicate themselves to work during regular working hours (Horney, 2016).

Flexibility of life

The primary advantage of the gig economy lies in its unparalleled flexibility, empowering workers with the freedom to select their working hours, locations, and the volume of work they undertake. The gig economy not only provides flexibility and work-life balance but is also suitable for people looking for extra income or interested in different activities or projects without being constrained by full-time employment (Katsnelson & Oberholzer-Gee, 2021). The survey's results indicate that the main reasons for choosing gig work are flexibility and autonomy (Manyika et al., 2016; Malt & BCD, 2021). Consequently, people have a high level of control over the workload and the set of tasks they perform, which undoubtedly affects the flexibility of their lives. They have the opportunity to choose which task to perform, based on factors such as fees and customer, or timing, and can change their decision later on. Moreover, the gig economy presents new opportunities for women by enhancing their flexibility in terms of work-life balance. According to Roy and Shrivastava (2020), companies are incentivized to hire gig workers for their high flexibility, the digital explosion, and the overwhelming transition towards remote work. Hence, the gig economy offers an opportunity for individuals to *custom design* their careers depending on personal goals, lifestyle choices and needs at different life stages and provides a level of individualized control and independence that the traditional work environment cannot offer.

Financial freedom

Online labour platforms provide a low barrier to entry into the gig economy. They enable anyone to, regardless of their skill level, join the gig economy and determine how, where, for whom, when, and how long they work. For instance, business entities are attracted to gig workers because they obtain immediate access to suitable experts, reduce operating costs, and find solutions faster (ILO & OECD, 2021). Also, individuals with either a part-time or full-time job or students seeking extra money to fund their studies can join the gig economy (Herrmann, 2023). Additionally, the gig economy provides individuals with the chance to diversify their income sources, reducing reliance on a single job or employer. With the growing popularity of gig economy platforms and marketplaces, individuals can easily find gig opportunities that align with their skills and interests (Heeks, 2022). Consequently, supplementary income for individuals living paycheck to paycheck with outstanding expenses or living expenses, extra income might mean a ticket to financial freedom. For example, a survey by Upwork (2021) found that 44% of gig workers reported earning more than they would in a traditional job in 2021, compared to 39% in 2020 and 32% in 2019. Furthermore, the gig economy allows individuals to explore different types of work and gain experience in various industries. This can lead to personal and professional growth, as well as the development of new skills.

Professional development and advancement

In the gig economy, firms (clients) seek to leverage the knowledge, skills and abilities of gig workers to improve firm performance (Burke & Cowling, 2015). Due to the high level of competition and self-reliance inherent in gig work, workers are constantly engaged in learning, gaining new experiences, and improving their skills, thereby uncovering and utilizing hidden capabilities (Barnes et al., 2015). This pursuit of professional development and advancement encourages workers to develop new skills and facilitates the formation of new contacts (Malik et al., 2017) and the maintenance of relationships with previous clients. Professionals aiming for career growth and ongoing learning often see gig work as a chance for professional development. They choose gigs to diversify their skills and experiences, favouring this approach to quickly gain insight into various roles and sectors. This strategy helps them widen their career scope and boost their job prospects. At the same time, this approach often leads to greater job satisfaction and fulfilment in their chosen career path (Taylor, 2017).

Based on the above, we propose the following hypothesis H1: Slovenian gig workers primarily perceive flexibility as the most significant reason for engaging in the gig economy.

Diversity of Inclusion

The gig economy offers opportunities for a diverse range of individuals, including those working outside their home country, without formal qualifications, with domestic responsibilities, or facing disabilities or health limitations. The gig economy is attractive because it allows for control over work schedules, making it easier to balance professional and personal commitments (Graham et al., 2017).

Remote work through online platforms can reduce discrimination cues present in traditional physical work environments, such as those related to disability, accent, dress style, and age, thus promoting a more inclusive work environment. Dettlaff (2023) emphasizes the potential of the gig economy to increase women's professional activity, proposing it as a way to break the cycle of professional passivity on a macroeconomic scale. Kaine and Josserand (2019) examine the organization and experience of work in the gig economy, highlighting how it is especially attractive to students, stay-at-home parents, and full-time employees seeking additional income sources.

Herrmann et al. (2023) examine the impact of the gig economy on the traditional education-income paradigm. This paradigm typically associates higher educational attainment with higher income levels. The study focuses on jobs facilitated by online platforms where educational certificates are not a requirement for job access. The authors utilize a mixed-method approach. The study analysed 1,607 gig workers across 14 Western economies through quantitative analysis and qualitative insights from in-depth interviews. It was found that educational attainment did not have a statistically significant correlation with wage levels within the gig economy. Instead, the platform's review system and the gig workers' level of previous job experience were identified as major signalling mechanisms for reducing information asymmetry between gig workers and employers.

These insights highlight the gig economy's role in promoting a diverse and inclusive labour market, providing employment options flexible enough to meet various needs and preferences. Based on the above considerations and focusing on Slovenian gig workers, we assume the following hypotheses:
H2: There are statistical differences in perceptions of financial freedom, flexibility of life, and personal development and advancement among Slovenian gig workers regarding gender.
H3: There are statistical differences in perceptions of financial development, life flexibility, and personal development and advancement among Slovenian gig workers regarding age.
H4: There are statistical differences in perceptions of financial development, life flexibility, and personal development and advancement among Slovenian gig workers regarding educational level.

Challenges in the gig economy

The gig economy, while offering flexibility and diverse job opportunities, presents significant challenges for workers, including a lack of social benefits, income unpredictability and increasing competition.

Inequality of social benefits and unpredictability of success and payment

The employment status of gig workers differs from that of traditional employees. Gig economy workers are employed for a specific period and on a contract basis, which means they are deprived of many rights that come with traditional employment relationships. They do not receive additional financial benefits, pension contributions, or social security (Kajwang, 2022). Consequently, gig economy workers do not receive assistance from the online work platform but must obtain it themselves. Individuals are required to pay taxes and obtain insurance. Additionally, there may be obstacles to entry related to technical and digital skills, as well as the necessary technical infrastructure and knowledge.

It is important to note that self-employment in the gig economy may not always result in success in a chosen job. As a result, the workflow and payment structure can be uncertain, and there may be instances where payments are delayed or perceived as unfair concerning the effort or knowledge invested. In comparison to employees in companies who typically receive a fixed and predictable salary, gig workers must persistently manage their projects with multiple clients and employers to ensure a consistent and dependable stream of income that is sufficient to cover their living expenses. Additionally, they must exert significant effort to acquire clients and market themselves to secure work (Huđek, 2022). Moreover, Muldoon and Raekstad (2022) examine the notion of algorithmic domination, whereby gig workers are subjected to novel forms of managerial control through algorithms. This may impact work conditions and add to the uncertainty of gig work, especially about job assignments and payments.

Increasing competition on platforms

The growth of the gig economy has led to an increase in competition among gig workers on online platforms. As a result, there is now greater competition for each job or project. This has led to employers and clients often selecting providers who offer lower prices for their work, which in turn has resulted in a reduction in payments. Therefore, to remain competitive, workers need to distinguish themselves through high-quality work, special skills, or lower prices. This trend not only increases the pressure on gig workers to continuously improve their skills and efficiency but also reduces their bargaining power about payments and working conditions (Schwellnus, 2019). According to Tan et al. (2020), the ethical challenges posed by the gig economy, particularly those concerning algorithmic control and worker rights. The authors propose that the future of the gig economy will be determined by regulatory issues.

Overload and exploitation of free time

According to Yang (2023), the gig economy provides greater flexibility but also presents challenges such as inadequate welfare protection and unstable income, which can lead to job burnout. This can happen when workers take on too many tasks due to financial pressures, intense competition on platforms, or concerns about future job opportunities. According to Ideas (2021), this situation may lead to a shortage of time for personal life, which could potentially affect family relationships and mental well-being.

Based on the above, we propose the following hypothesis H5: Slovenian gig workers predominantly perceive a lack of social benefits as the most significant challenge of engaging in the gig economy.

This fundamental problem underlies many of the other challenges described, including the need for self-promotion, competition for work, and the potential for job burnout. The issue of gig workers not having traditional employment protections, such as a fixed income, pension contributions, and social security, has a significant impact on workers' ability to plan for their future and maintain a stable livelihood and is therefore a major concern within the structure of the gig economy (Berg, 2016).

Methodology

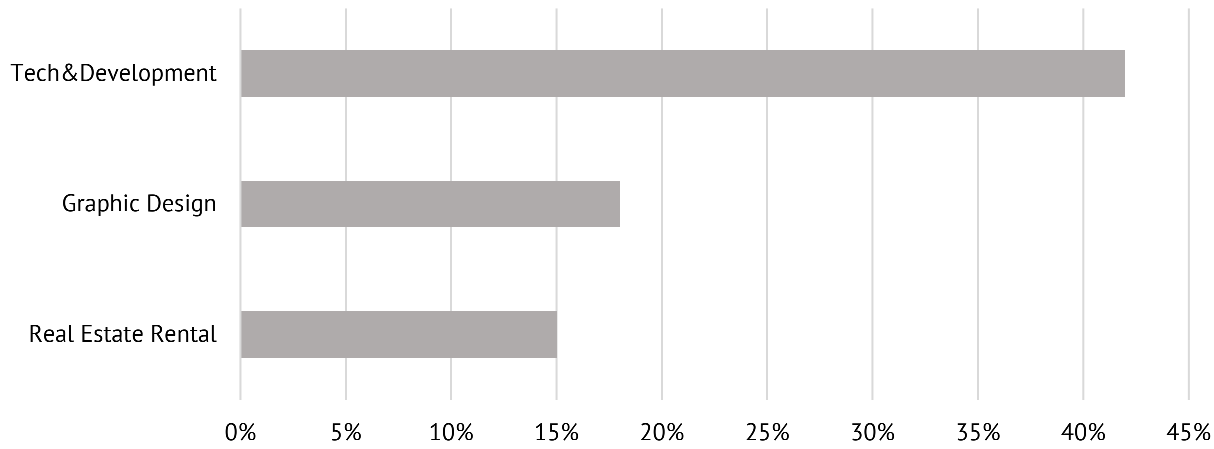
To test the hypotheses, a survey using a structured questionnaire was conducted among a small sample of 34 respondents from the Republic of Slovenia. The survey was disseminated via the social network Facebook, in groups where self-employed professionals or gig workers congregate. Due to the absence of an official register of gig workers in Slovenia, the survey included explicit guidelines to specify eligibility for participation: respondents had to be self-employed, not in traditional employment, responsible for their benefits, in charge of their tax declarations, free to choose their clients, and committed to undertaking a minimum amount of project work annually. Additionally, to achieve better diversity among respondent profiles, the survey was distributed to business incubators with coworking spaces, which circulated among their members active in the gig economy. The survey was conducted over the course of one month, from July 2023 to August 2023. Although 46 participants initially engaged with the survey, only 34 respondents completed it in its entirety. The questionnaire consisted of structured closed questions. The first set of questions pertained to the sample characteristics, while the subsequent sets aimed to examine the reasons for choosing gig work and to capture perceptions about the benefits and challenges associated with this type of work. For the questions on opportunities and challenges, multiple-choice questions were employed. Meanwhile, questions regarding perceptions utilized a 4-point Likert Scale, a survey methodology that offers four response options to assess opinions or attitudes. Participants express their degree of agreement or disagreement with given statements by selecting one of four choices: 1 - strongly disagree, 2 - disagree, 3 - agree, or 4 - strongly agree. In addition, to assess Hypotheses 1 – 3, the Mann-Whitney U test was employed for several reasons. Firstly, the non-normal distribution of our data precluded the use of parametric tests like the t-test. Given its non-parametric nature, the Mann-Whitney U test is well-suited for analyzing such data types, ensuring robustness and reliability even with small sample sizes. The test enables analysis without requiring equality of variances or normality of distribution, making it suitable for small sample sizes and categorical data, as encountered in our study. It should also be noted that our samples are independent, which is a fundamental requirement for the application of the Mann-Whitney U test in the research (Denis, 2021).

As presented in Table 1, 59% of respondents were male, while 41% were female. Of all the respondents, 18% were aged 18 to 24, 29% were between the ages of 25 and 34, 44% respondents were aged between 35-44, only 3% were aged between 45 and 54, and 6% were between 55 and 64 years old. In terms of their education level, most of them (44%) have an undergraduate degree, followed by a high school diploma (29%), a master's degree (21%), an elementary school (3%) and a PhD (3%).

According to Helling (2023), who identified the most common activities in the gig economy, and our examination of the various job categories on online labour platforms such as Upwork (2023), we have determined the categories in which Slovenian gig workers are most active. The results show that the three most common categories are Tech & Development (44%), Graphic Design (18%), and Real Estate Rental (15%) (Figure 2).

Figure 2

Most common gig economy job categories distribution according to Slovenian gig workers



Source: Authors

Table 1

Sample characteristics

Characteristic	*Frequency (n=34)*	*Percentage*
Gender		
Male	20	59%
Female	14	41%
Age		
18-24	6	18%
25-34	10	29%
35-44	15	44%
45-54	1	3%
55-64	2	6%
Education		
Elementary school	1	3%
High school	10	29%
Undergraduate degree	15	44%
Master degree	7	21%
PhD	1	3%

Source: Authors

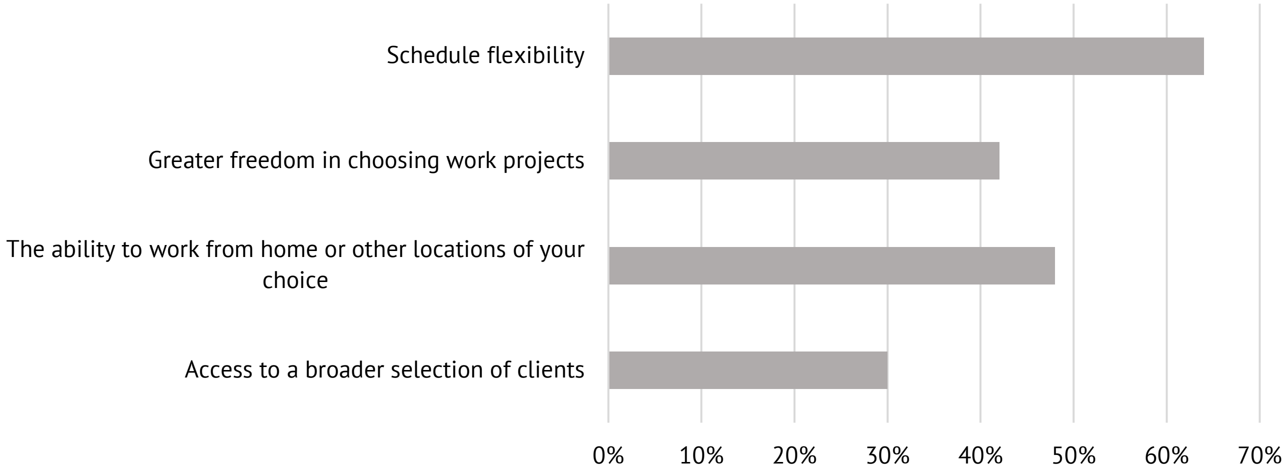
Results

To test Hypothesis 1, we investigated participants' reasons for choosing the gig economy. The data, presented in Figure 3, shows that 64% of respondents valued schedule flexibility as the most commonly selected reason. This underscores the high regard many hold for the adaptability the gig economy offers (Lehdonvirta, 2018; Malt & BDC, 2021; Malt, 2024). Following this, *Greater freedom in choosing projects* was chosen by 48% of respondents, highlighting the importance of personal interest and the perceived benefits of project selection. *The ability to work from home or any preferred location* was chosen by 42%, reflecting the value placed on location independence. The least popular response, chosen by 30% of respondents, was *Access to a broader selection of clients*, indicating this aspect is less critical for those surveyed. Accordingly, we confirm *Hypothesis 1*, that Slovenian gig workers primarily perceive flexibility as the most significant reason for engaging in the gig economy.

Furthermore, to obtain more detailed insights, we asked gig workers on a Likert scale (from 1 to 4) to express their perception of the outcomes of working in such a business market. Specifically, they were asked to evaluate whether this alternative form of work provides them with financial freedom, flexibility in life, and opportunities for professional development and career advancement. The results are displayed in Figure 4.

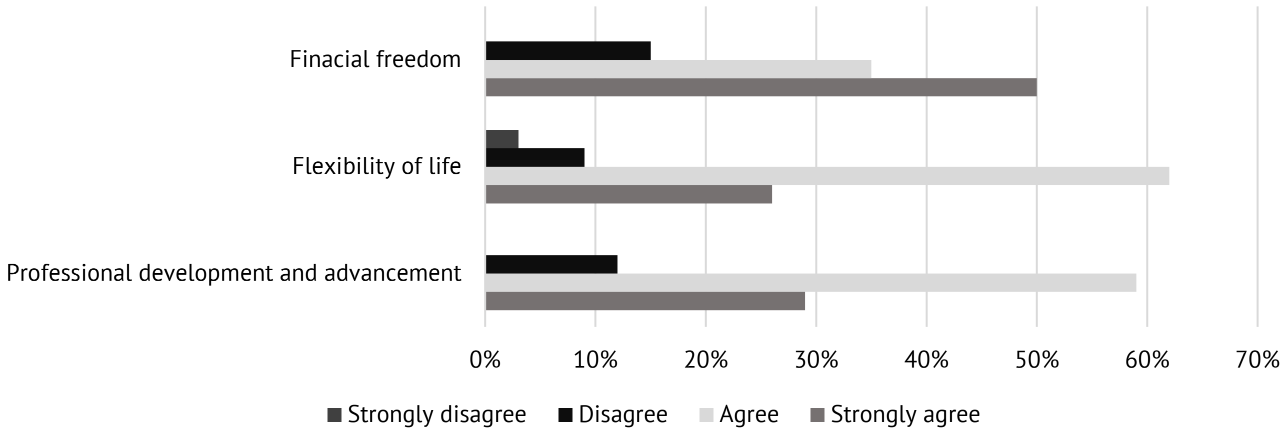
In Figure 4, it is evident that 29% of respondents strongly agree and 59% agree that gig work offers opportunities for professional development and advancement. This means that overall, 88% of respondents see gig work as positive for their professional development. Furthermore, 26% strongly agree and 62% agree with the statement that gig work enables a flexible life. This shows a high level of agreement, as 88% of respondents agree with the statement that gig work enables a flexible life, while 50% strongly agree and 35% agree with the statement that gig work offers financial freedom. The responses collectively reflect a positive perception of gig work, particularly noting its contributions to professional development and the flexibility it allows in one's life.

Figure 3
The main reasons for choosing work in the gig economy



Source: Authors

Figure 4
Perception of gig work benefits



Source: Authors

Additionally, we aimed to examine whether disparities exist within the demographics of the sample. Specifically, we wanted to determine if there are statistical differences in perceptions of gig economy outcomes of personal development and advancement, life flexibility, and financial freedom concerning gender, age, and education levels. Therefore, we examined the differences in perceptions between males and females. Regarding age, we categorized it into two groups: the young demographic (18-34 years) and the older demographic (35-64 years). For educational attainment, we grouped participants into two categories: those with at most a high school diploma and those with more than a high school education.

To achieve these goals, we initially considered employing the independent samples t-test, a common statistical method for comparing means between two groups (Hair et al., 2008). Regarding the assumptions for such a test, the data fulfils the requirements for independence. The observations in each sample should be independent and collected using a random sampling method (Bobbitt, 2021). Upon conducting a preliminary data analysis, which included Shapiro-Wilk tests for normality, it became evident that the assumption of a normal distribution was not met for the satisfaction measures across the groups defined by gender, age, and education. Thus, to ensure the robustness and reliability of our statistical analysis, we opted for the Mann-Whitney U test, a non-parametric alternative that does not assume normality in the data distributions. It is used to determine whether two independent samples differ significantly from each other (Denis, 2021). The test's applicability to ordinal data, such as responses on a Likert scale, and its robustness in the face of non-normal distributions made it the ideal choice for assessing the differences in our case (Hollander, 2013). Table 2 shows the descriptive statistics for each gender group and Mann-Whitney U test results.

The results indicate that there is a significant difference in the levels of perception of financial freedom and opportunities for professional development and advancement between males and females ($p<0.001$). Males had a higher mean score compared to females, as evidenced by the notably low Mann-Whitney U values and highly significant p-values. However, it is worth noting that both genders tend to agree on the level of flexibility in life. This is supported by a larger Mann-Whitney U value and a non-significant p-value ($p=0.656$), indicating no statistical difference between genders in this aspect. These results confirm *Hypothesis 2*, which suggests a statistically significant difference between gender groups regarding the perception of gig work arrangement benefits.

Furthermore, the Mann-Whitney U test was employed to assess the distribution of responses between two age groups – youth (18-34) and older individuals (35-64). The outcomes of this analysis, along with descriptive statistics, are presented in Table 3.

Table 2
Descriptive statistics and Mann-Whitney U test results by gender

Measure	*Gender*	*Mean*	*Standard deviation*	*Median*	*Mann-Whitney U*	*p-value*
Financial freedom	Male	3.85	0.37	4.00	12.000	<0.001
	Female	2.57	0.51	3.00		
Flexibility of life	Male	3.10	0.64	3.00	151.000	0.656
	Female	3.14	0.77	3.00		
Professional development and advancement	Male	3.50	0.51	3.50	50.000	<0.001
	Female	2.71	0.47	3.00		

Source: Authors

Table 3
Descriptive statistics and Mann-Whitney U test results by age

Measure	*Age group*	*Mean*	*Standard deviation*	*Median*	*Mann-Whitney U*	*p-value*
Financial freedom	18-34	3.25	0.68	3.00	165.000	0.428
	35-64	3.39	0.85	4.00		
Flexibility of life	18-34	3.19	0.54	3.00	136.000	0.749
	35-64	3.06	0.80	3.00		
Professional development and advancement	18-34	3.06	0.25	3.00	177.000	0.194
	35-64	3.28	0.83	3.50		

Source: Authors

The data suggests that there is a slight difference in the level of perception regarding financial freedom between the younger group (mean = 3.25) and the older group (mean = 3.39). On the other hand, for flexibility of life, the levels of agreement are somewhat higher in the younger group (mean = 3.19) compared to the older group (mean = 3.06), indicating a consistent perception of flexibility provided by gig work across age groups, but with the older group displaying a broader range of views (as shown by a higher SD = 0.80). With regards to opportunities for professional development and advancement, it appears that the older group (mean = 3.28) expressed a slightly higher level of agreement compared to the younger group (mean = 3.06), suggesting that gig work is perceived as offering better opportunities for professional growth by older participants. Although there were some differences in the levels of agreement between the younger (18-34) and older (35-64) age groups across all aspects, the Mann-Whitney U test results indicate that these differences are not statistically significant (with p-values of 0.428 for financial freedom, 0.749 for flexibility of life, and 0.194 for professional development and advancement, respectively). Therefore, the data suggest that there are comparable perceptions across age groups in these domains. Therefore, we reject *Hypothesis 3*, which suggests significant differences between age groups regarding their perceptions of the gig work arrangement benefits.

In addition, to test Hypothesis 4, we also employed the Mann-Whitney U test, to assess the distribution of responses between two educational attainments to compare the *Up to high school* group with the *More than high school*. The results are shown in Table 4. The descriptive statistics suggest that individuals with education beyond high school tend to report higher levels of agreement across all measures compared to those with education up to high school. Specifically, although the mean satisfaction scores are higher for those with more education, the differences do not reach statistical significance for financial freedom and flexibility of life. Therefore, *Hypothesis 4* cannot be supported. However, it is worth noting that there appears to be a noticeable difference in professional development and advancement. Only the perceptions of professional development and advancement approach statistical significance ($p = 0.059$). The p-value is 0.059, which is in proximity to the conventional significance threshold of 0.05. The analysis provides insights into the potential influence of education level on perceptions of professional development opportunities, with a notable trend suggesting that higher educational attainment may be associated with more positive perceptions.

Table 4

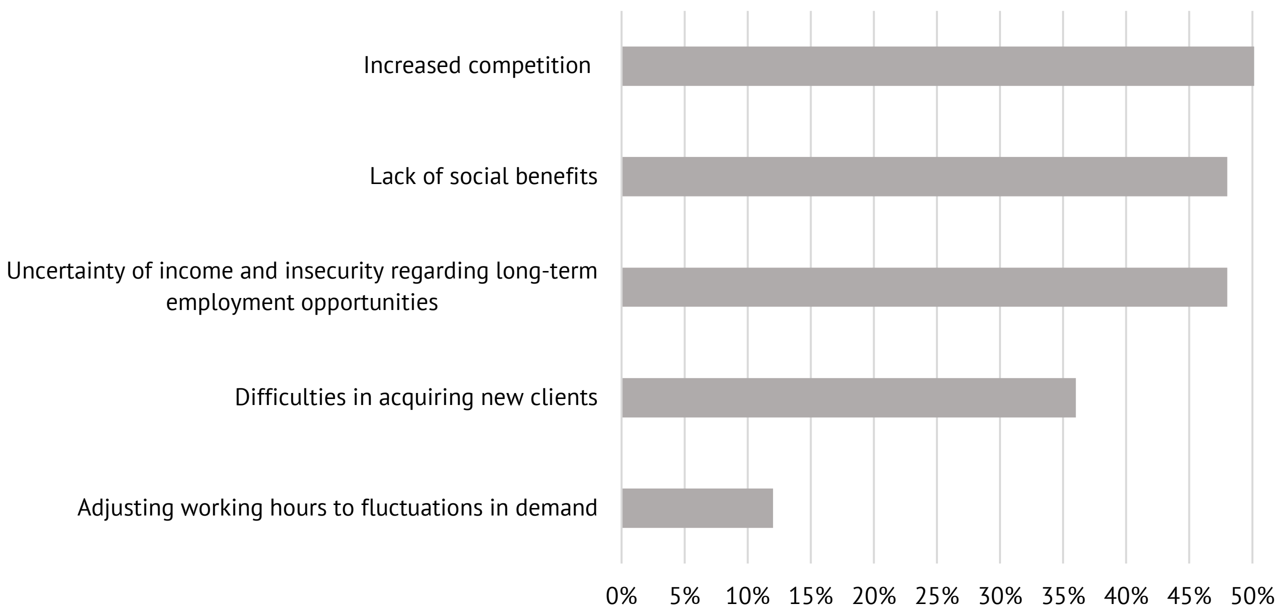
Descriptive statistics and Mann-Whitney U test results by education

Measure	*Education Group*	*Mean*	*Standard deviation*	*Median*	*Mann-Whitney U*	*p-value*
Financial freedom	Up to high school	3.18	0.75	3.00	148.000	0.445
	More than high school	3.39	0.78	4.00		
Flexibility of life	Up to high school	3.00	0.63	3.00	148.000	0.445
	More than high school	3.17	0.72	3.00		
Professional development and advancement	Up to high school	2.91	0.30	3.00	171.500	0.059
	More than high school	3.30	0.70	3.00		

Source: Authors

Figure 5

Challenges that pose the greatest concerns to gig workers



Source: Authors

Finally, we have examined the challenges that present the greatest concerns for respondents to test *Hypothesis 5*. Respondents were provided with a range of possible answers to choose from. The most frequently selected challenge, chosen by 52% of respondents, was increased competition. Our findings indicate that self-employed individuals in the gig economy often face competition, which necessitates them to adjust their service prices. According to the survey, 48% of respondents expressed concern about the lack of social benefits, including health insurance, pension, and sick leave. An equal percentage of respondents (48%) identified income unpredictability and uncertainty about long-term job prospects as significant issues. Acquiring new clients was a challenge for 36% of respondents, while only 12% reported adjusting their work hours based on fluctuating demand. Figure 5 displays the data. Based on the results, *Hypothesis 5* is rejected, which assumes that the biggest challenge is the lack of social benefits.

Discussion

The pronounced valuation of flexibility and professional development by Slovenian gig workers aligns with global trends where flexibility is hailed as a prime benefit of gig employment (Malt, 2024; Upwork, 2023). This preference underscores a universal shift towards work-life integration, where individuals prioritize control over their schedules and the nature of their work. However, this study also brings to light the inherent challenges such as increased competition and lack of social benefits (Balakrishnan, 2022). These challenges arise primarily due to the very nature of gig work, which is project-based and lacks the continuity and security associated with traditional employment**.**

Examining demographic differences reveals nuanced insights into how different groups experience gig work. In particular, gender differences in perceptions of financial freedom and opportunities for career advancement underscore existing literature on gendered labour market experiences favouring men (Florisson & Mandl, 2018).

In addition, the lack of significant differences in perceptions based on age and education within the gig economy context is particularly intriguing, challenging prevailing stereotypes and assumptions about gig work. Conventionally, it is assumed that younger, technologically adept individuals are more inclined towards gig work, valuing its flexibility and autonomy (Shaw et al., 2022). Additionally, Farrell & Greig (2016) noted that people, especially those young and financially unstable, participate in the gig economy to supplement income from traditional jobs, suggesting that many use the platform as a secondary income source. Despite these considerations, our findings did not support the hypothesis that age significantly influences perceptions of the gig economy. This suggests a broader, more nuanced understanding, where traditional demographic factors do not necessarily determine participation or perception.

The finding that educational attainment does not significantly impact perceptions of the gig economy challenges another set of assumptions about this form of work. Traditional views might suggest that individuals with higher education would view gig work less favourably, due to expectations of stable, traditional career paths, or more favourably, because of a perceived ability to leverage the flexibility of gig work for professional development and higher earnings. However, the research indicates a uniformity in perception across different education levels, underlying the findings by Herrmann et al. (2023) and suggesting several implications. These findings highlight the accessibility of gig work, implying that opportunities within the gig economy are not limited by one's level of formal education. This inclusivity is crucial in economies with saturated traditional job markets, offering a valuable avenue for individuals to utilize their skills in non-conventional roles. Furthermore, the uniform perceptions across educational backgrounds suggest a revaluation of which skills are deemed valuable in today's economy, expanding the definition to include a broader range of competencies and experiences.

Therefore, the importance of flexibility and career development expressed by Slovenian gig workers suggests that policy makers should consider measures such as promoting opportunities to work from home, encouraging the public sector and businesses to offer flexible working hours and supporting continuous learning and training initiatives. This could improve the job satisfaction and productivity of gig workers while meeting the changing needs of the labour market. The challenges identified, such as increased competition and the lack of social benefits, point to the need for policy interventions to provide gig workers with social protections and benefits, such as access to health care, minimum wage standards, or regulation of gig economy platforms, which could help address some of the challenges. Furthermore, gender differences in the perception of financial freedom and career advancement opportunities highlight the existing inequalities in the labour market and call for policy makers to make additional efforts in the implementation of measures to promote gender equality in the labour market. Also, the findings promote skill requirements, prompting a need for policymakers and industry stakeholders to reassess education and training programs. This could include investing in programs that teach relevant digital skills, entrepreneurship, and adaptability, regardless of formal education level, supporting lifelong learning to enhance individuals' competitiveness in the gig economy.

Therefore, for gig workers, the insights underscore the importance of prioritizing skill development, advocating for rights and better working conditions, and striving for work-life balance. Policymakers can utilize the findings to inform regulatory reforms aimed at addressing challenges such as precarious employment conditions and disparities in financial freedom. Platform companies have the opportunity to enhance worker support and prioritize transparency and fairness in their practices. Labour organizations and community groups can leverage the evidence to advocate for legislative reforms, negotiate with platform companies, and provide support services for gig workers. Overall, these implications highlight the potential for systemic changes that can improve the quality of work and life in the gig economy, creating a more equitable and sustainable ecosystem for all stakeholders.

Conclusion, limitations and recommendations for future research

Throughout our research, we discovered that flexibility remains one of the main advantages perceived by gig workers in Slovenia. However, our study also highlighted concerns faced by gig workers. The increased competition and lack of social benefits are among the most common challenges. These challenges underscore the need for the development of stable and sustainable models within the gig economy, as well as the overhaul of legislation to more effectively support and protect gig workers.

As the gig economy continues to grow, there is a need for rapidly evolving regulation of this form of work. There is potential for the development of regulations that will impact the future of self-employment in the gig economy. According to Bestinfohub (2023), this includes definition of the employment relationship, workers' rights and benefits, data privacy, ensuring health and safety.

In response to growing concerns over the working conditions of platform workers, particularly in the European Union (EU), legislative measures are being proposed and implemented to address these issues. The European Commission introduced a directive in December 2021 aimed at improving the working conditions of gig workers, potentially reclassifying them as employees under certain criteria (European Commission, 2021).

Recognizing demographic diversity necessitates targeted interventions, like skill development programs, to ensure gig work is inclusive and beneficial for all, regardless of gender, age, or education. Such strategic adjustments are key to fostering a supportive environment for gig workers, making this evolving sector more sustainable and rewarding for a wide range of participants.

One of the main limitations of this study is the small sample size, which may limit the generalizability of the results. Our study analysed a small group of 34 participants from Slovenia, which may not fully represent the diverse range of experiences associated with gig work in the country and may limit the generalizability of the results. However, the limited sample size provides a preliminary insight into the state and diversity of gig work, which emphasizes the need for further investigation to improve the representativeness of the findings and relevance. Moreover, the chosen methodology utilized a cross-sectional survey design, which captured a singular temporal snapshot of gig workers' experiences and perceptions.

Thus, to enhance the generalizability of the findings, future research should aim for larger, more diverse participant pools and increase the sample size. Additionally, applying stratified sampling can ensure adequate representation of different segments of the gig worker population. Exploring differences in gig worker experiences across various sectors can provide deeper insights. Conducting longitudinal studies would also offer comprehension of the dynamics of the gig economy and an understanding the long-term effects of gig work, tracking changes in employment conditions, job satisfaction, and overall well-being. Qualitative methods like detailed interviews or focus groups can also offer a deeper insight into gig work's complexities, enriching the quantitative data.

Accordingly, the study suggests the need for refined policies and strategies in the gig economy. In today's rapidly changing world, where traditional employment no longer meets modern expectations, gig work or project-based work presents both challenges and significant opportunities that can profoundly transform our society and the way we work. Hence, it is crucial for policymakers, local communities, and academic circles to recognize the characteristics of gig work and new career paths, and to create conditions that promote the growth and development of new values in the digital market while ensuring adequate support and security for those opting for independent professional paths.

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Analiza zaznav delavcev in demografskih dejavnikov - vpogled v slovensko gig ekonomijo

Izvleček

Ta študija obravnava gig ekonomijo v Sloveniji, s posebnim poudarkom na zaznanih prednostih in izzivih za gig delavce v tem nastajajočem modelu dela. Namen raziskave je zajeti posledice prožnega, projektnega zaposlovanja v manjšem evropskem kontekstu, saj ta trend postaja vse bolj razširjen v svetovnem merilu. S kvantitativnim pristopom je bila izvedena raziskava med 34 gig delavci v Sloveniji. Namen raziskave je bil analizirati njihove demografske značilnosti, razloge za vključitev v gig delo ter koristi in izzive, ki jih doživljajo. V ugotovitvah je 64 % anketirancev kot prevladujočo prednost gig dela izrecno navedlo fleksibilnost urnika. Vendar pa je raziskava razkrila tudi precejšnje izzive, vključno z večjo konkurenco na trgu in pomanjkanjem socialnih ugodnosti. Poleg tega raziskava kaže, da je dojemanje prednosti gig dela splošno priznano v različnih starostnih skupinah in na različnih ravneh izobrazbe, pri čemer ni bistvenih razlik. Kljub temu pa ugotovitve kažejo na razlike med spoloma pri zaznavanju gig dela, saj moški zaznavajo višjo raven finančne svobode in poklicnega razvoja kot ženske. Raziskava poudarja zapleteno naravo gig ekonomije, ki usklajuje avtonomijo s pripadajočimi tveganji. Nakazuje potrebo po politikah, katerih cilj je zagotavljanje enakosti, in nadaljnjih raziskavah o usklajevanju gig dela s podpornimi politikami trga dela.

Ključne besede: gig ekonomija, fleksibilnost, profesionalni razvoj, socialne ugodnosti, demografske razlike

Consumer Preferences and Reactions to Brand Expansion

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Abstract

Consumer purchasing power is one of the key determinants of consumer behavior, among other factors. Acceptance of new brands or product line extensions of existing brands is influenced by perceived value. New products can be added to existing product lines by introducing new products within them, or brands can expand horizontally by entering entirely new categories or product lines. Any vertical expansion, whether to a higher or lower level, comes after a price shift and a product quality achievement relative to its base product. While survey-based research provides valuable insights that support the growth of the Premium brand, building a strong relationship with customers, quickly identifying preferences, personalizing the offer and fostering a climate of trust remain its main sources of value. The purpose of the paper is to show the positive relationship that exists between the vertical growth of the brand and the increase in customer loyalty, as shown by the research conducted on a deliberate sample.

Introduction

Perceived value is a term that is most often used in the context of consumer behaviour, and refers to the difference between the buyer's assessment of all the benefits (benefits) and all the costs of a certain offer with the simultaneous perception of possible alternatives. The total value of an offer is the sum of various economic, functional and psychological benefits that the customer expects to arise in the process of making a purchase decision, and ultimately when using what he bought. Thus, perceived value represents the difference between all expected benefits and costs. The perceived value of the same product for different consumers can be very different, therefore it is a subjective category that is subject to the action of numerous factors.

Simply put, the perceived value of a product is the overall impression of quality, that is, the customer's opinion about how much a particular

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product is worth. Perceived value excludes all so-called hidden and invisible processes that led to the creation of the product and includes only what is known to the customer, i.e. the information and manifestations that the manufacturer or seller has publicly expressed. According to previous experiences and information at his disposal, the customer forms his attitude, which is also very important in judging whether a certain product is worth buying or not. Therefore, the perceived value of the product is influenced by other factors besides the quality of the product itself. This is why it happens that the perceived values of different customers for the same product are very different. However, generally speaking, the perceived value of some products and brands, such as premium brands, is high because a large number of consumers consider such products to be worth buying. The term "premium" means a high or added value compared to the value normally expected for a similar product. The success of premium product brands is not only based on the product being of better quality but also on being different from the competition. With premium brands, the emotional component is very important because customers and consumers want to feel special when they buy such a product, as well as when they consume it or give it to another person. According to some authors, prestige is one of the key determinants of perceived value because it implies that certain products are viewed as status symbols. This leads to consumer identification with such products, both through purchase and through use. The purchase and use of premium products are thus connected with the realization of one's personality, which clearly shows the great importance of psychological factors and consumer attitudes that influence the formation of perceived value.

Perceived value influences the acceptance of new products, i.e. brand extension. Expansion can be horizontal or vertical. Horizontal brand extension is used to introduce a new product within an existing (line extension) or new product category. Vertical extension refers to the expansion of a brand within the same product category, but the product is positioned at a different level of price and quality compared to the base brand. Given the differences in price and quality, vertical brand extension can take place both higher and lower. For any brand extension to be successful, there must be some congruence between the base brand and the extended brand. In the case of vertical expansion of a premium product brand, this is especially important, because such brands already have a high image that should not be damaged by the expansion. Consequently, it follows that the vertical expansion of a premium product brand downstream could be risky. When expanding to more, given that the brand is already a status symbol, the higher price will not pose a particular problem to customers, especially if they get the same or higher quality for it. This is because, in addition to quality and price, other factors are of great importance for premium brands.

Market of Luxury Products

Since the 1990s, the market for luxury products has grown rapidly. Truong, Simmons, McColl and Kitchen (2008) find the explanation in the economic recovery of most eastern countries, the economic growth of Southeast Asian countries, and the increase in the number of affordable luxury products. Despite the current global economic crisis, difficulties in the Eurozone, and political instability, the global luxury goods market remains largely positive. The word "luxury" is used in everyday life to describe products, services or a certain lifestyle, although often without a clear understanding of its meaning. While ordinary products are used every day to fulfil basic human needs, luxury products are characterized as objects of desire that provide pleasure (Barry, 1994), they are not necessary, that is, their purpose is exclusively to contribute to a luxurious life (Webster's dictionary, 2002). The word "luxury" is used in everyday life to describe a certain product, service or lifestyle and often, almost always, it is described through the perception of the consumer. In the case of luxury products, a considerable amount of work and funds is invested in creating a distinctive, characteristic, recognizable product design and creating a trademark (trade mark) that represents the recognizable brand of its owner on the market. Although luxury products allow users to satisfy functional as well as psychological needs, psychological benefits are still considered the main factor differentiating luxury from non-luxury products or counterfeits (Arghavan & Zaickowsky, 2000). Premium brands in the minds of consumers include associations of a high level of quality, aesthetics, rarity, excellence and price, and a high degree of non-functional benefits (Heine, 2012). Summarizing the results of previous research (eg Kapferer, 2001; Kisabaka, 2001), Heine (2012) states that these are: price, quality, aesthetics, rarity, extraordinary and symbolism. Taking on the role of experts, luxury product manufacturers often set style trends, which are then adopted by mass-market manufacturers (Goody, 2006). A protected trademark or brand represents the property of its owner by which he protects the investment in the quality and reputation of the product and as such enjoys legal protection. Nueno & Quelch (1998) define it as satisfying needs regardless of cost. Kapferer (2001), Kisabaka (2001) and Heine

(2012) cite six basic characteristics by which they can be distinguished from other brands on the market, namely: price, quality, aesthetics, rarity, extraordinary and symbolism. Something special is expected from a luxury product, a certain "shift" that comes from small details. Given the extravagance, the luxury product has a so-called eccentric selling proposition that facilitates the vertical extension of the premium brand. Eccentricity can, in addition to style, be achieved through innovative functional properties (Heine, 2012). Companies ensure rarity through limited production and individualization of their products (Catry, 2003). Nueno & Quelch (1998) conclude that luxury fashion brands share the following characteristics: ensure consistent delivery of premium quality, have a heritage of craftsmanship, often derived from original designers, have a recognizable style or design, are produced in limited quantities to ensure exclusivity and preferably create consumer waiting lists, limited distribution and premium prices support a market position that combines emotional appeal with manufacturing excellence, have a global reputation and association with a country of origin that has a particularly strong reputation as a source of excellence in a specific product category, possess an element of uniqueness and the value and personality of its creator. Perceived value is an abstract term whose meaning varies depending on the context, and different authors give different definitions of perceived consumer value. According to Zeithaml (1988), perceived consumer value is the consumer's overall evaluation of the utility of a product or service based on perceptions of what the consumer has given and received in return. According to a significant number of relevant authors (Dodds, Monroe & Grewal, 1990; McDougall & Levesque, 2000; Lapierre, 2000; Woodal, 2003) perceived value for the consumer is analyzed as a relationship between benefits and costs or between quality and costs. On the other hand, authors such as Sheth et al. (1991), Sweeney & Soutar (2001), Roig et al. (2006) include the concept of multidimensionality of perceived value according to which perceived value gives the sum of different dimensions of value that have different influence in different situations. Many authors such as Woodruff, De Ruyte et al., Sweeney & Soutar, Sanchez et al. (in Roig et al., 2006) state that the second approach is based on a multidimensional concept of perceived consumer value consisting of two main dimensions: cognitive, which is mainly related to the economic values of the main product or service, and affective, which includes the social and emotional value of the product. When it comes to premium products, the perceived value should not be seen as the outcome of a single value that is the result of the difference between benefits and costs, but that perceived value is complex, which is why it should be seen as a multidimensional value.

Preferences towards luxury products

Luxury products represent people's desire to be exclusive and inaccessible to certain layers of society, to thereby distance themselves from certain social circles, and thus to become different and unique. In the luxury goods market, the brand decides to buy long before the act of exchange has even taken place. The decision to buy a certain brand, a certain luxury product, is made by the prior positioning of the brand on the market of luxury products and its brand name in the minds of consumers. The key to success in the luxury product market is conditioned by a detailed knowledge and understanding of human emotional needs and desires. The strength of a luxury product depends on the position that the luxury brand has in the mind of the consumer in relation to other luxury brands. Manufacturers of luxury products are aware of the fact that the customer can always get fed up with them and replace them with a new luxury product brand or product line of an already used brand, so brand extensions are a matter of sustainability.

Luxury as a concept and luxury goods have attracted considerable attention in recent years of research. However, the term "luxury" is becoming more complex with the increased availability of luxury goods in the market, resulting in different interpretations and definitions depending on individuals and circumstances (Akther 2014, p. 4). 8 In his research paper "Review on Luxury Products" (2022), Yaoxuan, F., highlights a significant change in consumer perceptions of luxury. Luxury used to be reserved for buyers with high incomes, but now it can be seen that consumers, even those with lower incomes, are more willing to shell out significant amounts for luxury goods. This transformation in the perception of luxury opens the door to new market segments, and the traditional idea that luxury is exclusively the domain of high society becomes a thing of the past. In the research of the author Varga, E. I. (2020), which deals with the market of personal luxury goods, it was pointed out that preferences for luxury products depend on the age, income, and gender of the consumer. It is interesting that the group of young people aged 18 to 25, often students with limited financial means, shows a strong interest in personal luxury products. This segment of the market has significant participation, which indicates the need for precise segmentation of the consumer market to better understand the specific needs and wishes of different groups of consumers (Varga, 2020). All these studies together point to the dynamics of the luxury goods market and changes in the way consumers perceive luxury. This drives the need to adapt marketing strategies to meet different needs and wants in the world of luxury. In addition, the importance of an innovative approach to consumers is emphasized to build a deeper and more personal relationship with them.

Customers, when considering different brands of luxury products and appreciating and recognizing the creativity and efficiency of the products they buy, choose one brand of luxury product on the market to buy, having expectations about the purchased luxury product, that is, the brand they have chosen. Brand loyalty means that when the time comes for customers to repurchase products or services that satisfy the same needs, bearing in mind a positive experience and satisfaction, they will probably buy the same brand of product or service (Vranešević, 2007). The feeling of rarity fulfils the consumer's desire to be unique and different from other consumers Xingqiu Lou (2022). Moreover, luxury has a more distinctive character and creates a personalized relationship between the product and the consumer Kessous at al. (2019). With luxury consumption, social, emotional, quality, and financial values have been recognized as crucial dimensions Amatulli et al (2020). Research suggests that consumers purchase luxury goods not just to meet basic life needs but for the fact that the symbolic value of luxury brands increases consumers' self-esteem, the extent of recognition by others, and meets the emotional requirements of individuals (Smith Maguire & Hu, 2013; Li et al., 2022). In addition to social identity, the self-congruity theory explains that consumers seek consistency in cognition (such as beliefs, values, and personality) and behaviour. Inconsistency would make consumers feel worried, anxious, or dissatisfied (Wang et al., 2022).

The importance of loyalty in the luxury market is invaluable, where the battle for loyalty ensures survival in the market. On the other hand, the importance of loyalty to manufacturers of luxury products implies the possibility of fairly accurate forecasting of the purchasing behaviour of consumers of luxury products in the future. Therefore, large resources are directed towards researching the satisfaction of buyers of luxury products, why they buy a certain brand of luxury product, what their experiences are when buying a luxury product, what their experiences are when using it, and whether the purchased product has met their expectations.

Brand Extension Research to Date

Traditional luxury brands began their expansion through brand extensions, especially in the fashion industry, and in the perfume industry (Aaker, 1991). As expressed by Kapferer & Bastien (2009, p. 2), brand extensions allow luxury brands to grow faster without being limited by purely organic growth. But, for Stankeviciute & Hoffmann (2011), the way brand extension works for a consumer brand is different from that for a luxury brand. In addition, there are many different theories when it comes to the consumption of luxury brands and after extensive research of various literature sources, it can be concluded that high-price strategies are what attract consumers to luxury brands. This stems from Veblen's (1899) theory of conspicuous consumption, which states that people who have a higher disposable income consume expensive and luxurious goods and services as a way of displaying their wealth as a way of gaining a certain status in society. Mason (1998) also found that consumers are willing to pay a higher price for a product of similar quality to impress those of higher social status. Furthermore, the term "luxury" can be difficult to define as the reason why certain products are classified as superior to other products is mainly determined by customers' perceptions of these products (Baines & Fill, 2014). Hoffman & Coste-Maniere, 2012 indicate the seriousness of managing product premium brand extensions and conclude their research that premium brand extension negatively affects consumers' perception of premium brand value.

Premium brands follow the so-called vertical brand expansion strategy to serve growing niches of affordable luxury. Nevertheless, the upgrade of a premium brand extension, which involves a difference in price and/or quality, may lead to "consumer concerns, questions or disagreement about the level of quality of the core brand" (Kim & Lavack, 1996). The extension of the luxury product brand to the lower end harms the concept of luxury Eren-Erdogmus at al. (2018), while the extension of a luxury product brand to more increases the perception of brand luxury Margariti et al. (2019). The extension of the luxury product brand downstream affects the unfavourable image of Phau at al. (2021). Trust, quality perception, emotional connection and effective marketing strategies are the key factors that enable the parent brand to support the success of the premium extension Lee et al. (2023). The role of the parent brand is not only in recognition but in creating continuous trust and loyalty that enables successful expansion into the premium segment Ahn et al. (2018). Companies must carefully communicate the values and qualities of the new product, emphasizing the connection with the parent brand. Clearly communicating how the new product maintains the quality and value standards of the parent brand can help convince consumers of the superiority and value of the premium extension Prados-Peña & Barrio-García (2020). Chanda & Moharir (2020) believe that consumers often associate the reputation of the parent brand with the expected quality of new products. Thus, if the parent brand is known for its excellence, consumers will have greater confidence in the quality of the premium extension.

Research Methodology

As already stated, perceived value is a subjective category, therefore its measurement and generalization in practice is a problem. As modern business requires continuous adaptation of the offer to the needs and desires of consumers, which change over time, it is necessary to respond to market pressure in terms of adapting the product portfolio to the needs and desires of price-insensitive consumers, rather than picky consumers. The perceived value of premium brand products among a large number of customers is very high, which indicates that the product program is not static, but follows the needs and wishes of consumers, the competition and the market. Since individual products, lines, and even the entire production program can be included under the same brand, it is necessary to establish the relationship between the product and the brand, carefully implementing the extension of the premium brand from the basic one to other products and lines, guided by, on the one hand, effectiveness and the efficiency of the strategy, that is, on the other hand, the perception of value, the extension of the premium product brand from the consumer's point of view. In the strategic planning of the brand, it is necessary to think about all the advantages and disadvantages of different forms that can be branded and, in accordance with the analysis, to strategically plan the construction and introduction of the brand. The development of measurement scales in brand extension research is critical for accurately and validly measuring consumer perceptions, the success of the extension, and its impact on the luxury brand. The process of developing these scales involves several steps to ensure their reliability and validity. For the stated reason, the measurement scale was taken from several authors who dealt with the vertical expansion of the brand and it is adapted to consumers in a very small market, in general, and in the very small market of luxury brands. The measurement instrument developed by Oz, Donthu & Lee (2000) provides a comprehensive framework for understanding the key variables that influence customer satisfaction and loyalty towards a new product. Product uniqueness, matching customer demand, social media recommendations, first choice compared to other products, trust in the company and customer loyalty are key factors that contribute to the success of a new product. Understanding and measuring these variables allows companies to adjust their strategies and ensure long-term market success. This ranking covers several key aspects, including product uniqueness, alignment with customer demand, social media recommendations, customer loyalty and willingness to repurchase. In this essay, we explore these variables and how they affect the success of a new product. Development of measuring instrument through components:

(i) The uniqueness of the new product - One of the key elements in measuring customer satisfaction is the uniqueness of the new product. This includes the customer's perception that the product is unique in its appearance, features and use. Consumers are often looking for innovative products that stand out on the market. If the new product is unique, it can attract curious consumers who want to try something new and different. Such uniqueness can serve as a powerful differentiator, helping a product stand out from the competition; (ii) Compliance with customer demand - A product must be aligned with customer requirements and demand to be successful. Oz, Donthu and Lee's scale involves measuring customers' perceptions of how well a new product meets their needs. A product that meets customer expectations not only meets their current needs but also anticipates future wishes. This includes functional aspects of the product, such as performance, quality and usability, as well as emotional aspects, such as satisfaction and a sense of value for money; (iii) Recommendations via social media.

Social media referrals have become a key factor in modern marketing. Including this variable in the measurement scale helps to assess the willingness of customers to recommend the product to their friends and acquaintances through social networks. Positive reviews and recommendations on social media can significantly influence brand perception and attract new customers. Customers who are willing to recommend a product via social media tend to be very satisfied with the product, which can further increase its visibility and acceptance in the market; (iv) The first choice compared to other products - Customers often have many options when choosing a product. The measurement scale involves assessing how often a new product is the first choice of customers compared to other products or brands. If consumers regularly choose a new product as their first choice, this indicates a high level of satisfaction and preference. This variable is crucial because it shows how competitive the new product is in the market and how well it meets customer expectations compared to alternatives; (v) Confidence in the company - Trust in the company producing the new product also plays a significant role in the success of the product. Customers who trust the company behind the product are more likely to be loyal and willing to try new products from that company. Trust can be built through consistent quality, transparent communication and positive experiences with previous products. The trust variable included in the measurement scale helps to understand how much customers believe that the new product will meet their expectations based on the company's reputation; (vi).

Customer loyalty - Customer loyalty is key to the long-term success of any brand. This variable includes the willingness of customers to recommend a new product to their friends and acquaintances and to repeat the purchase of the same product. A high level of loyalty indicates satisfaction with the product and its ability to meet customer needs over time. Loyal customers not only make repeat purchases but also often become brand ambassadors, spreading positive information about the product and increasing its popularity. The research was conducted on a relatively small intentional sample but by random selection, in luxury goods stores in the cities of Zagreb, Split, and Dubrovnik. The research results were processed in the SPSS program.

For this research, a survey questionnaire was created. A survey questionnaire was used to collect data. The survey questionnaire is divided into 3 parts according to the type of question. The first part consists of 5 multiple-choice questions, and they concern the socio-demographic characteristics of the respondents in this research. The second part consists of 4 questions related to the perceived value of premium brand products. The last chapter consists of 8 questions related to the assessment of the respondents' tendency towards vertical expansion. The answers offered in the second and third parts were Likert scales from 1 to 5 (1 indicated the lowest degree of agreement with the question/statement, and 5 the highest degree of agreement with the question/statement).

As already stated, each premium product brand must have specially defined, unique values that make consumers choose a premium brand. The main objectives of the work include an analysis of the basic determinants of brand management and strategic positioning, an analysis of the process of vertical expansion, and an analysis of the perceived value of a premium brand. Four basic research hypotheses are set:

H1: There is a positive relationship between the perceived value of premium products and vertical expansion to more.

H2: There is a statistically significant difference in respondents' attitudes/inclinations between upward vertical expansion and downward vertical expansion, in favour of upward vertical expansion.

H3: Customers with high perceived value show a preference for vertical expansion to more.

H4: Customers with lower perceived value show a preference for vertical expansion downwards.

Reliability analysis was carried out before the start of the statistical analysis to determine whether and to what extent the measurement scale used in this research is reliable; in other words, what is the internal consistency of the questionnaire used in this research. For this research, two measuring scales were used, one to assess the perceived value of a premium product brand (four items) and the other to assess the respondent's tendency towards vertical expansion (eight items). The answers offered for both scales were in the form of a Likert scale from 1 to 5 (1 indicated the lowest degree of agreement with the question/statement, and 5 the highest degree of agreement with the question/statement).

Table 1 shows the results of frequency analysis, i.e. descriptive statistics for certain socioeconomic characteristics of respondents in this research. From Table 1, it can be seen that 58.95% of women and 41.05% of men participated in this research, a purposive sample who were surveyed in retail spaces that sell premium brands of clothing and footwear products, and fashion accessories.

Regarding the age structure of the respondents, the largest percentage of respondents belonged to the age group of 26 to 30 years (38.95%), followed by respondents in the age group of 18 to 25 years (33.16%) and respondents in the age group of 41 years and more (12.63%). The largest percentage of respondents determined by level of education (60%) had completed high school, while an almost equal percentage of respondents had completed undergraduate studies (19.47%), i.e. completed graduate studies (18.95%). The lowest percentages of respondents were those with completed elementary school (1.05%) and postgraduate studies (0.53%). Regarding work status, the majority of respondents (68.95%) are permanently employed, compared to 10.53% of respondents in this research who are temporarily employed. There were 13.68% of students, and the smallest percentage was the unemployed (6.84%). 51.53% of respondents have a monthly income in the amount of more than HRK 7,001 (€928.14), followed by 27.89% of respondents with a monthly income in the range of HRK 5,001 (€662) to HRK 7,000 (€928). While 0.05% of respondents have no monthly income.

Table 1
Sociodemographic characteristics of the respondents

Gender	Male	Female			
	41.05%	58.95%			
Age	18-25	26-30	31-35	36-40	41+
	33.16%	38.95%	10.00%	5.26%	12.63%
Education degree	Elementary School	High school	Undergraduate studies	Graduate study	Postgraduate study or doctorate
	1.05%	60%	19.47%	18.95%	0.53%
Employment status	Unemployed	Temporary employed	Permanently employed	Student	
	6.84%	10.53%	68.95%	13.68%	
Monthly income	No income	< 3,500 HRK	3,501-5,000 HRK	5,001-7,000 HRK	> 7,001 HRK
	0.05%	8.42%	12.11%	27.89%	51.53%

Source: Authors' work

Table 2 shows the basic descriptive parameters of respondents' responses to questions from the questionnaire related to the perceived value of premium brand products. From the average values of respondents' answers, it can be concluded that the highest average value was determined for respondents' answers to the statement "I think it is worth buying a certain brand of product" (3.91 ± 0.917). In other words, on average, respondents agree to the highest degree with this statement. The next highest average value of respondents' answers was determined for the statement "I believe that a certain product brand is worth its price" (3.55 ± 1.000). The lowest average value of respondents' answers was recorded for the statement "The displayed price of a certain brand of product is very acceptable" (3.16 ± 0.995), based on which it can be concluded that the respondents, on average, showed an ambivalent attitude regarding this statement.

Table 2
Basic descriptive statistics of respondents' answers (perceived value of premium brand)

	N	Minimum	Maximum	Mean	Std. Deviation
I believe that a certain brand of product is worth its price.	190	1	5	3.55	1.000
A certain brand of product is very economical considering its price.	190	1	5	3.35	0.913
I think it's worth buying a certain brand of product.	190	1	5	3.91	0.971
The displayed price of a certain product brand is very acceptable.	190	1	5	3.16	0.995
Valid N (listwise)	190				

Source: Authors' work

From Table 3, which shows the basic descriptive parameters of respondents' answers to questions from the questionnaire that determine their preference for vertical expansion, it can be seen that in terms of vertical expansion, the highest average value was recorded for the answers to the statement "In the event that a similar product appears on the market a product of the same brand/brand as my favourite product, but of higher/better quality, I would be interested in that product. " (3.73 ± 1.140). It is followed by the average value of the respondent's answer to the statement "In the event that a similar product of the same brand/brand as my favourite product, but of higher/better quality, appears on the market, I would buy that product" (3.68 ± 1.125). The average values of respondents' responses for the remaining statements related to vertical expansion to more (concerning higher product prices) are less than 3, which suggests that respondents did not agree with these statements; in other words, respondents are interested in a similar product of the same brand of higher quality and are willing to buy such a product, however, they are not interested in buying a similar product of the same brand at a higher price.

On the other hand, regarding the issue of vertical expansion downwards, the highest average response values were given by the respondents to the statement "In the event that a similar product of the same brand/brand as my favourite product appears on the market, but at a lower price, I would be interested in that product" (4.02 ± 1.129) and to the statement "In the event that a similar product of the same brand/brand as my favourite product appears on the market, but at a lower price, I would buy that product" (3.91 ± 1.183). The average values of respondents' answers to statements concerning their interest and intention to buy a similar product of the same brand but of lower quality are less than 3 (2.04 ± 1.159 and 1.97 ± 1.177), which indicates a certain negative attitude of respondents towards vertical expansion downwards from the aspect of lower product quality.

Table 3
Basic descriptive statistics of respondents' answers (propensity for vertical expansion)

	N	Minimum	Maximum	Mean	Std. Deviation
In the event that a similar product of the same brand/brand as my favourite product, but with a higher price, appears on the market, I would be interested in that product.	190	1	5	2.48	1.312
If a similar product of the same brand as my favourite product, but with a higher price, appears on the market, I would buy that product.	190	1	5	2.22	1.191
In the event that a similar product of the same brand/brand as my favourite product, but of higher/better quality, appears on the market, I would be interested in that product.	190	1	5	3.73	1.140
In the event that a similar product of the same brand/brand as my favourite product, but of higher/better quality, appears on the market, I would buy that product.	190	1	5	3.68	1.125
In the event that a similar product of the same brand/brand as my favourite product appears on the market, but at a lower price, I would be interested in that product.	190	1	5	4.02	1.129
If a similar product of the same brand as my favourite product, but with a lower price, appears on the market, I would buy that product.	190	1	5	3.91	1.183
In the event that a similar product of the same brand/brand as my favourite product appears on the market, but of lesser/worse quality, I would be interested in that product.	190	1	5	2.04	1.159
In the event that a similar product of the same brand/brand as my favourite product, but of lesser/poorer quality, appears on the market, I would buy that product	190	1	5	1.97	1.177
Valid N (listwise)	190				

Source: Authors' work

The Cronbach Alpha test was used to examine the reliability of both scales used in this study (Table 4). The results of Chrombach's alpha test for the first measurement scale (estimation of the perceived value of the premium product brand) is α = 0.797, and it can be concluded that the reliability, i.e. internal consistency, of the first questionnaire used in this research is very good. The obtained value α = 0.681 of Chrombach's alpha test for the second measurement scale (estimation of vertical expansion propensity) indicates good reliability of the second measurement scale used in this research.

Table 4
Cronbach alpha test

Measurement	Cronbach alpha	Number of items
Estimation of the perceived value of the premium product brand	0.797	4
Estimation of vertical expansion propensity	0.681	8
Case processing summary: 190 valid cases, 190 total cases		

Source: Authors' work

To test the first hypothesis of this research, which reads "There is a positive relationship between the perceived value of premium products and vertical expansion to more", correlation analysis was used. From the results of the correlation analysis (Table 5), it can be concluded that there is a positive, small correlation ($r = 0.300$, $p < 0.001$) between the perceived value of premium products and the vertical expansion to more among the respondents in this research. Namely, the higher the respondents' perceived value of premium products, the greater their inclination towards vertical expansion to more, thus confirming the hypothesis.

Table 5
Results of the correlation analysis between background music in the store and consumer behaviour

		Vertical expansion to more
Perceived value in total	Pearson Correlation	0.300***
	Sig. (2-tailed)	0.000
	N	190

Source: Authors' work

To examine the second hypothesis of this research, that there is a statistically significant difference in the respondents' attitudes/inclinations between vertical expansion to higher and vertical expansion to lower, in favour of vertical expansion to higher, a t-test for dependent samples was used. The level of statistical significance was set at $p < 0.05$. Table 6 shows the comparative basic descriptive parameters of respondents' answers in the analyzed variables.

Table 6
Comparative basic descriptive statistics of respondents' answers in the analyzed variables

Pair sample statistics					
		Mean	N	Std. Deviation	Str. Error Mean
Pair 1	Vertical expansion to more	3.0276	190	0.86386	0.06267
	Vertical expansion downwards	2.9829	190	0.74227	0.05385

Source: Authors' work

Table 7
The results of the t-test to determine a statistically significant difference between the responses/attitudes of the respondents regarding the tendency to vertical expansion to higher (VP to higher) and to lower (VP to lower)

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	VP to more - VP down	0.04474	0.93611	0.06791	-0.08923	0.17870	0.659	189	0.511

Source: Authors' work

Table 7 shows the results of the conducted t-test to determine a statistically significant difference in the attitudes/inclinations of respondents between vertical expansion to higher and vertical expansion to lower. From the obtained results of the t-test for dependent samples, it can be concluded that no statistically significant difference was found between the respondents' attitudes/tendencies towards vertical expansion upwards, i.e. vertical expansion downwards ($t(189) = 0.659$; $p = 0.511$). This result did not confirm the second hypothesis of this research.

ANOVA statistical analysis was used to test the following hypotheses of this research: "Customers with high perceived value show a tendency towards vertical expansion higher" and "Customers with lower perceived value show a tendency towards vertical expansion lower". For the purposes of this analysis, the average values of respondents' answers to a set of questions assessing their perceived value were taken into account. Based on these average values, the respondents were divided into three groups according to their perceived values; a group of lower perceived value, a group of medium perceived value and a group of higher perceived value. Dependent variables consisted of the average values of respondents' answers to a set of questions about vertical expansion to higher (VP to higher), i.e. average values of respondents' answers to a set of questions about vertical expansion to lower (VP to lower). The level of statistical significance was set at $p < 0.05$. Table 8 shows the descriptive parameters of respondents' answers in the dependent variables, according to perceived value groups.

From the p-value in Table 9 it can be seen that there were statistically significant differences between different groups of perceived value in their responses in the dependent variable "VP to more" ($F (2) = 7.032$, $p = 0.001$) as well as between of different groups of perceived value in their responses in the dependent variable "VP down" ($F(2) = 3.745$, $p = 0.025$).

Table 8

Descriptive statistics of respondents' answers in dependent variables, grouped according to age groups

		N	*Mean*	*Std. Deviation*	*Std. Error*	*95% Confidence Interval for Mean*		*Minimum*	*Maximum*
						Lower Bound	*Upper Bound*		
VP to more	1	63	2.7659	0.76711	0.09665	2.5727	2.9591	1.00	4.50
	2	66	3.0000	0.72058	0.08870	2.8229	3.1771	1.00	5.00
	3	61	3.3279	1.00782	0.12904	3.0698	3.5860	1.00	5.00
	Total	190	3.0276	0.86386	0.06267	2.9040	3.1513	1.00	5.00
VP down	1	63	2.7897	0.63374	0.07984	2.6301	2.9493	1.00	4.00
	2	66	3.0189	0.64646	0.07957	2.8600	3.1779	1.25	4.50
	3	61	3.1434	0.89496	0.11459	2.9142	3.3727	1.00	5.00
	Total	190	2.9829	0.74227	0.05385	2.8767	3.0891	1.00	5.00

Source: Authors' work

Table 9

ANOVA

		Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
VP to more	Between Groups	9.866	2	4.933	7.032	0.001
	Within Groups	131.177	187	0.701		
	Total	141.042	189			
VP down	Between Groups	4.010	2	2.005	3.745	0.025
	Within Groups	100.122	187	0.535		
	Total	104.132	189			

Source: Authors' work

To determine between which groups of perceived value there is a statistically significant difference, the Bonferroni post-hoc test was used (Table 10). The obtained p-values of the post hoc test indicate that there was a statistically significant difference in the respondents' attitudes in the dependent variable "VP on more" between the group with higher and the group with lower perceived value ($p = 0.001$). The average answer value of respondents in the group of lower perceived value was 2.77 (±0.767), while the average answer value of respondents in the group of higher perceived value was 3.33 (±1.008). From these values, it can be concluded that, about the tendency to expand vertically to more, the attitudes of respondents who show a higher perceived value are statistically significantly different from the attitudes of respondents who show a lower perceived value. With this result, the hypothesis that customers with high perceived value show a preference for vertical expansion to more has been confirmed.

The results of the Bonferroni post-hoc test (Table 10), i.e., the obtained p values of the post hoc test indicate that a statistically significant difference in the attitudes of the respondents in the dependent variable "VP to lower" also existed between the group of higher and the group of lower perceived value ($p = 0.023$). The average answer value of respondents in the group of lower perceived value was 2.79 (±0.634), while the average answer value of respondents in the group of higher perceived value was 3.14 (±0.895). From these values, it can be concluded that, about the tendency to vertical expansion downwards, the attitudes of respondents who show a higher perceived value are statistically significantly different from the attitudes of respondents who show a lower perceived value. However, considering the higher average values of responses of respondents in the group of higher perceived value compared to the average values of responses of respondents in the group of lower perceived value, the hypothesis that customers with lower perceived value show a tendency towards downward vertical expansion was not confirmed.

From the obtained results of the t-test for dependent samples, it can be concluded that no statistically significant difference was found between the respondents' attitudes/tendencies towards vertical expansion upwards, i.e. vertical expansion downwards ($t(189) = 0.659$; $p = 0.511$). To test the first hypothesis of this research, which reads "There is a positive relationship between the perceived value of premium products and vertical expansion to more", correlation analysis was used. From the results of the correlation analysis, it can be concluded that there is a positive, small correlation ($r = 0.300$, $p < 0.001$) between the perceived value of premium products and vertical expansion to more among respondents in this research. Namely, the higher the respondents' perceived value of premium products, the greater their inclination towards vertical expansion to more, thus confirming the hypothesis. From the p-value in the ANOVA table it can be seen that there were statistically significant differences between different groups of perceived value in their responses in the dependent variable "VP to more" ($F(2) = 7.032$, $p = 0.001$) as well as between different groups perceived values in their responses in the dependent variable "VP down" ($F(2) = 3.745$, $p = 0.025$).

Table 10
Results of the Bonferroni post-hoc test

Multiple Comparisons							
Dependent Variable			*Mean Difference (I-J)*	*Std. Error*	*Sig.*	*95% Confidence Interval*	
						Lower Bound	*Upper Bound*
VP to more	1	2	-0.23413	0.14752	0.343	-0.5905	0.1222
		3	-0.56200**	0.15045	0.001	-0.9254	-0.1986
	2	1	0.23413	0.14752	0.343	-0.1222	0.5905
		3	-0.32787	0.14876	0.086	-0.6872	0.0315
	3	1	0.56200**	0.15045	0.001	0.1986	0.9254
		2	0.32787	0.14876	0.086	-0.0315	0.6872
VP down	1	2	-0.22926	0.12888	0.231	-0.5406	0.0821
		3	-0.35376**	0.13144	0.023	-0.6713	-0.0362
	2	1	0.22926	0.12888	0.231	-0.0821	0.5406
		3	-0.12450	0.12996	1.000	-0.4384	0.1894
	3	1	0.35376**	0.13144	0.023	0.0362	0.6713
		2	0.12450	0.12996	1.000	-0.1894	0.4384

*Note: ** The mean difference is significant at the 0.05 significance level.*
Source: Authors' work

As we have seen, based on processing the results using the following tools: descriptive statistics, Cronbach alpha, correlations, t-test, ANOVA, and the results of the Bonferroni post-hoc test, it was possible to confirm the H1 (There is a positive relationship between the perceived value of premium products and vertical expansion to more) and H3 (Customers with high perceived value show a preference for vertical expansion to more). While H2 (There is a statistically significant difference in respondents' attitudes/inclinations between upward vertical expansion and downward vertical expansion, in favour of upward vertical expansion) and H4 (Customers with lower perceived value show a preference for vertical expansion downwards) were not confirmed.

All of the above needs to be analyzed in the light of two limitations. The first is the relatively small number of respondents, even though it is a purposive sample, and the second limitation is the large number of variables that the respondents had to evaluate, which could have led to fatigue or poorer discernment of the importance of traits during the evaluation. It is not excluded that some respondents have no experience with any of the three offered premium brands, which jeopardizes the validity of their answers. Despite the mentioned limitations, the research results can be considered indicative, i.e. they have a certain theoretical, methodological and managerial importance. The methodological value of the work is reflected in two important facts: (1) the paper, based on the results of empirical research, provides an overview of the vertical extension of a premium brand, thereby supplementing the existing empirical knowledge, which until now has been limited to brand extension research in general and (2) a questionnaire was applied in the paper, created based on all previously offered questionnaires for measuring brand extension and adapted to the Croatian market, which is relatively small. One of the important limitations is the complexity of the luxury product market, given that it is dynamic and complex, with numerous factors that influence consumer perception. A separate research should be done for each part of the luxury market. Also, an important limitation is that the extension of the brand has not been explored, which can result in the cannibalization of existing luxury products. Therefore, the obtained results should be seen exclusively in the vertical expansion of the brand to more. Finally, the paper can offer several recommendations to managers in the field of brand management. Since the luxury brand industry is global, and the experts who manage the global brand portfolio, understanding brand extension - vertically in different cultures helps in creating a successful global marketing strategy, the results of this research can provide insight into possible cultural differences in recognizing the dimensions of brand extension in relation to price and quality.

Vertical brand extension is a complex and dynamic strategy that requires detailed and diverse research. The research gaps identified in this paper identified by the authors and according to the research are: cultural variations, long-term effects on brand equity, the influence of the digital environment and industry specificities. Understanding and filling these gaps can help companies develop more effective expansion strategies and more successfully manage their brand perception in the marketplace. One of the main research gaps relates to cultural variations in the perception of vertical brand extension. Most existing research has been conducted in Western contexts, ignoring how consumers from different cultural backgrounds perceive vertical extensions. For example, in a culture where social hierarchies and status are extremely important, premium products may have a different effect on brand perception compared to a culture where egalitarianism and value for money are key factors. Understanding these cultural differences can help companies adapt their expansion strategies and communicate effectively with different markets. Another significant research gap concerns the long-term effects of vertical brand extension on brand equity. While many studies focus on short-term outcomes, such as initial consumer reaction or immediate sales, there is less research that tracks long-term consequences. Long-term impacts include changes in brand perception, consumer loyalty and overall brand value. Is it possible that the negative consequences of expanding to the lower price segment in the long term outweigh the short-term financial benefits? Or, conversely, can premium expansion maintain the brand's long-term prestige? These questions require longitudinal studies that monitor effects over a longer period of time. With the development of digital marketing and social networks, a new research gap is emerging in the context of vertical brand extension. Digital platforms offer new channels for the launch and promotion of extended products, and the influence of social networks on consumer perception is becoming increasingly significant. There is little research that addresses the specifics of how digital marketing and social media influence the success of vertical expansion. For example, how do influencers and online reviews shape perceptions of a premium or economy product? Understanding the digital landscape can help brands better leverage these channels for successful expansion. Another research gap lies in the different effects of vertical brand extension in different industries. A brand extension may not have the same effect in the automotive industry as it does in the luxury fashion or food industry. Each industry has its own specific characteristics, market dynamics and consumer habits that can affect the success of an expansion. Investigating how industry specificities shape vertical expansion outcomes can provide deeper insights and allow firms to adapt their strategies according to the industry context.

Research results can help managers identify demographic and psychographic profiles of new consumer segments that they can target through vertical expansion, whether they are price-sensitive consumers (downward extension) or highly prestigious segments (upward extension). Managers of luxury brands can use research findings on vertical brand extension to develop strategies that balance market expansion with maintaining brand exclusivity and prestige. Careful planning, clear positioning and continuous monitoring of performance are key to successful vertical brand extension, which is the author's contribution to this topic.

Conclusion

As stated in the paper, the brand has different dimensions and elements, and all of them affect the perceived value of consumers. Each brand is a kind of combination of elements, which can have different meanings, and which consumers can experience in different ways. In the empirical part of the work, a reliability analysis was carried out before the start of the statistical analysis to determine whether and to what extent the measurement scale used in this research is reliable, in other words, what is the internal consistency of the questionnaire used in this research. The goals set in the paper are the analysis of the basic determinants of brand management and strategic positioning, the analysis of the process of vertical expansion, and the analysis of the perceived value of a premium brand. According to the results of the research, can be concluded that there is a positive relationship between the perceived value of premium products and vertical expansion to more, and that customers with a high perceived value show a preference for vertical expansion to more. It was not confirmed that there is a statistically significant difference in the respondents' attitudes/inclinations between vertical expansion to higher and vertical expansion to lower, in favour of vertical expansion to higher and that customers with a lower perceived value show a preference for vertical expansion to lower. In conclusion, the analysis of theory and the results of empirical research suggest that the concept of vertical expansion of a luxury brand is to the greatest extent described by its symbolic function, which is confirmed by the obtained dimensions, given that consumers do not react to an increase in the price of a luxury product and the expansion itself is associated with greater recognition of the luxury brand and in the end, loyalty itself. The comparison between the obtained research results on a wide range of brands of all product categories and types, and research exclusively on luxury brands, once again confirmed the specifics of luxury products, and their orientation towards value, aesthetics, excellence and symbolic value, because the mentioned characteristics are much more readable from the purchase luxury brands.

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Potrošniške preference in odzivi na širitev blagovne znamke

Izvleček

Kupna moč potrošnikov je poleg drugih dejavnikov eden od ključnih dejavnikov, ki določajo vedenje potrošnikov. Na sprejemanje novih blagovnih znamk ali razširitev proizvodnih linij obstoječih blagovnih znamk vpliva zaznana vrednost. Novi izdelki se lahko dodajo obstoječim linijam izdelkov z uvedbo novih izdelkov znotraj njih, ali pa se blagovne znamke lahko horizontalno razširijo z vstopom v povsem nove kategorije ali linije izdelkov. Vsaka vertikalna širitev, bodisi na višjo ali nižjo raven, sledi spremembi cene in doseženi kakovosti izdelka glede na osnovni izdelek. Medtem ko raziskave, ki temeljijo na anketah, zagotavljajo dragocene informacije, ki podpirajo rast blagovne znamke Premium, ostajajo glavni viri njene vrednosti vzpostavljanje trdnih odnosov s strankami, hitro prepoznavanje preferenc, prilagajanje ponudbe in spodbujanje ozračja zaupanja. Namen prispevka je prikazati pozitivno povezavo, ki obstaja med vertikalno rastjo blagovne znamke in povečanjem zvestobe strank, kot je pokazala raziskava, izvedena na namerno izbranem vzorcu.

Ključne besede: premium blagovna znamka, pozicioniranje, vertikalna širitev premium blagovne znamke, preference potrošnikov, odziv strank na vertikalno razširitev

Dimensions of Corporate Governance in Public Relations Literature: A Systematic Review

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Abstract

This article aims to uncover the dimensions or characteristics of corporate governance in the literature of public relations that are also related to communication. We employed a methodological approach based on a systematic review of scientific articles in the field of public relations using the PRISMA method, along with content analysis through axial coding, the use of the Atlas.ti tool, and meta-analysis. After reviewing two major online research databases, Science Direct and Emerald, we narrowed our search to Public Relations Review as the fundamental scientific journal in the field of public relations. We identified 19 communication dimensions of corporate governance, consolidating related concepts into ten. The originality of this research lies in identifying key communication dimensions of corporate governance as an institutional framework for public relations. The research results reinforce the significant role of communication even in the processes of institutionalizing corporate governance.

Introduction

In this article, we are interested in the interplay between public relations and corporate governance. The aim, within the literature on public relations, is to uncover those dimensions or characteristics of corporate governance that are also related to communication or have some relationship with public relations.

Organizations are embedded in a constantly changing social, economic, technological, legal, and political environment, where mutual interactions occur, and they are managed within the structural prerequisites of external expectations and demands. According to neo-institutional theory, the ever-evolving expectations and demands of the social, economic, and political environment serve as an institutional framework that both enables and constrains organizational functioning. (cf. Aksom & Tymchenko, 2020; Diogo et al., 2015; Powell, 2007; Scott, 2014; Scott & Meyer, 1983). According to the sociological concepts, every company is an organization at the same time, but every organization is not a company at the same time. In the broadest sense, organisations are goal-oriented groups of people who operate in certain institutional contexts, i.e. within socially constructed norms, rules and values that enable and at the same time limit their functioning (cf. Deephouse & Suchman, 2008; Scott, 2014; Stinchcombe, 1968). For economic organizations, that is, a collective based on the division of labour, in this article, we use the term company. One of the significant institutional contexts for companies is corporate governance, as it represents the institutional framework of expectations from the socio-economic and political environment by which companies are directed and controlled (cf. IoDSA, 2016; The Committee on the Financial Aspects of Corporate Governance, 1992). It pertains to the institutionalized interactions among various actors (Bevir, 2010).

Organizations, including companies, always have some interaction with the environment in which they operate, regardless of whether they have a formal organizational function of public relations or not. The function of public relations enables companies to recognize and respond to social demands (Marschlich, 2022) through social interactions, using purposeful communication as a fundamental tool of public relations. Within these interactions, shared understandings of meanings, norms, values, and cognitive schemas emerge. Thus, public relations play a crucial role in maintaining organizational legitimacy (cf. Betteke van Ruler, 2014; Betteke van Ruler & Verčič, 2005), as they convey shared understandings of meanings, norms, and values from the external organizational environment to the organization, and vice versa: organizational meanings are transmitted to the external environment. By expanding meanings among organizational members, external expectations and demands become internalized, aiming to preserve organizational stability and legitimacy. Simultaneously, by disseminating organizational meanings among stakeholders in the external environment, mutual understanding and acceptance of the organization are achieved within the context in which it operates. This, indeed, is the fundamental purpose of public relations.

Corporate governance as an institutional framework of public relations

The separation between ownership and management of companies necessitates the introduction of mechanisms to achieve alignment in business operations among the company, its owners, and other stakeholders. This involves an interactive decision-making process and a set of voluntarily agreed-upon rules that define, guide, and oversee the behaviour of actors (cf. Berle & Means, 1932; Commission on Global Governance, 1995, pp. 1, 3; IoDSA, 2016; Rosenau, 1995, p. 13; The Committee on the Financial Aspects of Corporate Governance, 1992) - known as corporate governance. It encompasses a system of formal rules and procedures, as well as informal conventions, customs, and norms of behaviour that shape socio-economic activities and conduct (cf. Cornelissen et al., 2015; DiMaggio & Powell, 1983; 1991; Edelenbos & Meerkerk, 2016; North, 1998; Scott, 2014). Modern societies indeed have numerous institutionalized rules that provide a framework for the design and functioning of organizations and organizational practices. These rules originate and establish themselves through public opinion, educational systems, laws, and other regulations, professional practices, and the understanding of the environment within formal organizations, with meanings evolving through social interactions and incorporating subjective interpretations of social constructions. The social construction of reality is shaped through interaction (cf. Scott, 2014, p. 117).

Although there is no single definition of corporate governance, a review of the literature indicates that, regardless of context or the specific definition used, there are three common features of corporate governance from both an institutional and stakeholder perspective:

1. Corporate governance pertains to the direction, rules of the game, and relationships within this game (cf. Bevir, 2011; IoDSA, 2016; Kjaer, 2016; North, 1998; Rhodes, 2007; Rosenau, 1995; Stoker, 2010; The Committee on the Financial Aspects of Corporate Governance, 1992);
2. In addition to regulating the rules of the game and relationships between owners and managers, corporate governance also involves other stakeholders who have a legitimate interest or stake in the company (cf. IoDSA, 2016; OECD, 2015; Tricker, 2019; 2023),
3. Furthermore, it encompasses stakeholder management (cf. Câmara & Morais, 2022; IoDSA, 2016; OECD, 2015; Sogner & Colli, 2021).

Corporate governance refers to "the institutionalized interactions among numerous actors involved in the process of directing and controlling business operations of companies: shareholders, members of supervisory boards, managers, employees, customers, financial institutions, regulators, and the wider community«

(Ansell & Bevir, 2013, p. 2; Bevir, 2010, p. 563). Corporate governance is, in fact, the basis for the development management of the organization, which is operationalized in business operations. It encompasses a set of processes, patterns of behaviour, policies, and legislation that influence how a company is directed, managed, and controlled, for example: corporate law, corporate governance codes, written corporate governance policy, corporate ethical codes, etc. These mechanisms aim to protect owners' rights, reduce managerial opportunism, achieve business compliance, mitigate information asymmetry, and manage relationships with stakeholders, among other objectives. Furthermore, corporate governance represents a framework for decision-making and the pursuit of fundamental values, such as transparency, responsibility, or justice, in order to effectively oversee corporate management. It constitutes a system of regulations, procedures, informal conventions, customs, and norms that shape socio-economic activity and organizational behaviour (cf. Ansell & Bevir, 2013; Bevir, 2011; Frantzeskaki et al., 2009; OECD, 2015). In this sense, corporate governance serves as an institutional framework within which companies operate, internalizing (institutionalizing) rules, norms, and shared meanings derived from principles and best practices – the behavioural patterns of corporate governance. The concept that organizations are deeply embedded in institutional frameworks, as suggested by Powell (2007), underscores that organizational practices often directly reflect or respond to rules or structures embedded in their broader environments.

The penetration of neo-institutional theory on organizations, manifested through institutions, significantly impacts organizational practices (North, 1998; Scott, 2014). To establish and internalize the institutional framework, company members must achieve common meanings of the dimensions of this institutional change. The means that influence the behaviour of organizations and with which and through which organizations are formed are communication activities (Wilhoit, 2018), which are pivotal in all institutional processes (Suddaby, 2010). Frandsen and Johansen (2013) claim that the function of public relations is key in many processes of institutionalization, and the essence of public relations in these processes is communication, i.e. interpretation - the translation of regulatory, normative and cognitive schemes of the environment into the organization (Lammers & Barbour, 2006; Schultz & Wehmeier, 2010). Verčič and van Ruler (2002) argue that communication is a meaning-making process through which organizations co-create shared social meanings. Therefore, it is important to investigate (our research question - RQ):

> RQ: What are the key dimensions of corporate governance that are studied by public relations researchers as connecting dimensions of both corporate governance and public relations?

Indeed, public relations, as an organizational practice, is shaped and implemented through interactions between organizations and their environments (cf. Culbertson et al., 1993; Hallahan et al., 2008; Sandhu, 2009a; Zerfass et al., 2016). We define public relations as the management of relationships between the organization, its stakeholders, and the public, facilitated through purposeful, strategic communication. Stakeholders are central to public relations, which we understand as an organizational function that establishes and nurtures mutually beneficial relationships between organizations and their stakeholders (Grunig, 1992; Sriramesh & Verčič, 2019). Public relations provide organizations with insights into stakeholders, their concerns, expectations, interests, social issues, and the public related to them. In turn, stakeholders, and the public gain timely insights into the organization's strategic directions, enhancing their understanding of the organization's motives.

Organizations require a formalized public relations function to establish connections with stakeholders and public that can either enhance or hinder the organization's ability to fulfil its mission. Managing these relationships involves planned and purposeful actions that benefit the organization and its environment, as well as society as a whole. These connections emerge through social interactions, where shared understandings of meanings, norms, values, and cognitive frameworks are shaped using purposeful communication – a fundamental tool of public relations. As a result, public relations transfer the external organizational environment's meanings related to norms, values, and other aspects to the organization, and vice versa: organizational meanings are conveyed to the external environment. By disseminating these meanings among organizational members, expectations and requirements from the external environment become internalized, contributing to organizational stability and legitimacy. Simultaneously, by sharing organizational meanings with stakeholders and key publics in the external environment, mutual understanding, and acceptance of the organization within its operating context are achieved.

When examining the dimensions or characteristics that define the relationship between corporate governance and public relations, there is little consistency, resulting in a relatively broad literature lacking cohesion and a stronger theoretical foundation. Therefore, through a review of scientific literature in the field of public relations, we aimed to identify and document the key dimensions that have been used in the study of corporate governance.

Based on what has been stated so far, we propose the following research thesis (RT):

> RT: In the public relations literature, the key dimensions of corporate governance as an institutional framework of public relations are those related to communicating and managing stakeholder relations.

Methodology

To identify and document the key dimensions used in studying corporate governance within the public relations literature, we followed a methodological approach based on a systematic literature review using content analysis with the PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analysis*) method (Page et al., 2021). Due to the precisely defined procedure for conducting a systematic literature review in four steps (identification, screening, eligibility, and inclusion), the PRISMA method ensures a rigorous review plan that offers methodological accuracy, transparency, and ease of replication.

Subsequently, we utilized meta-analysis, and for content analysis in the final step following the PRISMA method, we employed the Atlas.ti tool and conducted axial coding. Content analysis represents an otherwise formal, qualitative research method that is often used in public relations research. Brody and Stone (1989) define it as an objective, systematic and qualitative description of the manifest content of the communication. Qualitative content analysis is a process of creating concepts by searching for themes, keywords, concepts, or coding and then categorizing, in which the basic unit of analysis is the concept and not the data (Strauss & Corbin, 1998, p. 7). Therefore, our analysis will be based on the meaning focused analysis approach, but not on the language focused analysis approach; namely, we deal with meanings and categories and not with narratives or discourses. When coding the texts, we also methodologically linked to thematic analysis, which means that while reading the articles, we determined descriptive coding, grouped them into groups or clusters, and finally formed overreaching themes (King et al., 2019, pp. 193−228).

As a tool for qualitative analysis of texts, we used a software tool for processing text data (*Computer Assisted Qualitative Data Analysis Software* - QDAS), namely Atlas.ti. In the text processing process, we used a combination of "top-down" theoretical coding and "bottom-up" open (partly also *in vivo*) coding (Strauss & Corbin, 1998, pp. 101−121).

Results and Discussion

In the first step (*identification*), we searched two major online research databases, Science Direct and Emerald, using the keywords "corporate governance" and "public relations" as well as synonyms for public relations: "strategic communication", "stakeholders’ relationship" and “communication management”.

This initial search yielded numerous articles that included these keywords, which directed us to the second step of the PRISMA method - *screening*, i.e. limiting the search to the leading journal in the field of public relations (*Public Relations Review*) with the keyword "corporate governance". Thus, we identified 54 papers that were published between 1988 and 2023, as we did not find articles before this period there, which is also quite logical, since the term "corporate governance" was first used by Tricker in 1984, the first code of corporate governance was created in 1992 (Cadbury's − see The Committee on the Financial Aspects of Corporate Governance, 1992).

In the third step of the analysis (*eligibility*), we removed articles that used the keyword “corporate governance” in the text but did not focus on the concept of corporate governance, or the concept of public relations in connection with corporate governance. We excluded such articles from further analysis, as they could not contribute to the identification of dimensions of corporate governance in connection with public relations. Thus, from the original 54 articles from the journal Public Relations Review, we included a total of 36 articles in the analysis. After completing these stages of the systematic review of the literature using the PRISMA method, we concluded that the literature in the basic scientific journal in the field of public relations regarding corporate governance was exhausted and that a meta-analysis could be performed within the framework of the last, fourth stage of the PRISMA method - *inclusion*.

We examined all suitable contributions through content analysis, using the Atlas.ti tool as well. Most of the authors in the 36 suitable contributions meaningfully used the understanding of corporate governance similar to that defined in the Cadbury report (The Committee on the Financial Aspects of Corporate Governance, 1992), OECD (1999; 2004; 2015), King's Reports (IoDSA, 2009; 2016), or, as defined by Aoki (2000), Aquilera et al. (2016), Cadbury (2000), Fiss (2008), Freeman and Evan (1990), R. A. W. Rhodes (1996) or Tricker (2019).

Table 1

Dimensions of corporate governance in the scientific literature in the field of public relations

Dimension (frequency of occurrence)	*Source*
Managing relations with stakeholders, cooperation with stakeholders, stakeholder participation, inclusiveness of stakeholders, responsiveness to stakeholder Expectations (24)	Binder-Tietz et al., 2021; Brühl & Falkheimer, 2023; Du Plessis & Grobler, 2014; Ingenhoff & Marschlich, 2019; Kwestel & Doerfel, 2023; Lane, 2018; Le Roux, 2014; Lee & Riffe, 2017; Lim & Lee, 2023; Mak et al., 2021; Mitra, 2011; Parum, 2006; Pastrana & Sriramesh, 2014; Rensburg & Botha, 2013; Steyn & Niemann, 2014; Thompson, 2018; Tutton & Brand, 2023; Vollero et al., 2022; Willis, 2012; Xifra & Ordeix, 2009
Social responsibility (18)	Abitbol & Lee, 2017; Coppa & Sriramesh, 2013; Du Plessis & Grobler, 2014; Golob & Bartlett, 2007; Ingenhoff & Marschlich, 2019; Lee & Riffe, 2017; J. R. Lim & Lee, 2023; J. S. Lim & Greenwood, 2017; Mak et al., 2021; Maubane et al., 2014; Mitra, 2011; Pastrana & Sriramesh, 2014; Rensburg & Botha, 2013; Steyn & Niemann, 2014; van der Meer & Jonkman, 2021; Vollero et al., 2022; Willis, 2012; Xifra & Ordeix, 2009
Transparency, openness, access to information, provision of information (14)	Binder-Tietz et al., 2021; Brühl & Falkheimer, 2023; Capriotti & Moreno, 2007; Du Plessis & Grobler, 2014; Golob & Bartlett, 2007; Jin et al., 2018; Lee & Riffe, 2017; Mak et al., 2021; Parum, 2006; Rensburg & Botha, 2013; B. Steyn & Niemann, 2014; E. Steyn et al., 2004; Thompson, 2018; Willis, 2012
Sustainability, sustainable development, sustainable reporting (5)	Du Plessis & Grobler, 2014; Lee & Riffe, 2017; J. S. Lim & Greenwood, 2017; Maubane et al., 2014; Rensburg & Botha, 2013
Ethical norms (4)	Du Plessis & Grobler, 2014; Jin et al., 2018; Tutton & Brand, 2023; Willis, 2012
Legitimacy, social license to operate (3)	Kwestel & Doerfel, 2023; Mak et al., 2021; van der Meer & Jonkman, 2021
Responsibility of management (3)	Meintjes & Grobler, 2014; Parum, 2006; E. Steyn et al., 2004
Negotiations, coordination (3)	Capriotti & Moreno, 2007; B. Steyn & Niemann, 2014; Willis, 2012
Reputation management (2)	Mitra, 2011; Xifra & Ordeix, 2009
Trust (2)	Jin et al., 2018; Willis, 2012

Source: Author's compilation

To gain a deeper understanding of the relationship between corporate governance and public relations, we further reviewed and counted the dimensions of each of the 36 included articles by counting frequency (frequency of occurrence). In all analysed articles, the relationship between corporate governance and public relations was defined by at least two dimensions. In total, we thus identified 19 dimensions that defined the relationship between corporate governance and public relations from a public relations point of view. However, in many cases the concepts discussed were named differently, even they were essentially related to the same concept. Such an example is the terms "stakeholder relationship management", "stakeholder collaboration", "stakeholder participation", "stakeholder inclusiveness", "responsiveness to stakeholder expectations", where the articles discussed either stakeholders in general or only some stakeholders (for example about the owners or the members of the board of directors). All the mentioned terms refer to the concept of stakeholder relations management, which is the organizational practice of stakeholders and public relations (Grunig and Hunt, 1984; Grunig, 1992; Verčič and Grunig, 1998; 2000). Another such example is the concepts of "legitimacy" and "social license to operate", although it refers to the same concept - organizational legitimacy (as a state attributed to a certain organization by stakeholders and the public from its external environment and means the approval of organizational action, cf. Deephouse and Suchman, 2008). The third example represents the concepts of "openness", "transparency", "access to information" and "provision of information", which represent the concept of transparency. Transparency is otherwise defined as the accessibility of information by stakeholders and the timely provision and disclosure of accurate, clear, reliable and balanced, i.e. high-quality, information to stakeholders (cf. Holland et al., 2018). Therefore, in the next round of coding by combining related concepts (that is, by using axial coding to combine individual conceptual codes with a similar meaning into super-conceptual concepts), we reduced 19 dimensions to 10 unified communication dimensions of corporate governance, which is shown in Table 1.

In the analysed scientific texts, we observed the consistency of research in the use of key concepts of corporate governance, as defined by the authors of the Cadbury Report, the OECD, the King Reports, and others. This consistency shows the solidity of the conceptual foundations of research in this area and enables comparison between different studies and their integration into a broader framework of understanding corporate governance.

Although the researchers discussed similar communication dimensions in their articles, they used different terms or perspectives. This shows the richness of the diversity in the understanding of corporate governance and public relations and enables an in-depth analysis of these concepts and the development of flexible and contextually relevant communication strategies in the institutionalization of corporate governance.

The identified key dimensions of corporate governance, which connect corporate governance and public relations, refer to stakeholder relationship management in the broadest sense. This also includes compliance with ethical norms, sustainable and socially responsible business, management responsibility, fulfilment of promises, transparency, fair treatment of stakeholders and active cooperation with them to understand their needs and concerns, if necessary, even negotiating with them. All of the communication dimensions of corporate governance that we discovered in the public relations literature contribute to building trust among stakeholders.

Using a meta-analysis using the PRISMA method, we identified ten central communication dimensions of corporate governance in connection with public relations. These dimensions are key to understanding the complex and multifaceted relationship between organizations and their stakeholders and can serve as a foundation for further research and development of corporate governance practices.

Conclusion

The present research sheds light on the critical interplay between corporate governance and communication in the context of public relations. Although we narrowed the research to only articles from the leading scientific journal in the field of public relations (*Public Relations Review*), and therefore only to one scientific field (public relations), this represents the first step in identifying the communication dimensions of corporate governance. At the same time, an important limitation of the research is that in the systematic review of the literature on public relations (or articles in the Public Relations Review), we started only from the phrase "corporate governance", which cannot cover the entire research sphere of the studied field.

In this article, we have identified key dimensions of corporate governance in the public relations scholarly literature that link corporate governance and public relations, which is important for understanding the institutionalization of corporate governance and public relations in the institutional framework of corporate governance. These key communication dimensions of corporate governance, as we discovered in the public relations literature, relate to comprehensive stakeholder relationship management, thereby strengthening our research thesis.

To build and maintain stakeholder trust, organizations must demonstrate integrity, transparency, reliability, and consistency in their actions and communication. This involves delivering on promises, being honest and open about challenges and mistakes, treating stakeholders fairly, and actively engaging with them to understand their needs and concerns. Organizations should prioritize ethical behaviour and corporate social responsibility initiatives, as these contribute to building trust with stakeholders.

The results of this research will help researchers of the institutionalization of corporate governance in understanding its communication dimensions, and at the same time, they will also help researchers of the institutionalization of public relations in the institutional framework of corporate governance as institutionalized interactions between many actors involved in the process of directing and controlling the business operations of companies. Our research revealed that understanding and managing the relationship between corporate governance and public relations is key to establishing a solid foundation for successful business operations. The communication dimensions of corporate governance and the common understanding of their meanings among members of organizations play a key role in the formation of organizational identity and, above all, in establishing and maintaining trust between different stakeholders.

The findings of the present research have important implications for practitioners in companies and organizations. The integration of identified communication dimensions into corporate management strategies and communication strategies can contribute to better stakeholder relationship management and the achievement of business goals in a dynamic and competitive business environment. The communicative organizational function is key in the processes of institutionalization of corporate governance, as organizations create common understandings and social meanings through communication as a meaning-making process. Communication is a key tool of public relations, and their essence lies in the creation of common organizational meanings and interpretation - translating the expectations and requirements of the organizational social, economic, technological, and political environment, i.e. regulatory, normative, and cognitive schemes of the environment into the organization (Lammers & Barbour, 2006; Schultz & Wehmeier, 2010). Therefore, in further research, it will be necessary to address this area as well and investigate how the organizational function of public relations interprets the communication dimensions of corporate governance among the members of the organization. This would be possible by analysing the texts of internal acts, for example, the corporate governance policy, the corporate governance statement, the reference code of corporate governance, the code of ethics, etc.

The conclusion of our discussion confirms the importance of a thorough understanding and management of the relationship between corporate governance and public relations and emphasizes the need for further research and practical application of these insights to achieve sustainable and successful business operations of organizations in modern society.

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Dimenzije korporativnega upravljanja v literaturi odnosov z javnostmi: sistematični pregled

Izvleček

Namen članka je razkriti dimenzije oziroma značilnosti korporativnega upravljanja v literaturi odnosov z javnostmi, ki so povezane tudi s komuniciranjem. Uporabili smo metodološki pristop, ki temelji na sistematičnem pregledu znanstvenih člankov s področja odnosov z javnostmi po metodi PRISMA, vsebinski analizi z osnim kodiranjem, uporabo orodja Atlas.ti in metaanalizi. Po pregledu dveh pomembnejših baz podatkov, Science Direct in Emerald, smo naše iskanje zožili na Public Relations Review kot temeljno znanstveno revijo s področja odnosov z javnostmi. Identificirali smo 19 komunikacijskih dimenzij korporativnega upravljanja in strnili povezane koncepte v deset. Izvirnost te raziskave je v prepoznavanju ključnih komunikacijskih dimenzij korporativnega upravljanja kot institucionalnega okvira odnosov z javnostmi. Rezultati raziskave potrjujejo pomembno vlogo komuniciranja tudi v procesih institucionalizacije korporativnega upravljanja.

Ključne besede: korporativno upravljanje, odnosi z javnostmi, odnos z deležniki, neoinstitucionalni pristop, strateško komuniciranje, sistematični pregled

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