

# Studia commercialia Bratislavensia

Vedecký časopis Obchodnej fakulty Ekonomickej univerzity v Bratislave

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# Impact of digitization of banking services on international exporters

Ondrej Hanušniak<sup>1</sup>

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## Abstract

*Digitization in the field of banking is proceeding very fast and brings with it a large number of benefits that Slovak and international exporters can use. For example, they do not have to go to the bank as often, and they can use different methods of online payments. On the other hand, the risk of digitization lies in its security. To limit the security issue, the banks are increasing the use of biometric data, artificial intelligence and blockchain technology. These technologies will be improved and developed in the future, and their increasing involvement in the banking environment will be raising.*

## Key words

*Digitization, biometric data, artificial intelligence, blockchain technology.*

**JEL Classification:** F10

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## Introduction

The banking sector is a dynamic and rapidly changing industry. In recent years, the increasing digitization of banking services has come to the fore. There are several trends in their digitization and they have a positive impact on the growth of the banking sector and the position of Slovak and international exporters. The development of the digitalisation of banking is reflected in two areas in particular. In the area of easier access to online payments, where in some cases the exporter does not have to deal with the payment of his payment by visiting a bank branch and can make the payment in a very short time via a smart device. The important area where the digitization of banking services is clearly shown is the area of protection the personal data and the area of security of banking services thanks to the development of biometric data, the introduction of artificial intelligence or blockchain technology.

## 1 Work methodology

The aim of the article is to examine the digitization of banking services for international exporters. To achieve this goal, several theoretical methods were used, which were used in the form of general methods (synthesis, analysis, induction, deduction and comparison). Graphical representations were used to make the interest rate data clearer. The method of induction and deduction will be used to draw conclusions about the digitization of banking services for international exporters.

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## **2 Results and discussion**

The banking sector has changed significantly over the last 10 years. We are seeing a number of growing trends, including blockchain technology, which is used to verify transactions. Mobile banking and payments via QR code are becoming more and more widespread. There is also a growing increase in the use of artificial intelligence and biometric identification technology. In the next chapter, we will focus on the trends faced by international exporters in the use of banking services.

### **2.1 Payment methods for exporters in Slovakia**

There are many methods of payment in international trade. Examples are:

- Documentary letter of credit,
- Documentary collection,
- Bills of exchange,
- Smooth payment
- Bank check ...

While for more complex payment instruments such as a documentary letter of credit or documentary collection a physical visit to the bank is required, primarily due to the complexity of the transaction itself, for simpler payment instruments the exporter has easier conditions and can perform the transaction via internet banking and mobile banking. Today, technology has advanced so much that a significant number of applications have been developed for the banking sector. Clients have easy access to their bank accounts and allow transactions without having to go to the bank. However, on the other hand, in Slovakia and in European countries in general, the use of mobile banking applications still lags far behind the rest of the world.

"Mobile payments have been experiencing a huge boom lately. More than 2 billion people around the world already pay this way. With us, payments via smartphones and other smart devices are still relatively new "(Mamnato.sk, 2021).

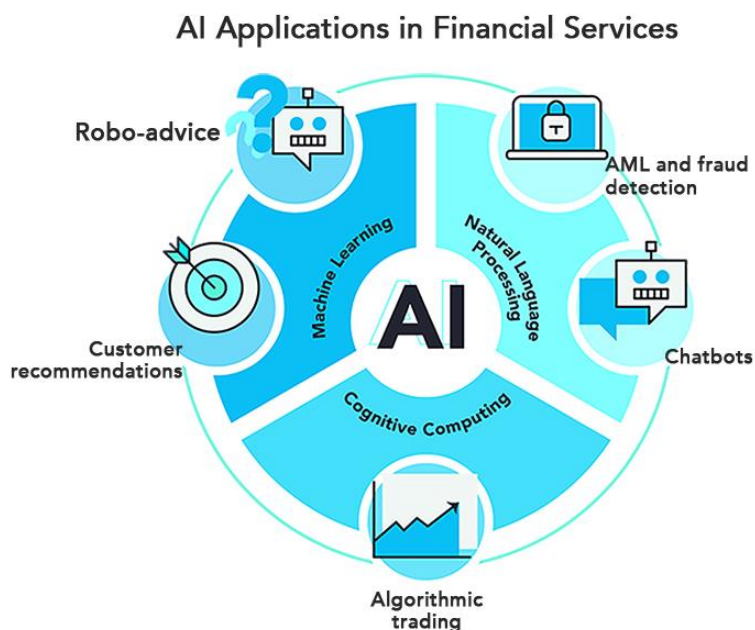
Gradually, the use of mobile banking applications began to develop in Slovakia as well. "About two years ago, we started the process of digital transformation at Slovenská sporiteľňa. Its goal is to provide modern services for our clients and strengthen our position as a leader in the Slovak market. The current global Covid-19 pandemic has only accelerated the transformation process, "(Mittaš, 2020).

### **2.2 Development of artificial intelligence in the field of banking**

Artificial intelligence (AI) has helped banks provide automated security to their clients, reducing cyber threats and security risks. "Artificial intelligence in its most extreme form with a human face is also an attraction in the banking world" (Kláseková, 2019). Clients are interested in their information being secured. The introduction of artificial intelligence helps clients protect their confidential information. Digital banking platforms use artificial intelligence algorithms to track user data, common patterns, digital access and transactions. The

constant development of artificial intelligence technology is changing the world of digital banking. The following chart shows the areas of current use of artificial intelligence in banking.

**Graf 1** AI Applications in Financial Services



Source: Lendit.com. Three Ways Artificial Intelligence is Transforming Banking. [online], 24.10.2018. [2022-5-18]. Available at: <https://blog.lendit.com/three-ways-artificial-intelligence-transforming-banking/>

Global companies in the financial sector are investing large sums in IT solutions based on artificial intelligence. It is a meaningful way for them to maintain their position in competition with other digital companies that have the potential to offer financial services to clients. The key area is data, their collection in order to prepare for the client a personalized offer in real time needs. Another area is to check the riskiness of the client and determine his credit score, which means that banks can give the client a loan, so to speak. Another important area is virtual voice assistants. Thus, instead of communicating with the operator, a real living person, he communicates with a computer program. In Slovakia, the use of biometric data is being promoted in this area. "For example, voice biometrics when contacting a call center, opening a mobile application via a fingerprint, opening an account or processing a loan agreement via facial biometrics. During the collection of data, for example when processing a loan agreement, for example, a face photograph is continuously checked, but also by monitoring a moving point, to make it clear that on the other hand, there is a real person.

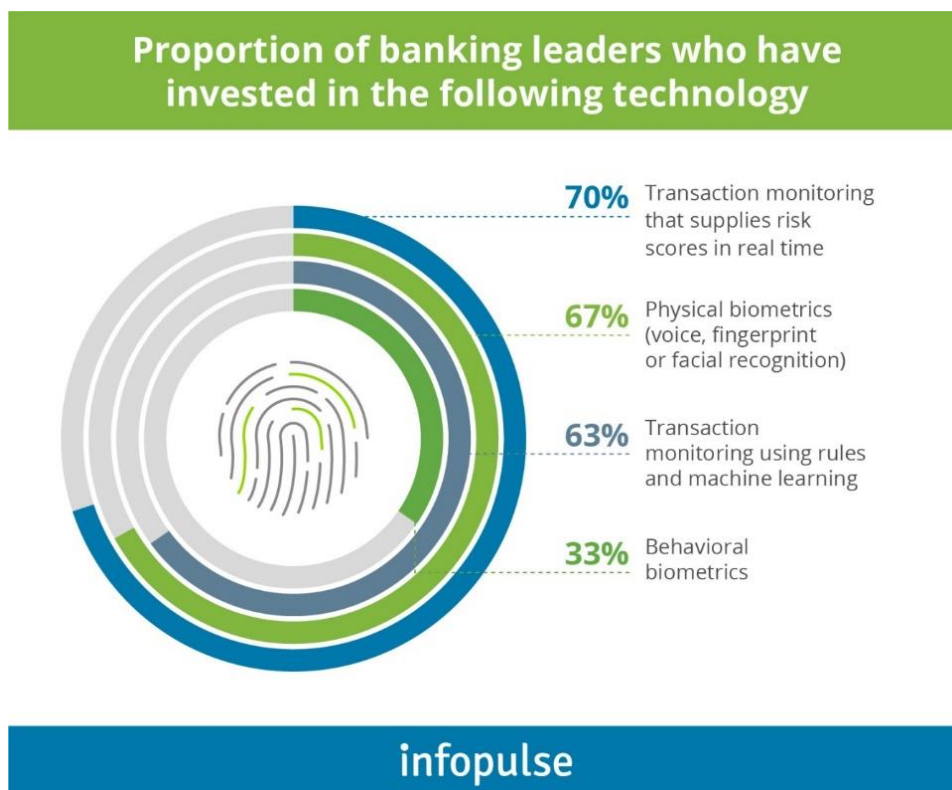
## 2.3 Identification by biometric data

"The use of fingerprint recognition, voice and face recognition technology in mobile banking or in the verification of biometric signatures is currently an alternative to the use of passwords. Biometrics is quickly finding its application due to the growing use of mobile banking applications and rapid changes in customer needs "(nbs.sk, 2021).

Biometric identification is another feature of the digital banking sector that has been added to secure banking access. Digital banking applications use several biometric methods to identify and allow access and transactions, from fingerprints to face identification. The main purpose of this advanced technology is to offer a high level of security. In this way, the possibility for potential attackers to gain access to someone's bank account without their consent should be significantly reduced.

In addition, if you lose your smartphone or other smart device, for example, your data and money should stay safe. It is possible to log in to the account in another device via biometrics. Currently, this technology is relatively widespread, and in the future, banking companies are likely to further develop it to greater security for their customers. A significant percentage of banking companies invest in the development of the use of biometric data, as the following chart shows.

**Graf 2** Proportion of banking leaders who have invested in the following technology



Source: Infopulse.com. Biometric authentication - a security game-changer for financial industry. [online], 23.10.2020. [2022-5-19]. Available at: <https://www.infopulse.com/blog/biometric-authentication-a-security-game-changer-for-financial-industry/>

As the chart above shows, up to 67 percent of banking companies are investing in the development of biometric security.

Examples of the use of biometrics for the purpose of verifying the identity of clients may include:

- Customer's fingerprint authentication: In practice, the fingerprint reader captures the fingerprint data as a digital image, which is then analyzed and changed into a customer verification code.
- Authentication using voice recognition: In order to use this method of authentication, the customer must first contact the institution and request the recording of a voice sample. Subsequently, the customer can be verified on the basis of his voice and can request information from his institution or perform financial transactions.
- Customer authentication and transaction authorization by verifying biometric signatures: The signature device (pad) captures the form of the signature, the dynamics of the entry and the pressure applied to increase the reliability of the authentication. An example of use is an application to open an account, granting a loan, borrowing, placing a deposit order or withdrawing funds from an account.
- ATMs using face recognition: ATMs can use face recognition as another authentication factor in high-value transactions (for example, in addition to the customer's card and PIN or mobile device). When the account is opened, the customer's face is scanned. If the customer withdraws a higher amount from the ATM, the ATM will scan its face and perform verification with a pre-recorded photo of the customer "(nbs.sk, 2021).

An important topic of future digital solutions will be their security. Passwords may be a thing of the past in the near future.

## **2.4 Use of Blockchain technology**

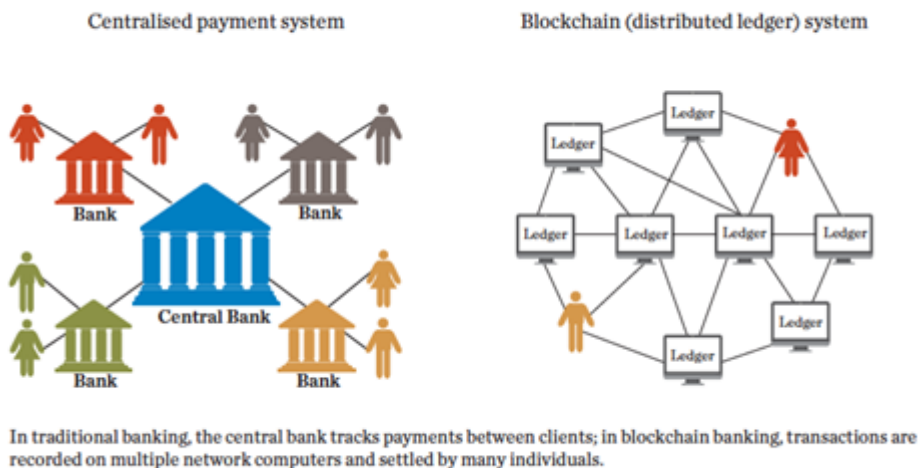
We could characterize Blockchain's technology as, so to speak, a virtual ledger that permanently records transactions between two parties. It consists of individual blocks of data that record a series of consecutive data linked together in an order. What is the great advantage of this technology is that all stakeholders can share this digital book with each other over a computer network, but without using a centralized authority. Which is important for faster transaction processing and high transparency. The following chart will help you to better understand how the blockchain works.

As can be seen in the chart above, using the classical banking model, banking transactions take place directly between the client and the bank, or banks themselves, but through a centralized banking system, with bank transactions using blockchain technology through a large number of private computers. Banking institutions connect people using different banking instruments, either with each other or with another economic entity. Blockchain technology increases security and transparency in this context. In addition, it streamlines business by automating processes, and in addition, it is a decentralized technology. This technology is currently developing rapidly, but also in other areas such as banking. The following graph will show us the use of blockchain technology in different industries.



### Graf 3 Blockchain in banking

#### 2. Blockchain in banking

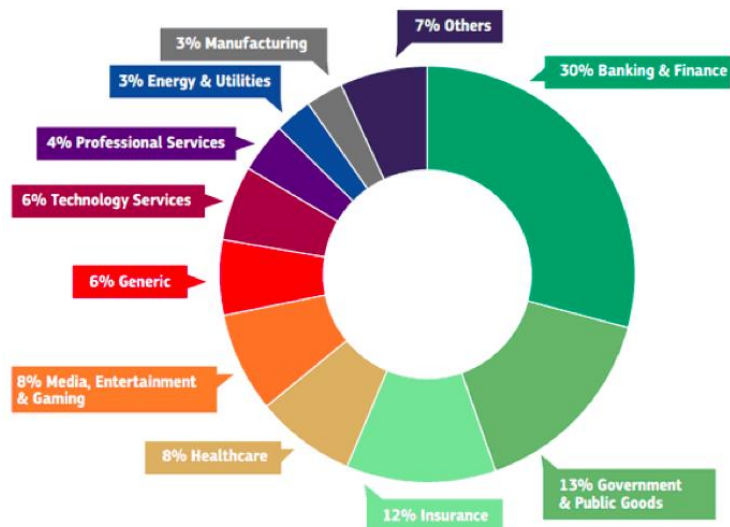


Source: International Monetary Fund, Finance & Development, June 2016

Source: Ben-Ami Daniel. Securities Services: Blockchain - A beginner's guide. IPE magazine. [online], 2016. Available at: <https://www.ipe.com/securities-services-blockchain-a-beginners-guide/10014058.article>

### Graf 4 Sectors currently using blockchain

#### Sectors currently using blockchain



Source: [www.jbs.cam.ac.uk/faculty-research/centres/alternative-finance/publications/global-blockchain/#.Wms8ZrPtypo](http://www.jbs.cam.ac.uk/faculty-research/centres/alternative-finance/publications/global-blockchain/#.Wms8ZrPtypo)

Currently, up to 30 percent of the use of this technology is in the field of banking. In the following subchapters, we will focus on the benefits of this technology in the future.

#### *2.4.1 Faster and cheaper bank transactions*

By creating a decentralized payment system, banking institutions will be able to use new technologies to reduce fees for processing bank transactions and increase their speed, and to reduce the need for third-party verification. In addition to these advantages, they could also bring completely new products to the market.

#### *2.4.2 Buying and selling property*

Buying and selling assets, such as commodities, stocks or debts, puts an emphasis on who owns what. For example, the financial market is served by a wide network of stock exchanges, intermediaries and custodian banks. Such transactions carried out, nowadays electronically, are sometimes quite complicated. Blockchain is likely to create a decentralized database of digital assets in the future.

#### *2.4.3 Blockchain in banking used to verify digital identity*

In order for banks to carry out financial transactions, they must require authentication. However, the verification process itself is sometimes lengthy and consists of steps that some clients do not like. Blockchain can significantly speed up these processes and, in addition, allow re-use of authentication for other services. An interesting innovation in this area is the Zero Knowledge Proof function, thanks to which clients will be able to register only once, so it will not be necessary to repeat this registration for each service provider and this applies if these providers are also connected to the blockchain. Storing this type of information in a blockchain also increases security.

#### *2.4.4 Use for accounting and auditing*

Accounting is digitizing quite slowly. We could cite strict regulatory requirements as one of the reasons. "Many companies in Slovakia are still worried about the transition from paper to digital accounting. This is mainly due to the fact that they cannot realistically imagine how much more advantageous such a transition is "(Duofinsk, 2021). Blockchain can also be used to digitize accounting processes. This technology should simplify compliance and streamline double-entry accounting overall. For example, instead of keeping separate records based on transaction receipts, businesses will be able to enter transactions directly into a common register. This would make records more transparent and secure. Blockchain would thus act as a digital notary to verify all transactions. Smart blockchain contracts could be used in applications that work in this way, with automatic invoice payment working.

## 2.5 Use of QR codes

"We often come across QR codes - they are special codes that hide characters stored in small squares that resemble pixels. QR codes can be easily read by special readers in the smartphone (etuo.sk, 2019).

The QR code is similar to the barcodes we see on products in stores, but it differs from barcodes in several ways:

- It can store large amounts of data.
- It can be scanned not only from paper but also from the screen.
- Can be read even if part of the code is corrupted.
- It is more secure because the information can be encrypted.

## Conclusion

The aim of this work was to characterize the field of digitization of banking services for international exporters. We have characterized trends in the development of digitalization of banking services through several areas. We focused on the introduction of artificial intelligence in the provision of banking services and its benefits. We explained the possibilities of how online payments simplify the functioning of exporters, whether Slovak or international. We have also left space to the protection of personal data and the security of payments through the use of biometric data. We also focused on blockchain technology, which is revolutionary in the area of transparency of banking transactions, and we also focused on the outdated QR code technology. The added value of this work lies in the characterization of development in digitalization of banking services. We can say that development in the field of digitization of banking services are highly likely to copy trends in this area, as the development of biometric data, artificial intelligence, or even blockchain technology is only in its infancy. Significant decentralization of banking services is expected in the future, to which blockchain technology will make a significant contribution. The introduction of biometric data will in turn play a key role in the protection of personal data. And artificial intelligence will begin to replace people in various positions in the banking sector more, where, for example, in a few years, a smiling lady at a bank branch will not offer an exporter the opportunity to finance his export, but a program based on artificial intelligence.

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# Market Orientation Model in SMEs: Antecedents, Consequences and Unresolved Questions

Marek Novinský<sup>1</sup>

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## Abstract

*Market orientation is popular subject in marketing research even thirty years after the ground setting works were published. Small and medium enterprises (SMEs) are more and more in the focal point of this research. The study analyzes the existing literature on the subject, more specifically the model of market orientation – the crucial bridge between the theory and practice of the concept and assess its applicability in SMEs. Thus, it addresses the questions - what is market orientation and the scale to measure it, why is it worth it to be market oriented and how it could be developed? The existing literature provides complex and sometimes confusing view on the definition and measurement of the construct, but with certain focus and prioritization, clear understanding is possible. The existing literature also provides persuasive evidence, reasoning, and motivation to pursue market orientation in SMEs and justify the invested resources. Unfortunately, the existing literature provides either too theoretical or not empirically tested suggestions for the market orientation development process, so there is still a gap to be closed for the purposes of SMEs. Two interesting suggestions to extend the market orientation model in SMEs resulted directly from the study. They become inspiration for the future research.*

## Key words:

*market orientation, SMEs, antecedents, consequences, business performance*

**JEL Classification:** L60, M10, M31

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## Introduction

It has been more than thirty years since the seminal works of Kohli and Jaworski (1990) and of Narver and Slater (1990) set the ground for the market orientation (MO) concept and the subsequent large body of research focused on different aspects of this attractive topic. As the concept has been in the scope of scholars for more than three decades, their focus evolved step by step over the years from conceptualization and measurement through its causes and effects to its practical implementation by managers. This long and gradual development of the field resulted in some fundamental works specific for each development phase over the time, most of which are still considered as valid and relevant. Since they were extensively used as a background for the new studies and are still also widely cited by latter authors, it means that to cover sufficiently the MO related field literature a balanced mix of fundamental historical and recent studies must be put forward (e.g., Hajipour et al., 2012). Even more than thirty years later market orientation is still considered to be an ap-

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pealing topic to researchers in marketing. This could be documented by the number of articles on the topic (query - "market orientation") published in the recent years and indexed in the Web of Science database – 520 in 2021, 607 in 2020 and 569 in 2019.

Although the term market orientation has been introduced according to Gheysari et al., (2012) to the academic literature as early as mid 1920s (Strong, 1925), the origins of the MO concept were in the management philosophy called "the marketing concept". This was a cornerstone of the marketing discipline since Drucker (1954, p. 39) described marketing as "the whole business seen from the point of view of its final result, that is, from the customer point of view" (Van Raaij & Stoelhorst, 2008). So, to achieve sustained success, firm should identify and satisfy customer needs more effectively than their competitors (Day, 1994b). According to Stoelhorst and Van Raaij (2004) the marketing concept has served many years as the marketing's implicit theory of the firm by relating performance differentials between firms to their degree of market orientation. Although the MO concept was mentally accepted by generations of managers and has been considered as one of the most influential ideas in marketing, the formal research into it started only after its "rediscovery" at the end of 1980s (Webster, 1988). After 1990, the year the groundbreaking studies of Kohli and Jaworski (1990) and of Narver and Slater (1990) were published, "market orientation" became generally accepted term to be referred to the implementation of marketing concept (Mason & Harris, 2006).

The successive stream of research covered the four main distinctive but closely related fields: the definition of the concept, measurement of the construct, model of MO (mostly causes and effects) and implementation of the concept (Van Raaij & Stoelhorst, 2008; Varadajaran, 2017). The four mentioned fields of focus create in fact a vertical sequence, as one field builds gradually on the previous one. It means that the definition is the fundamental stone, then the construct should be measured (on a scale), if it can be measured, the antecedents and consequences could be evaluated, and the mediators or moderators of the causal relationships assessed. All three previous steps represent the theoretical or conceptual basis for the final step - practical implementation of the concept. Further paragraphs will briefly explain each of the mentioned fields.

*Market orientation definition* is all about the conceptualization of the construct and answering the question: "What is market orientation?". Although there were historically several alternative approaches to define the concept of market orientation, most of the studies over the years used one of the following two definitions (Van Raaij & Stoelhorst, 2008). It may be defined either as a degree to which companies generate market intelligence, disseminate it internally and respond to the gathered market information appropriately (Kohli & Jaworski, 1990). Or alternatively, this construct can also be perceived as an organizational culture assuming that creating value for customers is the key driver of business performance (Narver & Slater, 1990). Although the two concepts differ in many respects, they have some common denominators – they both focus on the customer as the most important component and at the same time they both stress the necessity to assess much wider external environment besides just the customer.

*Market orientation measurement* deals with operationalization and assessment of the construct as well as the development of a concrete reliable and valid scale to measure the defined market orientation quantity. So, it solves the question: "How can be market orientation measured?" As the approaches to the definition of market orientation vary widely it is also directly reflected in the scales used to measure the construct. There are recognizable three distinctive groups of studies using the cultural (Narver & Slater, 1990), the behavioral (Kohli et. al., 1993) or their own measurement systems (e.g., Deng & Dart, 1994). The

cultural and behavioral approach prevailed the field, similarly to the alternative market orientation definitions.

*Market orientation model* focuses on causes and effects of market orientation, as well as the moderating and mediating factors playing role in the causal relationship between antecedents and market orientation or market orientation and its consequences. The question here is: "How market orientation works within a firm?". While antecedents of market orientation and moderators (or mediators) can explain under what organizational and environmental conditions are businesses likely to be more versus less market oriented, the consequences of market orientation (usually performance) and moderators (or mediators) can explain under what organizational and environmental conditions are businesses likely to be more versus less conducive to enhancing business performance (usually), and why (Varadarajan, 2017). As the market orientation model is in the focal point of this text, it will be covered later in a greater detail.

*Market orientation implementation* covers the managerial actions to implement or better said further develop market orientation in the organization. Thus, it addresses the question: "How the firms become more market oriented?". The implementation of market orientation builds on the three previous steps – the definition, the measurement, and the model of market orientation. We must take into consideration, that all surviving businesses exercise at least some basic level of market orientation (Jaworski & Kohli, 1993). Thus, we should understand the implementation of the concept more as a process of increasing its level to receive the potential benefits it could bring. The unfortunate fragmentation of approaches from these steps is inevitably also reflected here. This could be illustrated by the findings of Van Raaij and Stoelhorst (2008). They identified nine different implementation approaches in the literature, analyzed them, and tried to integrate the different perspectives into a framework, which would help managers ask the right questions and address the right issues. The implementation phase has always been the weakest of the four steps. We can only here hypothesize if it gets too complicated at this stage (considering additional fragmentation of views on market orientation), or that scholars are too far away from the management practice to be able to help.

Looking retrospectively at more than three decades of market orientation research, one could recognize several development stages. The first decade, between 1990 and 1999, was the era of the seminal works trying to define the construct, establish the scale to measure it and understand the basic antecedents and consequences of the construct (e.g., Kohli & Jaworski, 1990; Narver & Slater, 1990; Ruekert, 1992; Deshpandé et al., 1993; Day, 1994; Deng & Dart, 1994; Deshpandé & Farley, 1996; Gray et al., 1998). In the second decade, between 2000 and 2009, scholars focused more on the implementation of market orientation and obstacles of the process (e.g., Harris, 2000; Harris & Ogbonna, 2001; Kennedy et al., 2003; Gebhardt et al., 2006). Apart of this, others tried to defragment the fragmented literature in the comprehensive review papers (e.g., Gotteland et al., 2007; Van Raaij & Stoelhorst, 2008) or to clear the controversial outcomes of the numerous studies like in the case of relation of market orientation and business performance by their meta-analytic studies (Rodriguez Cano et al., 2004; Kirca et al., 2005; Ellis 2006). The third decade plus between 2010 and now brought no further fundamental studies, scholars evidently perceived most fundamental questions already answered or impossible to answer, so the focus was redirected to the research of market orientation in the different environments in terms of industry, geography, or a firm size (e.g., Reijonen et al., 2012; Laukkanen et al., 2013; Siddique, 2014; Currey et al., 2014; Dubihlela & Dhurup, 2015; Frösén et al., 2016; Mokoena & Dhu-

rup, 2017). Or alternatively, combining the market orientation concept with some other additional concepts (e.g., He & Wei, 2011; Laukkanen et al., 2013; Yan et al., 2017; He et al., 2018).

Recent focus on Small and Medium Enterprises (SMEs) makes perfect sense, as they represent a backbone of most world economies. The World Bank (2022) claims, that SMEs play a major role in most economies, particularly in developing countries. They account for most businesses worldwide and are important contributors to job creation and global economic development. They represent about 90% of businesses and more than 50% of employment worldwide. Market orientation is not purely a domain of some big companies, but its application and potential received benefits are rather general. Although the studies of MO were targeting at the beginning mostly larger companies (e.g., Blankson & Cheng, 2005), the focus in the last decade or so shifted also in the direction of SMEs. Although the general principles of economics should work the same way, the truth is that SMEs differ from big companies in many ways. Let's name just a few of them. The SME organization is usually flatter with less management layers and much lower level of job specialization. The power of the SME owner or the top management team is to be expected stronger – the distance of decision-making is much closer to execution. The level of formal business and management education in the firm's leadership could differ significantly. The environment is traditionally more straightforward and action oriented, so only pure theory is not well received, on the contrary the actionable recommendations or instructions for implementation are mostly appreciated. Business performance evaluation is another area of variance. SMEs employ usually less sophisticated measures of their business performance, and it is rather open to doubt, if the financial measures of objective business performance reflect truly the reality of a business, for example due to so-called the owner's discretionary income effect or some other income tax optimization maneuvers. Such a specific environment undoubtedly challenges scholars doing market orientation research in SMEs and subsequently reaching a practical impact with their findings and recommendations.

The model of market orientation in SMEs is in the center of interest in this article. There are several reasons for it. *Firstly*, it is a general starting point for implementation of market orientation no matter what the environment is as it organically integrates the definition, the measurement and modus operandi of market orientation within a firm. This way, it fosters understanding of the market orientation concept – defining WHAT. *Secondly*, it factors in distinctive and demanding features of the SMEs environment - defining WHERE. *Thirdly*, it provides reasoning for the owners or the top managers of SMEs why they should invest the company precious resources to further development of market orientation in their organizations as well as motivation to embark on the journey – defining WHY. *And finally*, it equips the owners or the responsible managers within SMEs with tools, instructions, and recommendations what to do or not to develop market orientation in their firms – defining HOW.

## **1 Methodology**

The aim of this paper is to critically evaluate and discuss how the existing literature encourages understanding of and reasoning for the concept of market orientation in SMEs as well as how it supports potential efforts to elevate market orientation in these firms. To tackle this task, the study focuses on the model of market orientation in SMEs (for the reasons expressed in the previous paragraph) and addresses the following three main research questions:



- a) Does the existing literature support clear understanding of the market orientation construct and its measurement in the SMEs environment as a basis for the model?
- b) Are the arguments corroborating the benefits of market orientation presented by the existing literature persuasive enough to motivate the owners or the top management of SMEs to put the necessary resources behind the development of MO in the firm?
- c) Can the existing literature provide the SMEs top management with appropriate and actionable recommendations or instructions how to best elevate market orientation in this distinctive organizational environment?

To answer the three research questions coined above, rather a comprehensive critical review of literature had to be performed. The primary pool of evidence was represented by the studies published between the years 1990 and 2021, indexed in the Scopus and Web of Science databases, with some innumerable exceptions. The papers received attention based on their relevance and how many times were cited by other researchers. Special attention was given to the thorough review articles in the field and meta-analyses integrating the results and conclusions across the wide range of the studies. The applied queries went from general to specific: "market orientation", "market orientation & SMEs", "market orientation & marketing concept", "market orientation & antecedents & consequences", "barriers to market orientation", "market orientation & business performance", "market orientation and competitive advantage", "market orientation and top management emphasis". The employed texts were available free via the electronic information resources at the Prague University of Economics and Business, Google Scholar, directly from researchers based on a personal request through ResearchGate ([www.researchgate.net](http://www.researchgate.net)) and eventually other internet resources through the Google search engine.

## **2 Results and Discussion**

Although the emphasis of this text lays on the model of market orientation in SMEs, a brief discourse on the definition and the measurement issues of market orientation is given in the initial subsection – to define WHAT of the model. Only then the emphasis will shift to the model itself. The structure reflects the fact, that the model builds on these two prior steps and their issues will be projected to the model issues too.

### **2.1 Market orientation Definition and Measurement as Bases for the Concept Model**

It is rather surprising that after all these years of extensive research there is still no simple answer to the question what is market orientation? Van Raaij and Stoelhorst (2008) identified arguably the six most influential definitions of the concept: Shapiro (1988) emphasizes the decision-making processes, Kohli and Jaworski (1990) the information processing activities, Narver and Slater (1990) the business culture as a set of behavioral components, Ruekert (1992) the organizational strategy process, Deshpande et al. (1993) the business culture as a set of beliefs, and Day (1994) emphasizes organizational skills. Nevertheless, over the years, in most market orientation studies only two have dominated - either

Kohli and Jaworski's (1990) or Narver and Slater's (1990) definitions. Two main perspectives on market orientation have emerged as a result: a behavioral perspective based on Kohli and Jaworski (1990), and a cultural perspective based on Narver and Slater (1990). Homburg and Pflesser (2000) have proposed a third, integrationist perspective while Helfert et al. (2002) proposed the third, system-based perspective. It appears, that there is at least general consent nevertheless the used perspective (behavioral, cultural, or integrationist), that market orientation contains elements of market intelligence generation, dissemination, and use, to create value for customers (Lafferty & Hult, 2001). It seems, that nevertheless the vast number of research studies published on market orientation, marketing scholars have not yet reached complete agreement on what constitutes to market orientation (Dursun & Kilic, 2017), and it looks rather unlikely they will ever do so. The absence of a clear single definition of market orientation (something unthinkable in mathematics, physics, or chemistry) creates potential serious hurdles for its implementation or development in the organizations. As Stoelhorst and Van Raaij (2008) rightly point out: "The different definitions of market orientation suggest very different levers for improving the market orientation of a firm. These levers include certain organizational behaviors, such as information processing, decision-making, and strategy formation (Kohli & Jaworski, 1990; Ruekert, 1992), specific skills to enable those behaviors, such as market sensing and customer linking (Day, 1994), and elements of culture to drive the desired behaviors, such as beliefs, values, and norms (Narver et al., 1998; Homburg & Pflesser, 2000). Depending on the authors they consult, managers who want to improve market orientation of their firm would be given very different ideas about where to focus their attention.". On the other hand, according to Gotteland et al. (2007), the dilemma of superiority between the cultural and behavioral approach has already been solved by Homburg and Pflesser (2000) - by proposing and empirically confirming that the culture of market orientation is prior to the behaviors reflecting it. Similarly, Zhou et al. (2008) differentiated market orientation culture and behaviors; asserting that market orientation behaviors as mediators of the relationship between market orientation culture and firm's performance.

The measurement issues are alike the definition issues and are mutually interconnected. There are recognizable three distinctive groups of studies. One group of studies uses a cultural measure, mostly MKTOR scale (Narver & Slater, 1990), a second group uses behavioral measure, mostly MARKOR scale (Kohli et. al., 1993) and the third one develops its own measurement systems, but these are less known and most of them originate from the two previous scales (e.g., Deng & Dart, 1994; Pelham & Wilson, 1996; Deshpandé & Farley, 1996; Gray et al., 1998). It is probably obvious that MKTOR and MARKOR have gained over the time a dominant position. MKTOR (Narver & Slater, 1990) is a 15-item scale that measures market orientation using the cultural perspective and is based on three components – customer orientation, competitor orientation and interfunctional coordination. The scale has been used by many studies as a measurement instrument (e.g., Siguaw et al., 1994; Slater & Narver, 1994; Greenley, 1995b; Han et al., 1998; Deshpandé & Farley, 1999). It has been also extensively used in the development of some other market orientation scales (e.g., Deng & Dart, 1994; Deshpandé & Farley, 1996; Gray et al., 1998). MARKOR (Kohli et. al., 1993) is a 20-item scale that measures market orientation using the behavioral perspective and reflects three dimensions – intelligence generation, intelligence dissemination and responsiveness. The scale was used also by Homburg and Pflesser (2000), Matsuno and Mentzer (2000), and Siguaw et al. (1998). The score in both the MKTOR and MARKOR scales is the unweighted sum of the components. Both scales have their pros and cons. They were both criticized from the different perspectives – scale development (Gabel, 1995), single informant strategy (e.g., Wensley, 1995), reliance on the focal organization (Gabel, 1995; Steinmann et. al., 2000), usefulness as a diagnostic tool for managers (Van Bruggen

& Smiths, 1995) or general usefulness for implementation of the concept (Van Raaij & Stoelhorst, 2008). A stream of research has also focused on the comparison and criticism mainly of these two dominant scales (e.g., Deshpandé & Farley, 1996; Wrenn, 1997; Oczkowski & Farrell, 1998), but without any actionable outcome. Although MKTOR outperformed MARKOR in the Oczkowski and Farrell (1998) study, the interpretation of the findings is to be cautious, as this is only a result of a single empirical study.

The definition issues of market orientation are complicated and rather confusing not only for the SMEs managers. Fortunately, it looks that there is a trend to narrow down the issues to at worst a dualism between a cultural (Narver & Slater, 1990) and a behavioral approach (Kohli & Jaworski, 1993) with the former getting traction also in the theory, as was already mentioned. It is good, because in the very down to earth world of SMEs such a dualism could present itself a hurdle. The pillars of the cultural approach – customer orientation, competitor orientation and interfunctional coordination – seem to fit better the environment of SMEs and they look easier to understand and operationalize, which could present significant advantage. We could watch a similar trend in the measurement scales used. Despite the fact, that studies in SMEs still use both MKTOR (Narver & Slater, 1990) and MARKOR (Kohli & Jaworski, 1993) scales, research practice in SMEs is moving also gradually to the MKTOR scale, either original or slightly modified (e.g., Huhtala et al., 2013; Reijonen et al., 2014; or Frosen et al., 2016). It is not an ideal situation, but it could provide at least relatively clear and simple guidance what is market orientation and how it could be measured – addressing sufficiently WHAT of the market orientation model.

## **2.2 Consequences of Market Orientation**

It seems reasonable to start rather with the consequences of market orientation than its antecedents, as the consequences drive the reasoning and motivation behind the efforts to elevate market orientation level in an organization. So, addressing the WHY of the market orientation model.

It is hardly surprising that the relationship between market orientation and financial performance was the most frequently studied of all (e.g., Kirca et al., 2005). The positive effect of market orientation on the performance had been primarily accepted only as a matter of faith. Later a vast number of studies tested the relationship empirically in different environments in terms of a company size, industry, type of goods, profit or non-profit, market geography or market level of development. The findings were not equivocal and sometimes even controversial, but according to some researchers e.g., Gotteland et al. (2007) or Van Raaij and Stoelhorst (2008) the overall positive and significant effect of the firm's degree of market orientation on a business performance was mainly confirmed by the meta-analysis studies of Rodriguez Cano et al. (2004), Kirca et al. (2005) and Ellis (2006). The positive effects on sales, market share and profitability support also other studies (e.g., Jaworski & Kohli, 1993; Slater & Narver, 1994; Pelham & Wilson, 1996; González-Benito & González-Benito, 2005). Although the studies among SMEs are less frequent Raju et al. (2011) analyzed sixteen studies performed between 1997 and 2006 and concluded that in fifteen of them the results support (direct or indirect) positive effect of market orientation on performance. It seems that the market orientation and performance relationship is typically stronger for studies using subjective performance measures than for studies using objective ones. This assumption is substantiated also by the meta-analysis of Kirca et al. (2005) or by the literature review of González-Benito and González-Benito (2005). Out of the sixteen

studies mentioned by Raju et al. (2011) above fourteen used a subjective measure of performance. It was recommended by several researchers to use both types of performance measures in the studies focused on the relationship (e.g., Harris 2001; Dawes 1999; Kirca et al. 2005). Studies using both subjective and objective performance measures are rather rare (González-Benito & González-Benito, 2005), and they still provide the evidence of lower effect of market orientation on performance in the case of objective measures than in the case of subjective measures (e.g., Jaworski & Kohli, 1993; Selnes et al., 1996).

Apart of the obvious focus on the impact of market orientation on financial performance, other consequences were conceptually and empirically linked to the construct. Woodruff (1997) claims that market-oriented companies converse their information advantage to higher satisfaction of their customers. The positive effects of market orientation on customer perceived quality, customer satisfaction and customer loyalty were confirmed by other studies (e.g., Becker & Homburg, 1999; Homburg & Pflesser, 2000; Kirca et al., 2005). Rukert (1992) identified the positive influence on job satisfaction, trust in leadership and organizational commitment. Similarly, Jaworski and Kohli (1993) also found a positive link to organizational commitment and team spirit. Positive effect on job satisfaction and organizational commitment of salespeople was supported by Siguaw et. al (1994). The positive influence on employees was also documented by Jaworski and Kohli (1996), Slater and Narver (2000) or Kirca et al. (2005). Market orientation has also innovation consequences, mainly in terms of innovativeness and new product performance (Kirca et al., 2005). Kumar et al. (2011) also investigated if market orientation could create a source of sustainable competitive advantage and for how long, or if it is just a requirement to compete in today's business environment. They found, that the first or early adopters in the industry experience the competitive advantage from being market oriented. But the advantage was diminished over three years period as the late adopters learned for the early adopters.

Potential moderators and mediators of the relationship between market orientation and performance were studied also quite intensely. It is obvious that some of the non-performance consequences will re-appear here, as they are at the same time the consequences of market orientation and the mediators of its impact on the business performance. There were many variables considered as potential moderators of the relationship. Among the most often used were market turbulence, technological turbulence, competitive intensity, and market growth (Van Raaij & Stoelhorst, 2008; Raju et al., 2011). It is fair to assume, that higher market orientation levels are likely to be rewarded in the conditions of higher levels of market or technological turbulence, higher competitive intensity, and lower market growth (Raju et al., 2011). Unfortunately, it was not supported enough by the data, yet. Wrenn (1997) concluded, that the existing literature shows little effect of the mentioned moderators on the relationship. Kirca et al. (2005) concluded after analyzing twenty-one empirical studies, that there is not enough empirical evidence, that market turbulence, technological turbulence, and competitive intensity moderate the relationship between market orientation and performance. Kumar et al. (2011) later found that environmental turbulence and competitive intensity moderate the effect of market orientation on business performance, but the moderating effects were greater in 1990s then in 2000s. There were similarly considered different mediating variables of the market orientation and performance relationship. According to Van Raaij and Stoelhorst (2008) very strong case has been built by the literature for the innovativeness, as the market-oriented firms can use the market knowledge as their advantage in new product development (Han et al., 1998). Kirca et al. (2005) confirmed by their meta-analysis innovativeness as a mediator of the relationship

together with customer loyalty and customer perceived quality. The mediating role of innovativeness for the business performance was further supported by other studies (e.g., Lang-erak et al., 2007). The findings are in line with the logic of marketing as the innovation and customer consequences are the prerequisites for market and financial performance of a firm. In the light of these findings, there is also a question rising, if the employee consequences of market orientation would not be a reasonable candidate for another mediator variable, at least in the service industry.

The existing literature presents several effects or benefits a firm could expect from being market oriented. But are they persuasive enough for the top managers in SMEs to justify the necessary focus and corresponding investments to elevate market orientation of their firms? The strongest argument to build the case is business performance. There are many studies available and though the presented evidence is not equivocal they generally suggest that the level of market orientation is positively associated with the business performance, nevertheless the size of the firm. Additionally, there were identified other positive effects of market orientation on customers (loyalty and perceived value), employees (job satisfaction, team spirit, organizational commitment) or innovativeness. In some cases, being market oriented could bring even competitive advantage. Some of them emerge as prerequisites of the eventual business performance. It is hard to predict how convincing are the additional benefits of market orientation to the SMEs top managers, but the WHY part of market orientation model seems adequately covered.

## **2.3 Antecedents of Market Orientation**

Antecedents play important role especially in the process of market orientation development as they can provide guidance in the implementation process (Kennedy et al., 2003). While consequences tell WHY to become more market oriented, the antecedents tell HOW to elevate market orientation of the firm.

There are two types of antecedents – external and internal. External antecedents are mostly environmental factors stimulating the firm's adoption of market orientation – creating the need to become market-oriented; internal antecedents are the organizational factors enabling the adoption of market orientation by the firm – creating the ability to become market-oriented (Van Raaij & Stoelhorst, 2008). It seems that much more attention was given to the internal antecedents, as they represent factors in power of management of the firm to be changed. Kohli and Jaworski (1990), Pelham and Wilson (1996) or Avalonitis and Gounaris (1999) suggest as the external antecedents market dynamism and competitive intensity. Firms operating in the stable environment can thrive with low level of market orientation (Kohli & Jaworski, 1990) and the same applies if they operate in the environment of lower competitive intensity (Pelham & Wilson, 1996). Van Raaij and Stoelhorst (2008) stress the special role of organizational strategies in the context, and they classify them as the external antecedent, as they do not directly enable market orientation behaviors (Pelham & Wilson, 1996) as they rather necessitate such behaviors (Homburg et al., 2004). The internal antecedents received evidently much more attention. Rukert (1992) identified three processes fostering market orientation: recruitment of the right individuals, market-oriented training, and market-oriented reward system. Jaworski and Kohli (1993) proposed eight internal antecedents, but only three of them survived the empirical scrutiny of the study: top management emphasis, interdepartmental connectedness/conflict, and reward system.

Kirca et al. (2005) divided the internal antecedents to three groups: top management factors, interdepartmental factors and organizational systems and confirmed the importance of the three antecedents of Jaworski and Kohli (1993) in their meta-analysis. Van Raaij and Stoelhorst (2008) distilled from the existing literature and proposed in the same meaning a checklist of seven enablers of market orientation in the firm. They divided the enablers into two groups: design enablers – structure, process design, ICT systems and reward system; and development enablers – leadership, behavioral norms & values, and competence management. Raju et al. (2011) divided the internal antecedents into two groups – structural and cultural variables. Organizational structure consisted of formalization, centralization, and departmentalization; organizational culture included organizational learning, market focus, entrepreneurial proclivity, and quality context.

Despite the fact, that the model is still rather conceptual matter, it should also provide SMEs top managers with some useful practical hints for implementation or development of market orientation through the identified antecedents. It is not different in SMEs. Some of the antecedents like top management emphasis, market-oriented selection, training, and reward systems, are easy to understand and most likely relevant for SMEs. Some look rather too academic for the straightforward world of SMEs e.g., formalization, centralization, departmentalization, or entrepreneurial proclivity. In spite of being only extracted from the existing literature and not empirically tested the MO enablers of Van Raaij and Stoelhorst (2008) look the most universal from all mentioned approaches if they are just merged into a single checklist. It is a bit of surprise because Raju et al. (2011) focused their conceptual study on SMEs. It was already mentioned that top management emphasis proved to be important antecedent. Considering very strong position of top managers in SMEs, one is bound to expect even stronger influence of the antecedent in this specific environment. To conclude this part, there are some reasonable clues coming from the identified antecedents, but some of them are just too theoretical for SMEs to be used directly in market orientation development or not applicable at all, and some other are not yet empirically tested, so there is no proof they truly work. Had the antecedents provided more actionable recommendations the HOW part of the market orientation model would be much more supportive in implementation or practical development of the concept not only in SMEs.

## **2.4 Unresolved Questions in the Model and the Future Research Inspiration**

The three original research questions of the study were already mostly answered, but the study brought to light several additional interesting questions concerning the model and the construct in the environment of SMEs which could serve as inspiration for the future research in the field.

The question of reasoning and motivation of top managers in SMEs to develop market orientation in their firms was resolved, so it should be crystal clear why to develop market orientation in SMEs. The answer was very important, as the top managers specifically in SMEs are quintessential part of the process; they have the crucial responsibility and authority. The key effect of top management emphasis on market orientation was identified already in the seminal studies (e.g., Jaworski & Kohli, 1993) and later also confirmed (e.g., Kirca et al., 2005). The positive effect of market orientation on performance was also finally generally confirmed for companies of all sizes (e.g., Kirca et al., 2005; Raju et al., 2011). But it seems that no study yet tested the relationship between top management emphasis (the essential antecedent of market orientation) and business performance (the crucial consequence of

market orientation) with market orientation as a mediating variable. Would not be interesting to shed light on this direct relationship particularly in the context of SMEs? It could not only enrich the model of market orientation but also make the reasoning for market orientation even more convincing. Of course, the empiric testing would rise several additional questions like what scale should be used to measure the level of market orientation, how to measure top management emphasis (the level of detail), what criteria of performance should be used, should they be objective or subjective, if subjective should there be a standard scale developed? Some of the answers could be found in the previous text, some still wait to be found.

The next question deals with antecedents of market orientation. It appears, that most approaches to antecedents in the existing literature assume, that the antecedents work as a parallel set, but is it always the case? There is no doubt that top management emphasis plays important role and even more important in SMEs. It is fair to assume, that top managers in SMEs significantly influence *ipso facto* any of the other internal antecedents or enablers. So, they (or their emphasis) could be considered at least in SMEs as a primary internal antecedent, while the rest of identified internal antecedents could be considered as the mediators of the relationship between top management emphasis and market orientation. This extension to the market orientation model could potentially help improve its fit for SMEs. Empiric testing would inevitably bring several more questions like what other internal antecedents or enablers to use, how they should be measured, should there be a standard scale developed? Some hints for the answers are already in the text above, others should be searched.

Final questions resulting from this study are more general. The subject of market orientation and particularly in SMEs is still very popular, which means that the amount of research is extensive. Would not be helpful to perform similar systematic concept reviews like Van Raaij and Stoelhorst (2008) or Gotteland et al. (2007) for SMEs? Would not be useful to perform meta-analyses like Rodriguez Cano et al. (2004), Kirca et al. (2005) and Ellis (2006) for SMEs? Would not be worth to find some common market orientation research standards in SMEs?

## **Conclusion**

The primary objective of the study was to find with the help of the existing literature acceptable answers to the three research questions of market orientation model and its applicability in SMEs. It is possible to conclude, that the existing literature provides a bit complex and sometimes confusing view on the definition and measurement of the construct, but with certain focus and prioritization, clear understanding is possible, even in the very practically oriented SMEs environment. This way it addresses the question what is market orientation and how it should be measured? It also seems, that the existing literature provides persuasive evidence, reasoning, and motivation to pursue market orientation in SMEs and justify the invested resources to the process. This way it addresses the question why to be market oriented? Unfortunately, the third question - how to become market oriented - was answered only partially. The existing literature provides either too theoretical or not empirically tested suggestions for the process, so there is still a gap to be closed at least for the purposes of SMEs. As this part represents a crucial bridge between the market orientation theory and practice, it should attract more attention of the researchers in the field.

The study also resulted in two conceptual suggestions to extend the model of market orientation in SMEs. First, consider a crucial role top management in SMEs plays, make top management emphasis the basic internal antecedent and connect it to the level of market orientation through the other internal antecedents as mediators of the relationship. Second, connect directly top management emphasis and business performance with market orientation as a mediator of the relationship, to show, that the effort is truly worth it. Both suggestions still need to be empirically tested. Apart of these two suggestions some general ideas for the future research in the field were advanced.

It is possible to conclude, that the task of the study was accomplished. The study not only maps the field of the subject – applicability of market orientation model in SMEs – but also brings some more suggestions to extend the model as a form of inspiration for the future research.

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# Cenová analýza exportu Slovenskej republiky<sup>1</sup>

Ondrej Tomčík<sup>2</sup>

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## ***Selling price analysis of the Slovak exports***

### **Abstract**

*The economic benefits of exporting goods vary from state to state. The selling price at a certain market is a very essential variable. The value density of a product can be used as a proxy for the commodity's average selling price. The value density ratios of commodities exported by Slovakia to each market are then compared with the value density ratios of commodities exported by Slovakia to other global markets. On the Swiss, Chinese, American, German, and French markets, prices are above average. Turkey and Russia paid the lowest price for the Slovak commodities in 2021.*

### **Key words**

*value density, value-per-weight ratio, export price, Slovak export*

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### **Úvod**

Vývoz Slovenskej republiky je charakterizovaný zameraním na automobilový priemysel. Nízka miera odvetvovej a geografickej diverzifikácie exportu je zdrojom nestability HDP a predstavuje riziko najmä v krízových rokoch. Z hľadiska odvetvovej diverzifikácie ekonomiky je však otázne, nakoľko je ekonomika Slovenska schopná poskytnúť priestor pre rozvoj viacerých priemyselných klastrov. Je zrejmé, že tu neexistuje priestor pre rozvoj rovnakého počtu odvetví, ako je to v rádo vo väčších ekonomikách. Menšie ekonomiky majú tendenciu koncentrácie v obmedzenejšom počte odvetví. Z geografického hľadiska jednoznačne najviac exportu smeruje do krajín EÚ. Ďalšími významnými odbytiskami sú Spojené kráľovstvo, USA a Čína. Množstvo a štruktúra exportu do jednotlivých krajín určuje aj jej hodnotu. Ďalším dôležitým aspektom je cena realizovaného exportu. Vyššia dosiahnutá cena má pozitívny vplyv na pridanú hodnotu exportu slovenských firiem. V tejto práci autor s využitím dát UN Comtrade porovnal dosahované cenové hladiny slovenského exportu na 20 najvýznamnejších exportných trhoch.

### **Metodika práce**

Autor článku si dal za cieľ na základe kilogramovej hodnoty exportu (value-per-weight ratio), teda hodnoty exportu prepočítanej na 1 kilogram, zhodnotiť dosiahnuté ceny exportu na jednotlivých trhoch a porovnať ich s cenami dosiahnutými na ostatných svetových trhoch.

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<sup>1</sup> Daný príspevok je výstupom riešenia vedeckého projektu: VEGA 1/0777/20 "Čínska hodvábná cesta (Belt and Road Initiative) - príležitosť alebo riziko pre konkurencieschopnosť exportu EÚ a SR?"

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Hodnota za kilogram alebo aj cena za kilogram komodity je údaj, ktorý sa vo veľkej miere využíva v logistike. Rozdelenie produktov na základe ich kilogramovej hodnoty spolu s faktorom časovej degradácie sú rozhodujúce pre výber najvhodnejšieho spôsobu dopravy daného tovaru (Dettmer et al., 2014). Posun v štruktúre exportu od vysoko-objemových a nízko-hodnotových produktov smerom k luxusným a high-tech produktom s vysokou kilogramovou hodnotou má veľký vplyv na požadovanú rýchlosť prepravy a následne i na zvolený spôsob dopravy (Riet et al., 2007). Odvetvia, ktoré tvoria vyššiu kilogramovú hodnotu (napríklad elektrotechnický priemysel), majú väčšiu tendenciu k medzinárodnému outsourcingu. Vyššia kilogramová hodnota znamená, že náklady na dopravu tvoria relatívne nižšiu časť výslednej ceny tovaru, čo vo výsledku vedie k častejšiemu využívaniu leteckej dopravy daného tovaru (Farrell, 2005). Na druhej strane sú tovary s nízkou kilogramovou hodnotou častejšie dopravované železničnou alebo lodnou dopravou. Zvolený spôsob dopravy závisí teda od kilogramovej hodnoty tovaru a jeho trvanlivosti (Christen, 2010). Letecké kargo je signifikantne drahším spôsobom dopravy používaným na prepravu tovarov s vyššou kilogramovou hodnotou, pri ktorom zohráva významnú úlohu bezpečnosť, stabilita a frekvencia dodávok (Reynolds-Feighan, 2001).

Pri každom tovare možno vyjadriť jeho cenovú hustotu (value density) vo vzťahu buďto k jednotkám tovaru alebo hmotnosti tovaru. Podľa toho sa jedná o jednotkovú hodnotu alebo kilogramovú hodnotu. Jej hodnota má rozhodujúci vplyv na logistickú stratégiu firiem. V prípade veľmi vysokých hodnôt cenovej hustoty, ako napríklad v prípade mikročipov, je ich produkcia značne centralizovaná, geograficky alokovaná v nižšom množstve špecializovaných výrobných klastrov. Tieto produkčné kapacity potom s využitím leteckej dopravy zásobujú trhy po celom svete. Výrobné kapacity veľkoobjemových tovarov s nižšou cenovou hustotou, ako napríklad cement, sa nachádzajú obvykle v blízkom okolí miesta spotreby (Delfmann a Albers, 2000). Navyše vysoká cenová hustota tovaru podstatne predražuje držanie jeho zásob, čo vytvára tlak na optimalizáciu skladových zásob a redukciu množstva tovaru v preprave. Centralizované sklady takéhoto tovaru v kombinácii s leteckou dopravou umožňujú včasné dodávky aj v prípade tovarov s vysokou volatilitou odberu (Lovell et al., 2005).

Hmotnosť produktu však nemusí byť iba fyzikálnou charakteristikou produktu, ale môže mu dodať i úplne novú kvalitatívnu vlastnosť. Napríklad vína predávané v ťažších fľašiach sú často vnímané ako kvalitnejšie a teda drahšie. Toto vnímanie je intenzívnejšie pri bežných lajkých spotrebiteľov ako u expertov (Piqueras-Fiszman a Spence, 2012). Vzťah medzi logistickými nákladmi a cenovou hustotou tovaru sa do veľkej miery dotýka otázky profitability exportu (Ghezzi et al., 2012).

## Výpočet hodnoty na kilogram tovaru

Výpočet cenovej hustoty ako kilogramovej hodnoty, respektíve hodnoty tovaru za kilogram, je možné vykonať s použitím dát UN Comtrade, ktorá obsahuje údaje o hodnote exportu, ako aj o jeho fyzickej hmotnosti. Z uvedeného vyplýva, že sa vypočíta ako podiel hodnoty tovaru k cene, t.j.

$$\frac{\text{hodnota}}{\text{hmotnosť}} \quad (1)$$

Najjednoduchší výpočet cenovej hustoty je pre jednotlivú komoditu. Keďže jednotlivé komodity majú rôznorodé fyzikálne vlastnosti, majú i rozdielne cenové hustoty. Táto skutočnosť komplikuje využitie cenovej hustoty pre súbor komodít, z ktorého pozostáva celkový export. Aj komodity v rámci jednotlivých kategórií harmonizovaného systému však môžu vykazovať väčšiu či menšiu heterogenitu. Dokonca i ropa, uhlie, železná ruda, ako aj poľnohospodárske plodiny vykazujú rozdielne vlastnosti v závislosti od ich pôvodu. To spôsobuje komplikácie pri použití cenovej hustoty na agregovanej úrovni dát jednotlivých komodít tak, ako sú vykazované v štatistikách UN Comtrade. Kilogramová hodnota vybranej komodity exportovanej dvoma exportérmi, respektíve exportujúcimi krajinami, je však pomerne spoľahlivým ukazovateľom ich exportnej efektívnosti. Zavedený exportér vín, ako je napríklad Francúzsko, dosahuje vyšších marží, teda aj kilogramovej hodnoty na trhu vín konkrétnej krajiny, ako nováčik, ktorý si musí svoje meno ešte len vybudovať. O čo vyššia cenová hustota produktu, o to lepšie sú pokryté výrobné a dopravné náklady, ako aj zisková marža. Vyššie výrobné náklady môžu byť spôsobené vyššími mzdovými nákladmi, čo predstavuje vyššie mzdy alebo zamestnanosť, teda sociálne žiaduce efekty. Keďže logistické náklady na tovar s vyššou cenovou hustotou predstavujú menšiu časť jeho celkovej hodnoty, ako je to v prípade tovaru s nižšou cenovou hustotou, obchod s takýmto tovarom je ekonomicky uskutočniteľný aj na väčšie vzdialenosti. Pokrytie geograficky rozsiahlejšieho trhu prispieva k udržateľnosti podnikania.

Porovnanie cenovej hustoty vývozu tovarov vybranej komoditnej skupiny harmonizovaného systému odhaľuje postavenie týchto exportérov na danom trhu a v danej komodite. Porovnanie exportov krajín ako celku v rámci širokého súboru obchodovaných produktov je však zložitejší problém. Vzhľadom k rozmanitosti komodít exportovaných tou ktorou krajinou, vyčíslenie cenových hustôt pre jednotlivé komodity nedokáže poskytnúť celistvý pohľad na celkový export krajiny na vybraný trh. Keďže každá komodita v súbore exportovaných komodít má svoje špecifické vlastnosti, komoditná štruktúra exportu krajiny zohráva kľúčovú úlohu pri vyčíslení cenovej hustoty celkového exportu krajiny na niektorý z exportných trhov. Táto cenová hustota sa dá vypočítať ako priemer hodnôt cenových hustôt jednotlivých komodít vážený ich podielom na exporte:

$$\sum_{i=1}^n \frac{v_i}{w_i} * \frac{v_i}{v_t} \quad (2)$$

kde  $v_i$  je objem exportu komodity  $i$  do vybranej krajiny,  $w_i$  je fyzická hmotnosť exportovanej komodity  $i$  a  $v_t$  je suma všetkých komodít exportovaných do danej krajiny. V komoditnom zložení exportu jednotlivých krajín existuje veľká diverzita. Zatiaľ čo jedna skupina štátov exportuje pokročilé technológie, iní sú odkázaní na vývoz surovín. Štruktúra exportu do značnej miery vychádza z obdarenosti krajín prírodnými zdrojmi.

Použitím cenovej hustoty exportu možno zhodnotiť ekonomický prospech krajiny plynúci z konkrétneho exportného trhu v porovnaní s ostatnými exportnými trhami. O čo je vyššia cenová hustota exportu na konkrétny trh v porovnaní s cenovou hustotou dosahovanou na ostatných svetových trhoch, o to je export na daný trh prospešnejší. Týmto spôsobom sa dá vytvoriť rebríček exportných trhov podľa takto vyčíslených ekonomických benefitov. Ak štát  $A$  vyváža tovar  $i$  do krajiny  $B$ , celková kilogramová hodnota (t.j. priemerná cena za kilogram tovaru) za komoditu  $i$  smerujúcu z  $A$  do  $B$  sa vypočíta nasledovne:

$$p_i^{A,B} = \frac{v_i^{A,B}}{w_i^{A,B}} \quad (3)$$

$p_i^{A,B}$  je kilogramová hodnota exportu komodity  $i$  z krajiny  $A$  do krajiny  $B$ ,  $v_i^{A,B}$  je hodnota exportu komodity z  $A$  do  $B$  a  $w_i^{A,B}$  je jeho fyzická hmotnosť. Získaná hodnota  $p_i^{A,B}$  je zároveň aj priemernou cenou komodity  $i$  za jednotku hmotnosti. Na zhodnotenie výhodnosti cenovej úrovne exportu komodity na určitom exportnom trhu stačí porovnať jej kilogramovú hustotu z kilogramovou hustotou tých istých tovarov na ostatných trhoch nasledovne:

$$p_i^{A,W-\{B\}} = \frac{v_i^{A,W-\{B\}}}{w_i^{A,W-\{B\}}} = \frac{v_i^{A,W} - v_i^{A,B}}{w_i^{A,W} - w_i^{A,B}} \quad (4)$$

$p_i^{A,W-\{B\}}$  je kilogramová hodnota komodity  $i$  exportovanej krajinou  $A$  na svetové trhy okrem exportu tejto komodity do krajiny  $B$ . Prenásobením hmotností komodity vyvezených do danej krajiny  $B$  ( $w_i^{A,B}$ ) svetovými cenami  $p_i^{A,W-\{B\}}$ , vypočítame hypotetický príjem  $r_i^{A,B,W}$  z hypotetického predaja komodity na svetových trhoch.

$$r_i^{A,B,W} = p_i^{A,W-\{B\}} * w_i^{A,B} \quad (5)$$

$r_i^{A,B,W}$  predstavuje príjem, ktorý mohol byť generovaný za predaj danej komodity  $i$ , ak by nebol predaný v krajine  $B$ , ale na svetových trhoch. Jedná sa o hypotetickú veličinu, keďže uvedené ceny nie sú na svetových trhoch garantované po zmene ponuky. Rozdiel medzi skutočnými príjmami z vývozu do krajiny  $B$  a vypočítanou hodnotou hypotetického príjmu  $r_i^{A,B,W}$  (6) odhaľuje ekonomické benefity plynúce z exportu do krajiny  $B$  v porovnaní s exportom do iných častí sveta. Pozitívna hodnota predstavuje vyššie ako priemerné príjmy na svetových trhoch, naopak záporná hodnota predstavuje nižšie priemerné príjmy z krajiny  $B$  ako dosahuje na svetových trhoch.

$$g_i^{A,B,W} = v_i^{A,B} - r_i^{A,B,W} \quad (6)$$

Týmto spôsobom je možné hodnotiť benefity exportu tých komodít, o ktorých fyzickej hmotnosti existujú dáta. Exportné trhy môžu byť hodnotené ako celky z hľadiska ich ekonomických prínosov, a to spočítaním príjmových prebytkov a schodkov ( $g_i^{A,B,W}$ ) pre všetkých  $n$  komodít vyvázaných krajinou  $A$  do krajiny  $B$  (7). Podľa toho do akej miery je výhodný export komodít do danej krajiny aj súčet nadobúda pozitívnu alebo negatívnu hodnotu. Čím vyššiu pozitívnu hodnotu  $g^{A,B,W}$  nadobudne, tým viac ekonomicky prospešný je export na daný trh.



$$g^{A,B,W} = \sum_{i=1}^n g_i^{A,B,W} \quad (7)$$

Konštrukcia vzorca (8) naznačuje, že vypočítaný ekonomický prospech vyplývajúci z exportu na určitý trh závisí od podielu kilogramovej hodnoty vývozu na ten daný trh k kilogramovej hodnote exportov rovnakých tovarov na ostatné trhy.  $PX^{A,B,W}$  je vlastne percentuálny rozdiel v kilogramovej hodnote medzi celkovým exportom z  $A$  do  $B$  a exportom tovarov v rovnakých komoditných skupinách na ostatné svetové trhy.

$$PX^{A,B,W} = \left( \frac{g^{A,B,W}}{v^{A,B}} \right) * 100 \quad (8)$$

## Výsledky a diskusia

Export slovenských exportérov je na jednotlivých exportných trhoch realizovaný za rozdielnych cenových podmienok. Vzhľadom k rozmanitosti produktov a jednotlivých obchodných prípadov je náročné analyzovať všetky ceny. Náhradným riešením je použitie proxy veličiny - kilogramovej hodnoty. Napriek tomu, že sa jedná o použitie agregovaných dát, kilogramová hodnota umožňuje pomerne presne kvantifikovať cenové úrovne dosahované na jednotlivých trhoch. S použitím postupov opísaných v prechádzajúcej kapitole boli analyzované údaje 20 najväčších odbytísk slovenského tovaru (Tab. 1.).

**Tab. 1** Najvýznamnejšie exportné trhy Slovenska v roku 2021.

	Export SR (tis. USD)
Nemecko	22 773 869 199
Česko	12 078 875 832
Poľsko	8 616 963 233
Francúzsko	6 775 973 934
Maďarsko	6 498 229 606
Rakúsko	5 751 309 865
Taliansko	4 876 568 401
Veľká Británia	4 135 503 650
USA	3 306 641 478
Čína	2 665 187 758
Rumunsko	2 551 510 440
Španielsko	2 394 039 401

Holandsko	2 114 214 607
Rusko	1 582 886 150
Švajčiarsko	1 509 827 045
Švédsko	1 429 735 656
Turecko	928 743 087
Slovinsko	916 989 241
Ukrajina	785 145 488

Zdroj: UN Comtrade, 2022

Po prepočítaní kilogramovej hustoty exportu na tieto trhy k exportu rovnakých tovarov na svetové trhy bola zostavená tabuľka č. 2, ktorá ukazuje, o koľko percent sa líši cena tovarov (vyjadrená ako kilogramová hodnota) exportovaných na daný trh v porovnaní s tovarmi exportovanými na ostatné trhy. Napríklad v prípade Nemecka sú tovary predávané o 4,3 % vyššiu cenu za kilogram, ako je to na ostatné svetové trhy.

**Tab. 2** Percentuálny rozdiel cenovej hustoty vypočítaný pre 20 najdôležitejších exportných odbytísk v roku 2021.

Nemecko	3.2 %
Česko	-12.9 %
Poľsko	-13.6 %
Francúzsko	1.9 %
Maďarsko	-7.9 %
Rakúsko	-2.1 %
Taliansko	-15.4 %
Veľká Británia	-1.2 %
USA	9.6 %
Čína	15.9 %
Rumunsko	-7.8 %
Španielsko	-7.8 %
Holandsko	0.4 %
Rusko	-19.9 %
Švajčiarsko	23.4 %
Švédsko	-1.3 %
Turecko	-43.7 %
Slovinsko	-0.7 %
Ukrajina	-20.4 %

Zdroj: Vlastná kalkulácia na základe údajov UN Comtrade, 2022

Ako vidno z tabuľky 2, na trhoch susedných štátov nedosahuje SR vyššej ceny na kilogram exportu ako je priemerná kilogramová cena za rovnaké komodity na ostatné svetové trhy. Čiastočne to súvisí s prepravnými nákladmi, ktoré môžu byť započítané v cene, čo zvyšuje hodnotu na kilogram tovaru pri vzdialenejších trhoch. Súvisieť to môže i so skladbou sortimentu, ktorý v prípade geograficky bližších trhov je širší, keďže vzhľadom na logistické náklady je ekonomické uskutočňovať aj obchod s tovarom s nižšou kilogramovou hodnotou.

Veľký vplyv na priemernú cenu má vďaka svojmu významu export Slovenska na trh Nemecka. Pomerne vysoké dosahované hodnoty na kilogram tohto exportu ako aj bezkonkurenčná výška objemu podstatne vplýva na zvyšovanie priemernej dosahovanej kilogramovej hodnoty celkového exportu SR. Export do Nemecka je teda pre Slovensko kľúčový nie len z hľadiska objemu, ale aj z hľadiska dosahovaných cien. Kladných hodnôt dosahuje Slovensko aj v prípade USA, Číny a najvyššie ceny, až o 23 % v porovnaní so svetom, dosahuje Slovensko v Švajčiarsku.

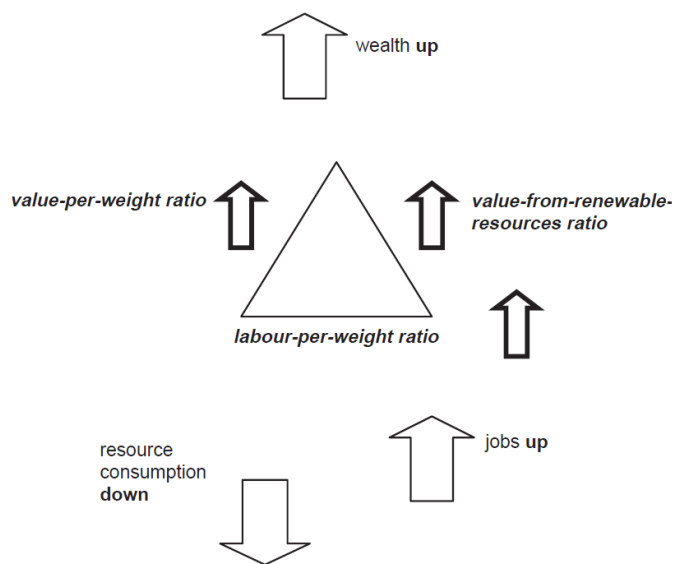
Na druhej strane najnižších cien exportov vyjadrených kilogramovou hodnotou v porovnaní s ostatnými trhmi dosahuje Slovensko v Rusku, na Ukrajine a v Turecku. Tieto údaje poukazujú na skutočnosť, že tam slovenské produkty musia byť predávané za nižšie ceny ako na ostatných trhoch sveta.

## **Cena za kilogram tovaru a produktivita ekonomiky**

Svojím inovatívnym prístupom Ahmad Lashkaripour (2020) analyzoval úlohu kilogramovej hodnoty tovaru, ktorú zohráva v medzinárodnom obchode. Zistil, že firmy sídliace vo vysokopríjmových ekonomikách majú tendenciu dodávať ťažšie varianty produktu, zatiaľ čo vzdialenejšie firmy majú tendenciu dodávať ľahšie varianty. Ťažšie varianty sú pritom spotrebiteľmi vnímané ako kvalitnejšie a sú pre spotrebiteľa príťažlivejšie. V svojom modeli Lashkaripour predpokladá, že hmotnosť zodpovedá až 60 % rozdielu v kvalite medzi výrobami.

Walter R. Stahel (2010) sa vo svojej práci zamerail na vzťah medzi produktivitou ekonomiky a hodnotou za kilogram produkcie. Kilogramovú hodnotu považoval za jednoduchý indikátor pre meranie ekonomickej produktivity zdrojov pri výrobe tovarov a služieb. Spotrebiteľom a producentom totiž poskytuje informácie o udržateľnosti konkurujúcich si tovarov priamo na mieste ich spotreby. Spolu s ukazovateľmi práca na kilogram (labour-per weight ratio) a hodnotou z jednotky obnoviteľnej energie (value-from-renewable resources ratio) predstavuje jeden s vrcholov Stahelovho trojuholníka udržateľnej konkurencieschopnosti (competitiveness sustainability triangle). Tento trojuholník považuje za predpoklad udržateľného rastu blahobytu v súlade so sociálnymi, ekologickými a ekonomickými podmienkami (Obrázok 1).

**Obr. 1** Stahelov trojuholník udržateľnej konkurencieschopnosti (competitiveness sustainability triangle).



Zdroj: Stahel, 2010

Stahel na základe dosahovanej hodnoty na kilogram produkcie roztriedil súčasné svetové ekonomiky do 3 kategórií:

1. Ekonomika doby kamennej
2. Priemyselná ekonomika
3. Výkonnostná ekonomika

Hromadný tovar (bulk goods) ako sú suroviny a poľnohospodárske produkty sú produktom ekonomiky doby kamennej. Smart riešenia, higt-tech hardvér, biotechnológie a nové materiály sú produktom výkonnostnej ekonomiky. Priemyselná ekonomika sa nachádza niekde uprostred. O čo väčšia časť produkcie je tvorená výkonnostnou ekonomikou, o to väčšia je podľa Stahela dlhodobá udržateľná konkurencia.

Aj v prípade Slovenska je pre rast celkového blahobytu a jeho udržateľnosť potrebné rozvíjať odvetvia, ktorých produkcia prináša viac ekonomických benefitov. Takéto slovenské tovary nachádzajú svoje odbytkiská vo väčšej miere v krajinách ako Nemecko, USA, Čína a Švajčiarsko. Naopak export do Turecka, Ruska a na Ukrajinu prináša z hľadiska dosahovanej kilogramovej hodnoty exportu najnižšie benefity.

## Záver

Export na jednotlivé trhy prebieha za odlišných cenových podmienok. S použitím údajov o objeme exportu a jeho hmotnosti je možné určiť priemernú cenu za kilogram komodity

vyvážanej na jednotlivé trhy a porovnať ju s priemernou kilogramovou cenou za rovnaký sortiment (komoditnú položku harmonizovaného systému) vyvážaný na ostatné svetové trhy. Analýzou údajov z 20 najvýznamnejších slovenských exportných trhov bolo zistené, že export do okolitých krajín smeroval za ceny nižšie ako sú priemerne dosahované na ostatných trhoch. Vyššie ceny za komodity získava Slovensko pri exporte do Nemecka, Číny, USA a Švajčiarska. Naopak najnižších priemerných kilogramových cien dosahujú slovenské komodity na trhoch Turecka, Ruska a Ukrajiny.

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