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doc. Ing. Miroslav Tóth, PhD.; e-mail: miroslav.toth@euba.sk ; tel.: +421 2 67 295 562

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Autori príspevkov (Authors of Papers)

Edwin Binder

University of Economics in Bratislava, Faculty of Business Management, Department of Information Management, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovak republic

E-mail: edwin.binder@euba.sk

Author's share: 90%

Vladimír Bolek

University of Economics in Bratislava, Faculty of Business Management, Department of Information Management, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovak republic

E-mail: vladimir.bolek@euba.sk

Author's share: 10%

Nadežda Jankelová

Ekonomická univerzita v Bratislave, Fakulta podnikového manažmentu, Katedra manažmentu, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovenská republika

E-mail: nadezda.jankelova@euba.sk

Autorský podiel: 10%

Jozef Kovács

Ekonomická univerzita v Bratislave, Fakulta podnikového manažmentu, Katedra manažmentu, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovenská republika

E-mail: jozef.kovacs@euba.sk

Autorský podiel: 90%

Peter Markovič

University of Economics in Bratislava, Faculty of Business Management, Department of Business Finance, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovak Republic

E-mail: peter.markovic@euba.sk

Author's share: 30%

Manfred Renner

University of Economics in Bratislava, Faculty of Business Management, Department of Business Finance, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovak Republic

E-mail: manfred.renner@euba.sk

Author's share: 70%

Monika Soľavová

University of Economics in Bratislava, Faculty of Business Management, Department of Information Management, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovak republic

E-mail: monika.solavova@euba.sk

Author's share: 80%

Michal Zelina

University of Economics in Bratislava, Faculty of Business Management, Department of
Information Management, Dolnozemska cesta 1/b, 852 35 Bratislava, Slovak republic

E-mail: michal.zelina@euba.sk

Author's share: 10%

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Impact of blockchain on firms and households - a microeconomic perspective

Edwin Binder – Vladimír Bolek

Abstract

This paper addresses the transformative effects of blockchain technology on firms and households within the broader context of the Internet of Value (IoV). Adopting a microeconomic perspective, it analyzes the non-technical facets of distributed ledger technologies (DLT). Drawing parallels to the internet's transformative impact, the paper positions blockchain as a potential key catalyst for digital transformation. Employing an inductive approach, it incorporates a three-step process, blending literature review, database searches, and practical insights to examine three crucial aspects: B2C and B2B demand-side effects, production and transaction cost analysis, and the evolving value propositions of blockchain technologies. While acknowledging blockchain's potential benefits, the paper emphasizes the necessity of addressing various challenges. In conclusion, this research provides a nuanced understanding of blockchain's microeconomic impact, offering insights into its transformative potential for firms and households in the rapidly evolving digital economy.

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1 Introduction

The Internet of Value (IoV) can be seen as a specific application within the broader framework of a decentralized Web 3.0. Following Tasca (Tasca, 2020), it can be defined as the instant transfer of assets expressible in monetary terms over the Internet between peers without the need for intermediariesand is fundamentally enabled by blockchain. Its promise is to provide another quantum leap in the way transactions are taking place and business is done. Its impact on the economy and the whole society is expected by many to be similar, if not even more profound, than the changes triggered by the internet as we know it today. Together with the Internet of Things (IoT) and Artificial Intelligence (AI), Banawa (2018) is seeing the blockchain technology as a catalyst for the digital transformation.

Hence, its possible implications for the economy and the individual players may be profound. And as Microeconomics is about the behavior of any individual or entity that plays a role in the functioning of our economy (Daniel L. Rubinfeld, Robert S. Pindyck 2018), all players in the market, firms, consumers and governments may be fundamentally affected.

Given that Microeconomics is taking a supply and demand perspective in describing “the trade-offs that consumers, workers, and firms face, and showing how these trade-offs are best made” (Pindyck and Rubinfeld, 2018), the relevance of this potentially transformative technology for the evolution of the various markets from a respective research perspective seems obvious. In such context perspective of the impact of blockchain, respectively and more generic the distributed ledger technologies (DLT), on firms and households, focusing on the non-technological aspects. Specifically, it will discuss:

- Demand side effects of new and modified offerings enabled by above technologies.

- Effects on production cost of offerings” due to new capabilities; reflected in direct and opportunity cost changes.
- Overall new, respectively changed, value propositions of the various market players.

2 Current State of the Solved Problem

Beyond their primary distributed ledger functionality (Risius and Spohrer 2017, p. 386), commercially available implementations of blockchain technology differ in their technical details and capabilities. Although in principle “only” a way of addressing the problem of storing, authenticating and protecting data, and sitting on top of the internet, blockchain is in essence a distributed, peer-to-peer ledger of records with a so far unheard-of level of security and of event logs (Risius and Spohrer 2017, p. 390). The term “blockchain” denotes a technological concept initially published by Stuart Haber and W. Scott Stornetta (1990), “How to time-stamp a digital document”. It embodies a growing „chain“ of data units, termed blocks, which are interlinked and fortified through cryptographic mechanisms. To append additional blocks to a Blockchain, consensus among participants must be achieved as no central entity exist.

This is due to its very fundamental architecture based on cryptographic algorithms and other cybersecurity related measurements, offering decentralization, immutability, and transparency. It’s providing a very high degree of resilience and allows for the implementation of “trust-less” transactions between all kinds of parties, fully transparent, but at the same time with pseudonymity, if chosen.

Due to Bigini (Bigini et al., 2020), blocks in a blockchain can potentially contain any information in addition to the link of its previous block. This link is usually a hash, a fixed-length “fingerprint” of the block that makes it unique. The first block of a blockchain is called “Genesis Block”, and it is used as the base for the entire chain, as shown in Figure 1.



Figure 1 Blockchain technology example. (Bigini et al., 2020)

This technology is especially seen as a challenge for established intermediaries (banks, notaries, lawyers,), representing a fundamental threat of disrupting their existing business models, but also a promise for a whole range of fundamentally new and powerful applications. It’s expected to provide both significantly improved and completely new functionalities, extending the reach of transaction partners to include computers (algorithms) and devices (IoT). The fundamental innovation this application provides is that there is neither a single entity, nor a selected group of entities, in charge of the entire chain, making it something completely new.

Although the full extent of the blockchain technology will most likely only be seen in the far future, it would seem very short sighted, ignoring the possible implications of this for society and businesses alike. The existing internet - still in the middle of an ongoing wave of innovation and change – is an excellent example of how quickly something new can take off and how

fundamental it already has changed so many aspects of our everyday lives. Blockchains may be just as huge (Bernhard and Marr, 2017).

It is expected that any industry or organization in which the recording and the oversight of transactions is a requirement, could be affected and should benefit. Besides the finance industry, existing and expected applications are addressing the fields of healthcare, human resource, the management of supply chains, intellectual property, real estate, art, etc. Two very significant opportunities exist in C2C commerce and the possible automation of micro-transactions between machines in the area of IoT. Beyond effects on established businesses and services, blockchain also enables new business models like decentralized autonomous organizations (DAOs) or decentralized autonomous corporations (DACs). (Risius and Spohrer, 2017, p. 393; Iansiti and Lakkani, 2017).

‘Smart contracts’: computerized transaction protocols which autonomously execute the terms of a contract (Marc Giancaspro) when conditions are met – with a transfer of funds, the dispatching of deliveries or any other measurement triggered by a respective kind of agreement - are also made possible by the blockchain technology. As far as the application layer of blockchain is concerned, the focus is on the utilization of such functionalities and the development of decentralized applications (DApps) running on them, without relying on the services of middlemen (Glaser, 2017, p. 1547)

Bringing things in perspective, a fundamental transformation of the world through this technology is supposed to be many years away. “That’s because blockchain is not a “disruptive” technology, which can attack a traditional business model with a lower-cost solution and overtake incumbent firms quickly. Blockchain is a foundational technology: It has the potential to create new foundations for our economic and social systems. But while the impact will be enormous, it will take decades for blockchain to seep into our economic and social infrastructure. The process of adoption will be gradual and steady, not sudden, as waves of technological and institutional change gain momentum” (Iansiti and Lakkani, 2017, p. 4)

3 Research Design

The fundamental objective of this study is to present a comprehensive overview of the prospective influence of blockchain technology on both businesses and households, within the broader context of the evolution of the Internet of Value (IoV).

In pursuit of this aim, this paper analysis the probable impact on demand and supply dynamics concerning new and modified products and services. Additionally, it investigates the repercussions on production and transaction costs for businesses. Also, considering the effect on opportunity costs and changing value propositions of companies, it is keeping technological aspects at a necessary minimum.

This research focuses on firms and households involved in both Business-to-Business (B2B) and Business-to-Consumer (B2C) commerce. Notably, it adopts a generic viewpoint, avoiding confinement to specific product lines, services, industry sectors, or geographies. Finance institutions are considered only in their roles as suppliers or business partners.

This article summarizes the findings from a predominantly theoretical study, employing an inductive approach. The primary research method encompassed systematic literature research utilizing both primary and secondary sources, with an emphasis on conceptual research papers from peer-reviewed sources, scholarly articles, and publications from research communities and leading market research organizations.

In the initial phase of the literature review, after having established a foundational understanding of the role of innovation from a microeconomic perspective, the first aim has been to identify expected generic demand-side effects for households in a Business-to-Consumer (B2C) context and for firms in a Business-to-Business (B2B) setup, parallel to production and transaction cost-saving opportunities, facilitated by this innovative technology.

Building on this, a structured framework for the following three key aspects was defined:

- **Demand-side effects in B2C commerce:** Existing and prospective products - both physical and digital - and financial and non-financial services.
- **Demand-side effects B2B commerce:** Additional features and functionalities of procured products and services. Plus, collaborative opportunities with suppliers and additional benefits within a broader B2B context, including financial- and non-financial services.
- **Production and transaction cost of firms:** Focus on potential savings in supply chain management, increased resource efficiency and possible improvements in internal and external business processes. Additional opportunities in customer and supplier relations, along with potential strategic innovation avenues. All the above not only from a direct cost impact perspective but also considering opportunity costs.

The applied research process for each aspect comprised three interconnected steps, to ensure a robust and comprehensive approach:

1. A direct search around keywords in research databases from the University of Bratislava and Augsburg University of Applied Sciences to identify expected areas of applications of blockchain technology, utilizing Scopus and Springer Link as the main scientific databases.
2. The confirmation of above findings either directly by the number of references found and/or the utilization of other databases like the Web of Science and especially Google Scholar due to its interdisciplinary perspective.
3. Finally, the authors personal business expertise - gained across diverse industries and a wide range of different roles including serving as managing director and on company boards – got incorporated to provide a practical perspective.

The culmination of above methodology involved synthesizing findings from the literature review and database searches with practical insights. This holistic approach not only substantiated theoretical perspectives but also facilitated the formulation of a conclusion section with a specific focus on the evolving value propositions of companies enabled by blockchain technologies.

4 Results and Discussion

4.1 Household demand (B2C)

Summarizing above findings, blockchain technology is highly likely to significantly impact household demand from a microeconomic perspective across various domains. In existing physical products, blockchain enhances transparency, ensuring authenticity, ethical sourcing, and reducing counterfeiting risks. This is most obvious in the areas of luxury goods, agriculture, and healthcare, influencing consumer choices and potentially contributing to sustainable practices. For existing digital products, blockchain - especially through NFTs - offers an increase of both perceived and real value by introducing ownership dynamics, new types of

collectibles, and overall enhanced digital experiences. Especially in the areas of art, digital content and gaming, new markets might appear based on demand for unique digital assets.

In existing non-financial services, blockchain implementations are expected to streamline processes, identity verification, and healthcare. For existing financial services, blockchain revolutionizes cross-border payments, remittances, and decentralized finance (DeFi), providing cost-effective solutions. Smart contracts are supposed to make automated loans, mortgages, and insurance processes possible, offering increased efficiency and potential savings.

4.2 Firm's demand (B2B)

Blockchain's impact on firms demand from a microeconomic perspective is multifaceted. It includes influencing demand through cost-saving opportunities the addition of new functionalities, and various other benefits. In terms of cost savings, blockchain offers significant opportunities enhancing supply chain efficiency, reducing transaction costs, and automating commercial agreements through smart contracts or other means. It enables operational savings and minimizes fraud-related expenses. The technology also facilitates efficient cross-border transactions and supports cost-effective procurement through decentralized marketplaces.

Additionally, blockchain introduces features and functionalities that strengthen business operations. These include enhanced supply chain visibility, and options of real-time verification through smart contracts, product authentication, and the utilization of decentralized marketplaces for direct interaction. Collaborative innovation opportunities and control over data monetization further contribute to the attractiveness of blockchain-enabled suppliers.

Firms also benefit from advantages such as enhanced level of trust and transparency, reduced time delays, improved accuracy in data integrity, and streamlined compliance management. Blockchain fosters financial inclusion, offers immutable intellectual property protection, and supports decentralized data storage. Furthermore, the technology facilitates cross-organizational collaboration, creates additional opportunities for supply chain financing, and the tracking of environmental and social impacts.

In aggregate, blockchain's influence on the demand side of firms will be significant as firms prioritize suppliers that provide cost savings, innovative features, and broader benefits that align with contemporary and evolving business needs and opportunities. Overall, the utilization of blockchains in such area makes the technology a potential catalyst for efficiency, innovation, and resilience, providing firms with a strategic edge in an evolving economic landscape.

In the area of financial services, blockchain revolutionizes traditional financial processes, enabling more efficient transactions and automating financial agreements. Firms will benefit from an enhanced level of security for financial data, get the opportunity to explore decentralized finance options, and might experiment with novel governance models. The technology enables new avenues for supply chain financing and may allow for the introduction of stablecoins for reduced volatility in financial transactions.

4.3 Production and Transaction Cost Savings

Blockchain technology, from a microeconomic perspective promises the opportunity for companies to reshape how they operate across key dimensions, optimizing processes and reducing costs. In supply chain management, real-time inventory management enhances accuracy, removing excess costs tied to stockouts and overstock. Simulations using IBM's Hyperledger implementation have shown that integrated blockchain models can lead to a projected 6% reduction in (stock-related) costs for factories, wholesalers, and retailers, along

with a >60% decrease in mean waiting time due to improved supply chain transparency and information sharing (Ada et al., 2021).

Provenance tracking ensures product quality, averting recall-related expenses and safeguarding brand reputation. Resource Efficiency and Compliance introduce Smart Energy Management, curbing energy costs and contributing to sustainability, while automated compliance reporting streamlines processes, minimizing penalties and manual efforts.

Internal processes and collaboration potentially benefit from blockchain's streamlined operations, via reduced administrative overheads, and secure data management, addressing inefficiencies and minimizing the costs of data breaches, most significantly in minimized system down-time. This extends to efficient collaboration and decentralized decision-making, diminishing delays and seizing innovative opportunities.

In customer and supplier relations, automated billing and payments, product authentication, and efficient procurement can cut administrative costs, enhance trust, and reduce errors, while decentralized marketplaces potentially offer direct interactions and even supply chain financing opportunities. Reduced disputes and errors should further minimize costs. Preserving brand integrity and ensuring regulatory compliance might be significant too. Agile decision-making and efficient collaboration should reduce cost, improve a company's competitiveness and drive revenue generation.

Overall, blockchain's impact on costs might be vast and multifaceted, influencing supply chains, internal operations, and strategic innovation. It aligns with sustainability goals, enhances transparency, and fosters a culture of continuous improvement, making businesses more resilient, efficient, and adaptable in an ever-evolving competitive economic landscape.

4.4 Opportunity Cost Savings

Additionally to above savings, the blockchain technology is also presenting opportunities for firms minimizing their opportunity costs. A key area for such is supply chain management, which – driven by rapidly evolving competitive markets - is getting ever more important. So, improving real-time inventory management, demand forecasting, and provenance tracking with blockchain could open avenues to reduce opportunity costs related to stockouts, overstock, reputational damage, and ultimately missed business opportunities. Furthermore, improved resource efficiency and compliance measures may present possibilities for firms to reduce respective opportunity costs via an optimized allocation of resources and the avoidance of regulatory fines.

In terms of internal processes and collaboration activities, streamlined operations and decentralized decision-making can reduce opportunity costs related to delayed decision-making and operational inefficiencies. Furthermore, the focus on continuous innovation in this field helps to minimize the opportunity costs of missed breakthroughs and unaddressed market opportunities. Customer and supplier relations benefit from automated transactions, efficient procurement, and access to decentralized marketplaces, reducing opportunity costs linked to delays, disputes, and relationships lacking trust. In the area of strategic innovation, fostering a culture of continuous adaptation and timely decision-making supported by blockchain-based applications, can reduce opportunity costs associated with delayed decisions and missed business opportunities, ultimately improving competitiveness and profitability.

4.5 Changing Value Propositions of Companies

Blockchain's impact on a company's overall value proposition revolves around increased levels of transparency and security, efficiency improvements and cost reductions and innovative ways dealing with customers, suppliers and other business partners. It expands geographic market reach, taps into new customer segments, and provides an increased user value through new functionalities and services. Additionally, it can boost customer empowerment and demonstrate commitment to environmental and social responsibility, shaping the company's overall value proposition.

From a microeconomic perspective, blockchain technology introduces several changes to a company's value proposition:

- **Increased transparency and accountability** can be leveraged in the company's value proposition to build, respectively increase the level of trust with customers, investors, and other stakeholders, due to the availability of immutable and decentralized ledgers. Walmart demonstrated this through a pilot project focused on enhancing food safety within the mango supply chain, employing blockchain technology.. As a side effect, Walmart reduced the original tracking time using a blockchain-based supply chain system for a package of sliced mangoes shipped from Latin America to the United States, from over six days to just 2.2 seconds. (Park and Li, 2021).
- **Enhanced security** can attract clients concerned about potential data breaches and fraud. Such emphasis of a heightened level of security in a company's value proposition is possible due to the decentralized and cryptographic nature of blockchain. Firms that can assure the integrity and security of their operations may have a stronger value proposition.
- Significant **cost reductions** are enabled by streamlined processes, a significantly reduced number of intermediaries, and the disappearance of otherwise required manual verifications. For example, according to the 2019 Maersk sustainability report, exporters and importers in Mumbai reduced their costs by approximately 15% of the total costs after adopting blockchain technology (Park and Li, 2021).
- **Efficiency improvements** through the utilization of smart contracts and automated processes on the blockchain, support an emphasis on quicker and more reliable services, setting their value proposition apart from competitors.
- **Data Integrity** due to the tamper-resistant nature of blockchain immutable record keeping allow companies to market such reliability of their records and transactions, particularly in industries where accuracy is crucial.
- **Decentralization and direct peer-to-peer transactions** allow for a more customer-centric and efficient business model without intermediaries, which companies can highlight to customers and business partners. BitPesa serves as an example of peer-to-peer value transfer, utilizing Bitcoin as an intermediary currency for remittance. By circumventing the necessity for USD, it has facilitated trades surpassing USD 500 million in Africa without using SWIFT, claiming remittance transaction completions in under two hours (BitPesa|Africa's Crypto and BTCEExchange—Access the Deepest BTC Liquidity in Africa 2022) (Coutinho et al., 2023).
- **Innovative services and products** based on blockchain enable new business models with a more attractive customer value proposition, allowing companies to position themselves as innovators, for example in addressing emerging market needs. In existing markets, firms that for example create "tokenized" offerings, or products complemented by NFT-based add-ons, may offer unique value propositions that differentiate them from competition.

- **Global reach and cross-border transactions** achieved through blockchains seamless cross-border transaction capabilities. Companies can emphasize their global reach and the ability to serve customers internationally, potentially significantly expanding their market.
- **Customer empowerment** by giving them more control over their data and transactions. Companies can leverage this aspect to empower customers, framing their value proposition around customer-centric principles.
- Companies aligning with **environmental and social responsibility (ESR)** targets benefit from blockchain's immutable tracking, ensuring transparency in sustainability metrics. This decentralized technology records energy consumption, resource usage, and supply-chain details, including supplier ESG records. Enhancing credibility, blockchain fosters trust among environmentally conscious consumers. To underscore the potential impact of respective improvements, particularly within supply chains, it's worth noting that they alone account for approximately 40-60% of a manufacturing company's and 80% of a non-manufacturing company's carbon footprint (Park and Li, 2021).

It's obvious in which way above aspects – properly implemented - can contribute to a more compelling and competitive position of a company in the market. However, it is as important to note, that the successful integration of blockchain into a firm's operations requires careful consideration of factors such as scalability, interoperability, manageability, regulatory compliance, and industry-specific requirements.

The resulting impact of a changed value proposition will depend on how well the firm addresses these challenges and effectively communicates the benefits of blockchain adoption to customers, business partners and other relevant stakeholders.

5 Conclusion

In summary, blockchain respectively distributed ledger technologies (DLT) are anticipated to have a substantial impact on the economy in the coming years, influencing both businesses and households across developed economies and beyond. Anticipated applications within Web 3.0 and a potential metaverse, and the evolution of IoT and AI signal significant future shifts in the economic landscape.

However, a major barrier to widespread adoption lies in the limited performance, the lack of scalability and the high energy consumption of current public blockchain systems. Bitcoin exemplifies this by its limitations of bandwidth - only able handling a relative low rate of transactions - and a very high energy consumption due to its proof-of-work approach. While new blockchain-based systems like Ethereum show notable improvements, realizing truly scalable systems with a much higher throughput remains a very significant challenge.

Given the technological innovation in this field, the future architecture of blockchain-based applications is uncertain. Nonetheless, it is evident that this technology presents both a major challenge and an opportunity for nearly every market and business entity. The expected impact on demand and supply, resulting from modified or entirely new products and services, suggests substantial future shifts. Similarly, new service levels and the potential for significant cost savings pose a profound challenge for existing market players and their value propositions, with intermediaries likely to be particularly exposed and their business models challenged and possibly disrupted.

Present implementations of blockchain technology outside cryptocurrencies are primarily based on private blockchains financed by individual market players. This is unsurprising, given

the significantly higher degree of control and scalability compared to public blockchains. Firms are mainly driven by short to medium-term ROI considerations or, at the least, an interest in specific insights within clearly defined areas of applications promising sustainable competitive advantages.

Nevertheless, there is a general trend towards addressing public and governmental scrutiny, ensuring the proper adoption of regulations, and prioritizing ESG-focused transparency as a key means of strengthening brands and avoiding penalties. Although the necessity of international blockchain regulation and governance, including an applicable legislative regime, is acknowledged, achieving consensus among numerous parties with fundamentally different agendas remains a substantial challenge. The reactive nature of law-making and the enormous challenges for international bodies to agree on joint rules makes this unlikely in the foreseeable future.

One of the central challenges confronting blockchain applications lies in establishing a seamless interface between the physical and digital realms. This complexity arises from the essential requirement to seamlessly connect real-world assets, processes, and events with their digital counterparts on the blockchain. Ensuring the accuracy and efficiency of this connection is crucial for the reliable representation and management of real-world assets within the blockchain ecosystem. The intricate nature of this interface introduces formidable hurdles, at times even preventing the effective handling of real-world assets and transactions by blockchain systems. Innovative solutions are required to address these challenges and optimize the integration between the physical and digital aspects of blockchain applications.

Future technological research needs to particularly focus on the scalability and manageability of multi-layered distributed-ledger architectures. The challenge lies in combining the advantages of distributed and immutable technology with the necessities of large-scale, transaction-based applications open to unknown future developments. Additionally, understanding the interplay of blockchain with other digital technologies, such as digital twins and NFTs, represents another crucial area requiring exploration, especially in the context of digital megatrends like IoT, the metaverse, and AI.

However, it will not be the technologies but their application—with the potential to fundamentally alter value propositions, relationships, and market dynamics between players—that will be decisive. Hence, from a top-down perspective, developing a better understanding of how businesses might want to look at the profound implications for their business models and proactively adapting their strategies and managing the respective change processes will make the difference. It's the authors understanding that this is the area, where research is most needed.

In conclusion, it is evident that substantial efforts are needed to comprehend and systematically explore the potential of this technology via the necessarily interdisciplinary approach. Such will not only facilitate the development of a wide range of diverse applications but is also imperative for a smooth integration of blockchain technologies into our economic and technological landscape.

With the aim to establish a comprehensive understanding of the possible impact of blockchain technology on supply and demand, cost effects, and firms overall value propositions, this research encountered several limitations. These constraints arise from the scope of the study and the scarcity of quantitative evidence due to the limited availability of real-life public blockchain implementations beyond cryptocurrencies.

In conclusion, above limitations underscore the need for future research. At the same time, they can also serve as guidance for potential promising research directions. These areas warrant

focused exploration to establish a genuinely comprehensive yet nuanced understanding of the opportunities that blockchain/DLT, as a potentially transformative technology, presents and what's required implementing it successfully.

Moreover, gaining a profound understanding of the broader implications, extending beyond individual economic entities to encompass industries, customers, and society, becomes ever more important. This comprehensive perception is a critical prerequisite for governments and regulatory bodies entrusted respectively tasked with defining the best possible framework to support this promising technology in parallel to establishing appropriate barriers to prevent misuse and unintended negative consequences.

From a microeconomic perspective, gaining a deeper understanding the impact of distributed ledger technologies on demand and cost, as well as the roles played by the various stakeholders, including governments, in shaping future blockchain based processes, products and services, seems not only highly interesting, but undeniably very relevant.

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Contact

Edwin Binder

University of Economics in Bratislava
Faculty of Business Management
Department of Information Management
Dolnozemska cesta 1/b
852 35 Bratislava
Slovak republic
E-mail: edwin.binder@euba.sk
Author's share: 90%

Vladimír Bolek

University of Economics in Bratislava
Faculty of Business Management
Department of Information Management
Dolnozemska cesta 1/b
852 35 Bratislava
Slovak republic
E-mail: vladimir.bolek@euba.sk
Author's share: 10%

Prieskum procesov podnikateľského objavovania a vplyv na podnikateľské ambície, prijímanie rizika a prístup k inováciám MSP na Slovensku za roky 2018-2023

Exploring entrepreneurial discovery processes and the impact on entrepreneurial ambition, risk-taking and attitudes to innovation SME in Slovak Republic for years 2018-2023

Jozef Kovács – Nadežda Jankelová

Abstract

Economic growth is widely seen as one of the main objectives of businesses, as it is a primary indicator of business success and a key component of wealth creation, employment and economic development in the world. Innovation is a primary component of the sustainability and development of SMEs. Defining the factors and processes to support innovation is therefore important. The main objective of this paper is to explore the impact of entrepreneurial ambition and risk appetite in the context of the approach to innovation. Methodologically, the paper focuses on the search of scientific articles in international scientific databases based on the definition of keywords, while the research part refers to the results from research studies of individual articles in the theoretical level. Through the obtained knowledge we draw conclusions in the selected research issue.

JEL classification: O31, M19, M29

Keywords: entrepreneurial ambition, innovation, entrepreneurial risk

1 Úvod

Podnikanie zohráva kľúčovú úlohu pri podpore hospodárskeho rastu a prínosu inovácií, najmä v rámci kategórie malých a stredných podnikov (MSP). V Slovenskej republike predstavujú MSP významnú časť hospodárstva, prispievajú k tvorbe pracovných miest, vytváraniu bohatstva a inováciám. Pre podporu prosperujúceho podnikateľského ekosystému je nevyhnutné pochopiť procesy objavovania podnikateľov v rámci týchto MSP a ich následný vplyv na podnikateľské ambície, ochotu riskovať a postoje k inováciám. Podnikateľské objavovanie sa vzťahuje na identifikáciu a využívanie nových príležitostí podnikateľmi. Zahŕňa dynamický a opakujúci sa proces rozpoznávania a posudzovania potrieb trhu, technologického pokroku a iných faktorov prostredia. V rámci MSP v Slovenskej republike sú procesy objavovania podnikateľských príležitostí ovplyvnené rôznymi vnútornými a vonkajšími faktormi vrátane organizačnej kultúry, dynamiky trhu a regulačného rámca. Podnikateľská ambícia zahŕňa ciele, aspirácie a motivácie, ktoré vedú jednotlivcov k zapojeniu sa do podnikateľských aktivít. Výskum naznačuje, že pri formovaní podnikateľských ambícií majiteľov a manažérov malých a stredných podnikov v Slovenskej republike zohrávajú kľúčovú úlohu procesy objavovania podnikania. Napríklad identifikácia nevyužitých trhových medzier alebo technologických inovácií môže podnecovať ambície jednotlivcov realizovať podnikateľské príležitosti. Podnikanie neodmysliteľne zahŕňa podstupovanie rizika a ochota prijať riziko je kľúčovým faktorom určujúcim podnikateľský úspech. Podnikateľské procesy ovplyvňujú rizikové správanie MSP v Slovenskej republike tým, že formujú vnímanie rizika a odmeny. Napríklad dôkladný prieskum trhu a hodnotenie príležitostí môžu zmierniť vnímané

riziká spojené s novými podnikmi, a tým povzbudiť majiteľov MSP, aby prijímali kalkulované riziká.

Inovácie sú nevyhnutné na to, aby MSP zostali konkurencieschopné a prispôbili sa meniacim sa podmienkam na trhu. Podnikateľské objavné procesy podporujú postoje k inováciám medzi MSP v Slovenskej republike tým, že podporujú kultúru tvorivosti, experimentovania a prispôbovania sa.

Organizácie, ktoré sa aktívne zapájajú do podnikateľského objavovania, s väčšou pravdepodobnosťou prijímajú inovačné postupy, ako je vývoj produktov, zlepšovanie procesov a zavádzanie technológií. Hlavným cieľom príspevku je skúmať a priniesť odpoveď na výskumnú otázku, či má vplyv podnikateľského rizika vyvíjať u podnikateľov ambície a ochotu prinášať inovácie? Nasledujúcich častiach sa preskúma súčasný stav v tejto oblasti a metodológiu výskumu, v štvrtej sa analyzujú výsledky literárnej rešerše, v diskusii rozoberú výsledky výskumu a v závere zosumarizujú a navrhnú oblasti, ktorým smerom by sa mohol výskum uberať v danej oblasti.

2 Súčasný stav riešenej problematiky doma a v zahraničí

Podľa Kirznera (1998) je podnikateľ, špecifická osoba, ktorá okrem toho že vyvíja podnikateľskú aktivitu, disponuje taktiež aj povahovými, intelektuálnymi a jedinečnými rysmi:

- Snaží sa nájsť nedostatky v trhovom procese.
- Má špekulatívne plány do budúcnosti.
- Inovuje technologické procesy a výrobné procesy.
- Využíva svoje zdroje na podnikateľské plány. (Otahál, 2008)

Podnikateľ predáva svoje tovary a služby prostredníctvom obchodovania. Spôsob predaja závisí od predmetu podnikania a formy podnikania. Čoraz viac sa do popredia dostáva predaj prostredníctvom elektronického obchodovania (Peráček, 2022). MSP sú špecifické segmenty národného hospodárstva, majú niekoľko odlišných charakteristík, väčšinou súvisiacich spájajúcich sa s veľkosťou podniku. MSP čelia mnohým druhom rizík, ktoré sú pre veľké podniky neznáme, pričom riziko financovania zohráva významnú úlohu pre účely potreby externých zdrojov financovania MSP. (A. Kľučnikov, 2018). Zlepšovať podmienky podnikateľského prostredia je pre štát veľkou výzvou ako aj pre MSP aj veľké podniky (A. Kotaskova, 2020). Podnikateľské a spoločenské prostredie vplyva na MSP rôzne a spoločenská zodpovednosť podnikov je v súčasnosti téma, ktorou sa MSP taktiež zaoberajú. SZP neovplyvňuje kvalitu výroby ani zavádzanie inovácií MSP priamo, ale imidž a povest' áno (Gavurova, 2022). Na SR sa výskum MSP vykonáva najčastejšie na úrovni krajskej pôsobnosti (Korcsmáros, 2018). Prevažne väčšina MSP považuje imidž „inovácie“ za podnikateľsky atraktívny (Krchová, 2021).

3 Výskumný dizajn

Hlavným cieľom príspevku je skúmať vplyv podnikateľských ambícií a ochoty podstupovať riziko v kontexte prístupu k inováciám. Naplnenie hlavného cieľa sa uskutočnilo prostredníctvom literárnej rešerše zo súčasných dostupných literárnych výskumov a štúdií realizovaných za obdobie posledných 5 rokov. Literárnu rešerš sme spracovávali prostredníctvom dostupných zdrojov vychádzajúcich z empirických výskumov a z vedeckých databáz ako (Scopus, Google Scholar, Web of Sciences) a taktiež boli použité aj iné zdroje od významných autorov zaoberajúcich sa touto oblasťou bádania. Vyhľadávanie sa realizovalo

prostredníctvom definovania kľúčových slov (podnikateľské ambície, inovácie, podnikateľské riziko) z vedeckých databáz za skúmané roky 2018-2023.

V príspevku kladieme hlavný dôraz na nájdenie odpovede na výskumnú otázku „Má vplyv podnikateľského rizika vyvíjať u podnikateľov ambície a ochotu prinášať inovácie?“

4 Výsledky výskumu

Na základe spracovania literárnej rešerše od významných autorov zaoberajúcimi sa práve touto výskumnou oblasťou poukazujeme na empirické výskumy.

Tomáš Peráček (2022) – skúmal súčasné podmienky elektronického obchodovania v podmienkach SR a limity ochrany spotrebiteľa. Výsledky štúdie prišli k záveru, že nejednotná kodifikácia a zjednotenie právnej úpravy vedie k roztrieštenosti právneho prostredia. Táto roztrieštenosť spôsobuje zmätok medzi právnikmi a laikmi, čo sťažuje orientáciu v právnych požiadavkách upravujúcich elektronický obchod. Taktiež štúdia prišla k výsledkom o nekonzistentnosti v rôznych zákonoch a aktoch, ako je Občiansky zákonník, Obchodný zákonník, zákon o elektronickom obchode a zákon o ochrane spotrebiteľa. Tieto nezrovnalosti môžu vytvárať neistotu a brániť dodržiavaniu predpisov tak pre podniky, ako aj pre spotrebiteľov, čo môže brzdiť rozvoj elektronického obchodu na Slovensku. Odporúčania štúdie naznačujú aby sa kodifikáciou elektronického obchodu do samostatného právneho kódexu zefektívnil rámec, znížili sa prekážky a bariéry v súvislosti so zmiernením obáv potencionálnych podnikateľov. Toto zlepšenie by mohlo podporiť tvorbu pracovných miest a podporiť hospodársky rast v súčasnom digitálnom veku.

Aleksandr Kljusnikov a kol. (2018) – skúmali vplyv veľkosti podniku a veku vlastníka na vnímanie rizika financovania v segmente MSP na Slovensku. Výsledky štúdie poukazujú, že menšie spoločnosti majú tendenciu vnímať riziko financovania intenzívnejšie v porovnaní s väčšími spoločnosťami. To naznačuje, že veľkosť podniku ovplyvňuje vnímanie rizika financovania. Podnikatelia vo veku 36 - 45 rokov vykazujú najvyššiu mieru zamietnutia žiadosti o úver, čo naznačuje, že vek zohráva úlohu pri vnímaní rizika financovania. Zistilo sa však, že vek majiteľa má štatisticky významný vplyv na frekvenciu zamietnutia žiadosti o úver. Odmietnutie úveru je najčastejšie u mladších podnikov, ale nie je typické pre menšie podniky. Medzi podnikateľmi vo veku 36 – 45 rokov najčastejší dôvod zamietnutia úveru súvisel s negatívnymi finančnými ukazovateľmi. U starších podnikateľov medzi časté dôvody zamietnutia úveru patrili nedostatočné zabezpečenie, zlé podnikateľské plány a negatívne finančné ukazovatele. Výskumný tím plánuje rozšíriť zameranie budúceho výskumu a preskúmať ďalšie faktory ovplyvňujúce všetky aspekty finančného rizika v segmente MSP v krajinách vyšehradskej skupiny.

Anna Kotaskova a kol. (2020) – skúmali na vzorke 822 MSP na Slovensku a v Českej Republike prostredníctvom online dotazníka definovať a predstaviť významné faktory ovplyvňujúce vnímanie personálneho rizika MSP. Celkové hodnotenie vplyvu personálneho rizika na činnosť MSP v oboch krajinách je podobné. Fluktuáciu zamestnancov hodnotí veľká časť podnikateľov v oboch krajinách pozitívne, pričom fluktuácia je vnímaná ako nízka a nemá negatívny vplyv na podnikanie. Slovenskí podnikatelia hodnotia kvalitu svojich zamestnancov horšie ako českí podnikatelia. Nespokojnosť je v oboch krajinách vyjadrená v súvislosti s úsilím o zlepšenie výkonnosti zamestnancov a ďalších oblastiach personálneho riadenia MSP. Výskum sa uskutočnil počas priaznivej fázy hospodárskeho cyklu, ktorá sa vyznačuje relatívnym nedostatkom kvalifikovaných pracovníkov. To mohlo mať vplyv na hodnotenie podnikateľských rizík.

Beata Gavúrová a kol. (2022) – skúmali rozdiely vo vnímaní používania vybraných princípov spoločenskej zodpovednosti manažérmi a vlastními mikro, malých a stredných podnikov v krajinách vyšehrádskej štvorky. Výsledky štúdie priniesli, že podnikatelia a manažéri najviac využívajú stratégie SZP v Maďarsku, Poľsku a na Slovensku. Naopak najmenej ich využívajú v Českej Republike. Na základe odvetvovej analýzy odhalili rozdiely vnímania a využívania SZP v jednotlivých odvetviach. SZP sa využíva prevažne v odvetviach cestovného ruchu, poľnohospodárstva, ale v menšej miere v stavebníctve, maloobchode, výrobe a službách. Veľkosť spoločnosti významne ovplyvňuje zaradenie medzi spoločnosti orientované na SZP. Mikropodniky sú menej pravdepodobne vnímané ako podniky orientované na SZP v porovnaní so stredne veľkými podnikmi, čo naznačuje pozitívnu koreláciu medzi veľkosťou podniku a prijatím SZP. Malé podniky tiež vykazujú nižšiu orientáciu na SZP v porovnaní so stredne veľkými podnikmi, čo ďalej zdôrazňuje vplyv veľkosti podniku na postupy SZP. Výsledky štúdie poskytujú cenné poznatky pre regionálnych a národných tvorcov politik, ktoré sú podkladom pre strategické plány a iniciatívy zamerané na podporu zavádzania CSR a postupov udržateľnosti medzi MSP.

Beata Gavúrová, Jaroslav Belas a kol. (2020) – skúmali na vzorke 641 MSP v Českej Republike a Slovenskej Republike administratívne a legislatívne prekážky podnikania MSP a kvalifikovali rozdiely vo vnímaní legislatívnych a administratívnych prekážok podnikania podnikateľmi v oboch krajinách. Výsledky štúdie odhaľujú zistenia a poukazujú na potrebu ďalšieho výskumu s cieľom pochopiť príčiny rozdielu medzi krajinami a definovať nové príčinné súvislosti. Rozdiely vo vnímaní a hodnotení prekážok vyvolávajú otázky o prijateľnosti a vymožitelnosti práva a byrokracie medzi rôznymi skupinami podnikateľov. Faktory ako vzdelanie, vek podniku a rodová diferenciácia môžu ovplyvniť vnímanie prekážok v podnikaní.

Enikő Korcsmáros a kol. (2018) – skúmali na vzorke 496 MSP prostredníctvom online prieskumu komplexné posúdenie, ako jednotlivé faktory ovplyvňujú podniky rôznych ekonomických odvetví. Výsledky výskumu priniesli niekoľko opatrení pre budúce zabezpečenie rozvoja podnikov v Nitrianskom kraji: zníženie nákladov na dopravu surovín a tovaru, zlepšenie vzťahu zamestnancov k práci, zabezpečenie primeranej úrovne miezd, modernizácia technickej úrovne a vekovej štruktúry strojov a zariadení, najmä v poľnohospodárstve, priemysle, stavebníctve, zlepšenie hospodárskej situácie regiónu s cieľom zvýšiť kúpyschopnosť regiónu. Celkovo výskum poskytuje cenné poznatky o faktoroch ovplyvňujúcich podnikateľské prostredie a budúci vývoj podnikov v Nitrianskom kraji.

Hana Krchová a kol. (2021) – skúmali na vzorke 825 manažérov MSP na Slovensku vplyv nástrojov marketingovej komunikácie na inovácie MSP na Slovensku. Mnoho podnikateľských procesov sa presunulo do online priestoru, najmä každodenná spolupráca pracovníkov, komunikácia so zákazníkmi, podpora predaja a všetky typy marketingových aktivít. Vplyv pandémie Covid-19 viedol k drastickej zmene pracovných podmienok, pričom mnohí jednotlivci sa presunuli na prácu na diaľku zo svojich domácností. Spoločnosti reagovali na pandémiu zvýšením využívaním online komunikačných nástrojov. Výskum poukazuje na súvislosť medzi inováciami spoločností a využívaním moderných komunikačných metód. Bol identifikovaný nižší záujem a zručnosti slovenských spotrebiteľov o online nákupné nástroje v porovnaní s ostatnými európskymi spotrebiteľmi. Táto nižšia úroveň zručnosti môže prispieť k odporu voči online marketingovým nástrojom u niektorých segmentov zákazníkov. Spoločnosti s lepším zákazníckym správaním a efektívnym využívaním moderných online komunikačných nástrojov majú potenciál rastu. Využívanie týchto nástrojov môže pomôcť

prilákať nové trhové príležitosti a prispôbiť sa zmenám v správaní zákazníkov, ktoré urýchlila pandémia.

Ján Dvorský a kol. (2020) – skúmali na vzorke 454 MSP z Českej Republiky vplyv podnikateľského postoja definovaním podnikateľských rizík na vnímanie budúcnosti MSP. Výsledky výskumu identifikovali niekoľko rizík, ktoré majú pozitívny vplyv na budúce podnikanie MSP. Identifikovali trhové, finančné, personálne, prevádzkové a operačné riziká. Operačné riziko bolo zdôraznené ako riziko s najvýznamnejším pozitívnym vplyvom na budúce podnikanie. Štúdia zistila pozitívny vplyv podnikového riadenia rizík a postojov podnikateľov k hrozbe neúspechu podnikania na vnímanie budúcich podnikateľských perspektív. Prejavuje sa trend centralizácie riadenia rizík a vývoja integrovaných systémov riadenia, a to na národnej a celoeurópskej úrovni. Medzi najčastejšie identifikované prekážky efektívneho riadenia rizík patrí dostupnosť interných a externých informácií potrebných na riadenie a vyhodnocovanie rizík, ako ich integrácia do rozhodovacích procesov. Celkovo štúdia poskytuje cenné poznatky o vzťahu medzi postojmi podnikateľmi k podnikateľským rizikám a budúcimi vyhliadkami MSP. Zdôrazňuje význam proaktívnych stratégií riadenia rizík a potrebu spoľahlivého zberu údajov a politických rámcov na podporu rozvoja a odolnosti MSP najmä v časoch hospodárskej neistoty, ako je pandémia Covidu-19.

Ján Dvorský, Ľudmila Kozubíková a kol. (2020) – skúmali, ktoré podnikateľské riziká určujú vnímanie podnikateľského prostredia MSP v budúcnosti. Na prieskume sa zúčastnilo 454 MSP z Českej Republiky prostredníctvom online dotazníka. Výsledky výskumu priniesli, že trhové, finančné, personálne, právne a prevádzkové riziká významne ovplyvňujú vnímanie budúcnosti podnikov. Trhové riziko sa hodnotí prostredníctvom primeranosti predaja výrobkov a služieb. Finančné riziko sa hodnotí prostredníctvom ukazovateľov finančnej výkonnosti. Personálne riziko porovnáva základné právne predpisy zo strany respondenta. Prevádzkové riziko vykazuje sa podľa využitia kapacít podniku. Celkovo štúdia poskytuje cenné poznatky o špecifických podnikateľských rizikách, ktoré ovplyvňujú MSP v Českej Republike a vytvára základ pre budúci porovnávací výskum v rámci krajín V4.

Ján Dvorský, Zora Petráková a kol. (2020) – skúmali porovnávanie postojov k podnikateľským rizikám a neúspechu podnikania u podnikateľov a tých, ktorí majú skúsenosti s bankrotom a tých, ktorí skúsenosti s bankrotom nemajú v MSP. Výskumná vzorka predstavovala 454 MSP. Hlavné zistenia prípadovej štúdie odhalili štatisticky významné rozdiely v postojoch podnikov k rôznym typom rizík vrátane trhových, finančných, personálnych, prevádzkových a právnych rizík, a na základe ich skúsenosti s neúspechom podnikania. Celkovo článok zdôrazňuje význam ďalšieho výskumu na prehĺbenie pochopenia toho, ako podnikatelia vnímajú a riadia podnikateľské riziká, najmä v kontexte skúseností s neúspechom v podnikaní a na vypracovanie prispôbených stratégií na zmiernenie rizík a udržateľnosť podnikania v sektore MSP.

Ján Dvorský, Zora Petráková (2021) – skúmali identifikáciu dôležitých zdrojov podnikových rizík budúcnosť podnikania v oblasti služieb a sektore dopravy osobitne u českých a slovenských podnikateľov. Výskumná vzorka predstavovala 240 MSP. Výsledky výskumu odhalili niekoľko poznatkov. Štátna príslušnosť podnikateľov sa ukázala ako významný faktor ovplyvňujúci ich vnímanie podnikateľských rizík a ich vplyv na budúce podnikateľské vyhliadky. Slovenskí podnikatelia prikladali väčší význam riadeniam finančným a personálnym rizík, zatiaľ čo trhové, právne a prevádzkové riziká považovali za menej významné. Naopak, českí podnikatelia zdôrazňovali význam riadenia prevádzkových rizík, najmä v sektore služieb a dopravy. Významu podnikateľských rizík sa priradujú aj ďalšie

charakteristiky podnikov a podnikateľov, ako je lokalita, vek, typ podniku, pohlavie, národnosť a úroveň vzdelania.

Ján Dvorský, Tomáš Klieštík a kol. (2020) – skúmali vplyv významných konkurenčných faktorov na rizikovosť podnikového rizika v sektore MSP v Českej Republike a na Slovensku. Výskumná vzorka predstavovala 641 podnikateľov z dvoch krajín v priebehu roka 2018. Výsledky štúdie priniesli, že faktory súvisiace s konkurenčným prostredím, ako napríklad akceptácia cien výrobkov a služieb zákazníkmi zohrávajú kľúčovú úlohu pri formovaní vnímania rizika podniku. Zdôrazňuje dynamickú povahu vnímania rizika, ktoré je ovplyvnené nielen vonkajšími faktormi, ako aj konkurenčné a podnikové prostredie, ale aj správaním a konaním samotných MSP.

Jaroslav Belas, Beata Gavúrová a kol. (2020) – skúmali zhodnotenie makroekonomického prostredia a určili rozdiely vo vnímaní makroekonomického prostredia podnikateľov na Slovensku a v Českej Republike. Výskumná vzorka predstavovala 329 podnikov zo Slovenska a 312 podnikov z Česka. Z výskumu vyplynulo niekoľko zistení. Medzi respondentmi v odvetviach dopravy, stavebníctva, obchodu a verejných služieb panovala silná zhoda v názore na pozitívny vplyv makroekonomického prostredia na podnikateľské aktivity, pričom v ostatných odvetviach boli zaznamenané rozdiely. Taktiež aj vnímanie podpory inovačných aktivít v jednotlivých sektoroch vykazovali silnú proaktívnu podporu, pričom iní sa v názoroch na podporu inovácií značne líšili. Okrem toho výskum zdôraznil význam sektorových politík pri riešení rozdielov a podpore stabilného hospodárskeho rastu.

Jaroslav Belas, Ján Dvorsky, Zdenek Strnad a kol. (2019) – skúmali faktory, ktoré určujú kvalitu podnikateľského prostredia a kvalitu podnikového prostredia a jeho determinanty v MSP. Výskumnú vzorku predstavovalo 641 podnikov zo SR a ČR. Zistenia ukázali, že ekonomické faktory, ako makroekonomické prostredie, menová politika a úrokové sadzby spolu s politickými faktormi, ako napr. právne prostredie sú najvýznamnejšími determinantmi kvality podnikového prostredia v sektore MSP. Okrem toho sa zistilo, že rozhodujúcu úlohu pri formovaní kvality podnikateľského prostredia zohrávajú aj neekonomické faktory, ako sú politické, sociálne a technologické aspekty. Model zdôrazňuje význam úpravy legislatívneho prostredia, zníženia štátnej byrokracie a zlepšenie prístupu médií k hodnoteniu podnikového prostredia. Tieto úpravy sa považujú za nevyhnutné pre zlepšenie celkovej kvality podnikového prostredia pre MSP.

Jaroslav Belas, Lubomír Belas a kol. (2019) – skúmali a kvantifikovali dôležité verejné faktory ovplyvňujúce kvalitu podnikateľského prostredia v segmente MSP a porovnali intenzitu definovaných faktorov medzi ČR a SR. Do prieskumu bolo zapojených 312 podnikov z ČR a 329 podnikov z SR. Zo zistení vyplýva, že hodnotenie politických faktorov je v oboch krajinách všeobecne negatívne. Len malé percento podnikateľov pozitívne hodnotilo úroveň legislatívy v podnikaní a vyskytli sa obavy o schopnosť štátu zabezpečiť kvalifikovanú pracovnú silu pre podniky. Pozitívne hodnotili, najmä podporu exportu zo strany štátu. Rozdiel medzi krajinami bol zaznamenaný v oblasti štátnej byrokracie, pričom slovenskí podnikatelia hodnotili súčasnú situáciu pozitívnejšie ako ich český kolegovia.

Jaroslav Belas, Martin Cepel, Matus Kubák a kol. (2020) – skúmali rozdiely vo vnímaní podnikateľského prostredia podnikateľmi v závislosti od odvetvia, v ktorom podnik pôsobí. Porovnanie ponúka pohľad medzi ČR a SR. Výsledky ukázali, že slovenskí podnikatelia vykazujú vyššiu mieru skepticizmu v porovnaní s českými kolegami, čo naznačuje potrebu podrobnej analýzy na pochopenie základných dôvodov týchto rozdielov. Štúdia zdôraznila potrebu neustálej podpory MSP s cieľom stimulovať hospodársky rast, inovácie

a medzinárodnú spoluprácu, najmä v regiónoch, ktoré čelia rozdielom. Obmedzenia štúdie boli nereprezentatívne vzorky a nerovnomerné zastúpenie sektorov. Štúdia bude pokračovať vo výskume, aby sa rozšírili vzorky o Poľsko a Maďarsko pre účely komplexnejšieho pochopenia podnikového prostredia v strednej Európe.

Ján Dvorský, Aleksandr Ključnikov a kol. (2020) – skúmali rozdiel vo vnímaní vybraných podnikových rizík a ich vplyvu na budúcnosť podnikania, pokiaľ ide o skúsenosti podnikateľov s bankrotom podniku. Výskumnú vzorku predstavovalo 73 MSP so skúsenosťou bankrotu podniku a 381 MSP bez skúsenosti s bankrotom podniku. Výsledky výskumu prišli k záveru, že podnikatelia, ktorí nemajú skúsenosti s bankrotom, vnímajú vplyv zvyšovania počtu zamestnancov na budúcu výkonnosť podniku. Podnikatelia, ktorí prešli podnikateľským úpadkom, nevnímajú vplyv ukazovateľov personálneho rizika na vnímanie budúcnosti podniku. Podnikatelia, ktorí nemajú skúsenosť s úpadkom, vnímajú priamy vplyv zvyšovania výkonnosti zamestnancov na budúcnosť podniku. Na druhej strane, podnikatelia, ktorí prešli úpadkom podniku, nevnímajú ukazovatele personálneho rizika, ako je fluktuácia zamestnancov, chybovosť zamestnancov alebo zvyšovanie výkonnosti zamestnancov za významné.

Leos Safar a kol. (2018) – skúmali, ako efektívne navrhnuť model organizácie podniku pre existujúce nové malé a stredné podniky, ktorý by zohľadňoval tradičné podnikateľské prístupy a požiadavky priemyslu 4.0. Model slúži ako návod pre malé a stredné podniky v počiatočných fázach zavádzania technológií 4.0. Výsledky výskumu priniesli, že pre nové aj existujúce MSP bude na efektívne začlenenie princípov 4.0 do ich činnosti potrebný ďalší softvér, cloudové služby a pomôcky. Štúdia podporuje názor, že MSP sa môžu stať efektívne prostredníctvom implementácie platforiem 4.0, zároveň však poukazuje na potencionálnu potrebu vyšších počiatočných investícií do štandardného softvéru a výkonného hardvéru. Okrem toho sa v dokumente zdôrazňuje význam automatizovanej komunikácie v budúcom inteligentnom vonkajšom svete, kde sú objekty schopné komunikovať v reálnom čase. Očakáva sa, že takáto automatizácia zníži výrobné náklady a čas. Autori uznávajú potencionálne potreby s financovaním, čo vedie k návrhu preskúmať zapojenie právnych orgánov do vytvárania priaznivého prostredia 4.0. Okrem toho sa v dokumente navrhuje, že ostatní účastníci trhu vrátane bánk, daňových úradov a domácností by museli prijať nové technológie, aby sa mohli účinne zapojiť do globálnej siete.

Martin Čepel a kol. (2019) – skúmal sociálne a kultúrne faktory vytvárajúce kvalitu podnikateľského prostredia v segmente MSP a porovnal ich na českom a slovenskom trhu. Výskumnú vzorku predstavovalo 312 podnikov z ČR a 320 podnikov z SR. Z výsledkov výskumu vyplýva, že podnikatelia v oboch krajinách vnímajú relatívne nízku mieru akceptácie zo strany verejnosti a politiky. Vyzdvihujú však pozitívny vplyv rodinného prostredia, ktoré podnikateľov motivuje a pomáha im v ich podnikateľských aktivitách. Podnikatelia sa domnievajú, že média skresľujú podnikateľské aktivity a nedokážu pozitívne prispieť k podnikateľskému prostrediu prezentovaním úspešných príbehov. Napriek týmto problémom sa väčšina podnikateľov v oboch krajinách zhoduje, že výhody podnikania prevažujú nad nevýhodami.

Mehmet Civilek a kol. (2022) – skúmali, či sa vplyv inovatívnosti a konkurencieschopnosti MSP prenáša na finančné riziká v závislosti od krajín, v ktorých sa MSP nachádzajú. Výskumná vzorka predstavovala 1221 českých, slovenských a maďarských MSP. Štúdia odhalila podobnosti medzi MSP z ČR, SR a Maďarska, pokiaľ ide o vplyv inovatívnosti na obavy z bankrotu a konkurencieschopnosti na finančnú výkonnosť a riadenie rizík. Tieto podobnosti možno priradiť k podobným sociálno – ekonomickým podmienkam na týchto trhoch. Boli však

zistené aj rozdiely, najmä pokiaľ ide o vplyv konkurencieschopnosti na obavy z úpadku inovatívnosti na finančnú výkonnosť a riadenie rizík. Tieto podobnosti možno priradiť podobným sociálno – ekonomickým podmienkam na týchto trhoch. Tieto rozdiely by mohli vyplývať z rôzneho počtu konkurzov, politického rizika, úrovne konkurencie a kultúrnych rozdielov na jednotlivých trhoch. Zo štúdie vyplýva, že na zníženie obáv MSP z finančných rizík je nevyhnutné zvýšiť finančnú gramotnosť vedúcich pracovníkov podnikov, zlepšiť podmienky prístupu k úverom, práva duševného vlastníctva a daňové a právne predpisy. Hoci štúdia analyzovala MSP z viacerých krajín a z finančného hľadiska, mala obmedzenia, ako napr: nedostatok údajov z finančných výkazov a zameranie sa výlučne na vlastné hodnotenia finančných podmienok MSP.

5 Diskusia

Empirické výskumy o vplyve podnikateľského správania na výkonnosť malých a stredných podnikov prinášajú poznatky o podnikateľskom prostredí. Zistilo sa, že sklon k riziku a inovatívnosť majú priamy vplyv na rozhodovacie procesy, čo vplýva na úspech podniku.

Na základe výsledkov možno skonštatovať, že podnikateľské iniciatívy vytvárať a prinášať na domáce i zahraničné trhy sú na základe výsledkov práce ovplyvnené národnými a medzinárodnými právnymi úpravami a zákonmi. Zistilo sa, že typ a forma financovania výrazne ovplyvňujú podnikateľské ambície prinášať rôzne typy inovácií a úsilie presadiť tieto inovácie na trhu. Financovanie podnikateľských iniciatív a inovácií je náročnejšie na základe výsledkov, hlavne pre podnikateľov, ktorí sú v stredných rokoch života v dôsledku zamietnutia bankového úveru z dôvodov neúplných podnikateľských plánov, nesprávne vypočítaných finančných ukazovateľov. Z výsledkov možno vyčítať, že taktiež spoločenská zodpovednosť podnikov úzko súvisí z udržateľnosťou a inováciami, nakoľko národné strategické plány a iniciatívy zamerané na podporu zavádzania postupov spoločenských zodpovedných podnikov sú prispôbené pre podnikateľov a čoraz viac právnych úprav a noviel zákonov smerujú k podpore zavádzania postupov spoločenskej zodpovednosti podnikov pre účely zlepšenia podnikateľského a komunitného prostredia. Podnikateľské prostredie je ovplyvnené ochotou a ambíciami podnikateľov vyvíjať aktivity, ktoré zabezpečia priaznivý vývoj prínosu inovácií a ovplyvnia faktory, ktoré majú priamy vplyv na vývoj a rozvoj podnikov. Medzi hlavné faktory, ktoré ovplyvňujú podnikateľské ambície a ochotu podnikateľov prinášať inovácie na národnej úrovni patria: znižovanie nákladov na dopravu surovín a tovaru, zlepšenie pracovných podmienok pre zamestnancov, zabezpečenie primeranej úrovne miezd, modernizáciu strojov a technického zabezpečenia podnikov a poskytovanie podpory zo strany štátu pre účely ovplyvňovania týchto faktorov. Mnoho podnikateľských procesov sa presunulo do online priestoru aj v dôsledku pandémie covidu-19. Z výsledkov vidieť, že je úzka súvislosť medzi inováciami podnikov a využívaným moderných komunikačných metód. Podniky, ktoré majú lepšie zákaznícke správanie a efektívnejšie využívajú moderné online komunikačné nástroje majú potenciál rastu. Výsledky štúdie preukázali pozitívny vplyv podnikového riadenia rizík a postojov podnikateľov k prijímaniu rizík spojených s hrozbou neúspechu podnikania a vnímaniu potencionálnych budúcich podnikateľských perspektív. Pozitívny vplyv je ovplyvnený trendom centralizácie rizík a vývoja integrovaných systémov riadenia ako aj na národnej aj celoeurópskej úrovni. Medzi najčastejšie prekážky efektívneho riadenia rizík patrí dostupnosť interných aj externých informácií potrebných pre účely riadenia a vyhodnocovania rizík, ako aj ich následná integrácia do rozhodovacích procesov. Z uskutočneného prieskumu je zrejmé, že pre malé a stredné podniky je kľúčové mať jasnú podnikateľskú orientáciu,

podporovať inovácie a byť ochotnými podstupovať riziko, aby sa mohli prispôbiť dynamickému podnikateľskému prostrediu a dosiahnuť úspech na trhu.

Vo všeobecnosti musia mať podniky nielen na domácom, ale aj na zahraničnom trhu jasnú víziu a stratégiu, ale aj flexibilitu a schopnosť prispôbiť sa meniacemu sa podnikateľskému prostrediu. Ich úspech závisí od ich schopnosti efektívne riadiť riziká, inovovať a reagovať na potreby trhu.

6 Záver

Podniky, ktoré sú ochotné podstúpiť riziko a inovovať, majú väčšiu pravdepodobnosť dosiahnuť konkurenčnú výhodu a dlhodobý rast.

Dôležitými aspektami sú aj kultúra krajiny a prostredie podniku, ktoré môžu byť podporovať, alebo brániť podnikateľskému rozvoju. Flexibilita a schopnosť prispôbiť sa novým trendom a technológiám sú kľúčové faktory pre úspech podnikov.

Napriek rôznym štúdiám a výsledkom je zrejmé, že podniky bez ohľadu na veľkosť a odvetvie, v ktorom pôsobia musia mať jasné ciele, stratégie a schopnosť riadiť riziká, aby mohli dosahovať konkurenčné výhody. Ich úspech závisí nielen od vnútorných faktorov, ako je podnikateľská orientácia a kultúra danej krajiny, ale aj od schopnosti adaptácie na vonkajšie prostredie a využívania nových príležitostí.

Je zrejmé, že inovácie ovplyvňujú rôzne faktory, pričom najsilnejším faktorom je sklon k ochote podstupovaniu rizika. Konkurenčná pozícia jednotlivých malých a stredných podnikov bola a aj bude determinovaná frekvenciou a kontinuálnym prínosom inovácií a preto malé a stredné podniky musia venovať pozornosť faktorom, ktoré majú najvýznamnejší dopad na ich rast a vývoj.

Poznámka o riešenom projekte

Tento príspevok je čiastkovým výstupom riešenia projektu VEGA MŠ SR 1/0006/22 „Accelerating the Growth of Innovative Enterprises – Scaling Scale-ups and New Technology Based Businesses (NTBFs)“ v rozsahu 100%.

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Contact

Jozef Kovács

Ekonomická univerzita v Bratislave
Fakulta podnikového manažmentu
Katedra manažmentu
Dolnozemska cesta 1/b
852 35 Bratislava
Slovenská republika
E-mail: jozef.kovacs@euba.sk
Autorský podiel 90 %

Nadežda Jankelová

Ekonomická univerzita v Bratislave
Fakulta podnikového manažmentu
Katedra manažmentu
Dolnozemska cesta 1/b
852 35 Bratislava
Slovenská republika
E-mail: nadezda.jankelova@euba.sk
Autorský podiel 10 %

Digitalization, automation and sustainability of occupations in the printing industry in Slovakia

Monika Soľavová – Vladimír Bolek – Michal Zelina

Abstract

For the printing industry, digitalisation, automation and sustainability are important topics that influence its future. In the context of human resource scarcity, energy reduction, increased legislative and social demands for environmental protection, this paper seeks to provide a theoretical perspective on digitalization, automation and sustainability of occupations in the printing industry in Slovakia. The empirical study analyses and presents secondary data from the Social Policy Institute and the Statistical Office of the Slovak Republic; the paper looks for relationships and links to the sustainability of occupations in the printing industry in Slovakia. The printing industry in Slovakia, as well as abroad, is struggling with a shortage of professional workforce. In certain areas, such as finishing, it tries to compensate for this shortcoming by introducing automated systems. At the same time as addressing the labour shortage, companies in the printing industry in Slovakia are responding to rapidly changing technological trends and at the same time responding to dynamic changes in the working environment.

JEL classification: M15

Keywords: digitalization, sustainability, printing industry

1 Introduction

In today's industrial environment, it is important to recognise that the drivers of change are trends in digitalization and automation of production. These trends require changes not only in production technologies, but also in the work environment and in the digital skills of employees. They represent a significant change in how manufacturers operate, what knowledge they require and not just technical, but also more adaptive, as well as strategic thinking. Changes do not occur evenly or with the same intensity, but have different strengths and different impacts on different segments (Kotíková, 2019).

Digitalization and automation, as elements of Industry 4.0, have a significant impact on the printing industry and currently form its basis. Within the printing industry, all parts of the production process, technological equipment, enterprise management, printing using renewable raw materials, biodegradable and recyclable raw materials are affected (Sani, 2021; Song, 2022, Aydemir, 2023; Chen, 2019). Digitalization in the printing industry is exerting its influence on its competitiveness and transformation. New technologies enable better communication between equipment, machines and logistics systems, enabling production from renewable and recyclable resources. Innovations and technological developments require adaptation to new requirements and continuous training of employees. Automation in the printing industry is applied in pre-print preparation (e.g. page assembly, printing form preparation). Printing equipment includes automated systems for loading and unloading paper, automatic replacement of printing plates, etc. Finishing machines are equipped with systems to increase efficiency and reduce production errors, replacing monotonous work (Trexima, 2020).

Digitalization, together with automation, is also driving changes in the labour market. Technological trends are affecting job profiles and skills, new skills are emerging, new job

profiles are emerging, and training programs must follow this transformation (da Silva 2021). In the context of an increasingly powerful global and information environment, the process of selecting and evaluating human resources has a particularly important role to play. Organisations see human capital as critical to their success and strive to employ the best possible individuals. They usually prefer to recruit employees who have a good mix of soft skills that are strongly sought after by employers. (Asefer, 2021). In order to be employed, one must not only have the required knowledge but also a set of skills that would enable him or her to perform the task well (Noah, 2020).

This paper seeks to provide a theoretical perspective on digitalization, automation and sustainability of occupations in the printing industry in Slovakia. Printing companies are responding to staff shortages by investing in digitalization and process automation. On the other hand, printing companies are adapting to new trends and technologies, which is changing the demands on employees. Activities performed by low-skilled employees are being replaced by automated systems, causing the disappearance of these occupations. In contrast, investment in new digital technologies supports the creation of new jobs with higher skill requirements.

2 Current state of affairs in question at home and abroad

Over the last three decades, digitalization has affected all parts of the printing production process and, to the greatest extent, the first part – pre-press (production preparation) (Melnikov, 2014). In the printing industry, this means a shift from traditional analogue methods to digital methods, to the use of technologies such as web to print, printed electronics, print on demand, etc. For simple and repetitive contracts, automating and digitalizing some selected processes will create the opportunity for salesmen and technologists to focus on more complex orders. For example, with the web to print system, some steps of the job will be automated, but they will not be completely free of human work. Data entering will probably form the most critical part and the maximum amount of problems in printing thus requiring human intervention (Adwiya, 2022). New technologies, such as additive 3D printing, affect the reduction of waste generated in the manufacturing process, particularly in packaging production, in the development of advanced packaging, expanding the alternative of manufacturing 3D objects in other industries, and allowing customers to see the final product before the actual production begins (Thompson, 2022; Tamir, 2023).

Digital technologies and automation are equally implemented in the design of printing machines in order to increase the speed, accuracy and automation of printing processes, e.g. sensors to monitor print quality, control systems, enhanced personalization capability, predictive maintenance (Villalba Diez, 2019; Song, 2022; Zhang, 2019).

Within Industry 4.0, digital technologies and automation are interconnected. Digitalization provides the data and the necessary information facilitating effective automation. At the same time, automation generates data and information used in the management of production processes and their digitalization. Industry 4.0 can be seen as a technology-driven transformation and is complemented by Industry 5.0, where research and innovation are driving the transition to a sustainable and resilient human-centred European industry. A human-centred approach places basic human needs and interests at the centre of the manufacturing process. Workers will use technologies such as robotic systems and augmented reality (AR) to provide workers with real-time information to improve decision-making and work processes (Xu, 2021). Process automation procedures ensure that automation is efficient, sustainable and safe for employees.

At the same time, digitalization and automation bring certain changes such as (Balsmeier, 2019):

- creation and disappearance of jobs;
- increased requirements for qualification-specific knowledge of employees when working with automated systems;
- reducing the number of low to medium skilled employees;
- increased demands for information security require increased investments and increased requirements to work with security systems;
- managing change through staff training.

The practical, intelligent, responsible and sustainable use of technology depends entirely on human activity. Such employment requires a type of cognitive processing that is challenging for machines, which highlights the importance of matching human reasoning with machine intelligence. The importance of digital skills is widely recognised in cultivating appropriate skill sets in employees (Poláková, 2023). Some studies are aimed at identifying the need for job skills consisting of soft skills for higher education students and hard skills for vocational students. Vocational education graduates are labelled as graduates with very low qualification and cannot meet expectations regarding job requirements (Hartanto, 2019). The mismatch between employers' demand and universities' supply of students in the area of soft skills is becoming a major employability issue. Employers are concerned that recent college graduates do not possess the necessary soft skills (Rasli, 2020).

The aforesaid is directly related to the sustainability of occupations. Occupational sustainability can be characterised as the ability of jobs and industries to adapt to change. At the same time, the sustainability of occupations in the printing industry is an important aspect that respects environmental, social and economic factors. A study in Poland shows that companies in the printing industry use sustainability practices to a much higher extent than Industry 4.0 technologies (Gładysz, 2021).

Standard printing production is highly energy intensive. The printing industry is striving to reduce its environmental impact, energy, water and raw material consumption, and is adopting sustainable practices. As part of innovation activities and new investments, printing companies have increased their activities in this area in recent years, depending on the size of the company. They are further adapting to new technologies that include automation, digitalization and the implementation of intelligent systems. They are moving from analogue to digital media. The ability of companies to adopt to new practices, information and communication technologies, digitalization and automation streamlines management and business processes, improves data evaluation and enhances the companies' production quality (Bolek, 2021).

The aforesaid activities have a significant impact of employees' skill requirements of the workforce, while at the same time they should not compromise the ability of future generations to maintain their quality of life and meet their needs. The biggest challenges to the sustainability of occupations in the printing industry that may affect it include: demographic changes (e.g. ageing population, migration), shortage of graduates in printing-related fields, which may cause unavailability of skilled labour. In the printing industry, especially those occupations are promising that are related to cutting-edge technologies and sustainability. For example experts in digital printing, digital data management and solar technologies are in demand because of their ability to adapt to current trends and innovations. Conversely, occupations that are experiencing a decline are often those related to traditional printing technologies and manual processes. These include, for example, printers and finishing workers, where there is a

perceived shortage of skilled labour and a risk of disruption to the continuity of training in the relevant field. Occupations that are in danger of extinction are those that can be replaced by automation and robotics. This includes simple assembly work or other routine activities that can be more efficiently performed by machines (Trexima, 2020).

3 Paper objective, methodology and research methods

The main objective of the empirical study is to provide a discourse on digitalization, automation and sustainability of occupations in the printing industry in Slovakia and to identify links to sustainability of occupations in the printing industry. The main objective is supported by several partial objectives:

- to draw up an overview of the relationship between the registered occupations of the printing industry according to the National System of Occupations of the Slovak Republic, the fields of education at secondary schools and occupations requiring university education;
- to analyse data on the number of graduates in the fields of education at secondary schools focused on printing according to secondary data from the Social Policy Institute in Slovakia;
- to assess the state of the scope of innovation activities of printing companies in Slovakia from secondary data of the DATAcube public database of the Statistical Office of the Slovak Republic;
- to summarize and interpret the findings on the number of secondary school graduates on the sustainability of occupations in the printing industry in Slovakia.

The object of the research is the printing industry, which is a branch of manufacturing dealing with the reproduction and printing of originals, which gives the final shape to the product (e.g. books, posters, newspapers, magazines, etc.). In terms of production volume, it is one of the smaller industries in Slovakia. Although it is not one of the giant industries that affect the economy of countries, nor does it have a decisive impact on GDP, it is important to recognise that printing is present in all sectors and accompanies products from the supply chain to the end consumer. It also plays an important role in preserving cultural heritage and promoting literacy and education, and it is used by all sectors of the national economy.

Within the activities of the sector councils of the Slovak Republic (SR), the printing industry is classified together with the pulp and paper industry in one sector being divided into 17 Manufacture of paper and paper products and 18 Printing and reproduction of recorded media. The sector council for the pulp, paper and printing industry is a part of the Sector Councils Alliance. The Sector Councils Alliance guarantees the activities of sector councils in the Slovak Republic, contributes to the introduction of a new method of monitoring employers' requirements for skilled labour and to the alignment of the lifelong learning system with the needs of the labour market by coordinating them (<https://www.sustavapovolani.sk>).

Education of the workforce for the printing industry is carried out at secondary vocational schools and at the Faculty of Chemical and Food Technology of the Slovak University of Technology in Bratislava, Department of Graphic Arts Technology and Applied Photochemistry. At secondary vocational schools, education is provided in the following fields of education:

- 3446 K print media graphic designer.
- 3447 K digital media graphic designer.

- 3457 K print operator.
- 3434 K packaging materials operator.
- 3436 K library technologies operator.
- 3431 M 01 printing technology.
- 3431 M 02 graphics of printed materials.
- 3473 H printing expert.

The empirical study is based on the analysis of domestic and foreign literature. Google Scholar, Web of Science, and ScienceDirect article databases were used to search for relevant articles within the research. Keywords were used in the search: digitalization, sustainability, printing industry. In order to fulfil the main objective and partial objectives of the theoretical paper and background of the research problem, several methods of scientific work are applied in the paper, such as excerpts from domestic and foreign theoretical sources, analysis, anatomization, perspectives of domestic and foreign authors dealing with issues of the printing industry. The paper analyses and presents secondary data from the Social Policy Institute in Slovakia and DATAcube in the form of tables. The tables compiled available data on secondary school graduates from 2018/2019 to 2021/2022 school year as at June of the year following their graduation. Data on graduates of the 2022/2023 school year are not presented in the theoretical study, as they will be processed by the Social Policy Institute only after the month of June 2024. Data on graduates of universities in Slovakia were not processed in this theoretical study due to the low interest in this education and the low number of graduates in 2020/2021 and 2021/2022 school years (2020/2021 = 2 graduates, 2021/2022 = 3 graduates). The DATAcube public database data of the Statistical Office of the Slovak Republic are processed in the range of two-year intervals in the period of 2008-2020 and published after processing in the month of August in the following two-year period (the last update was on 31 August 2022 for the two-year period of 2019-2020). The theoretical and research findings are summarized in the conclusion.

4 Paper results

For almost two decades, the printing industry in Slovakia has faced a lack of interest in education from the younger generation, who are deciding on their future careers, and from their parents, which has resulted in a gradually ageing population of employees in this field. The results of the Human Resources Operational Programme of "Strategy for the Development of Human Resources in the Pulp and Paper Industry and Printing Industry until 2030" show that in 2020 the average age of employees in the printing industry was approximately 47, while in 2015 the average age was 45. Occupations that are currently predominantly manual in nature (e.g. finishing technician, print operator) have had no or very few new employees directly trained in the occupation for more than 15 years (Trexima, 2020).

According to the National System of Occupations, separate occupations are registered in the printing industry. Occupations are summarized in Table 1 with the indication of which fields of education are most suitable for the given occupation.

Table 1 Occupations of the printing industry according to the National System of Occupations of the Slovak Republic and the relationship to the fields of education with graphic designer focus

SK ISCO-08 Occupation/ fields of education	3446 K	3447 K	3457 K	3434 K	3436 K	3431 M 01	3431 M 02	3473 H	University
1321007 Printing production manager (executive)									X
2141026 Printing production management specialist									X
3122007 Printing production supervisor	X	X				X	X		
2141027 Printing production quality management specialist									X
7543006 Printing production quality controller	X	X				X	X		
2141025 Printing production research and development specialist									X
2141028 Printing production technology specialist									X
7321001 Printing preparation graphic designer		X		X			X		
7321002 Printing form maker		X					X		
7322000 Printer, printing operator			X	X				X	
7321003 Colour operator, printing colourist	X	X	X						
7323001 Finishing technician (librarian)				X	X			X	
7323002 Art librarian					X			X	
9329007 Printing production auxiliary staff								X	
Total	3	5	2	3	2	2	4	4	5

Source: Own processing

Table 1 lists the specific occupations of the printing industry as recorded in the National System of Occupations of the Slovak Republic database. The table provides an overview of the relationship between registered occupations, secondary school programmes, and occupations that require a university degree. The programme of 3447 K digital media graphic designer is applied in 5 registered occupations. Other programmes totalling 4 in the registered occupations include 3431 M 02 printing - graphics of printed materials, 3473 H printing expert, and totalling 3 include 3434 K packaging materials operator, 3446 K print media graphic designer. A university education is required for five registered occupations. Due to the low number of graduates from universities with focus on printing (in 2020/2021 and 2021/2022 school years the number of graduates was 5), these positions are mainly filled by graduates from universities with economic or engineering focus. Printing industry manufacturers offer their employees to take the course "Fundamentals of Printing" at the Department of Graphic Arts Technology and Applied Photochemistry of the Faculty of Chemical and Food Technology of the Slovak University of Technology in Bratislava (the number of the accreditation confirmation for 2024 is 0473/2024/34/1; the course opens every year), where they will receive a certificate of completion of the course.

The Social Policy Institute, the main analytical and advisory unit of the Ministry of Labour, Social Affairs and Family of the Slovak Republic, analyses social, employment and labour market policies. In its interactive application, it provides data on the labour market employability of secondary school and university graduates. This application is the result of a

joint initiative of the Social Policy Institute and the Education Policy Institute. The available data interpret how Slovak secondary school and university graduates in different fields of education succeeded on the labour market. This theoretical paper uses data on graduates with the printing education programme at secondary schools in Slovakia during the first year following graduation.

Table 2 Number of graduates in the fields of education at secondary schools with graphic arts focus in Slovakia

Occupation/ School year	2018/2019	2019/2020	2020/2021	2021/2022
3431 M 01 printing technology	7	0	0	0
3431 M 02 graphics of printed materials	14	16	16	11
3473 H printing expert - librarian	8	14	6	11
3457 K print operator	25	26	20	16
3446 K print media graphic designer	26	48	34	18
3447 K digital media graphic designer	517	476	505	490
Total	597	580	581	546

Source: Data by the Social Policy Institute, own processing

Table 2 interprets the number of graduates in each field of education in secondary schools with printing focus. Interest in the field of 3447 K digital media graphic designer maintains an average of 500 graduates per year. This is mainly due to the interest in ICT and digital technologies among the younger generation. Other fields attract a significantly lower interest.

Based on the shortage of graduates in most fields and successive crises, printing industry companies address this by innovating machinery, automating and introducing digital technologies and systems for environmental management, more efficient use of resources, waste management, etc. These activities are summarised as innovation activities. The Statistical Office of the Slovak Republic in the DATAcube public database provides information in the form of data tables for indicators of economic and socio-economic development. The section of "Multilateral Statistics - Science, Technology and Innovations" lists some of the information available for the printing industry. Specifically, the information pertains to the years 2008-2020 at two-year intervals in the section of the share of the companies that engage in innovation activities and the share of their expenditures on these in activities.

The following categories of monitored enterprises are represented in the table:

- Slovak companies total,
- industry total,
- industrial production,
- production of paper and paper products,
- printing and reproduction of recorded media.

Table 3 Share of the companies that engage in innovation activities of the total number of companies and the share of their expenditures on these in activities in the monitored area according to DATAcube in %

Avg. activity/ Year		2008	2010	2012	2014	2016	2018	2020
Total SK	Number %	33.59	32.79	31.29	29.17	28.68	27.96	33.96
	Expenditures %	1.19	1.21	1.76	1.33	1.60	2.23	1.92
05-39 Industry total	Number %	37.05	35.90	32.45	32.50	32.67	34.55	41.55
	Expenditures %	1.25	1.42	2.00	1.31	1.66	2.24	1.94
10-33 Industrial production	Number %	37.26	36.62	33.22	32.93	33.64	36.60	42.94
	Expenditures %	1.32	1.57	2.30	1.44	1.84	2.36	2.09
17 Production of paper and paper products	Number %	41.25	33.77	67.21	30.00	30.00	36.98	61.88
	Expenditures %	3.25	3.18	0.91	2.54	0.15	0.82	0.82
18 Printing and reproduction of recorded media	Number %	24.19	24.71	34.25	25.68	33.33	21.84	40.69
	Expenditures %	1.38	2.10	13.93	0.30	3.21	15.15	7.82

Source: DATAcube statistics (Statistical Office of the Slovak Republic), own processing

Table 3, based on the secondary data from DATAcube, shows that on average one-third of printing companies engaged in innovation activities during the monitored period. This is mainly influenced by market and customer demands, the extent of automation and digitalization (Industry 4.0 impact) in the printing industry and the elimination of weak parts such as energy-intensive technologies, energy scarcity and staff shortages due to retirement. Printing enterprises that engaged in innovation activities during the period under review declared the highest expenditure on innovation activity in 2012, 2018 and 2020. In 2012, they mainly responded to the large-scale marketing strategy of retail chains - direct mail. Increased demand for promotional print products has prompted increased investment into the innovation of existing production facilities. In 2018, investments in automation and digital printing were increased in order to increase speed, variability and print quality in the context of personalised printing. In 2020, the effects of the COVID-19 crisis such as shortages of input materials, energy and energy-intensive technologies, and the impact of labour shortages were apparent. The innovation activities of printing companies were focused on the efficient use of resources (e.g. the assembly of photovoltaic cells), the exchange of energy-intensive technologies for less demanding technologies, the implementation of environmental systems and the solution of staff issues. All the innovation activities also changed the qualification requirements for employees.

5 Discussion

The printing industry in Slovakia is responding to global challenges and technological advances. Digitalization and automation are the crucial trends in the printing industry that are changing the skills requirements of employees. At the same time, digital technologies are changing the younger generations' interest in education. The 3447 K programme called digital media graphic designer maintains a high level of interest among applicants, in contrast to other courses that focus on printing. A comparison of Table 1 with Table 2 shows that for some occupations there is a decline in the number of skilled employees and the printing industry manufacturers will be forced to address this by, for example, retraining existing or new employees, investing in the automation of those production processes where manual labour can be replaced, or introducing digital printing and finishing technologies. They include the following occupations: 7322000 printer, print operator, 7323001 finishing technician (librarian), 9329007 printing production auxiliary staff. The declining number of skilled

employees, the impact of technological trends and green transformation (implementation of sustainable production processes that save energy and raw materials) are perceived by companies as a necessity for innovation activities to increase their sustainability. New technologies create the need for new jobs that will be more attractive for the younger generation, which can contribute to the sustainability of some occupations in the printing industry.

6 Conclusion

The theoretical paper provides an insight into the digitalization, automation and sustainability of occupations in the printing industry in Slovakia, which are interconnected. The available statistical data show that one third of printing enterprises in Slovakia are engaged in innovative activities, responding to trends in digitalization, automation and, after the COVID-19 crisis, also responding to the energy and material crisis, which are tracked as innovative activities in terms of statistical data. All of these activities are changing the skill requirements of employees, they require more skilled workforce and there is a decline in low-skill workforce. Simultaneously with the younger generation's interest in digital technologies, their interest in occupations of a predominantly manual nature is decreasing. This leads printing companies to invest in digitalization and process automation. At the same time, printing companies respond to technological trends and at the same time react to the decline in the skilled workforce. The theoretical paper has some limitations: it gives a basic view of specific occupations of the printing industry according to the National System of Occupations of the Slovak Republic and their relationship to the education programmes with printing focused in secondary schools, then it specifies the number of graduates with printing focus in secondary schools, the share in the number of printing companies that engage in innovation activities and their expenditures on these activities. However, it does not indicate to what extent these innovation activities were implemented (e.g. product, technology, process innovates, etc.). It therefore provides an opportunity for further research in the area of innovation analysis, deeper research in the area of digital technologies on individual occupations.

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Contact

Monika Soľavová

University of Economics in Bratislava
Faculty of Business Management
Department of Information Management
Dolnozemska cesta 1/b
852 35 Bratislava
Slovak Republic
E-mail: monika.solavova@euba.sk
Author's share: 80%

Vladimír Bolek

University of Economics in Bratislava
Faculty of Business Management
Department of Information Management
Dolnozemska cesta 1/b
852 35 Bratislava
Slovak Republic
E-mail: vladimir.bolek@euba.sk
Author's share: 10%

Michal Zelina

University of Economics in Bratislava
Faculty of Business Management
Department of Information Management
Dolnozemska cesta 1/b
852 35 Bratislava
Slovak Republic
E-mail: michal.zelina@euba.sk
Author's share: 10%

PRÍSPEVKY DO DISKUSIE

CONTRIBUTIONS TO THE DISCUSSION

Geschäftsfeldanalyse als Kennzahl einer Heilpraktikerpraxis

Business area analysis as a key figure of a non-medical practitioner's practice

Manfred Renner – Peter Markovič

Abstract

In Germany, about 47,000 alternative practitioners work in full-time or part-time practices, compared to 101,932 doctors. The business area analysis is an important factor before setting up a practice, but constant analysis is also important during ongoing operations. This article examines the use of these analyses by German naturopathic practices. It tested the research theses that the former are underused by the latter and that PEST, PESTEL and SWOT analyses are a common method for conducting environmental analyses among German naturopathic practices. There is little literature that indicates that German naturopath practices carry out business area analyses. Some sources describe how these analyses are carried out by market research companies, suggesting that German naturopaths could rely on pre-existing analyses by these companies. This indicates that the first research thesis is correct. Whether the second research thesis is true cannot be conclusively assessed, as there is no evidence that German alternative practitioners carry out environmental analyses.

JEL classification: D47, M10, M21

Keywords: Corporate Management, Business Area Analysis, Alternative Practitioner Practice

1 Einleitung

Heilpraktikerleistungen werden in Deutschland nur von der privaten Krankenversicherung und nicht von der gesetzlichen Versicherung übernommen. Daraus ergibt sich ein erhöhter Bedarf an Umfeldanalysen für die Praxen, um den Markt besser einschätzen und rechtzeitig Maßnahmen ergreifen zu können. Rund 47.000 Heilpraktikerinnen und Heilpraktiker arbeiten in Voll- oder Teilzeitpraxen (BDH 2017) im Vergleich zu 101.932 Arztpraxen (KV 2017), was zeigt, wie groß der Anteil der Heilpraktikerinnen und Heilpraktiker an der Gesamtzahl der Praxen ist und wie viele Betriebe von solchen Analysen profitieren können. Betrachtet man ihre Zahlen im Vergleich zu anderen Berufsgruppen im Gesundheitswesen, so stellen sie einen erheblichen Anteil an der Gesamtzahl der Heilpraktiker, Ärzte, Fachärzte und Zahnärzte (Bundesärztekammer, o.J.; Koptjug, 2020; Michas, 2021; Weltbank, o.J. a; Weltbank, o.J. b), wie in Abbildung 1 (unten) zu sehen ist. Obwohl es immer noch weniger von ihnen gibt als von anderen Berufsgruppen im Gesundheitswesen, steigt ihre Zahl derzeit an. Die Tatsache, dass sie einen beträchtlichen Anteil der Angehörigen der Gesundheitsberufe ausmachen und dass immer mehr Heilpraktiker in den Markt eintreten, legt den Schluss nahe, dass eine Literaturübersicht, die sich auf die Verwendung von Umweltanalysen unter ihnen konzentriert, von Nutzen sein könnte. Solche Analysen können einem immer wichtiger werdenden Bereich der Gesundheitsbranche mögliche Vorteile bringen.

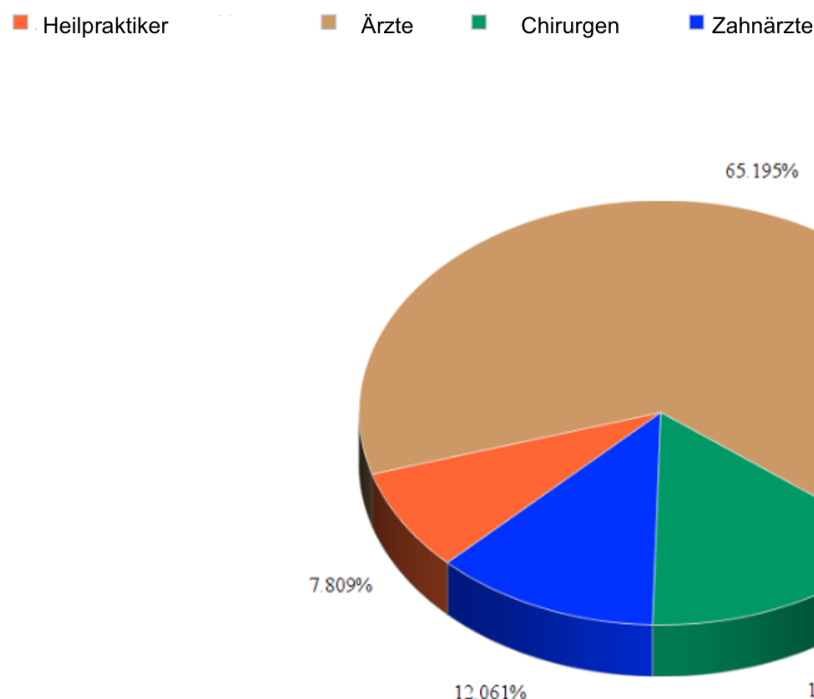


Abbildung 1 Ärzte, Zahnärzte und Heilpraktiker in Deutschland

Quelle: Eigene Darstellung, abgeleitet aus Bundesärztekammer (o. J.), Koptug (2020), Michas (2021), Weltbank (o. J. a) und Weltbank (o. J. b)

Umweltanalysen sind wichtig, da es nicht nur sinnvoll ist, vor der Gründung eines Unternehmens eine Geschäftsfeldanalyse durchzuführen, sondern auch wertvolle Erkenntnisse aus einer ständigen Analyse gewonnen werden können (Jimenez, 2009, S. 377; Yu & Chen, 2010, S. 94-95). Sie sind ein Mittel, um strategische Faktoren herauszufinden, die ein Unternehmen in seinem weiteren Umfeld beeinflussen. Umweltanalysen wurden als Möglichkeit zur Gewinnung von Wissen identifiziert, das zur Erlangung eines Wettbewerbsvorteils erforderlich ist (Al-Hawary & Al-Hawman, 2017, S. 279). Im Gesundheitsbereich besteht für Unternehmen die Option, sich auf eine bestimmte Gruppe von Krankheiten oder Behandlungsmethoden zu spezialisieren, um Nischenbedürfnisse zu erfüllen. Es lässt sich argumentieren, dass es für Unternehmen unerlässlich ist, sich bei derartigen Entscheidungen der Umweltfaktoren bewusst zu sein, was bedeutet, dass Umweltanalysen ein wirksames Instrument sein könnten, um sicherzustellen, dass alternativmedizinische Praxen in der Lage sind, solche Anforderungen zu erfüllen, wenn dies erforderlich ist, ohne dabei ihr Geschäft zu gefährden. Eine umfassende Literaturrecherche zur Nutzung solcher Analysen durch die Unternehmen des deutschen Heilpraktikermarktes könnte daher Erkenntnisse liefern, welche die Wettbewerbsfähigkeit der Praxen verbessern könnten. Dies wird daher der Schwerpunkt der vorliegenden Arbeit sein.

2 Aktueller Stand der Problemlösung im In- und Ausland

Eine erste grobe Durchsicht der verfügbaren wissenschaftlichen Literatur zeigt, dass bisher zahlreiche unterschiedliche Literaturübersichten zu Geschäfts- bzw. Umweltanalysen im Allgemeinen oder zu spezifischen Instrumenten zu deren Durchführung durchgeführt wurden, u.a. von Acar (2015, S. 3-4), Al-Hawary und Al-Hawman (2017, S. 279), Ghazinoory et al. (2011, S. 26-30) und Nyanga et al. (2018, S. 143-144). Bisher scheint es jedoch keine

Literaturrecherche zu geben, die sich mit der Nutzung dieser Analysen durch Heilpraktikerpraxen im Ausland oder in Deutschland beschäftigt. Die vorliegende Studie hat somit das Potenzial, eine deutliche Lücke im derzeitigen Wissensstand zu diesem Thema zu schließen.

Es gibt Belege dafür, dass Umweltanalysen durchgeführt wurden, um Facetten des breiteren Umfelds zu identifizieren, in dem private Unternehmen, öffentliche Institutionen und spezifische Produkte oder Dienstleistungen, die in den Bereich der Gesundheit fallen, in einer Vielzahl verschiedener Länder operieren (Krylova et al., 2020, S. 382; Pourmohammadi et al., 2020, S. 1; Sai et al., 2018, S. 51-54; Samal et al., 2012, S. 1-53; Yu, 2020, S. 185-186). Pourmohammadi et al. (2020, S. 1) führten eine PESTEL-Analyse zur Umweltanalyse von öffentlichen Krankenhäusern im Iran durch. Eine PESTEL-Analyse ist ein häufig verwendetes Umweltanalyseinstrument (Omran & Khorshid, 2014, S. 29) zur Identifizierung zukünftiger und aktueller Bedrohungen und Chancen innerhalb der Makroumwelt eines Unternehmens (Matovic, 2020, S. 101). Er ist aber auch ein Begriff, der verwendet wird, um Trends zu beschreiben, die in großem Maßstab auftreten und vom Unternehmen nicht direkt beeinflusst werden (Padgett & Loos, 2019, S. 40). Er konzeptualisiert sie in Bezug auf die sechs Bereiche, die in Abbildung 2 (unten) dargestellt sind (Vileta, 2020).

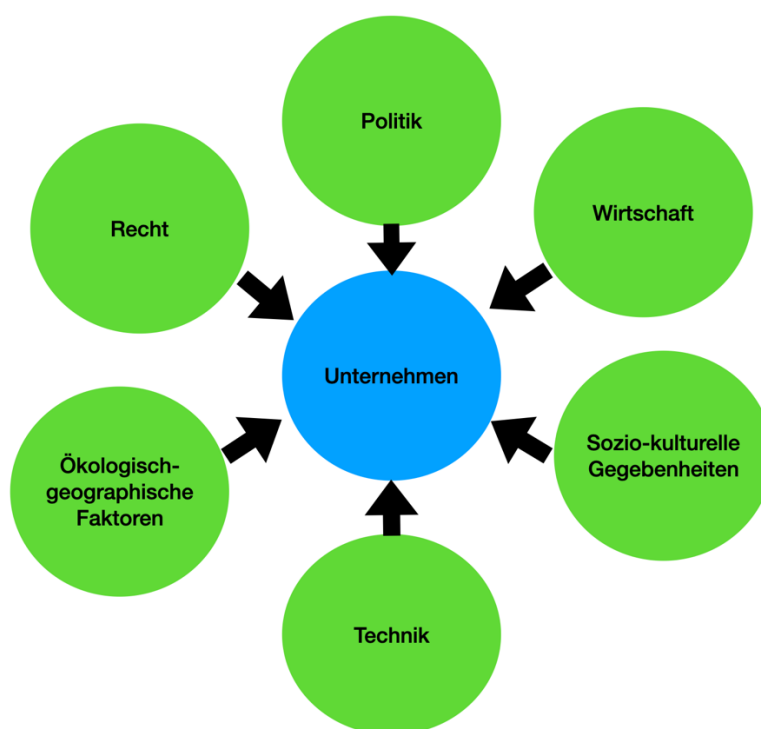


Abbildung 2 PESTEL-Analyse

Eigene Darstellung in Anlehnung an Vileta (2020)

Samal et al. (2012, S. 1-53) führten eine Umweltanalyse des breiteren Umfelds für Gesundheitsinformatik durch, die darauf abzielt, die Koordinierung der Gesundheitsversorgung und Übergänge in den USA zu unterstützen. Krylova et al. (2020, S. 382) verwendeten eine SWOT-Analyse, welche ein Instrument zur Durchführung von Umweltanalysen ist, die auf der Identifizierung von Faktoren innerhalb der Mikro- und Makroumwelt basieren (Chang et al., 2017, S. 1-3), um das Umfeld zu untersuchen, in dem Pharmahändler in Russland arbeiten.

Mikroumwelt ist die Umwelt, mit der ein Unternehmen in direktem Kontakt steht und auf die es direkten Einfluss nehmen kann, so dass dies ein engerer Bereich ist gegenüber der Makroumwelt (Moresova et al., 2020, S. 3). SWOT-Analysen befassen sich mit den Faktoren des internen Umfelds von Unternehmen (Gurel & Tat, 2017, S. 995), d. h. mit den Faktoren, die innerhalb des Unternehmens existieren und sich aus den Mitarbeitern, ihren Kompetenzen, den Verfahren und Prozessen des Unternehmens und der Art und Weise, wie es organisiert ist, zusammensetzen (Tapinos, 2009, S. 7). Aber auch dem externen Umfeld (Gurel & Tat, 2017, S. 995), das sich aus Aspekten des Wettbewerbs, der Lieferanten und Kunden sowie der technologischen und soziopolitischen Bereiche zusammensetzt (Tapinos, 2009, S. 7). Die Faktoren, die sich auf das interne Umfeld beziehen, werden als Stärken und Schwächen des Unternehmens konzeptualisiert. Faktoren, die sich auf das externe Umfeld beziehen, werden als Chancen und Bedrohungen konzeptualisiert, wie in Abbildung 3 (unten) zu sehen ist.

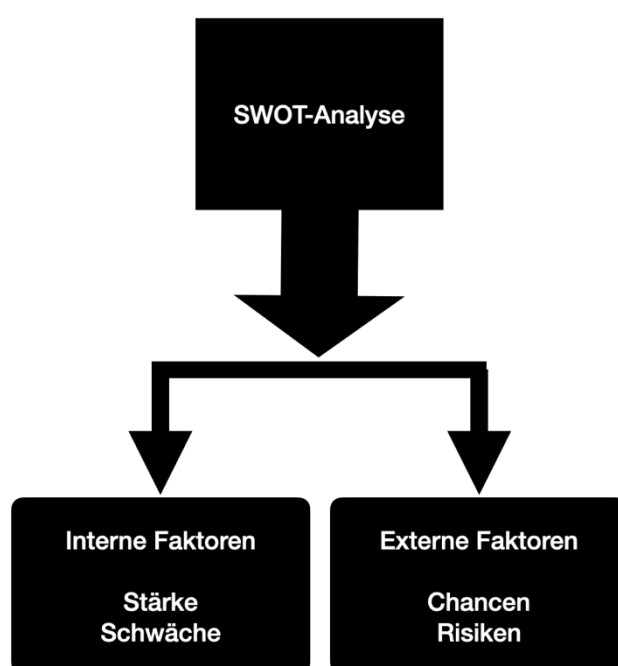


Abbildung 3 SWOT-Analyse

Eigene Darstellung nach Gurel und Tat (2017, S. 995)

Yu (2020, S. 185-186) führte eine SWOT-Analyse und eine PEST-Analyse durch, um das Umfeld zu analysieren, in dem die Demenzantworttechnologie in Korea entwickelt wird. Sai et al. (2018, S. 51-54) führten eine PEST-Analyse und eine Porter's 5 Forces-Analyse durch, um das Umfeld für Dialysezentren in der indischen Stadt Hyderabad zu untersuchen. Eine PEST-Analyse ähnelt einer PESTEL-Analyse, ist aber eine weniger umfassende Variante, da letztere die Umweltfaktoren in Form von vier Dimensionen konzeptualisiert, während sie in Form von sechs Dimensionen gebildet wird (Ho, 2014, S. 6479).

Die Porter's 5 Forces-Analyse ist ein Instrument zur Bewertung der Mikroumwelt (Morris, 2019), welche durch fünf Dimensionen gekennzeichnet ist: die Bedrohung durch neue Marktteilnehmer, die Verhandlungsmacht- bzw. -stärke der Kunden, die Verhandlungsstärke der Lieferanten, die Bedrohung durch Ersatzdienstleistungen oder -produkte und die Intensität des Wettbewerbs zwischen den Marktkonkurrenten (Porter, 1979), wie in Abbildung 4 (unten) zu sehen ist.

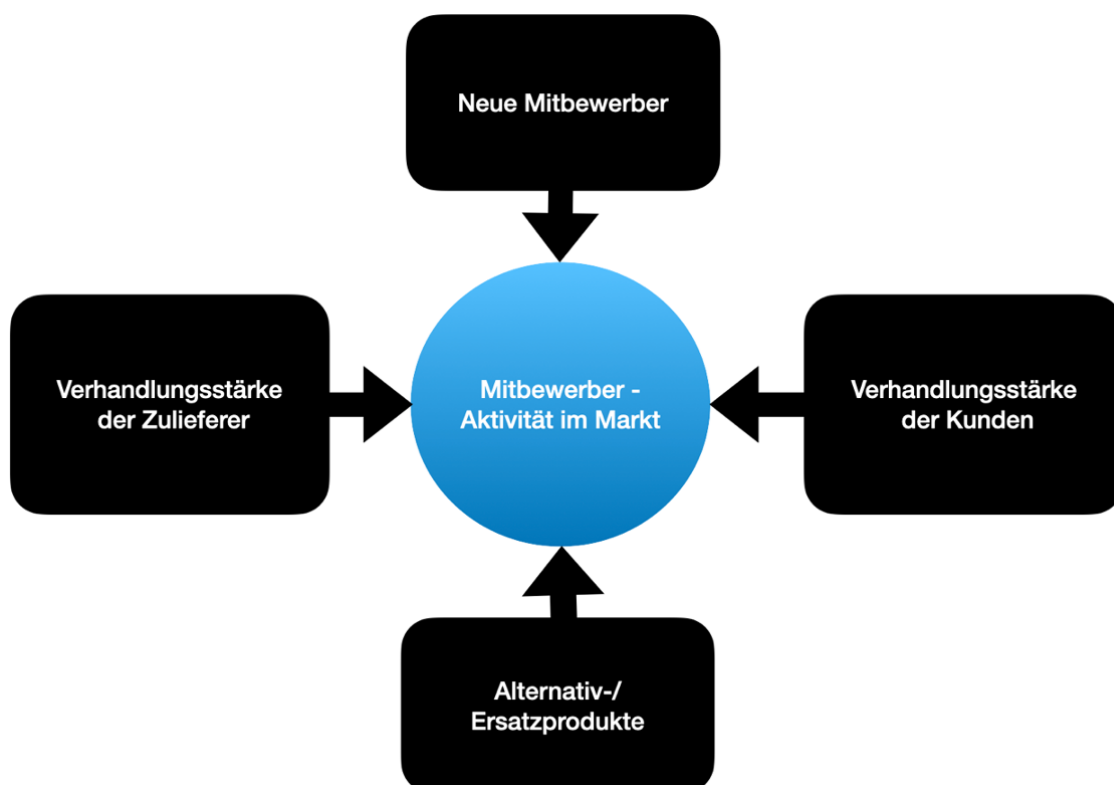


Abbildung 4 Porter's 5 Forces-Analyse (1979)

Eigene Abbildung in Anlehnung an Porter (1979)

Umweltanalysen werden in einer Vielzahl von Ländern durchgeführt, es ist jedoch bemerkenswert, dass keine dieser Analysen von den Unternehmen und Einrichtungen durchgeführt wurde, auf die sich die Analysen entweder direkt bezogen oder die für die Produkte und/oder Dienstleistungen, auf die sich die Analysen konzentrierten, verantwortlich waren. Es gibt nur wenige Untersuchungen darüber, wie diese Analysen von den Unternehmen der Gesundheitsbranche durchgeführt werden, obwohl es möglich ist, dass sie PESTEL-, PEST- und SWOT-Analysen verwenden, da diese Instrumente von Forschern bei der Durchführung dieser Art von Analysen im Rahmen von Studien im Bereich der Gesundheit verwendet wurden (Krylova et al., 2020, S. 382; Pourmohammadi et al, 2020, S. 1; Sai et al., 2018, S. 51-54; Yu, 2020, S. 185-186).

Es bedarf jedoch weiterer Forschung, um festzustellen, ob dies tatsächlich der Fall ist oder nicht. Dies ist eine weitere Lücke, zu deren Schließung die vorliegende Arbeit einen Beitrag leisten kann, auch wenn die Ergebnisse nicht unbedingt auf die Gesundheitsbranche als Ganzes verallgemeinert werden können und möglicherweise nur für Heilpraktiker gelten.

Nachdem festgestellt wurde, inwieweit das Problem, das mit dieser Arbeit angegangen werden soll, bewertet wurde und es noch nicht untersucht wurde, ist es notwendig, die Art und Weise zu skizzieren, in der es angegangen werden soll. Daher wird in Kapitel 3 das Forschungsdesign, das zu diesem Zweck gewählt wird, skizziert.

3 Forschungsdesign

In diesem Abschnitt wird die Fragestellung der vorliegenden Studie näher erläutert und anschließend die Methodik beschrieben, die zu diesem Zweck angewandt wird. Zunächst werden die Forschungsthemen, -ziele und -vorgaben erläutert. Anschließend werden die Art und Weise, wie die Studie durchgeführt wird, sowie die zugrunde liegende Forschungsphilosophie und Erkenntnistheorie dargelegt. Anschließend werden die Methoden der Datenerhebung beschrieben. Schließlich werden Einzelheiten zur Verwendung der Daten dargelegt.

3.1 Forschungsthemen, Zielsetzungen und Zwecke

Das Hauptziel der vorliegenden Studie besteht darin, die Nutzung von Umweltanalysen durch Heilpraktikerpraxen in Deutschland zu untersuchen. Die Ziele lauten daher wie folgt:

1. Es soll festgestellt werden, wie häufig Umweltanalysen in Heilpraktikerpraxen in Deutschland eingesetzt werden.
2. Identifizierung der Art und Weise, in der Umweltanalysen von Heilpraktikerpraxen in Deutschland durchgeführt werden.

Da es nur wenig Literatur über die Art und Weise gibt, in der Umweltanalysen von Heilpraktikerpraxen in Deutschland und von Unternehmen der Gesundheitsbranche im Allgemeinen eingesetzt werden, scheint es wahrscheinlich, dass sie ein zu wenig genutztes Instrument sind. Daher lautet die erste Hypothese, die in dieser Studie überprüft werden soll, wie folgt:

Forschungsthese 1: Umweltanalysen werden von Heilpraktikerpraxen in Deutschland zu wenig genutzt.

In Anbetracht der Tatsache, dass PEST-, PESTEL- und SWOT-Analysen bereits in Umweltanalysen für Produkte und Unternehmen im Gesundheitsbereich eingesetzt wurden, ist es möglich, dass diese Methoden von deutschen Heilpraktikerpraxen bei der Durchführung von Umweltanalysen verwendet werden.

Vor diesem Hintergrund lautet die zweite These wie folgt:

Forschungsthese 2: PEST-, PESTEL- und SWOT-Analysen sind bei deutschen Heilpraktikerpraxen, die Umweltanalysen durchführen, weit verbreitet.

Es ist nun notwendig, die Methoden zu beschreiben und zu begründen, die zur Prüfung dieser Hypothesen verwendet werden.

3.2 Methodik

Als Methodik für die vorliegende Arbeit wurde aus verschiedenen Gründen eine Literaturanalyse gewählt. Erstens stellen Hoon und Baluch (2019, S. 1264) fest, dass sich Literaturübersichten besonders für Bereiche eignen, die durch das Fehlen verbindlicher und zusammenhängender Theorien gekennzeichnet sind. Dies macht sie für die vorliegende Arbeit geeignet, da es einen Mangel an Theorien über die Nutzung von Umweltanalysen durch alternativmedizinische Praxen gibt.

Zweitens erleichtern Literaturübersichten die breite Erfassung und Analyse eines Themas. Entgegen der landläufigen Meinung besteht das Ziel solcher Übersichten nicht nur darin,

Informationen zu einem Thema zusammenzufassen; sie ermöglichen auch die Entwicklung neuer Erkenntnisse und Ansätze auf der Grundlage des gesamten aktuellen Wissens über das Forschungsgebiet (Pimenta et al., 2017, S. 51). Literaturübersichten sind auch effizient umzusetzen, sowohl in Bezug auf den Zeitaufwand als auch auf die erforderlichen Ressourcen (Chan, 2009). All diese Faktoren wurden bei der Auswahl dieser Methode berücksichtigt.

Die Literaturrecherche wird sich auf Texte konzentrieren, die entweder die Verbreitung von Umweltanalysen unter den deutschen alternativen Gesundheitspraktiken oder die Art und Weise, wie erstere von letzteren durchgeführt werden, beleuchten. Die Aufnahmekriterien sind, dass die Texte Informationen enthalten müssen, die für die Forschungsziele relevant sind, und dass sie in angesehenen akademischen Zeitschriften oder Tagungsbänden, in Büchern, die von akademischen Verlagen herausgegeben wurden, oder in Berichten von Marktforschungsunternehmen oder anderen offiziellen Stellen veröffentlicht worden sein müssen. Quellen, die älter als zehn Jahre sind, werden von der Überprüfung ausgeschlossen, da sie als zu alt angesehen werden, um für den aktuellen Stand der Dinge relevant zu sein.

Die Daten der Literaturrecherche werden durch eine kritische Prüfung analysiert, um Schlüsselthemen und Zusammenhänge zu ermitteln. Diese Datenanalysemethode wurde gewählt, da sie nach Synder (2019) eine valide Methode zur Analyse von Literaturdaten ist. In Kapitel 4 werden die Ergebnisse der Literaturrecherche vorgestellt.

4 Forschungsergebnisse

Obwohl eine Reihe von Umweltanalysen für den globalen alternativen Gesundheitsmarkt durchgeführt wurden (Global Information, 2021; Grand View Research, 2021), scheint es einen Mangel an Analysen dieser Art zu geben, die sich speziell auf Deutschland beziehen. Bei der Literaturrecherche wurde nur eine einzige Quelle gefunden, die speziell Methoden zur Durchführung einer Umweltanalyse aufzeigt, die auf den deutschen Markt für alternative Heilmethoden angewandt wurden. Bei diesem Text handelt es sich um einen Bericht des Marktforschungsunternehmens Maximize Market Research (2020), das nach eigenen Angaben eine SWOT-Analyse und eine Porter's 5 Forces-Analyse für den deutschen Markt durchgeführt hat. Übersichten über den Markt für alternative Gesundheit in Deutschland wurden bereits erstellt (Blasius, 2018; Wiegand, 2016), stellen jedoch keinen systematischen Versuch dar, eine Umweltanalyse durchzuführen und die Mikro- und Makro-Umweltfaktoren zu ermitteln, die sich auf die Heilpraktiker auswirken. Bemerkenswert ist auch, dass diese Übersichten nicht von den Praxen selbst erstellt wurden, was auch für die von Maximize Market Research (2020) durchgeführten Analysen zutrifft.

Es gibt jedoch Hinweise darauf, dass einige Umweltanalysen zu kleineren Segmenten des Heilpraktikermarktes in Deutschland durchgeführt wurden. Das Marktforschungsunternehmen HTF Market Intelligence (2020) führte eine SWOT-Analyse durch, die sich auf die vielversprechendsten pflanzlichen Arzneimittel (Phytotherapie) zur Behandlung oder Vorbeugung von COVID-19 in Deutschland konzentrierte. Phytotherapie ist eine Unterart der alternativen Medizin (Welz et al., 2018, S. 1). Sie gehört weltweit zu den beliebtesten alternativen Heilmitteln und ist auch in Deutschland mit fast drei Viertel der Bevölkerung sehr weit verbreitet. Sie wird auch häufig von Heilpraktikern im Land durchgeführt (Joos et al., 2012, S. 1-2), was sie für den Rahmen der vorliegenden Studie direkt relevant macht. Trotzdem ist es wichtig, sich der Tatsache bewusst zu sein, dass sie nur einen Teilaspekt der alternativen Gesundheit darstellt (Joos et al., 2012, S. 1), was bedeutet, dass die Tatsache, dass eine SWOT-Analyse als Umweltanalyse im Zusammenhang mit dieser Art von alternativer Medizin verwendet wurde, nicht bedeutet, dass dies auch für die alternative Gesundheit im Allgemeinen

gilt. Es ist möglich, dass diese Variante der alternativen Medizin nicht repräsentativ für den gesamten Bereich ist, was die angewandten Analysemethoden betrifft.

Das Marktforschungsunternehmen 360 Research Reports (2021) hat eine SWOT-Analyse und eine Porter's 5 Forces-Analyse für den deutschen Homöopathiemarkt durchgeführt. Auch die Marktforschungsunternehmen Verified Market Reports (2021) und Global Market Vision (2020) haben diese beiden Analysemethoden angewandt, um das Umfeld der deutschen Homöopathieprodukte zu analysieren. Die Homöopathie ist eine in Deutschland weit verbreitete alternative Gesundheitsbehandlung (Langler et al., 2010), bei der den Patienten stark verdünnte Extrakte von Substanzen verabreicht werden, die ähnliche Symptome wie die Krankheiten hervorrufen, an denen sie leiden, um sie zu heilen (Guglielmi, 2018, S. 173). Es ist jedoch wichtig, nochmals darauf hinzuweisen, dass es sich nur um ein einzelnes Element des gesamten alternativen Gesundheitsmarktes handelt, was bedeutet, dass die Tatsache, dass SWOT- und Porters 5-Forces-Analysen verwendet werden, um das Umfeld zu analysieren, in dem es operiert, nicht notwendigerweise bedeutet, dass sie verwendet werden, um das Umfeld für alternative Gesundheitspraktiken als Ganzes zu analysieren. Es sollte auch bedacht werden, dass Verified Market Reports (2021) diese Analysen nur für homöopathische Produkte durchführte und weder die Expertise von Fachleuten noch andere Dienstleistungen in ihrem Bericht berücksichtigte.

Das Marktforschungsunternehmen Data Bridge Market Research (2021) führte eine SWOT-Analyse und eine Porter's 5 Forces-Analyse durch, um das Umfeld zu analysieren, in das der deutsche Aromatherapie-Markt fällt. Obwohl es sich um ein Element der alternativen Gesundheit handelt, das in Deutschland immer beliebter wird (English National Health Service, 2019; European Union Centre for the Promotion of Imports from Developing Countries Ministry of Foreign Affairs, 2015, S. 2), stellt es nur einen Teil des gesamten alternativen Gesundheitsmarktes dar. Die Tatsache, dass alle diese Analysen von Marktforschungsunternehmen und nicht von Heilpraktikerpraxen selbst durchgeführt wurden und dass es keine Literatur zu geben scheint, die darauf hindeutet, dass deutsche Heilpraktikerpraxen selbst Umweltanalysen durchführen, deutet darauf hin, dass sie sich eher auf die Analysen von Marktforschungsunternehmen verlassen, als dies zu tun. Dies könnte insofern von Vorteil sein, dass sie keine Zeit und Ressourcen aufwenden müssen, um eigene Untersuchungen durchzuführen, die als Grundlage für Umweltanalysen dienen könnten. Petrescu und Lauer (2017, S. 2256) haben jedoch festgestellt, dass es Marktforschungsunternehmen bei der Durchführung von Untersuchungen manchmal an methodischer Strenge mangelt. Dies deutet darauf hin, dass Heilpraktikerpraxen von einem höheren Standard an Strenge profitieren und validere Ergebnisse erzielen könnten, wenn sie eigene Analysen durchführen würden.

Von den Umweltanalysen, die der Literatur zufolge von Marktforschungsunternehmen durchgeführt wurden, um das Umfeld von alternativen Gesundheitsunternehmen als Ganzes oder von Unternehmen, die in Unterkategorien der alternativen Gesundheitsindustrie fallen, zu untersuchen, umfassten die meisten sowohl eine SWOT- als auch eine Porter's Five Forces-Analyse, wie in Abbildung 5 (unten) zu sehen ist. 5 von 7 der Analysen beinhalteten diese Kombination von Methoden (360 Research Reports, 2020; Data Bridge Market Research, 2021; Global Market Vision, 2020; Verified Market Reports, 2021). 2 Analysen beinhalteten nur eine SWOT-Analyse (HFT Market Intelligence, 2020; Maximize Market Research, 2020).

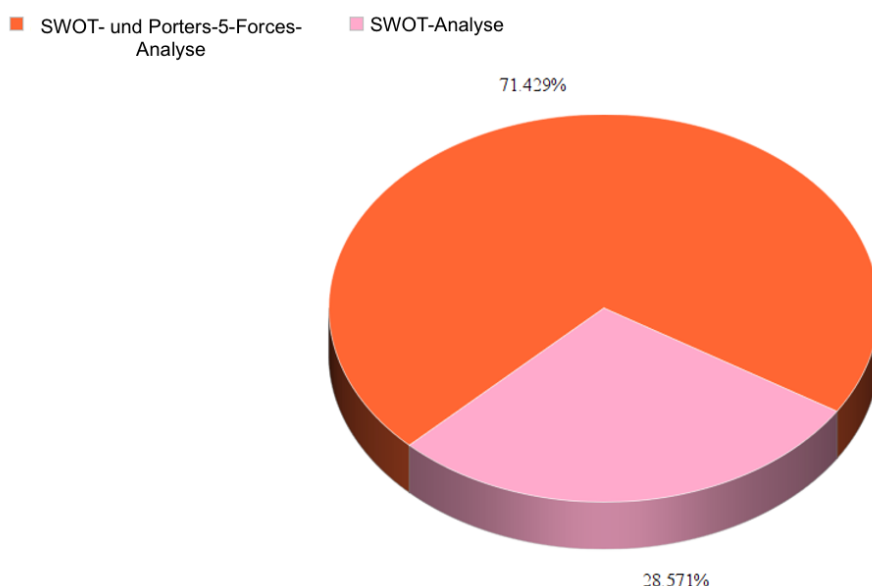


Abbildung 5 Häufigkeit der verwendeten Methoden für Umweltanalysen für deutsche Unternehmen, Produkte oder Dienstleistungen im Bereich alternative Gesundheit

Quelle: Eigene Erstellung des Autors, abgeleitet aus 360 Research Reports (2020), Data Bridge Market Research (2021), Global Market Vision (2020), HFT Market Intelligence (2020), Maximize Market Research (2020), Verified Market Reports (2021)

Dies deutet darauf hin, dass die meisten Analysen des Umfelds für Aspekte der deutschen alternativen Gesundheitsbranche sowohl SWOT- als auch Porters 5-Forces-Analysen beinhalten und dass die SWOT-Analysen darin besonders hervorstechen, da sie in jedem Fall vorhanden waren. Die Ergebnisse sind nicht unbedingt auf die deutsche Alternativmedizinbranche insgesamt anwendbar, da sich die meisten Studien nur auf einen einzigen Bereich innerhalb der breiteren Branche der alternativen Gesundheit beziehen. Dies lässt vermuten, dass es in Deutschland eher einen Markt für Marktforschungsberichte gibt, welche die Ergebnisse von Umweltanalysen enthalten, die auf spezifische Elemente der alternativen Gesundheitsbranche ausgerichtet sind, als auf die Branche als Ganzes.

Nachdem nun die Ergebnisse der vorliegenden Studie vorgestellt wurden, ist es notwendig, ihre Auswirkungen zu diskutieren und sie in den Kontext der bisherigen Forschung zu stellen. Dies wird dazu beitragen, die Daten einzuordnen und ihre Bedeutung im Hinblick auf die Forschungsfragen aufzuzeigen.

4.1 Beispiel einer SWOT-Analyse an einer Heilpraktikerpraxis

Die exemplarisch ausgewählte Praxis besteht seit über zehn Jahren im Großraum Regensburg in Deutschland. Der Praxisinhaber ist Heilpraktiker und führt diese Praxis alleine. Schwerpunkte der Praxis sind die allgemeinmedizinische Versorgung auf naturheilkundlicher Basis.

Es sind keine weiteren Mitarbeiter in der Praxis beschäftigt, Abrechnung und Buchhaltung werden eigenständig durchgeführt, teils unter Inanspruchnahme eines Steuerberaters. Die Patientendokumentation erfolgt vollständig elektronisch, Patienten können die Termine über ein Online-Portal sowie telefonisch buchen.

Die Praxis ist Montag bis Freitag von 8 bis 18 Uhr durchgehend nach Terminvereinbarung geöffnet, es befinden sich drei kostenlose Patientenparkplätze direkt vor der Praxis. Die gesamten Praxisräume (3 Behandlungsräume, Wartezimmer, Lagerraum und Patiententoilette) sowie die Parkplätze sind komplett barrierefrei. Der Bahnhof liegt 1 km entfernt, eine Bushaltestelle ist 500 m entfernt. In einem Radius von 10 km liegen noch 21 weitere Naturheilpraxen, wenige jedoch mit einem allgemeinmedizinischen Spektrum, die meisten mit einer Spezialisierung auf ein oder zwei Behandlungsmethoden. Das Einzugsgebiet dieser Praxis umfasst einen Radius von 100 km.

Die Stärken dieser Praxis sind die vielfältigen Ausbildungen des Inhabers sowie die Erfahrungen der Intensivmedizin. Stammpatienten erhalten immer noch am gleichen Tag bei akuten Beschwerden einen Termin. In den Online-Bewertungen der Praxis tauchen wiederholt positive Bemerkungen wie sehr guter Umgang mit Kindern oder moderne Räume auf. Durch die reine Bestellpraxis treten keine oder nur sehr geringe Wartezeiten auf.

Als Schwächen können die Wartezeiten auf einen Termin gewertet werden, sie betragen teils 6 Wochen Vorlaufzeit auf einen Termin für neue Patienten. Auch bei einer eventuellen Erkrankung des Praxisinhabers oder einem hohen Anfall von Akutfällen innerhalb eines Tages können die Patienten Anfragen nicht zufriedenstellend kompensiert werden.

In dem Item Chancen stehen Eigenschaften wie barrierefreie Praxis, zudem kommen viele Patienten schon seit Jahren regelmäßig in die Praxis.

Risiken können durch eine Inflation entstehen, wenn die Selbstzahler keine Termine mehr buchen. Ebenso partiell durch konkurrierende Apotheken, die naturheilkundliche Beratungen anbieten oder Labore, die sich verstärkt auf Online-Beratung spezialisieren.

Die SWOT-Analyse ist immer ein aktueller Zustand, Stärken können jedoch auch zu Schwächen werden und umgekehrt.

5 Diskussion

Die Ergebnisse deuten darauf hin, dass sich deutsche Heilpraktikerpraxen auf Umweltanalysen verlassen, die von Marktforschungsunternehmen durchgeführt werden, anstatt sie selbst durchzuführen. Vergleicht man jedoch die Methoden, die zur Untersuchung des Umfelds der verschiedenen Arten von Gesundheitsunternehmen, Gesundheitsprodukten und -dienstleistungen in anderen Ländern verwendet wurden mit den Methoden, die für die Umweltanalysen des Umfelds der deutschen alternativen Gesundheitsunternehmen verwendet wurden, ergeben sich einige Unterschiede. Abbildung 6 (unten) zeigt die am häufigsten verwendeten Methoden, die in den erstgenannten Ländern eingesetzt wurden. Wie zu erkennen ist, sind SWOT-Analysen in Abbildung 6 weit weniger stark vertreten als in Abbildung 5, was darauf zurückzuführen sein könnte, dass diese Art der Analyse bei der Analyse des Umfelds deutscher alternativer Gesundheitsunternehmen häufiger verwendet wird als bei der Analyse des Umfelds von Unternehmen der Gesundheitsbranche im Allgemeinen oder von gesundheitsorientierten Unternehmen in anderen Ländern.

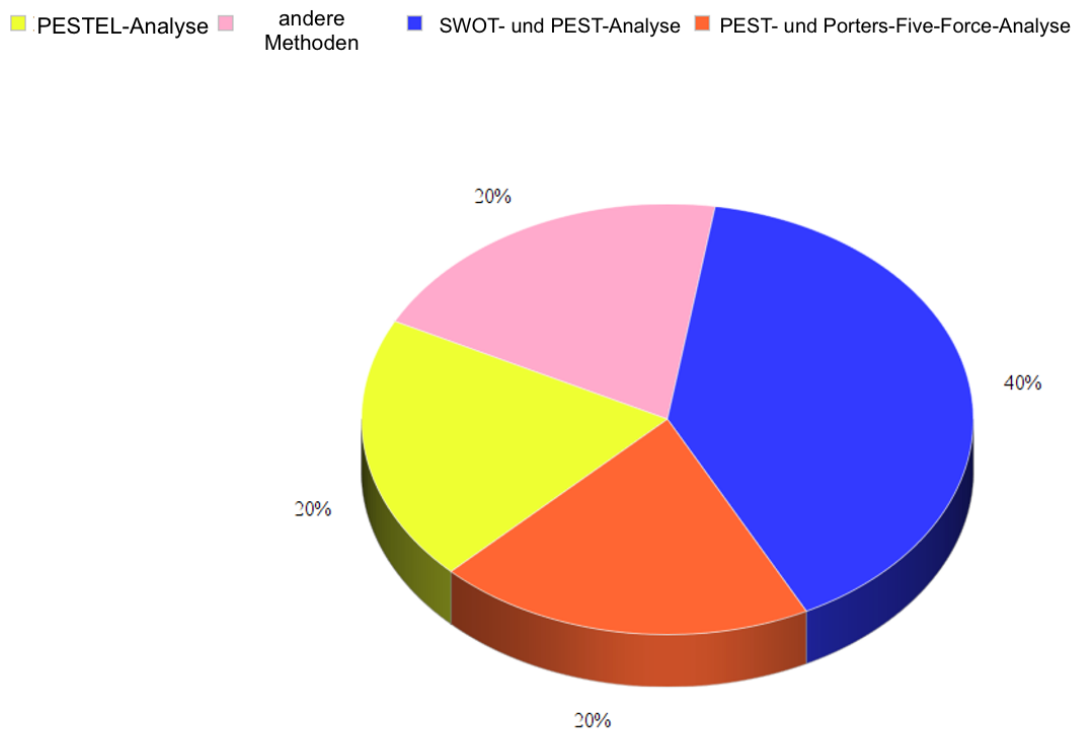


Abbildung 6 Häufigkeit der Methoden, die für Umweltanalysen bei Gesundheitsunternehmen aus anderen Ländern als Deutschland verwendet werden

Quelle: Eigene Erstellung des Autors, abgeleitet aus Krylova et al. (2020, S. 382), Pourmohammadi et al. (2020, S. 1), Sai et al. (2018, S. 51), Samal et al. (2012, S. 18-21) und Yu (2020, S. 185-18)

In Anbetracht der Tatsache, dass die SWOT-Analyse als eines der wirksamsten Instrumente für die Entwicklung von Marktstrategien gilt, die das Gewinn- und Unternehmenswachstum vorantreiben (Benzaghta, 2021, S. 62), scheint es, dass die Marktforschungsunternehmen, auf die sich deutsche Heilpraktikerpraxen zu verlassen scheinen, effiziente Techniken für die Durchführung von Umweltanalysen verwenden. Es bleibt jedoch die Frage offen, ob sie bei der Anwendung dieses Instruments genaue Methoden anwenden. In Anbetracht der Tatsache, dass bereits festgestellt wurde, dass einige Marktforschungsunternehmen dies nicht tun, könnte man argumentieren, dass die deutschen Heilpraktiker ihre Zeit keineswegs vergeuden, wenn sie sich auf die von Dritten durchgeführten Untersuchungen stützen, um Informationen über die Umwelt, in der sie tätig sind, zu erhalten; sondern dass sie auch von gründlichen, intern durchgeführten Umweltanalysen aus erster Hand profitieren könnten. Es werden nun Schlussfolgerungen und Empfehlungen auf der Grundlage der Ergebnisse vorgestellt.

6 Schlussfolgerungen und Empfehlungen

Die Ergebnisse der vorliegenden Arbeit scheinen Forschungsthese 1 zu bestätigen, wonach Umweltanalysen von Heilpraktikerpraxen in Deutschland zu wenig genutzt werden, da bei der Literaturrecherche kein einziges Beispiel für eine deutsche Heilpraktikerpraxis gefunden wurde, die diese nutzt. Dies könnte darauf zurückzuführen sein, dass viele Praxen sich stattdessen auf Umweltanalysen von Marktforschungsunternehmen verlassen. Es wird empfohlen, weitere Untersuchungen durchzuführen, um genau zu ermitteln, wie hoch der Anteil der Heilpraktikerpraxen in Deutschland ist, die von diesen Firmen Berichte kaufen bzw. nutzen, die die Ergebnisse von Umweltanalysen enthalten.

Die Nutzung der Ergebnisse von Marktforschungsunternehmen als Informationsquelle über Umweltanalysen ihres Umfeldes ist für deutsche Heilpraktikerpraxen offensichtlich ein effizientes Mittel, um sich über dieses Thema zu informieren. Nicht alle Marktforschungsunternehmen haben jedoch ein hohes Maß an Sorgfalt in Bezug auf die von ihnen angewandten Methoden, was einen Mangel darstellt. Es wird empfohlen, zusätzliche Untersuchungen durchzuführen, um festzustellen, welche Marktforschungsunternehmen die strengsten Methoden bei der Durchführung von Umweltanalysen anwenden. Dies würde es alternativen Gesundheitsunternehmen ermöglichen, diejenigen auszuwählen, die Ergebnisse liefern, die mit wesentlich höherer Wahrscheinlichkeit repräsentativ für die tatsächlichen Verhältnisse sind.

Die Forschungsthese 2, die besagt, dass PEST-, PESTEL- und SWOT-Analysen unter den deutschen Heilpraktikerpraxen, die Umweltanalysen durchführen, weit verbreitet sind, konnte nicht abschließend beantwortet werden, da offenbar nur wenige Praxen in Deutschland Umweltanalysen durchführen oder es zumindest kaum Belege dafür gibt, dass sie dies tun. Es konnte jedoch festgestellt werden, dass diese Hypothese auf die Marktforschungsunternehmen zutrifft, die anscheinend die meisten Umweltanalysen in Bezug auf das Umfeld, in dem die Heilpraktiker in Deutschland tätig sind, durchführen. In Anbetracht der Tatsache, dass alle Unternehmen, deren Analysen in die Literaturübersicht aufgenommen wurden, SWOT-Analysen durchgeführt haben, scheint diese Hypothese im Falle dieser Methode der Umweltanalyse zuzutreffen. Keines der Unternehmen hat jedoch PEST- oder PESTEL-Analysen durchgeführt, was darauf hindeutet, dass diese Hypothese in Bezug auf diese Methoden nicht zutrifft. Was die weiteren Ergebnisse betrifft, die für das Ziel, herauszufinden, welche Umweltanalysen von Heilpraktikerpraxen in Deutschland verwendet werden, relevant sind, so wurden in der überwiegenden Mehrheit der von den Marktforschungsunternehmen durchgeführten Umweltanalysen Porters 5-Forces-Analysen verwendet.

Auffällig ist, dass sich nur eine der von den Marktforschungsunternehmen durchgeführten Umweltanalysen auf den alternativen Gesundheitsmarkt im Allgemeinen bezog. Da in den anderen Analysen nicht alle Arten von Heilpraktikerbetrieben vertreten waren, ist es möglich, dass die Ergebnisse nicht für den gesamten Heilpraktikermarkt gelten. Es wird empfohlen, die vorliegende Forschung zu wiederholen, wenn in der Zukunft eine ausreichende Anzahl von Berichten über Umweltanalysen für die gesamte Branche der alternativen Heilmethoden zur Verfügung steht.

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Contact

Manfred Renner

University of Economics in Bratislava
Faculty of Business Management
Department of Business Finance
Dolnozemska cesta 1/b
852 35 Bratislava
Slovak Republic
E-mail: manfred.renner@euba.sk
Author's share: 70%

Peter Markovič

University of Economics in Bratislava
Faculty of Business Management
Department of Business Finance
Dolnozemska cesta 1/b
852 35 Bratislava
Slovak Republic
E-mail: peter.markovic@euba.sk
Author's share: 30%

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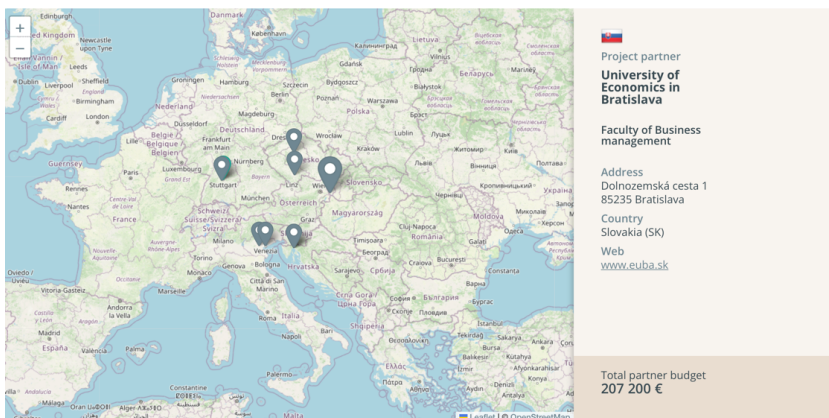
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Editorial Board



Project partnership



Project overview

Futurepreneurs and SMEs for a sustainable Central Europe | Certification Scheme

Futurepreneurs are professionals that are driven by purpose and impact. They take on societal challenges and climate change with an entrepreneurial mindset and want to improve our lives. The GREENPACT project sets up partnerships between companies and futurepreneurs. The aim is to develop a certification scheme for a new generation of impact-driven top executives. To this end, the project develops joint action plans, pilot actions and a self-assessment tool.



Duration

Start date
04.2023

End date
03.2026

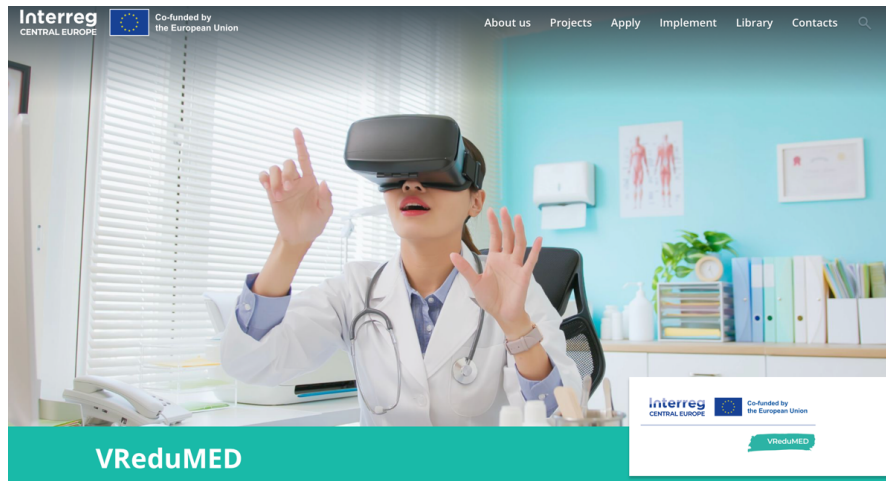
Project progress

20%

Project partners

Lead partner
Stuttgart Media University
 Startup Center
 Address
 Nobelstr. 10
 740569 Stuttgart
 Country
 Germany (DE)
 Web
<https://www.hdm-stuttgart.de/en>

Project partner	
	Stuttgart Region Economic Development Corporation
	ENAIIP Veneto Social Enterprise
	Region of Veneto - Department of Labour
	STEP RI Science and Technology Park of the University of Rijeka Ltd
	City of Rijeka
	Czech Chamber of Commerce
	Institute of Technology and Business in České Budějovice
	University of Economics in Bratislava



Project partners



Lead partner

South Bohemian Science and Technology Park, corp.

Address
Lipová 1789/9
37005 České Budějovice
Country
Czechia (CZ)
Web
www.jvtp.cz

Project partner

	University of South Bohemia in České Budějovice	▼
	Business Upper Austria	▼
	Education Group	▼
	University of Economics in Bratislava	▼
	National Institute of Children's Diseases	▼
	Strategic Partnership for Sensor Technologies	▼
	Ostbayerische Technische Hochschule Regensburg	▼
	Innoskarta Business Development Nonprofit Ltd.	▼
	Széchenyi István University	▼

Project overview

Virtual Reality Education and Training Solutions for Medicine Sector

Medical interventions are increasingly digitalised but training of health care staff is still lagging behind. The VReduMED project helps to untap the potential of virtual and augmented reality for their education. The partnership develops a roadmap for virtual reality training products and services and will publish a handbook on the integration of virtual reality into health care education. They also set up three regional virtual reality labs to test different virtual reality use cases.



Duration

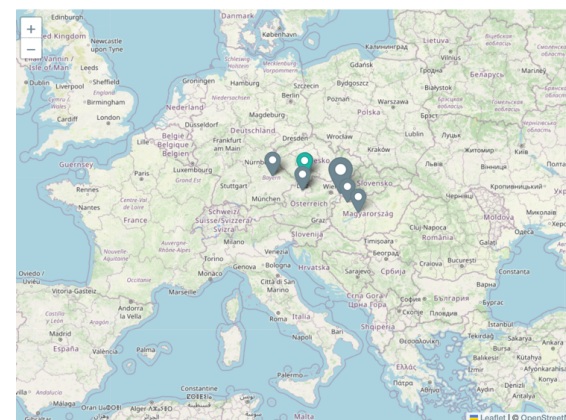
Start date
04.2023

End date
03.2026

Project progress

20%

Project partnership



Project partner
University of Economics in Bratislava

Faculty of Business Management

Address
Dolnozemská cesta 1/A
852 35 Bratislava
Country
Slovakia (SK)
Web
www.euba.sk

Total partner budget
220 900 €

Project overview

Start date:

01 January 2024

Status: ongoing

End date:

30 June 2026



€1,540,470 budget

80.00 % funded by
Interreg Funds

7 countries

10 partners

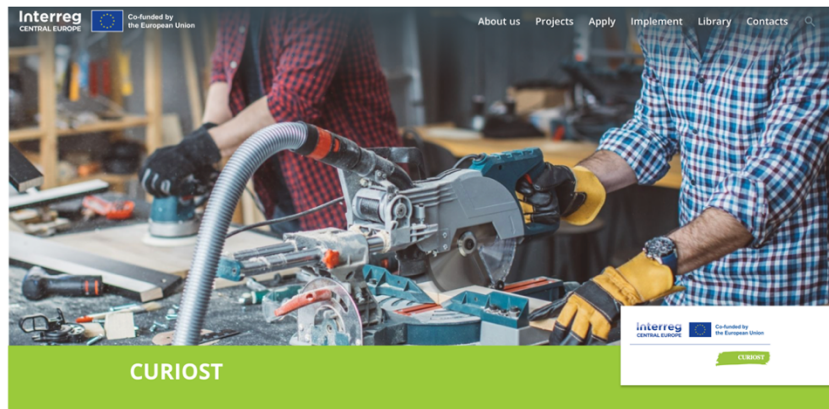


SOCIALLY RESPONSIBLE SLOW FOOD TOURISM IN THE DANUBE REGION

The main objective of the SReST project is to promote "slow food" tourism in the Danube region and enhance the employability of vulnerable groups by providing solutions that enable the valorisation of agrobiodiversity and gastronomic heritage and a fair distribution of generated benefits, including the well-being of the host communities.

By focusing on agro-biodiversity, food heritage and local identity, the goal is to broaden the socially responsible sustainable tourism offer and promote "slow food" tourism based on the exploration of gastronomic traditions and the local communities that preserve them. The project will help enhance local agricultural high-value chains while appreciating natural and cultural diversity of partner regions.

SReST will develop joint solutions to enhance socio-economic development and promote alternative models and competitive new tourism products of "slow food" itineraries grounded in agrobiodiversity and food heritage, tested in different territorial contexts of pilot regions. These solutions will not be limited to the local level, but will have a wider impact in the Danube area. Therefore, the success of the project will be based on close cooperation between partners from different countries and regions. You can learn more about the project partners [here](#).



Project partners



Lead partner

Business Upper Austria

Mechatronics Cluster + Circular Economy
Team @ Plastics Cluster

Address
Hafenstraße 47-51
4020 Linz

Country
Austria (AT)

Web
<https://www.biz-up.at>

Project partner

ConPlusUltra Ltd



University of Economics in Bratislava



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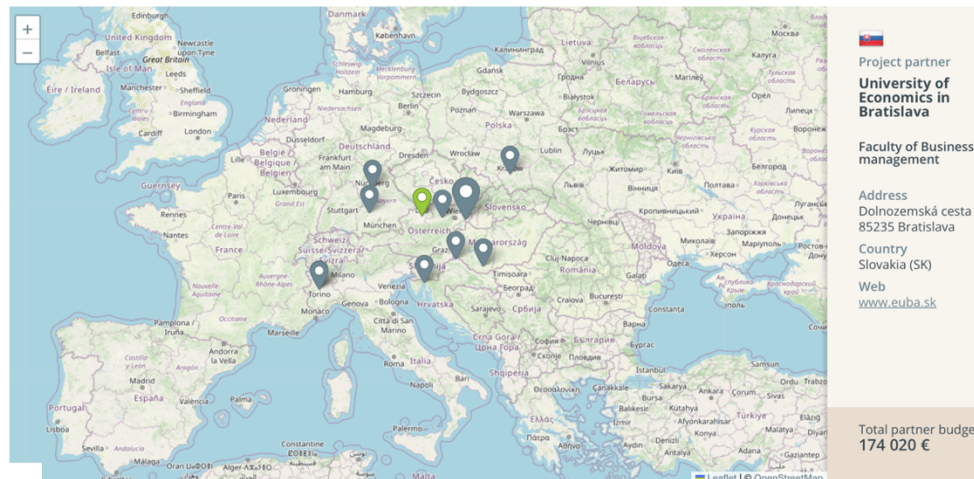
Bayern Innovativ



Cluster of Environmental Technologies Bavaria



Project partnership

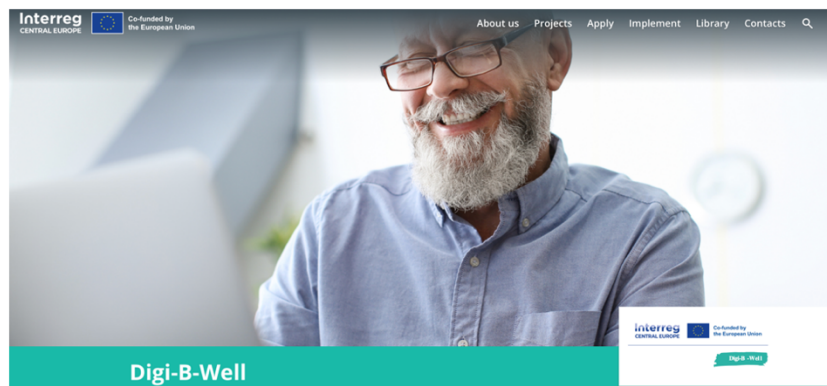


Project overview

Circular design and development of Sustainable products in 4 key sectors in Central Europe

The ongoing transition to a circular economy is not only a tedious obligation for the manufacturing industry. It also offers an opportunity to develop innovative sustainable products. The CURIOST project helps small- and medium-sized companies in sectors like mechanics, packaging, plastics, and construction to harvest the potential benefits. They help selected companies to co-develop tailor-made, innovative, sustainable and circular product prototypes. The learnings are then aggregated into a universal strategy and action plans to accelerate the green transition in the manufacturing industry.





Duration

Start date **06.2024**
End date **05.2027**

Project partners



Lead partner

Primorje-Gorski Kotar County

Administrative Department for Regional Development, Infrastructure and Project Management

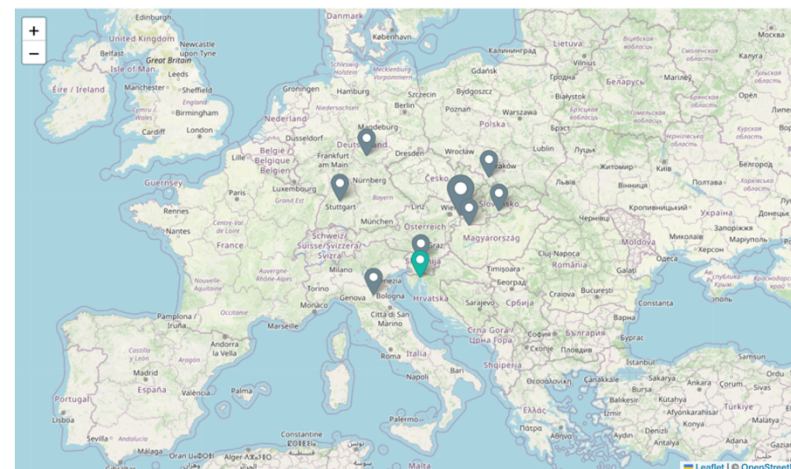
Address
Adamićeva 10
51000 Rijeka

Country
Croatia (HR)
Web
www.pgz.hr

Project partner

	Alma Mater Studiorum - University of Bologna	▼
	Technical University Ilmenau	▼
	bwcon	▼
	Chamber of Commerce and Industry of Slovenia	▼
	Pannon Business Network Association	▼
	University of Economics in Bratislava	▼
	Regional Development Agency in Bielsko-Biala	▼
	City Lucenec	▼

Project partnership



Project partner
University of Economics in Bratislava

Faculty of Business Management

Address
Dolnozemska cesta 1/B
85235 Bratislava

Country
Slovakia (SK)
Web
fpm.euba.sk

Total partner budget
286 428,83 €

Project overview

Enhancement of capacities of SMEs, public authorities and academia for digitalisation, digital era-fit management and achievement of digital well-being.

The digital transformation offers new opportunities for companies but also increases complexity. Especially employees over 55 can suffer from digital stress or burnout at the workplace. The Digi-B-Well project helps companies to transform and make employees fit for the digital age. The partners upskill competences of managers, public authorities, and academia to better prevent digital stress and burnout. They develop and test new tools to self-assess digital maturity and digital transformation models in companies. In addition, a digitalisation strategy and action plans ensure the uptake of their innovative solutions into broader policy and business practices.



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Ekonomickej univerzity v Bratislave

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