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of Doctoral Students and Young Scientists

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BOOK OF EXTENDED ABSTRACTS

FOREWORD

Dear ladies and gentlemen, dear doctoral students, let me sincerely welcome you all to Book of extended abstracts Scientia Iuventa 2022. The current year was the 17th opportunity for doctoral students and young scientists to present their research results at the conference Scientia Iuventa. The conference was organized by the Centre for Research and Development of Doctoral Students in cooperation with the Faculty of Economics of Matej Bel University in Banská Bystrica.

Scientia Iuventa 2022 reflected contemporary doctoral research in areas as Tourism, Business Economics and Management, Finance and Public Economics and Politics, not only here in Slovakia, but also abroad. The conference created space for multidisciplinary and mutual inspiration and getting to know the new and unknown. Scientia Iuventa became a platform where young people reveal their talent, move their research forward by gained advices and also add their value added to the scientific knowledge. The output of the conference is the Book of Extended Abstracts. The abstracts published in this way were thoroughly reviewed by the Scientific Committee for the scientific level and suitability of research results presented at the conference.

At the conference 22 papers were registered of which 18 were actively presented and 17 are published in this Book of extended abstracts. Moreover, participants gained possibility of preferential publishing of their paper in four scientific journals: Acta aerarii publici, Economic Review of Tourism, Journal of Economics and Social Research, and Statistika: Statistics and Economy Journal. All these represent international peer-reviewed journals that are respected in the academic community. Also, I would like to thank the organizers of this conference for their responsible approach, work effort and successful organization of Scientia Iuventa 2022.

Dear participants of Scientia Iuventa, on behalf of the Scientific Committee as well as the Organizing Committee, let me thank you for choosing our conference to present your results and I want to wish you all the best and good success in your research, study as well as in all other ways.

prof. Ing. Zdenka Musová, PhD.

Guarantor of the conference

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CURRENT STATE OF EWOM RESEARCH IN THE TOURISM SECTOR

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Keywords: Electronic word of mouth, eWOM, literature review, tourism.

JEL classification: L83, M31.

1 Introduction

The enhancement of the Internet, the popularity of e-Commerce and the extensive expansion of social media applications led to the emergence of electronic word of mouth (eWOM) (Henning-Thurau et al., 2004). Electronic word of mouth can be defined as any positive or negative statement made by potential, actual, or former customers about a product or company that is made available to a multitude of people and institutions via the Internet (Henning-Thurau et al., 2004, p. 39). It can also be demarcated as all informal communications directed at consumers through the Internet related to the usage or characteristics of particular goods and services or their sellers. This communication takes place between enterprises and consumers, as well as between consumers themselves (Litvin, Goldsmith, Pan, 2008, p. 461-462).

Interpersonal interaction in tourism is more pronounced than in other sectors, so the impact of eWOM in this sector is also more pronounced (Abd-Elaziz et al., 2015). Consumers in tourism increasingly rely on eWOM to seek information about tourism destinations, accommodations, or restaurants, and they increasingly share their experience with services they encountered during their visit (Liu et al., 2021). EWOM is even considered more trustworthy and reliable than marketing communication created by enterprises (Litvin, Goldsmith, Pan, 2008; Abd-Elaziz et al., 2015; Kim, Li, Brymer, 2016; Pang, 2021).

The aim of the paper is to present a literature review on the topic of eWOM in the tourism sector and learn about the current state of eWOM research in the tourism sector.

2 Material and methods

The literature review focusing on the studies on eWOM in the tourism sector was conducted by means of the snowball method in Science Direct and Google Scholar databases from December 2021 to January 2022. The keywords for the study search were eWOM, eWOM in tourism, eWOM and tourism destination and online review. 57 articles in journals and 3 conference papers were found. The publication period of the studies is 2008-2021.

3 Results

Electronic word of mouth has received intensive attention in literature for several years. Given the importance of the Internet and its impact on consumer behaviour, it is expected that interest in eWOM will continue to grow. In connection with the study of eWOM in tourism, theorists dealt with the impact of eWOM, eWOM-giving, and research of both of these dimensions. The authors focused on the impact of eWOM on consumer behavior when using tourism services (3), deciding to visit a tourism destination (13), deciding to revisit a tourism

destination (3), satisfaction with the tourism destination (1), choosing a hotel (3), booking a room in a hotel (2), trust in eWOM about hotel (2), reducing information asymmetry about hotel (1), willingness to pay for an accommodation (1) and choosing a restaurant (2). The authors also focused on the impact of eWOM on destination image (1), destination image, satisfaction with and loyalty to destination (1), online sale of hotel rooms (2), hotel performance (1), hotel efficiency measurement (1), and restaurant financial performance (1). The studies about eWOM-giving focused on the impact of motivation (5), emotions (4), aspects of hotel sustainability and satisfaction of consumers with it (1), hotel attributes (2) and Airbnb attributes (1) to write eWOM about tourism services, hotels, shared accommodation or restaurants. One study aimed at comparing consumer behavior in eWOM-giving focused on shared accommodation and hotels. The authors researched positive, negative, and neutral eWOM communications, focused on various platforms of eWOM and previous experience with eWOM and its effect on eWOM-giving. Authors who concentrated on eWOM-seeking and eWOM-giving researched it in connection with tourism destinations (2) and traveling (1), but also researched customer engagement in eWOM behavior (1). Some theorists also dealt with the impact of eWOM and management responses on choosing a hotel by consumers (1) and on hotel performance (1), the impact of management responses on further consumer behavior and subsequent evaluation of their hotels (1) and comparison of the quality of information on the online platforms TripAdvisor, Expedia, and Yelp (1).

4 Conclusions

With the ever-growing interest in the online environment, we anticipate that there will also be a growing interest in eWOM communication, and therefore it is important to find out how much influence it has on consumer decision, but also on the activities of enterprises of tourism. This article offers a review of the literature, namely 60 studies focused on eWOM in tourism. By conducting an overview of the studies, we were able to find an answer to the research question and thus fulfil the aim of the paper. The results suggest that the authors of their eWOM-related studies are more focused on consumer behaviour in tourism (51), both in terms of eWOM search or eWOM-giving. Only eight studies focused on the impact of eWOM communication on tourism enterprises of and one author examined the quality of the information provided through eWOM.

The limits of the paper represent the use of two databases, so the literature review contains only 60 studies. Further research in this area could focus on other studies and literature about the impact of eWOM on consumer behaviour or tourism enterprises.

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MARKETING SUPPORT OF SELECTED SPA FACILITIES IN THE CZECH REPUBLIC IN 2021

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Keywords : Spa, marketing, support.

JEL classification: I18, L88

1 Introduction

Since March 2020, the spa facilities in the Czech Republic have found themselves in a difficult economic situation due to the coronavirus pandemic, their operation was limited and, in some periods, they even had to completely close. The situation led the Czech government to adopting several measures aimed at partial compensation of the occurred losses. The critical situation affected not only the spa facilities themselves, but also the spa locations. The subject of this research is the marketing activities of entities providing spa services with the aim of filling the capacity of the spa, and the subsequent evaluation of the success of these marketing activities. The researcher focuses on three spa companies with different owners. The entities are Lázně Třeboň-Slatinné lázně Třeboň s.r.o.- owned by the municipality, Lázně Toušeň-Bulovka University Hospital owned by the state and Františkovy Lázně-Lázně Františkovy Lázně s.r.o.-a private legal entity. This research will see if the marketing activity of individual subjects and the subsequent measures taken contributed to mitigating the negative effects of the pandemic on the operation of spa and rehabilitation facilities.

2 Material and methods

Health care is one of the three basic motivations for participating in tourism with maintenance or improvement of health being the main motivation and is generally referred to as health tourism. Needless to say, the authors' approach to the definition and classification of health tourism differs (Smith, Puczkó, 2009, Georgiev, Vasileva, 2010). Georgiev and Vasileva, for example, divide health tourism into three groups - Balneotourism, Spa tourism and Wellness tourism - based on selected criteria. In the Czech environment, the division into health spa tourism, wellness tourism and medical tourism is more common. The importance of spas can be assessed from a number of perspectives, whether it is health (Attl, 2011, Hadzik, 2009), economic, cultural-social (Smith, Puczkó, 2009), environmental (Attl, Chalupa, Studnička, 2016, Plzáková, Crespo Stupková, 2019, Plzáková, Studnička, 2021) or regional (Attl, 2014, Štefko, Jenčová, Vašaničová) and so many authors deal with this issue.

Recently, a number of authors have focused on the effects of the coronavirus pandemic on spas, or rather on spa destinations and spa organizations. Of course, the authors mostly deal with the medical context of the coronavirus pandemic (Bushra, Qadir, 2021).

However, some authors address the broader context associated with the coronavirus pandemic. They monitor not only the direct impact of the coronavirus pandemic on spas (Attl, Pátek, 2021), but also note the possibilities of developing balneology as a science with the use of natural healing resources and the possibility of expanding the range of spa services with new, non-traditional treatment methods.

The primary source of information in this article is secondary statistics, mainly statistical data of the Czech Statistical Office (hereinafter „CZSO“) and other secondary sources of information. The statistical data of the Institute of Health Information and Statistics (hereinafter "IHIS") could not have been used because they are publicly available only until 2018. From a methodological point of view, it is important to understand the difference between CZSO statistical data on the one hand and IHIS on the other. While CZSO data include all residents at the spa, IHIS data are only for spa visitors who have been treated at the spa as patients. Another advantage of CZSO data is their availability down to the level of municipalities. Another source of information was a questionnaire survey conducted electronically and sent by e-mail to three spa facilities between January 5 and January 26, 2022. The analysis is focused primarily on the comparison of marketing activities. Furthermore, the author deals with the impacts on the operation of the spa and on the measures taken in connection with the coronavirus pandemic at the level of the top authorities of the Czech Republic.

3 Results

For the purpose of presentation of services, spa entities rely mainly on modern marketing tools, both electronic and printed (Table 1).

Table 1. Overview of main marketing activities

Spa location	Web	Facebook	Bulletin	Adver- tise- ment	Marketing plan	Costs 2021 in CZK
Slatinné lázně Třeboň	Yes	Yes (6751)	Yes (10 000 print, 7 000)	Yes	Yes	4.000.000,-
Slatinné lázně Toušeň	Yes	Yes (169)	No	Yes	No	500.000,-
Lázně Fran- tiškovy Lázně	Yes	Yes (8201)	No	Yes	No	1.000.000,-

Source: own procesing.

Based on a questionnaire, the website was evaluated as the most effective source of information for spa clients, and marketing activities mainly website promotion. All three researched entities use online booking and all subsequent marketing activities are also linked to the website. In the field of social networks, Facebook clearly leads, especially with regard to the average age of the user of this social network, who is in the vast majority a client of spa facilities. However, there is a difference in its use.

While Třeboň and Fran-tiškovy Lázně work with Facebook as one of the main tools of the presentation, Toušeň sees Facebook as marginal and insignificant with limited followers. The main focus of Toušeň marketing is directed towards its parent organization, the Bulovka University Hospital, is one of the largest hospitals in the Czech Republic and thus generating a sufficient number of spa clients.

The publication of its own printed magazine is carried out only in Třeboň, where the spa facility is owned by the municipality and this magazine is also a municipal magazine. The overall concept of marketing activities is very interesting. While Třeboň's approach is professionalized and the entity has its own marketing department, which develops a marketing plan for each calendar year, in Toušeň marketing is handled by the director and the creation of promotional materials is external.

The questionnaire survey examined whether spa entities also cooperate with other professional organizations such as the Czech Tourist Board-CzechTourism, the Association of Medical Spas of the Czech Republic and the Association of Spas in the Czech Republic. Based on the evaluation of the questionnaires, almost non-existent cooperation with the CzechTourism agency was found on joint marketing activities within the spa support, despite the fact that the agency offered a discount voucher of CZK 4,000 per person as part of tourism support. It was also found that the Association of Medical Spas does not develop any marketing activities and is more of a statistical service and lobbying organization. Also in the Association of Spas there is no common marketing strategy and we can see more of the competitive environment of individual places than the willingness to cooperate together.

Marketing activities are implemented with the aim of using the available capacity of spa entities to their fullest. In this context, data on spa occupancy in 2021 can be found out (Table 2).

Table 2. Average occupancy of the examined spas in 2021 in%

Month	1	2	3	4	5	6	7	8	9	10	11	12
Occupancy	10	19	5	0	49	97	83	93	99	95	80	46
Comprehensive and contributory care	62	54	67	0	71	38	31	19	21	26	32	0
Selfpayers	38	46	33	0	29	63	69	81	79	74	68	100

Source: own processing

Table 2 clearly shows uneven use of spa capacity, especially due to the coronavirus pandemic. Although the year 2021 was less critical for the spas than 2020, in April they were closed. With regard to the support programs announced by the Government of the Czech Republic, marketing activities were involved in two waves, in April and May, when the primary use of the spa was for patients with post-covid status i.e., for comprehensive and contributory spa care, and then in June and July to fill the capacity of guests using spa vouchers, both Covid-Lázně and vouchers for health professionals i.e., self-payers.

4 Conclusions

Since its beginning, the coronavirus pandemic has had a negative impact on Czech spas and spa tourism. This is primarily reflected in the significant decrease of foreign guests (non-residents). In the case of Třeboň and Františkovy Lázně, their absence in the last two years has been especially noticeable, considering the fact that until 2019 non-residents were the most frequent visitors, and so the impact is particularly strong.

The solution of the situation lies primarily in the individual spa organizations. They take a number of their own measures in the area of product offer, marketing, safety, etc. However, addressing the impacts of the coronavirus pandemic on Czech spas is a problem that re-quires a comprehensive solution in which not only the spa locations and organizations, but also selected European bodies and organizations, state administration and self-government bodies in the Czech Republic as well as relevant professional organizations, are going to participate. Without their help, solving the situation would probably prove to be too difficult for the spa locations and spa organizations themselves. In this respect, marketing activities do not have the potential to compensate for the loss of clients, as various anti-epidemic measures limit the use of spas, and so marketing is mainly focused on minimizing losses. The solution is a clear cooperation of spa companies, local governments and branch organizations.

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VISITOR SATISFACTION IN DESTINATIONS

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JEL classification: L83, Z30

1 Introduction

Customer satisfaction research has been a topic for several decades and the authors are considering satisfaction from different angles. Satisfaction is perceived as the difference between what the customer expects and what the customer receives (Oliver, 1980; Oliver, Swan 1989, Duke, Persia 1996; Ban, Kim, 2019; Padma, Ahn, 2020) and as the customer's ability to evaluate their consumption (Martilla, James, 1977; Sirgy, 1984, Anderson, Fornell, Lehmann 1994; Subash, Raju, 2015; Wei, Kim, 2022). Visitor satisfaction in tourism is closely linked to the tourism product. The product of tourism is any offer (service, product) that satisfies the needs or wishes of the customer (Sukiman et al., 2013). We encounter a strong need to identify customer expectations in relation to the tourism experience. Failure to provide the expected quality often leads to poor performance of tourism businesses. On the other hand, exceptional service quality is a source of differentiation and competitive advantage of the company (Mmutle, Shonhe, 2017). According to Buhalis (2000), destinations are at the heart of a tourism product that offers consumers an integrated experience. Understanding the relationship between the products and attributes of the destination and the perception of quality, value and satisfaction of visitors helps destinations cope with the increasingly competitive tourism environment. Exploring this relationship provides an opportunity to evaluate how visitors perceive satisfaction, quality and value, and how these factors combine to influence future purchasing decisions (Oppermann, 2000). Additionally, visitor satisfaction is generally considered a key factor in the sustainability and competitiveness of the destination (Stumpf et al., 2021). Therefore, the aim of this paper is to present a literature review on the role of destination management organizations in achieving visitor satisfaction. Our paper addresses the following research questions: RQ1. What is the current state of research of destination management organizations as providers of visitor satisfaction? and RQ2. Which indicators of visitor satisfaction in the destination are the most important according to the studies?

2 Material and methods

The literature review was conducted throughout December 2021 and January 2022. The Scopus and Web of Science databases were selected for the review, as they are the largest and

most used bibliographic scientific databases. As the selected databases are not full-text. The full-text articles were further searched via search engines. Papers selection was based on keywords selected during the literature review. The keywords were examined in article titles, abstracts and keywords in both databases. In order to answer our first research question, the keywords “tourists satisfaction” and “destination management” were used in the Scopus database, which resulted in an overview of 55 articles. The keyword “destination management” was used because the review is focused on destination management (destination management organizations), not just on the destinations themselves. The same keywords were used in the WOS database, but only 15 articles were found in this combination. We therefore adjusted the keywords to "touris* satisfaction" and "destination management", from which we obtained a set of 51 articles. After excluding unrelated articles and papers that were not directly related to the identification of visitor satisfaction indicators, our sample from Scopus consisted of 41 articles. Together with the results from the WOS database and after excluding the same papers, our final sample consisted of 56 articles. The publication period of our research sample is 2003 - 2021. Based on the contribution of the authors Chi and Qu (2009), we supplemented selected articles with 2 more that were published before 2003. For the purpose of this paper, we wanted to analyse only one combination of keywords and use only the Scopus and WOS databases to get an overview of the researched issue. By using more keywords combinations, such as “visitor satisfaction”, “destination” or by using more databases, we would get a larger range of articles to analyse and not just an overview of the research we were trying to achieve.

3 Results

Despite the growing importance of examining visitor satisfaction with the destination, the authors do not pay much attention to this issue. To answer our RQ1, the articles are mainly focused on monitoring visitor satisfaction through satisfaction with accommodation and catering facilities in the destination, infrastructure of the destination, employees and residents, sustainable tourism, attractions and image of the destination. To answer our RQ2, the authors of the case studies examined visitor satisfaction most often by examining satisfaction with accommodation and catering facilities and the infrastructure of the destination. Services provided in tourism facilities can significantly affect the overall impression of the stay in the destination and consequently the satisfaction of visitors, as well as insufficient infrastructure (poor access to the destination, the attractions in the destination). Another important part of visitor satisfaction are employees in tourism facilities and local residents. Friendly, courteous and educated staff enhance the visitors' experience and the interaction with them and residents often become a strong memory of staying in the destination. According to some authors, visitor satisfaction is linked to sustainable tourism. Visitors are becoming more aware of the environmental and social environment in which tourism is developing, so they are looking for destinations whose concept of development is in line with sustainable tourism. The last indicator of visitor satisfaction which occurs more frequently in the articles is the attractiveness of tourism and the image of the destination. Among the attractions, we can include natural attractions, possibility of sports activities, participation in events, the existence of cultural entertainment facilities, etc. Our study contributes to the research of the role of destination management organizations in ensuring visitor satisfaction and establishes an opportunity for further research of visitor satisfaction in the destination.

4 Conclusions

With the rapid development of tourism (*pre COVID-19*), there is pressure on the destination competitiveness. Visitor satisfaction is an important part of the competitiveness and if a management organization operates in the destination, its activities have an impact on visitor satisfaction. By conducting the literature review, we have demonstrated that the current research focuses primarily on examining visitor satisfaction with accommodation and catering facilities in the destination. Very few studies are oriented at assessing the visitor satisfaction with the overall experience in the destination. Our paper can be used as a basis for further literature research of the role of a management organization as a facilitator of visitor satisfaction in the destination. The results of our study are limited to the use of only two databases and a small number of combined keywords, so we highly recommend further research.

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ACCESSIBLE TOURISM – A LITERATURE REVIEW

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Keywords: Accessible tourism, disability, literature review.

JEL classification: L83, Z32

1 Introduction.

In developed countries, accessibility is growing rapidly and is gaining significant importance in the tourism industry. This trend is partly a result of empathy, but also awareness of the significant business potential of accessibility (Gassiot, Prats, Coromina, 2018; Gonda, 2021). Nevertheless, there is still a great gap between supply and demand, i.e., access needs and access provisions (Naniopoulos, Tsalis, Nalmpantis, 2016). By accessibility, we can understand a barrier-free access to hotels, restaurants, tourist attractions, etc. It also means financial accessibility for low-income families, seniors, and socially disadvantaged people (Linderová, Janeček, 2017). In 2009, Darcy and Dickson defined accessible tourism as a form of tourism that enables the people with access requirements, including mobility, vision, hearing, and cognitive dimension of access, to function independently and with equity and dignity through the delivery of universally designed tourism products, services, and environments. Accessible tourism considers the full human life cycle and the fact that anyone, depending on their physical condition and the stage of family life, can benefit from certain types of facilities. After all, it provides an opportunity for everyone to enjoy leisure without barriers, not only for people with disabilities (Zajadacz, 2014; De La Fuente-Robles et al., 2020). The aim of this paper is to present a review of the academic literature on accessible tourism. Analysis allows us to identify the limitations of current studies, as well as future trends and possibilities. Our paper addresses the following research question: What is the current state of the research on accessible tourism?

2 Material and methods

The literature review was performed in January 2022. The Scopus and Web of Science databases were selected for the review as they are the most commonly used scholar citation databases for field delineation (Strozzi et al., 2017). To find the right articles and thus answer our research question, three keywords related to the concept of accessible tourism were used. The chosen keywords are “accessible tourism”, “disab” and “tourist”. The keywords were searched in article title, abstract as well as in keywords. We searched only for open access articles. No restrictions were specified regarding the date of publication or location of the research. The sample based on the used keywords consisted of 69 articles in the Scopus database.

Since only three articles were found in the WoS database with the given keyword combination, we needed to separate them. Firstly, we had to search for articles using the keyword “accessible tourism”, and then using the keyword combination “disab” and “tourist”. Finally, the search produced 34 articles in the WoS database. After excluding unrelated articles, duplicates, and articles in a language other than English, the final sample consisted of 66 specific works on accessible tourism from both databases. In order to analyse the bibliography in depth a comparative method was applied.

3 Results

In searching the answer to our research question, based on the review of available literature, we found out that the number of studies concerning accessible tourism had a growing trend between 2008 and 2021. To be more specific, 2020 was the best year in terms of the number of published articles (13), followed by 2021 (12). The most frequently researched issue was finding ways to improve accessibility of tourism for people with disabilities (21) mostly in a specific tourist area or destination (7). Only four papers were concentrated on improving the accessibility of tourist attractions. Beside development of accessibility in some studies, the human and social approach of accessible tourism was also examined (16). Six of these studies focused on perception, attitudes, experiences of workers, owners or managers of tourist facilities and tour guides. On the demand side, eight authors focused mainly on needs, expectations, motivations, and experiences of people with disabilities. It was mostly a qualitative survey conducted by the method of semi-structured in-depth interview (10). Two papers even dealt with discrimination of customers with disabilities. Most of the reviewed studies were focused on people with disabilities in general, but some papers had their own target groups – people with reduced mobility/physical disabilities (10), people with visual impairments (3), people with special needs (1), seniors/elderly tourists with assistive needs (6), people with disabilities using wheelchair (1), families with disabled children/families with children diagnosed with autism spectrum disorder (2).

4 Conclusions

The literature review has allowed us to observe how the research on accessible tourism comes of age. According to our results, we can assume that the interest in accessibility in the tourism industry is quite a young and evolving research field. The study findings revealed the main research topic on accessible tourism and summarized the target group of visitors. In connection with accessible tourism, we consider the improvement of the accessibility of tourist attractions as a research gap. More attention should be also paid to people with sensory impairment and families with disabled children. Our paper can be used as a basis for knowledge development and further literature research in this field. However, this study also has some limitations, for example a sampling frame, there may be more valuable research on accessible tourism, but it has not been identified as it is not written in available language and also articles could be integrated from multiple sources. Another limitation of our study is the use of insufficient combination of keywords.

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SMART TOURISM DESTINATION COMPETITIVENESS: LITERATURE REVIEW

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Keywords: Smart tourism destination, competitiveness, literature review.

JEL classification: L83, Z30

1 Introduction

The concept of a smart tourism destination has been defined from various perspectives and in multiple ways by researchers (Buhalis, Amaranggana, 2013; Shaffie et al., 2019). Smart tourism development has grown significantly in recent years. It is important to develop smart destinations as a subsystem of smart city with multi-dimensional ecosystem and multi-faceted construct of smartness with different beneficiary groups. (Boes, Buhalis, Inversini, Morrison, Gretzel, 2016). With the growing competition between destinations, the modelling of destination competitiveness can be considered as an essential tool for the development of tourism destinations. However, the existing model can not be used for smart tourism destinations properly, because Crouch and Ritchie's model (1999) did not consider information and communication technologies, which were not sufficiently developed and did not play the dominant role in tourism at that time (Koo, Shin, Gretzel, 2016). Therefore, the aim of this paper is to present a literature review on the competitiveness of smart tourism destination. Based on the literature review, we found that there are studies on smart tourism destinations, but not many of them focus on competitiveness. Our paper addresses the following research questions. RQ1. What is the current state of the research on smart tourism destinations? RQ2. Who are the most influential authors in this area of research?

2 Material and methods

The literature review was conducted throughout January and February 2022. The Scopus database was selected for the review, as it is the largest bibliographic scientific database in the world. Papers selection was based on keywords identified during the literature review. Keywords were researched in article title, abstract and keywords in the Scopus database. In order to answer our first research question, the keyword "smart tourism destination" was researched in combination with the keyword "tourism destination competitiveness". The sample based on the combination of the mentioned keywords consisted of 65 articles and 5 conference papers. After excluding unrelated articles, if they were not explicitly focused on the topic, the sample consisted of 65 papers.

These papers were considered relevant for our research and created our final sample. For the publication period of our research sample were selected the years 2016-2022. For the purpose of this paper, we wanted to analyse only one combination of keywords and use only one database to get an overview of the researched issue. By using more basic keywords, such as “tourism competitiveness”, or by using more databases, we would get a larger range of articles to analyse and not just an overview of the research we were trying to achieve.

3 Results

Despite the growing importance of measuring the progress of smart tourism destinations, only little attention was paid to the competitiveness of smart tourism destinations. To answer our RQ1, based on our literature review, there were 14 papers focused on tourism stakeholders, 22 papers were about the structure of tourism destinations, 34 papers paid attention to the processes in smart tourism destinations, 28 papers focused on technologies, policies were characterized in 3 papers, and measurements were mentioned in 7 papers. Of all the papers, only 13 were focused and explicitly directed on smart tourism destination competitiveness, of which two included models and indicators of smart destination progress measurement. In 2022, authors mainly focused on Smart ecosystems (5), Sustainability (2), Management and Social media (2). In 2021 the research was oriented towards analysis of data in tourism (4), smart cities (5), information and communication technologies (5). Most of the papers in 2020 were focused on smart tourism destinations from the perspective of tourists and residents (9) and sustainability and competitiveness (8). Some papers also dealt with marketing (1) and Covid-19 (2). In 2019 and 2018, authors mostly dealt with tourism management (5) and innovation and technologies (10). Lastly, in 2017 and 2016 studies focused on destination competitiveness (2) and the role of technology (4). To answer RQ2: The most influential authors in the field of smart tourism destination competitiveness are Buhalis, D. (4), Celdrán-Bernabeu, M.A. (4) Ivars Baidal, J. A. (5) and Femenia-Serra, F. (4). Our study contributes to the smart tourism destination and its competitiveness by a literature review and points to the importance of further research of this topic.

4 Conclusions

The aim of this paper was to provide an overview of the literature focused on smart tourism destinations competitiveness. Processing 65 papers, we were able to answer the research questions and thus fulfill the aim of the paper. The topics that were examined by the authors included components, tourism stakeholders, tourism destination processes, smart destination structure, destination policies and measurements. The academic view of smart tourism development is in its infancy and empirical research is currently rare (Gretzel, Scarpino-Johns, 2018). Studies on smart tourism destinations competitiveness have shown that although smart destinations attract a lot of interest in tourism, they are not sufficiently conceptualized and do not have a common framework for understanding their competitiveness. The results of our study are limited to the use of a single database and a small number of combined keywords, so we highly recommend further research. In addition, we agree with the opinion of some authors (Buhalis, 2020) that researchers in future should take into consideration ambient intelligence tourism as a next step in the development of smart tourism destination.

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BALANCED SCORECARD IN THE SYSTEM OF MANAGEMENT AND PERFORMANCE MEASUREMENT OF THE HOTEL

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Keywords: Balanced Scorecard (BSC), hospitality, hotel, literature review.

JEL classification: L83, Z30

1 Introduction

Profit – is it the mean to reach the goal or the goal itself? The answer to this question forms the foundation of many performance measurement tools that promise to measure as per the organization's needs. Practitioners and academicians alike keep forgetting that profit is merely the means to an end and not the end itself (Spiller, 2000). Given this in mind, a renowned performance measurement tool, balanced scorecard (BSC), has gained quite a lot of prominence since its induction by Kaplan and Norton in 1992 (Elbanna, Fatima, 2020). Although there has been a wide use of the balanced scorecard (BSC) in a range of industries, little is known about the design and implementation of its overall framework in the hospitality industry (Elbanna, 2015). In Hoque's (2014) review of 181 articles covering 20 years of studies on the Balanced Scorecard between 1992 - 2012, none of these studies was published in a tourism and hospitality journal or addressed the hospitality industry, which shows a clear gap when it comes to the use of integrative theoretical frameworks of Balanced Scorecard in this industry. Similarly, in their review of research published on hotel performance from the Balanced Scorecard perspective in the hospitality and tourism journals over 20 years, Sainaghi Phillips, Corti (2013) have concluded that "no broad theoretical frameworks have yet emerged". They continue to add that scholars need to do research beyond specific perspectives of the Balanced Scorecard and to understand the relationships between these perspectives. In the same vein, it was argued that there is an apparent schism between the Balanced Scorecard theory and its application in the hotel sector (McPhail et al., 2008) and that the literature relating to Balanced Scorecard applications in this sector is weakly developed (Evans, 2005). Therefore, the aim of this paper is to present a literature review on the topic of Balanced Scorecard method in a hotel. According to the research, we found that there are quite a lot of studies focused on Balanced Scorecard in general, so we focused in this study on Balanced Scorecard in hospitality, specifically in hotels. Our paper addresses the following research question. RQ: What is the current state of the research on the Balanced Scorecard method in hotels?

2 Material and methods

The literature review was conducted throughout December 2021 and January 2022. The Scopus and Web of Science databases were selected for the review, as they are the largest

bibliographic scientific databases in the world. Papers selection was based on keywords, identified during the literature review. A keyword search of “balanced scorecard” or as an abbreviation “BSC” and “tourism” or “travel” or “hospitality” or “hotels” or “hotel” was utilized. Keywords were researched in article title, abstract and keywords in the Scopus and Web of Science databases. In this literature review process, a total of 104 relevant articles were shortlisted upon applying the above criteria. After excluding unrelated articles and conference papers, i.e., if they were not explicitly oriented towards hotels or hospitality as a part of tourism in common, the sample consisted of 65 papers related to hospitality, which were further reduced to 54 papers by evaluation of their connection to balanced scorecard in hotels. The publication period of our research sample is 1995 – 2022. In order to analyse the bibliography in depth a comparative method was implemented.

3 Results

The field of performance itself and one of its methods named Balanced Scorecard is clearly attracting increasing attention by researchers. We focused on each of the four Balanced Scorecard perspectives. The results of our literature review suggest a relative stability in papers focusing on financial performance with more than 29% of the sample (16). Customer indicators represent the most researched area, attracting less than 26% of the sample (14). Results confirm that for firms with a high level of fixed assets and costs, revenue management represents a priority for linking decisions and results. Internal business process indicators represent the least studied research area with more than 20% of the sample (11). However, in the past 10 years this perspective appears to be increasing its relative weight. Innovation and learning indicators are widely used and in 2008 account for more than 50% of the sample, but for the whole period about 24% of the sample (13).

Upon focusing on the research topics and research objectives, we were able to categorize the empirical studies into the following four trends, namely, Balanced Scorecard adoption and implementation, sustainability and Balanced Scorecard, antecedents and consequences of Balanced Scorecard, and Balanced Scorecard as a framework. First, Balanced Scorecard adoption and implementation has been the second most prominently researched topic (17). Balanced Scorecard adoption and implementation remains a topic of interest to researchers. Researchers have actively tried to examine ways in which organizations can utilize Balanced Scorecard to realize their sustainability strategies. In doing so, they have given rise to a new stream of research trending under the name of sustainability Balanced Scorecard. Second, Sustainability has been incorporated into the Balanced Scorecard in two different ways (14): within the existing four perspectives (6) or as a stand-alone perspective where the latter was a more frequent occurrence (8). Third, the most prominent research topic that was observed in Balanced Scorecard literature relates to the examination of Balanced Scorecard’s antecedents and consequences (19). Fourth, few researchers utilized Balanced Scorecard as a framework with other decision-making, performance metric and strategic control concepts (4).

4 Conclusions

We perceive the fundamental fact that the management systems that were effective in many hotels in Slovakia in the last century, may not suit the current situation and the period of the upcoming years in many aspects. Therefore, there is currently even more pressure on the tourism companies to look for new approaches to corporate governance.

These should be approaches that explicitly allow the company to respond more flexibly to such extreme changes in the external environment. Continuous improvement of the Balanced Scorecard system through its extensive use in foreign practice as well as by improving knowledge in the scientific community in general and in the tourism sector in particular, this system can become more established in our conditions and become a significant and commonly used tool of corporate management. Our paper can be used as a basis for further literature research in the field of research of Balanced Scorecard as a method of performance measurement in hospitality, not only for hotels.

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A SYSTEMATIC REVIEW OF DESTINATION BRAND PERSONALITY

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Keywords: Systematic Review, destination brand personality, conceptual framework, methods, quantitative statistics.

JEL classification: O10, O20

1 Introduction

Destination personality is becoming a more viable metaphor for building destination brands when the global market is more increasingly competitive. In order to build a powerful destination brand, it is necessary for destination managers to understand tourist perceptions of places, and craft a unique destination personality and develop a rich, relevant brand personality since destination personality is a potential predictor of tourists' buying behaviors (Hosany, Ekinci, Uysal, 2006; Usakli & Baloglu, 2011). Therefore, the concept of destination brand personality is more popular among marketers at national, regional, and local levels, as it helps to define the appropriate branding strategies and target them to the right audiences.

Plummer (2000) states that brands can demonstrate specific and diversified "personality characteristics" in a similar way to humans. In fact, "brand personality reflects how people feel about a brand as a results of what they think the brand is or does, the manner by which the brand is marketed, and so on" (Keller, 2003). In the other words, brand personality is defined as "the set of human characteristics associated with a brand" (Aaker, 1997). When this concept is applied in the tourism context mainly from a tourist point of view, destination brand personality is stated by Ekinci and Hosany (2006) as "the set of human characteristics associated with a destination as perceived from a tourist rather than a local resident viewpoint".

Although destination personality and brand marketing have become increasingly important, there is still a lack of comprehensive analysis of this extant literature synthesizing the current state of knowledge and postulating future research directions. This study addresses this gap by utilizing a systematic literature review approach.

2 Material and methods

The main chosen databases for the research are two world-leading and competing citation ones, namely Web of Science and Scopus. In the scope of this study, I decided to do the systematic review of the articles in English published from 2005 to 2020 in the journals of Hospitality and Tourism. There are 23 and 77 English-written papers published on outstanding journals during the past 15 years were searched in Web of Science and Scopus databases respectively. Quick skimming on the title and abstract of 98 found articles after excluded the duplicates, there are 67 articles that meet the identified research objectives. However, only 58 full-text papers were found.

TS="DESTINATION BRAND PERSONALITY" OR TS="DESTINATION PERSONALITY" OR TS="PLACE PERSONALITY" OR TS="COUNTRY PERSONALITY" OR TS="CITY PERSONALITY"

Refined by: DOCUMENT TYPES: ARTICLE, WEB OF SCIENCE CATEGORIES: HOSPITALITY LEISURE SPORT TOURISM, LANGUAGES: (ENGLISH), PUBLICATION YEARS: 2005-2020.

Figure 2. Searched query in Web of Science

TITLE-ABS-KEY ("destination brand personality") OR TITLE-ABS-KEY ("destination personality") OR TITLE-ABS-KEY ("place personality") OR TITLE-ABS-KEY ("country personality") OR TITLE-ABS-KEY ("city personality") AND (EXCLUDE (PUBYEAR, 2021) OR EXCLUDE (PUBYEAR, 2004) OR EXCLUDE (PUBYEAR, 2003) OR EXCLUDE (PUBYEAR, 2002) OR EXCLUDE (PUBYEAR, 2001) OR EXCLUDE (PUBYEAR, 2000) OR EXCLUDE (PUBYEAR, 1993) OR EXCLUDE (PUBYEAR, 1991)) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (LANGUAGE , "English"))

Figure 2. Searched query in Scopus

From the study results, destination brand personality is one of the concepts that received the attention of many researchers since the 2006. There is a tight relationship between Destination brand personality and its antecedents, moderators and outcomes shown in this article. This paper contributes to the existing literature on destination brand personality by extending the discussion with the conceptual model of this concept and the antecedents, moderators and outcomes. The research created the best foundation for future researches in the destination brand personality field.

3 Results

3.1. Integrated model of destination brand personality

It is clear that the current trends of destination brand personality research include three main directions. First of all, several studies have developed the scale of Destination Brand Personality by adopting the Aaker's Brand Personality Scale (BPS) or the 'Destination Personality Scale (DPS) of D'Astous & Boujbel (2007) or even building up the own scale through qualitative research and combining different approaches. Next, the comparison between different perspectives of destination personality also attracts the researchers' attention. Last but not least, the number of studies put their interests in investigating the relationship between DBP & tourists' behavioral intention; or the effect of DBP to Overall Image, Destination Satisfaction, Self-Congruity, etc. and figuring out the role of moderators.

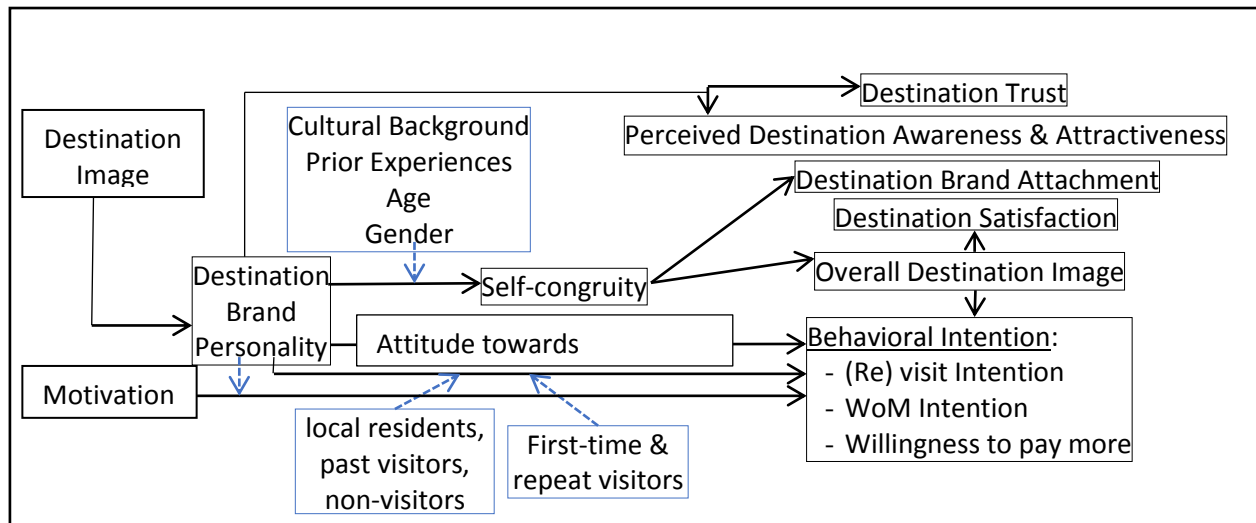


Figure 3. Relationships between Destination Brand Personality and other variables

3.2. Methodological characteristics of the sample

There are 41 quantitative researches conducted to investigate the personality traits of tourist destinations and figure out the relationship between destination brand personality with other variables. Questionnaire is the main tool used to collect data from the participants. Data analysis of these studies is exploratory factor analysis (EFA), confirmation factor analysis (CFA), and structural equation modeling (SEM).

Table 1. Articles applying quantitative methods

No.	Title	Authors	Published Year	Publisher
1	Destination image and destination personality	Sameer Hosany Yuksel Ekinci Muzaffer Uysal	2006	International Journal of Culture, Tourism and Hospitality Research
2	Destination image and destination personality: An application of branding theories to tourism places	Sameer Hosany, Yuksel Ekinci, Muzaffer Uysal	2006	Journal of Business Research
3	Destination Personality: An Application of Brand Personality to Tourism Destinations	Yuksel Ekinci and Sameer Hosany	2006	Journal of Travel Research
4	Destination Brand Personality: Visitor Perceptions Of A Regional Tourism Destination	Laurie Murphy, Pierre Benckendorff & Gianna Moscardo	2007	Tourism Analysis
5	Host Image And Destination Personality	Yuksel Ekinci, E. Sirakaya-Turk & Seyhmus Baloglu	2007	Tourism Analysis

No.	Title	Authors	Published Year	Publisher
6	Using Brand Personality to Differentiate Regional Tourism Destinations	Laurie Murphy, Gianna Moscardo, & Pierre Benckendorff	2007	Journal of Travel Research
7	Positioning countries on personality dimensions: Scale development and implications for country marketing	Alain d'Astous, Lilia Boujbel	2007	Journal of Business Research
8	Linking Travel Motivation, Tourist SelfImage and Destination Brand Personality	Laurie Murphy , Pierre Benckendorff & Gianna Moscardo	2007	Journal of Travel & Tourism Marketing
9	The relevance of visitors' nation brand embeddedness and personality congruence for nation brand identification, visit intentions and advocacy	Nicola E. Stokburger-Sauer	2011	Tourism Management
10	From Destination Image to Destination Loyalty: Evidence From Recreation Farms in Taiwan	Chyong-Ru Liu Wei-Rong Lin Yao-Chin Wang	2012	Journal of China Tourism Research
11	A closer look at destination: Image, personality, relationship and loyalty	Ching-Fu Chen, Sambath Phou	2013	Tourism Management
12	Toward The Perspective Of Cognitive Destination Image And Destination Personality: The Case Of Beijing	Karen L. Xie & Jin-Soo Lee	2013	Journal of Travel & Tourism Marketing
13	Destination Image and Brand Personality of Jamaica: A Model of Tourist Behavior	Seyhmus Baloglu, Tony Leonard Henthorne & Safak Sahin	2014	Journal of Travel & Tourism Marketing
14	The role of destination personality in predicting tourist behaviour: implications for branding mid-sized urban destinations	Artemisia Apostolopoulou & Dimitra Papadimitriou	2014	Current Issues in Tourism
15	Destination Personality, Affective Image, and Behavioral Intentions in Domestic Urban Tourism	Dimitra Papadimitriou, Artemisia Apostolopoulou, & Kyriaki (Kiki) Kaplanidou	2015	Journal of Travel Research
16	Impacts of city personality and image on revisit intention	Hong-bum Kim Sanggun Lee	2015	International Journal of Tourism Cities
17	Length of Stay: A Case of Northern Norway	Nina K. Prebensen, Mehmet Altin & Muzaffer Uysal	2015	Scandinavian Journal of Hospitality and Tourism

No.	Title	Authors	Published Year	Publisher
18	Achieving tourist loyalty through destination personality, satisfaction, and identification	Magnus Hultman Dionysis Skarmas Pejvak Oghazi Hooshang M. Beheshti	2015	Journal of Business Research
19	Nonutilitarian Tourism Destination Positioning: A Case Study in China	Ying Qu & Hailin Qu	2015	International Journal of Tourism Research
20	Perceived images and vocations of local territorial systems: implications for place branding strategies	Giovanni Pino Gianluigi Guido Alessandro M. Peluso	2015	Journal of Product & Brand Management
21	Restrictions on the use of the Aaker model in the measurement of city brand personality: The sender's perspective	Ewa Glińska Oleg Gorbaniuk	2015	Place Branding and Public Diplomacy
22	South Korea's Medical Tourism Destination Brand Personality and the Influence of Personal Values	Michael Guiry & David G. Vequist IV	2015	Asia Pacific Journal of Tourism Research
23	The Benefits of Similarity between Tourist and Destination Personality	Magdalena Bekk, Matthias Spörrle, & Joachim Kruse	2015	Journal of Travel Research
24	Experience-based Brand Personality as a Source of Value Co-creation: The Case of Lofoten	Per Ivar Seljeseth & Tor Korneliussen	2015	Scandinavian Journal of Hospitality and Tourism
25	Destination Brand Personality: An Application to Spanish Tourism	Alejandro Gómez Aguilar, María Jesús Yagüe Guillén & Nieves Villaseñor Roman	2016	International Journal of Tourism Research,
26	Brand personality and culture: The role of cultural differences on the impact of brand personality perceptions on tourists' visit intentions	Kurt Matzler, Andreas Strobl, Nicola Stokburger-Sauer, Artur Bobovnický, Florian Bauer	2016	Tourism Management
27	Country Personality Scale: Is a Five-dimensional Model a Better Methodological Instrument?	Carlos Manuel Súa Burcio Rui Vinhas Da Silva Maria de Fátima Salgueiro	2016	Tourism Management
28	Examining the role of destination personality and self-congruity in predicting tourist behavior	Dr. Vikas Kumar	2016	Tourism Management Perspectives

No.	Title	Authors	Published Year	Publisher
29	The impact of congruence between self-concept and destination personality on behavioural intentions for visiting an Islamic-historical destination	Khazaei Pool, Javad ; Khodadadi, Masood; Asadi, Ali	2016	Tourism and Hospitality Research
30	Examining the role of destination personality and self-congruity in predicting tourist behavior	Dr. Vikas Kumar	2016	Tourism Management Perspectives
31	Destination brand personality and destination brand attachment - the involvement of self-congruence	Zhuowei (Joy) Huang, Chaozhi Zhang & Jing Hu	2017	Journal of Travel & Tourism Marketing
32	Achieving destination advocacy and destination loyalty through destination brand identification	Vikas Kumar & Arun Kumar Kaushik	2017	Journal of Travel & Tourism Marketing
33	Destination personality and destination image	Nizar Souiden Riadh Ladhari Nour Eddine Chiadmi	2017	Journal of Hospitality and Tourism Management
34	How Young Tourists Are Motivated: The Role Of Destination Personality	Jing (Bill) Xu And Pimtong Tavitiyaman	2018	Tourism Analysis
35	Marketing destinations: the impact of destination personality on consumer attitude	Seyedamir Sharifsamet, Hyun Seung Jin & Brett Martin	2018	Journal of Strategic Marketing
36	Personality attributes of botanic parks and their effects on visitor attitude and behavioural intentions	Vanessa Ann Quintal, Michael Lwin, Ian Phau and Sean Lee	2018	Journal of Vacation Marketing
37	An Empirical Study about the Influence of Country Personality and Product Involvement on Consumer's Purchase and Visit Intentions	Ana Sousa, Helena Nobre, Minoo Farhangmehr	2018	Journal of Asian Finance, Economics and Business
38	Recognise me from outside to inside: Learning the influence chain of urban destination personalities	Chen Zhang, Zhenfang Huang, Fangdong Cao, Xiaoyan Chen	2018	Tourism Management
39	Destination Personality, Destination Image, and Intent to Recommend: The Role of Gender, Age, Cultural Background, and Prior Experiences	WooHyuk Kim, Kristin Malek, NamJo Kim & SeungHyun "James" Kim	2018	Sustainability
40	The role of functional associations in building destination brand personality: When official websites do the talking	Sara Vinyals-Mirabenta, Mihalís Kavaratzisb, José Fernández-Caviaa	2019	Tourism Management

No.	Title	Authors	Published Year	Publisher
41	The Effects of Destination Brand Personality on Chinese tourists' Revisit Intention to Glasgow: An Examination across Gender	Shaohua Yang, Salmi Mohd Isa, T. Ramayah, Ramona Blanes & Shaian Kiumarsi	2020	Journal of International Consumer Marketing

Only 5 qualitative researches were conducted in order to review the evolution of the concept “destination personality”, or examine the projected destination personality through the content analysis.

Table 2. Articles applying qualitative methods

No.	Title	Authors	Published Year	Publisher
1	Mapping Destination Personality in Cyberspace: An Evaluation of Country Web Sites Using Correspondence Analysis	Robert A. Opoku	2009	Journal of Internet Commerce
2	The predictive power of destination-personality-congruity on tourist preference: a global approach to destination image branding	Fethi Klabi	2012	Leisure/Loisir
3	The measurement & conceptualization of destination personality	Vikas Kumar, J.K. Nayak	2014	Tourism Management Perspectives
4	Countries' positioning on personality traits: Analysis of 10 South American national tourism websites	Jose' I Rojas-Me'ndez and Michael J Hine	2016	Journal of Vacation Marketing
5	The projected destination brand personalities of European capital cities and their positioning	Sonya Hanna & Jennifer Rowley	2019	Journal of Marketing Management

Some authors are interested in comparing the projected and perceived destination personality, so they run the studies in mix method, both quantitative and qualitative. The result shows that there are 12 researches achieved their research objectives with significant contributions.

Table 3. Articles applying mix methods

No.	Title	Authors	Published Year	Publisher
1	Perceptions of countries based on personality traits: a study in China	Alain d'Astous Dong Li	2009	Asia Pacific Journal of Marketing and Logistics

No.	Title	Authors	Published Year	Publisher
2	Brand personality of tourist destinations: An application of self-congruity theory	Ahmet Usakli, Seyhmus Baloglu	2011	Tourism Management
3	Projected and Perceived Destination Brand Personalities: The Case of South Korea	Soyeon Kim and Xinran Y. Lehto	2013	Journal of Travel Research
4	Towards a taxonomy of a golf-destination brand personality: Insights from the Algarve golf industry	Rosária L.G. Pereira, Antónia H. Correia, Ronaldo L.A. Schutz	2014	Journal of Destination Marketing & Management
5	City Branding: Investigating a Brand Advocacy Model for Distinct Segments	Safak Sahin & Seyhmus Baloglu	2014	Journal of Hospitality Marketing & Management
6	Golf destinations' brand personality: the case of the Algarve	Rosaria Luisa Gomes Pereira Antónia Correia Ronaldo L.A. Schutz	2015	International Journal of Culture, Tourism and Hospitality Research
7	Achieving Consistency in Destination Personalities: A Tripartite Personality Congruity Theory Focused on Industry Professionals	Veronica I. K. Lam Leonardo (Don) A. N. Dioko	2015	Marketing Places and Spaces
8	Destination brand identity: scale development and validation	Sheng-Hshiung Tsaur, Chang-Hua Yen & Yu-Ting Yan	2016	Asia Pacific Journal of Tourism Research
9	Development and validation of a destination personality scale for mainland Chinese travelers	Li Pan, Meng Zhang, Dogan Gursoy, LuLu	2017	Tourism Management
10	The role of destination personality fit in destination branding: Antecedents and outcomes	Magnus Hultman, Carola Strandberg, Pejvak Oghazi, Rana Mostaghel	2017	Psychol Mark
11	Examining destination personality: Its antecedents and outcomes	Christina Geng-Qing Chi, Li Pan, Giacomo Del Chiappab,	2018	Journal of Destination Marketing & Management
12	Beyond country image favorability: How brand positioning via country personality stereotypes enhances brand evaluations	Peter Magnusson, Stanford A. Westjohn & Nancy J. Sirianni	2019	Journal of International Business Studies

4 Conclusions

In order to build the positioning of tourist destinations, destination managers and marketers consider destination branding as a powerful instrument, so branding is a vital research area in the tourism field.

Particularly, destination brand personality is taken into consideration when formulating destinations' marketing as it not only mirrors the emotional side of brand image but also is meaningful for marketing communication in multiple ways. This paper analyzed the destination brand personality-related research. A systematic literature review was conducted using Web of Science and Scopus online databases. The results present the relationship between destination brand personality and other variables such as destination image, self-congruity, destination trust, tourists' actual attitude to the destination, etc. There are three main research directions also figured out in this study included scaling the destination brand personality, comparing different perspectives of destination brand personality, and investigating the antecedents, mediators, moderators, and outcomes of destination brand personality. Moreover, a variety of research methods was applied in those papers. This work not only improves the current understanding of the concept "Destination Brand Personality" systematically, identify the conceptual framework of "destination brand personality", but also build more effective and precise procedures for future research orientation of "destination brand personality". In the other words, this paper contributes to the existing literature on destination brand personality by extending the discussion with the conceptual model of this concept. Moreover, the quantitative statistics offered clear points in the diversity of research methods applied in studies considering the destination brand personality. The research created the best foundation for future research in the destination brand personality field.

However, this study has a few limitations, which can be the issues to explore in future research. First, the data for this study consists of articles collected on the Web of Science and Scopus. To generalize the results, future research must consist of a larger sample. Second, this study includes only the framework of destination brand personality and the basic statistic of used methodologies. Future studies could be enhanced to obtain further results.

Recently, sustainability, smart destination, and COVID-19 are hot topics. Researchers may pay more attention to the impact of the issues on the destination brand personality. In addition, whether there is any relationship between these concepts with destination brand personality is a question that needs to be answered. And whether the destination management organizations are aware of sustainable development, role of ICT and smart technology, and risk avoidance in order to take action to have proper marketing strategies and communication.

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SOCIAL INTELLIGENCE AS A PART OF THE MANAGER PERSONALITY

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JEL classification: M14, M12, D91

1 Introduction

*„The more socially intelligent you are, the happier,
more robust and enjoyable your relationships will be.“*

Daniel Goleman

Social interactions are an everyday part of each of us, and knowing how to manage them wisely can be of great benefit. In the third millennium, personality traits in the form of social intelligence are an integral part of a successful manager and thus have a positive impact on the whole company. It is an effort to perceive social intelligence as a sign of a mature personality that leads to humane, honest and ethical behavior. The role of the manager is a complex matter. In addition to professional activities, a fundamental component of managerial work is also cooperation with people, in the form of motivation, communication, understanding, influencing or negotiating or resolving conflicts, which can be managed by improving social intelligence. The way of solving interpersonal situations is conditioned by the whole personality of the manager. The manager is expected to have a wide range of skills that will make him socially capable, so it is essential to pay attention to this issue. Social intelligence means acting wisely, with overview, in interpersonal relationships and is an important part of our lives, not excluding managers at all levels of management. The aim of the paper is to point out the importance and impact of social intelligence of managers in the business practice as well as to present its results on a selected sample of managers of the Slovak Republic.

2 Material and methods

The material we used consists of primary and also secondary data. Secondary content includes some international researches and findings. Primary information represents our own research through an online questionnaire survey that was realised from October to December 2020. We received answers from 275 managers from the Slovak Republic (136 male managers and 139 female managers). We used a method called MESI, which is used to measure the social intelligence of managers and was created by Frankovský, Birknerová (2017). MESI, self-evaluating test, contains 21 items, where 7 items are focused on the tendency of social irritability (statements such as: contact with others disturbs me, the feelings of others distract me), 7 items focused on empathy (statements like: I am able to guess the wishes of others, I can guess what I have to adapt to) and 7 items focused on the tendency to manipulate (statements such as: I can persuade others to do anything, use others to my advantage is good to me).

However, it is necessary to emphasize that the higher the empathy (the higher score) and the lower the manipulation and social irritability (the lower point score) is, the higher social intelligence the manager is abounding. During the process, we also used the method of analysis, synthesis and comparison.

3 Results

The history of the study of social intelligence is 100 years old, its origin is dating back to the 1920s. In defining social intelligence, we emphasize how an individual understands and interprets their own behavior and behavior of other people, their thinking and feelings, and depending on this, interpretations can effectively guide their behavior and the behavior of other people. The possibility to specify social intelligence as one of the important predictors of effective behavior of managers already helps in recruitment to select people who are more likely to succeed managerial positions. Social intelligence in management also means successful results in the field of work organization, participation in social events, inputs into social interactions, transmission and receiving more information, oversight, sense of humor, but also level of empathy and personal harmony, work-life balance, willingness to help and maturity of personality, as well as deeper generous values (Frankovský, Birknerová, 2017; Birknerová, Vávrová et al. 2013; Frankovský, Baranová, 2010; Goleman 2015; Gulliford et al. 2019). Frankovský and Birknerová (2017) define three main factors that are researched within social intelligence; it is manipulation, empathy and social irritability (MESI).

Based on our survey of Slovak managers, we can say that the item of empathy as the only positive component in this test reaches favorable above average results. It is a medium high score, 3.61 points (out of 5) with a standard deviation of 0.60. Female managers achieve higher empathy scores. Empathy as a masterful ability needs to be perceived and worked on, as the high score of the other two items reduces it. This is also confirmed by our other results, as empathy does not reach a completely high score; it is also due to the fact that the items manipulation and social irritability have moving values around the average that could be achieved on the rating scale. Within the social irritability, the average value achieved by managers is 2.28 points with a standard deviation 0.60. At the same time, women managers show a few hundredths points higher score, which means that they tend to have more inappropriate emotional reactions to adverse circumstances. Overall, the level of social irritability is below average, which is in line with the research by Frankovský et al. (2018), in which the authors stated that Slovak managers largely reject social irritability. An important finding is the level of manipulation, which is on average 2.72 points with standard deviation 0.68. This level is still below average, which is favorable, well nevertheless, it is a fairly high value. Significantly higher scores are achieved by male managers, so they have a greater tendency to abuse or persuade others for their own benefit. By these findings we see the importance and a connection of social and emotional intelligence, because it contains intrapersonal components that help build the inside of each manager and subsequently improve the ability of empathy as well as social relations. All this affects personal growth and personality shift as well in working life, to which it brings more peace, joy, honesty and higher life values and thus eliminates social irritability, also the tendency to manipulate and egocentrism.

A research by Frankovský et al. (2018) focused on comparing the social intelligence of 131 Slovak and Ukrainian managers. The results of the study showed great similarities between managers from Slovakia and Ukraine. Like our research, it pointed to higher empathy scores, lower social irritability scores, but also a certain tendency to manipulate. The study also revealed the influence of the country's culture on the social intelligence score. Ebrahimpoor, Zahed and Elyasi (2013) draw attention to the development of managers' social skills in their study. In this way, they are able to understand each other, pursue common goals and, above all, trust each other. At the same time, this ability helps to give right feedback, creates space for ideas, opinions for everyone and enhances good crisis and conflict management.

It works to create a pleasant and friendly working atmosphere, greater initiative on the part of employees and their identification with products, which will improve sales and business performance. A study by Genc and Genc (2018) confirms that the social intelligence of managers affects the emotions, behavior and performance of employees, job satisfaction and subsequently customer satisfaction. The important fact is that the level of social intelligence can be increased and developed mostly by self-awareness, which can be definitely defined as a right choice that brings an amount of positive changes.

4 Conclusions

Based on our primary and secondary research, we can state social intelligence is a skill that has a deep potential and is a fundamental pillar of manager personality. We evaluate the social intelligence of the examined Slovak managers as above average with the possibility and potential for improvement and development, both for male and female managers. The stronger side is the higher degree of empathy and the more favorable results of lower social irritability, the weaker side is the tendency to manipulate. The first step for managers is the need to realize this fact and then to understand that everyone has to start on his own. Managers with social intelligence skills can be fully aware and develop themselves and their mission as well as the unique art of managerial work. They can get to know their strengths and weaknesses, gain courage in new visions or see things from a different point of view. They can perceive life more positively, build healthier relationships, know what makes sense and what does not, lead their life path in the right direction by those values for which it is worth to live. In the end, by the skill of social intelligence, they are able to build their personalities into a true leader.

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COMPARISON OF CLASSIFICATIONS OF FIRM-LEVEL MULTINATIONALITY

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Keywords: Classification systems, firm multinationality, multinational corporations, international business.

JEL classification: F23, L25

1 Introduction

Multinational enterprises (MNEs) include many diverse companies with varying international involvement and significance. For this purpose, various scholars have tried to develop methods for categorizing or measuring the diverse international involvement through indices. The degree of firm-level multinationality, as expressed by Aggarwal et al. (2011) is a key dimension that spans all theoretical frameworks, levels of empirical analysis, and domains of investigation in international business research. There is, however, no agreed approach to defining or measuring firm-level multinationality.

Four significant and diverse approaches (United Nations, 1995; Rugman and Verbeke, 2004; Asmussen, 2009; and Aggarwal et al., 2011) are presented in this work and compared according to various aspects to determine in which cases which method of measurement is better, what are the constraints to be considered and what data is needed for measurement.

As a result of the lack of a coherent approach, different studies come to different conclusions. Authors such as Rugman and Verbeke (2004), for example, argue that globalization is a myth at the corporate level, which is further supported by several other studies by Rugman and his co-authors. On the other hand, there are several authors (e.g., Osegowitsch and Sammartino, 2008; Berrill, 2015) who criticize Rugman and Verbeke's approach and find the results skewed due to limitations due to threshold settings and other shortcomings of the method used.

This could be prevented if, as suggested by Aggarwal et al. (2011) and Berrill (2015), the authors of international trade agreed on a strong and robust classification system for distinguishing the degree of corporate multinationality. This approach would thus provide clarity on the regionalization/globalization debate, comparability of research on the firm multinationality-performance relationship and other topics such as studying factors supporting the growth of multinationality.

2 Material and methods

The four most important classification systems were used for comparison, namely the ABHK classification (Aggarwal et al., 2011), the ASM classification (Asmussen, 2009), the RV classification (Rugman and Verbeke, 2004), and TNI (Transnationality Index by United Nations, 1995). This research paper was inspired by Dorrenbacher (2000), who compared the measurement concepts of multinationality of Sullivan (1994), UNCTAD (1995), and Ietto-Gillies (1998).

In this paper, the four classification systems were compared based on eight features. The list of features developed for comparison is as follows: (1) geographic segmentation, (2) measurement approach, (3) dimensionality, (4) aggregation, (5) robustness, (6) methodological inclusivity, (7) home-country effect (8) and host-country effect. The list of features in this review paper was conducted based on the literature of international business.

The literature used includes the original papers of compared classifications, papers of authors who analyzed them (Osegowitsch, Samartino, 2008; Rugman and Oh, 2011; Verbeke and Asmussen, 2016; Nguyen, 2017; Rosa et al., 2020; Ietto-Gillies, 2021; etc.), used them for an empirical research (Hutson and Laing, 2014; Berrill, 2015; O'Hagan-Luff and Berrill, 2016; Chadha and Berrill, 2020; etc.), or developed an alternative approach to measure and classify multinationality (Sullivan, 1994; Marshall et al., 2020; etc.).

3 Results

When examining the diverse approaches to measuring firm-level multinationality, a certain ideal approach was found for each factor. However, it is important to consider that the ideal theoretical model differs significantly from what is practical and possible to compute given the data availability. Therefore, the ideal model would suffer from secondary exclusivity. The practical model should be chosen based on the data availability and the intention of the research. It was found, that combining both categorization and aggregation into indices provides deeper understanding of multinationality, as well as using both scope and scale metrics.

It was found essential for the classification system to be able to address home-country and rest-of-the-world effects as otherwise the comparability across countries is low. The best approach seems to be using GDP as a proxy for the size of the country. Classifications should be developed in the way, so they do not suffer from primary exclusivity and their methodology is robust. To create a robust and suitable classification system, it is necessary to perform an extensive check, using both various geographical segmentation of regions and changing the classification conditions while monitoring the rate of change to the proposed system.

4 Conclusions

Based on the comparison of the four classification systems mentioned, it can be stated that none can be considered a universal approach suitable for a general assessment of the degree of internationalization of MNEs. Each approach has its advantages and limitations, which are presented in the paper. Every method is criticized by other authors, who often develop their alternative approach, which means that authors in the field of international business are unable to agree on a unified approach. The most criticized system is the RV classification used by Rugman and many of his co-authors. It was in response to its shortcomings that the classifications of Asmussen (2009) and Aggarwal et al. (2011) were developed. However, despite significant progress, those systems cannot be considered generally applicable. The recommendation of the paper is to develop a new approach addressing all the features presented in the study. Another option is to combine approaches, ideally ASM and ABHK classifications to be able to capture both the scope and scale of firm's multinationality.

Future research should focus on creating a system that combines the use of categories and indices as recommended and conducting research focused on an empirical comparison of different classifications on the same dataset.

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STRATEGIC APPROACH OF SELECTED HIDDEN CHAMPION COMPANY – A CASE STUDY

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Keywords: Hidden champions; small and medium-sized enterprises; strategy selection; success factors.

JEL classification: L19, L25

1 Introduction

Hermann Simon's research (1996) shows that in the context of globalization, the growth of the national economy is increasingly determined not by the achievements of large corporations, but by the development of small and medium-sized enterprises. The little-known medium-sized enterprises, leading in the world market, the author calls "hidden champions." Hidden champions remain a virtually unexplored source of knowledge. Scattered across the globe, thousands of these highly successful companies are concealed behind a curtain of inconspicuousness, invisibility and, in some cases, deliberate secrecy. This applies to the products these companies make, how they beat the competition or—even more, difficult to research—how they are managed internally. Even their names are known to only a handful of experts, consultants, journalists, and researchers. This secretiveness contrasts starkly with the dominant positions the hidden champions enjoy in their markets (Simon, 2012).

This specific phenomenon is the first introduction investigated in many other cultural environments and still attracts attention of researchers. There exist Hidden Champions Institute (HCI) established as the world's first academic institution dedicated to Hidden Champions (<https://exced.esmt.berlin/hci>) or recently established International Research Center for Hidden Champions at Zhejiang University, China (<https://gbsn.org/new-member-spotlight-zhejiang-university-international-business-school/>).

The first steps in identifying Slovak hidden champions were taken by Tábořecká-Petrovičová et al. (2013) in the context of the countries of Central and Eastern Europe. Six companies were studied in the form of case studies, e.g., ESET – a company developing antivirus software with a strong global leadership on this market; ACE Enterprise – an innovative leader in IT sphere with customized focus strategy (in 2018 acquired by Bentley Systems) or Sygic – an innovative company focused on their niche in GPS navigations. Within the latest work in 2018 the authors identified new HCs, such as Microstep – one of the world leaders in the field of high-end plasma cutting systems and Innovatrics – an independent partner for biometric identity management technology (Tábořecká-Petrovičová et al, 2021). The authors underline (Lalic, Purg, 2021) that Slovakia has a huge number of potential HCs being acquired by big players – a recent one is Slido (acquired by Cisco on May 2021).

Studying the strategies of hidden champions may reveal one of the sides of their uniqueness and serve as a guide for potential companies that can get inspirations and best practices on how to become a leader on the international market.

It will allow SMEs to learn from HCs how to successfully identify target markets (niche), gain attractiveness from the commercial aspect, set up a strategy and appropriately realize its inception. In addition, the data can be used in the process of implementation and improvement of policies to support hidden champions and help them releasing their full innovation potential, as well as helping potential ones in becoming stable hidden champions. Moreover, this could also be useful in the development of medium and long-term plans to optimize the activities of SMEs, their strategies, as well as in many other government programs aimed at supporting small and medium-sized enterprises and enhancing their participation in the country's operations. Those recommendations can go also other way – to help policy makers to ensure better conditions for the business.

2 Material and methods

The main aim of our paper was to provide an in-depth insight into the strategy development and success factors of selected hidden champion company. We followed the methodological approach adopted by the research teams within the previously realized international joint research studies, covering 22 countries (McKiernan, Purg, 2013; Lalic, Purg, 2018) in which Slovak research team participated. The literature review of studies on HC revealed that majority of them applied the qualitative methodological approach (usually as a combination of desk research and interview), to study the phenomenon of hidden champions (e.g., Voudouris, et al., 2000; Blackburn, et al., 2000; Deng, Wan, 2006; Meyer, 2006; Simon, Lippert, 2007; Venohr, Meyer, 2007; Yu, Chen, 2009; Boga, 2012; Din et al, 2013; Makelainen, 2014).

This determined the choice of our methodological approach. We used secondary sources such as the website of Business Register of the Slovak Republic, basic statistical set from the Statistical Office of the Slovak Republic, website of Register of Financial Statements, web portal finstat.sk, website of the company, and reports of respective consulting companies, such as Big-4. Existing interviews, media resources and various awards given to the company also play an important role - they have formed criteria and provided more detailed information. We realized also primary qualitative research in the form of interview.

In later stages of more complex research, the quantitative research approach is planned to study the larger sample of HCs.

3 Results

2J Antennas is a global supplier and a market leader of antenna solutions that aims to provide cutting-edge technologies for the connected world. Besides antennas for common applications (e.g., automotive, M2M, base stations, embedded antennas), customers may request customized solutions for any enclosure, mounting position, or specific device from the company. Recently, 2J Antennas released their new catalogue featuring a series of high-quality products to meet the needs of the rapidly expanding wireless industry, such as 5G, 4G (LTE), 3G, 2G, WiFi, Iridium communications, GPS/GNSS/BeiDou frequencies and more.

1) Nature of Market Leadership

2J Antennas has supplied over 45 million antenna devices to over 12,000 consumers around the globe in the last 18 years. Garmin, Siemens, T-Mobile, Audi, Porsche, General Electric, Apple, Honeywell, Thales, Trimble, and Advantech are only a few of the market leaders that rely on their antenna products for high efficiency and reliability. With 12.2% increase in revenue in 2019 (more than 19% over the past 3 years), the company has been selected for the The East Slovak Diamond award for 2019 and 2020, getting a special mention by Forbes.

2) Nature of Competitive Advantage

2J Antennas introduced the world's most comprehensive 5G NR Ultra-wideband cabled internal antenna portfolio, including 12 ultra-thin embedded antennas that deliver low latency and high efficiency across sub-6 GHz and UHF, redefining the future of wireless devices and mobility. This series supports bands between 410MHz and 5925Mhz which allows to outperform the competition in a variety of technologies, including car-2-cloud, VR, drones, robotics, smart cities, automation, artificial intelligence, consumer electronics, and manufacturing 4.0. The company also introduced "Katana" – the world's smallest 5G NR Monopole Antenna.

Table 1. Financial indicators of 2J Antennas

Revenues	€ 14,265,693 (2019)
Average growth per annum	23.81% (2010 – 2019)
Number of employees	200 (31.12.2019)
Export share	98%
Ownership	Limited Liability Company, 2 partners - Janette Jarvie & Benoit Claude Jacques Tourres
Total assets	73.64% Total equities, 26.36% Total liabilities
10-Year Average ROE	28.41%
10-Year Average ROA	19.75%
Age	20 years (established in 2002)
Number of patents	10+ filed applications, 10+ issued

Source: FinStat.Sk, 2J Antennas website

Table 2. Author's ranking of 2J Antennas

Success factors as per Simon (2012)	Ranking	Reason for ranking
Leadership with ambitious goals	Strong	2 leaders with well-defined roles; gradual growth and stickiness to the vision
Depth	Very strong	Under one roof production; minimal outside influence/input
Innovation	Strong	The world's smallest 5GNR Monopole Antenna; customized solutions
High performance employees	Very strong	Low personnel turnover; delivery in 6-8 weeks (8-12 weeks in other companies)
Focus	Strong	Presence in only one market as of now
Decentralization/Competitive advantages	Fair	Under one roof production – strongly connected with focus; onboarding short-term and small quantity projects
Global orientation	Strong	Strong export from the first day; direct subsidiaries in 3 countries; distribution all over the world.
Closeness to customer	Very strong	The core of the niche and market leadership; customization of the solutions according to inquiries

4 Conclusions

Based on our findings, we have identified Core Lessons Learned on the path to business success:

- I. Innovation is a prerequisite for the development of production, quality improvement and an increase in the number of new goods and services. 2J Antennas work closely with technology innovators to ensure a clear vision for future projects, which maintain their strong position in the antenna design and manufacturing segment.
- II. Customer engagement – not attraction. Customer engagement is the process of building long-term customer engagement with a brand. Company's team of engineers and sales staff have built strong ties with customers and suppliers, ensuring good communication to address the needs and requirements of products. Company's engagement with the customers essentially created the niche for them, thus, underlines the importance.
- III. Depth and independence. "The final product will be as good as its worst part", according to the 6 σ principles. To bring customers the best product, the company does everything from A to Z, using minimal external resources and only if it is necessary. Additional requests only help the company to develop and in no way scare away.

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CONSUMERS ASPECTS OF BIOMETRIC TECHNOLOGIES - MALE VS. FEMALE PERSPECTIVES

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Keywords: Biometric technologies, consumer behavior, sociodemographics, perception and use of biometric technologies.

JEL classification: M31, M1

1 Introduction

Today, we can see the growing impact of advances in information and communication technologies, which have become an integral part of the daily lives of many individuals (Storey, 2020). One result of this progress is undoubtedly biometric technologies, which are becoming increasingly used and their potential has taken on a new dimension since the outbreak of the crisis and the consequent need to conduct confidential remote operations, such as communication with the bank, but also many others (Bhalla, 2020). With biometrics now in over 80% of smartphones, it is also a preferred technology that has rapidly overtaken PIN authentication as the means to secure access to devices, make payments and secure applications (Nilsson, 2021). Since biometric technologies are starting to penetrate more intensively into various industries in Slovakia, the number of users of these technologies has also increased (Štubian, 2012). However, even though biometric technologies are booming, the area of consumer perception of these technologies in Slovakia has not yet been sufficiently researched. Therefore, we decided to contribute our research to this area.

Women tend to be more accepting of others' evaluations, while men adopt a competitive and potentially overconfident attitude about others' evaluations. However, the socialization patterns of women today are different from the past; thus, it is possible to argue that some of the findings show women being more susceptible to influence than men (Kim, Bernhard, 2014). Significant differences were found between women and men regarding expectations from new technology at work with men being more optimistic than women. Women have also been found to be more risk averse than men (Dutta, Omolayole, 2016). Pew study (Fallows, 2005) states that men usually pursue many internet activities more intensively than women, and those men are still more proactive in trying the latest technologies. It is possible, however, that the key to greater trialability by men is the origin of the information regarding a new technology in question. While men are more likely to give a new technology a try, it could be because most new technologies are likely to be discussed first in male centric media.

The aim of this paper is to examine the views, attitudes, experiences and other aspects of consumer behaviour towards biometric technologies and to identify differences in the perception of biometric technologies between women and men. This survey is part of a broader, more comprehensive research, which is addressed in the project VEGA 1/0488/20 Market, marketing, legislative and ethical aspects of the use of biometric technologies in the commercial sector.

2 Material and methods

We have already dealt with the topic of biometric technologies from the consumer's point of view in previous articles. Our previous research shows interesting results regarding the use of biometric technologies by Slovaks. We found that 71% of respondents identified themselves as active users of biometric technologies (Táborecká, Šipulová, 2021). We also examined the ethical aspects associated with biometric technologies. In a previous study, we found interesting differences between women and men in relation to biometric technologies. Therefore, we decided to examine them more deeply in this article.

The aim of the research was to examine the views, attitudes and experiences of consumers and to identify differences in the perception of biometric technologies between women and men. The data obtained could be used to better understand the behaviour of different socio-demographic groups based on gender, which can be useful for companies that offer or use these technologies and customers can be in contact with them. In the article, we present only the results of quantitative research (which was preceded by qualitative research).

We organized field research by utilizing an online questionnaire survey on the sample of 111 respondents, (of which 54% were women and 46% men) to obtain the necessary information on the perception of biometric technology by consumers. The questionnaire was created via docs.google.com and distributed via e-mail and social networks. We also addressed some respondents with a direct report. When creating the questionnaire, we drew knowledge from the literature review, and we also based the formulations of individual questions based on previously conducted qualitative research in the form of structured in-depth interviews.

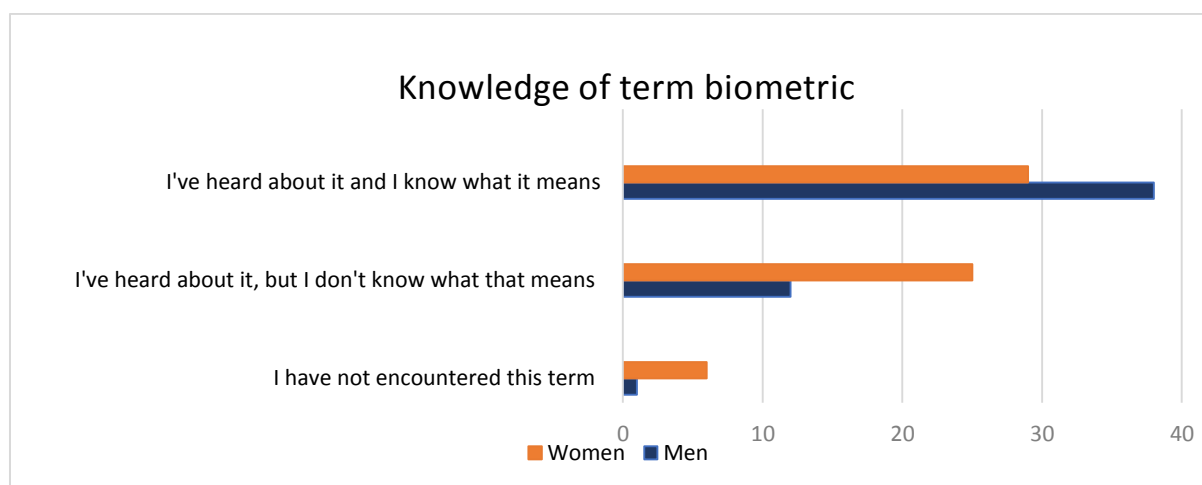
We divided the questionnaire into several parts. The first part consisted of identification questions, which were answered by all respondents. The second part of the questionnaire was aimed at revealing knowledge about biometric technologies. In the third part, we asked respondents about their perception of biometric technologies and their willingness to use these technologies in presented situations. All data were analysed with the use of descriptive statistical methods and simple comparison.

3 Results

Based on the data we obtained from our research, we can state that the vast majority of respondents are aware of biometric technologies, while some are also active users. We consider a positive finding that more than half (53%) of potential users said they wanted to start using these technologies in the future.

Based on the findings, we can also state that most respondents consider biometric technologies to be safe. The research revealed several interesting results, namely we revealed differences in the perception of biometric technologies between women and men in the following areas. Regarding the *knowledge* (or awareness), more men than women knew the concept of biometrics, only 1.96% of men said they had never encountered the term, while up to 10% of women gave the same answer. Results are shown in the table (1) below. There is an apparent difference between women's and men's knowledge. In this section, the research results agree with the assumptions based on the theory. Specifically, the Fallows study (2005) states that most new technologies are likely to be discussed first in male-centric media.

Table 1 Knowledge of term biometric

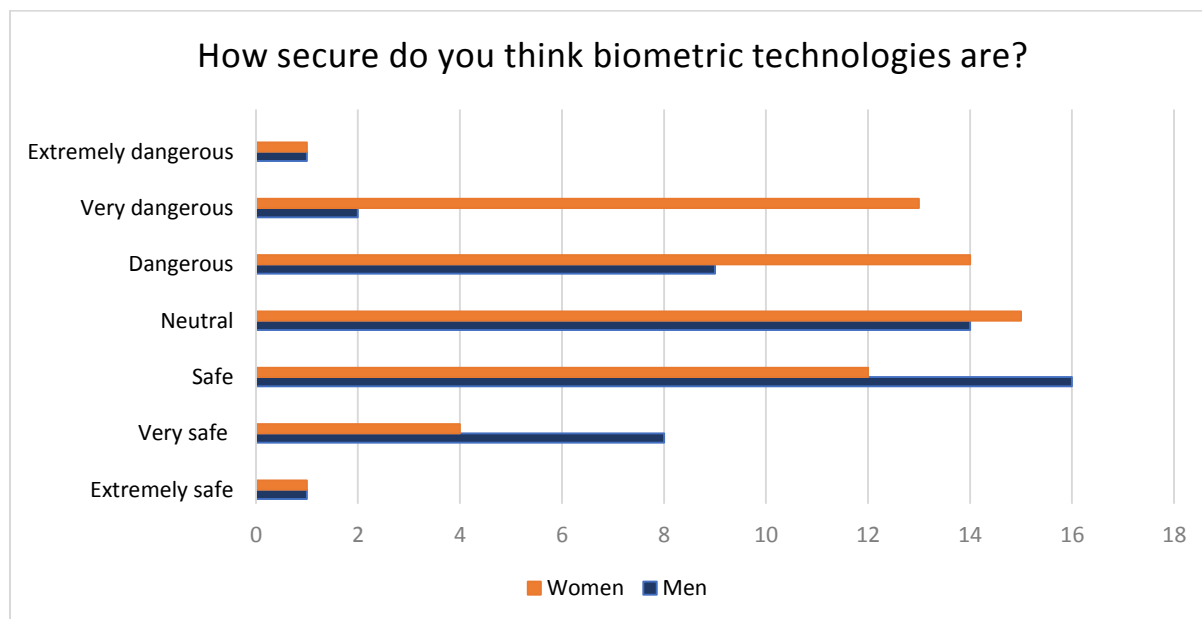


Source: Own research

Attitudes towards biometric technologies were more positive for men than for women, most men agreed with a positive attitude towards biometric technologies, namely 37.25%, while only 18.33% of women gave the same answer.

We also found that more men (78.43%) *use* biometric technologies than women (65%). When asked *why* respondents do not use biometric technologies, women more often stated (14.29%) that they did not understand this compared to men (9.09%). Women (19.05%) also feared misuse of personal information compared to men (9.09%). In addition, women stated that they did not have the opportunity to use these technologies (28.57%), while only 18.18% of men reported this answer. When it came to the use of biometrics in hypothetical situations, men and women broadly agreed on the answers, except when women would more welcome the use of BT in finance and tourism and men in mobile technology. The last interesting finding related to security perception was significant, results are shown in the table below.

Table 2 Perceived security of biometric technology



Source: Own research

4 Conclusions

In this paper, we dealt with the use of biometric technologies from the perspective of consumers and potential consumers in Slovakia with respect to their gender. In the research, we revealed the existing different perceptions of biometric technologies from the perspective of men and women. We also examined the views, perceptions, attitudes and consumers of biometric technologies. The data obtained should serve to better understand the behaviour of individuals in contact with biometric technologies, which can be useful for companies that offer these technologies, or consider their implementation and customers met them. The object of the research was consumers in Slovakia, regardless of whether they were active users of biometric technologies or not. The subject of the research was the use and perception of biometric technologies from the perspective of these consumers. Quantitative methods were used in this work to collect the data, using an online questionnaire tool. The evaluation of the obtained data was performed using mathematical-statistical methods, analysis and synthesis. The result of our work is knowledge of selected aspects of consumer behaviour in the field of biometric technologies. We can see that there exist differences between male and female consumers. The sample of men showed higher level of knowledge, more positive attitudes towards BT, more intensive utilisation and lower perception of risks. In further research, we will collect data from a higher number of respondents and based on specific quotas criteria we will ensure a more representative sample. We will also use more advanced analytical methods and test relationships among variables.

Based on our research results and literature review we will be interested in revealing statistically significant differences between male and female respondents regarding their awareness, knowledge, perceptions (perceived risks), behavioural intentions, real use and other aspects of consumer behaviour. These results could serve for the companies in their segmentation strategies, identification of target market or development of adjusted marketing communication.

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BANKS OR MARKETS - WHAT COUNTS MORE FOR ECONOMIC GROWTH IN EUROPEAN UNION COUNTRIES?

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JEL classification: F43, O11, O43

1 Introduction

In the theory of financial intermediation, there are bank-based and market-based financial systems that mobilize savings and allocate capital in different ways. While banks perform indirect financial intermediation by providing financial services on the basis of close relationship with their clients, the capital markets channel resources directly from savers to borrowers, serving as a platform where equity and debt securities are priced and traded.

Regardless of the extensive research on the role of the banking or market-based financial system in economic growth and development, this is still the topic on which economists reveal completely different opinions. Over the years, we find authors who claim a positive impact of finance on economic development (Dollar, 1992; Ben-David, 1993; Wacziarg and Welch, 2008; Lucas, 2009; Perera and Paudel, 2009; Madsen and Ang, 2016), but also the authors who claim a negative impact of finance on economic growth (Demirgüç-Kunt and Detragiache 1998; Fisher and Chenard, 1997; Pinar and Damar, 2006; Ayadi et al., 2013; Karagiannis and Kvedaras, 2016; and Barradas, 2018).

Georgantopolous, et al. (2015) focused on examining the relationship between financial systems and economic growth in 28 EU member states, dividing them into Euro and non-Euro countries panels. The first group disclosed a significant influence of the financial sector on economic growth. The second indicated a significant negative impact of the banking sector and a weak impact of stock market on economic growth. The outcome of Chu's analysis (2020) is that the dominating role of stock markets over banks is deteriorated if the financial structure is unbalanced toward stock market.

The aim of this contribution is to analyse the impact of selected soundness indicators of both the bank-oriented and market-oriented financial system on economic growth in the European Union countries. To enrich the existing strand of literature, we investigate not only the determinants typical for the financial system, but also non-financial determinants as the perception of corruption, competitiveness in the economic environment, and the impact of the Eurozone membership. As time span, we analyse the period from 2004 to 2017, as it enables us to examine the impact of selected determinants on the economic growth in the period before and after the financial crisis.

This study thus expands previous research that focused on bank-oriented key soundness indicators and their impact on economic growth in the European Union countries (Zimková, Vidiečanová and Cisková, 2021).

2 Material and methods

In the contribution, the GLS regression framework is employed, while focusing on three time periods: the time span from 2004 to 2017, the first sub-period from 2004 to 2009, and the second sub-period from 2010 to 2017. Results are gained by five models: Model 1 takes into consideration the impact of main financial indicators to assess access, efficiency, stability, and depth of the bank-oriented financial systems and market-oriented financial systems on the economic growth. Model 2 analyses not only the impact of financial indicators but also the effect of corruption perception (CPI) and competitiveness in the economy (GCI). Model 3 abstracts from the control variables CPI and GCI and examines the impact of the Eurozone membership and economic and debt crisis. Model 5 examines the impact of all variables on economic growth. Model 4 differs from Model 5 by abstracting the impact of the Eurozone membership.

The Hausman test and the heteroskedasticity test were performed for all models. Descriptive statistics were compiled for the entire data set of the 27 countries of the European Union in the years 2004-2017. The number of observations varies depending on the variable, as the data set is unbalanced and the variables are incomplete. Variables are expressed as annual percentage changes.

Economic growth is a source of progress and development and contributes to the overall standard of living. Economic development was defined by Čihák (2013) as a combination of (i) depth (size and liquidity of markets), (ii) access to finance (ability of individuals to gain access to finance), and (iii) efficiency of financial systems (ability of institutions to provide financial services at low cost with sustainable income). However, (iv) financial stability is also necessary for sustainable economic growth and development. These four characteristics were measured both for financial institutions and financial markets, thus covered bank-oriented and market-oriented financial systems.

In this study, to measure the impact of a bank-oriented financial system on the economic growth, we use (i) financial resources provided to the private sector to GDP as a measure of financial depth, (ii) number of commercial bank branches to measure access of financial services, (iii) ROE and (iv) Z-score to reflect stability of a financial system. To measure the impact of market-oriented financial systems on the economic growth, we use (i) gross portfolio debt liabilities to GDP as a measure of financial depth, (ii) mutual fund assets to GDP to measure access of financial services, (iii) stock market turnover ratio as a measure of efficiency, and (iv) stock price volatility to reflect volatility of a financial system. In our study, we also included corruption perception index (CPI) and global competitiveness index (GCI), which significantly resonate at present times. In addition, the study includes three dummy variables: Eurozone membership, global financial crisis (GFC) and debt crisis (DC). The period of global financial crisis and debt crisis is adopted from OECD Economic Outlook (2021) and it does not consider possible individual differences among analysed countries.

Based on empirical evidence, we expect a positive impact of access and efficiency indicators and, conversely, we expect that higher volatility in financial markets and variables for the depth of financial systems should have a negative impact on economic growth.

3 Results and conclusion

Based on a comparison of the five proposed models, it can be declared that our results are heterogeneous. Regarding the impact of selected bank-oriented financial soundness indicators on the economic growth in the European Union over the period 2004-2017, the indicators that reveal access (number of branches per 100 000 inhabitants) demonstrated a significant positive impact on the economic growth while the indicators of efficiency, stability and depth are statistically insignificant at all significance levels in all regression models. In contrast to the whole analysed period, the indicator of depth (domestic private loans), the indicator of efficiency (ROE), and finally the indicator of stability (Z-score) revealed a significant positive impact on economic growth in the pre-crisis period and a strong negative impact after the financial crises and during debt crises.

The impact of the market-oriented financial soundness indicators on the economic growth in the European Union over the period 2010-2017 is statistically insignificant except the indicator of financial depth. The influence of the gross portfolio debt liabilities to GDP as a measure of financial depth on economic growth was negative. Its increase over the financial and debt crises was supported by an expansionary monetary policy and financial sources were used for consumption and not investments. As to the second sub-period result, the influence of mutual fund assets to GDP on economic development in the European countries is negative.

Moreover, our results regarding the Eurozone membership indicate that the monetary union does not contribute to the economic growth during the crises times. This result is not unlikely since individual countries joined in the monetary union might miss autonomous monetary and exchange policies to fix their specific problems.

Overall it can be stated that bank oriented indicators disclose a stronger influence on the economic performance of European Union countries.

Future research should focus on supply-oriented model of economic growth derived from the neoclassical theory, which outlines the three factors necessary for a growing economy: labor, capital and technology.

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ESG RATINGS OF STOCK COMPANIES IN EUROPEAN UNION: SECTOR PERSPECTIVE

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JEL classification: L22, L53

1 Introduction

The Industrial Revolution has brought prosperity in the form of economic and population growth. However, this growth is based on a mass production process dependent on fossil fuels and has created environmental issues through pollution and depletion of natural resources (Dixon, 2019). It is clear that climate change caused by human actions raises the necessity to change the existing consumption and production patterns to more sustainable ones (Ferri and Liu and Stiglitz, 2005; Bailey and Caprotti, 2014; Gawęda, 2021).

According to Dyllick and Muff (2016), and Doppelt (2017) the focus should be on revisiting the fundamental purpose of a company as they are the main driver of success in the transition towards a sustainable and green economy. In order to prevent negative issues in the global economy, the primary objective of a company should be to maximize environmental and social value in the long run (Soppe 2004; Fatemi and Fooladi, 2013; Dziwago, 2019; Schoenmaker and Schramade, 2019) rather than to maximize the value of shareholders as it is now (Friedman, 1970; Rappaport, 2006; Choi and Wang, 2009; Damodaran, 2017; Inkpen and Sundaram, 2021).

What is more, Ahlström and Monciardini (2021) highlight that such approach requires access of stakeholders to non-financial information of companies impact on their surrounding in environmental, social and governance (ESG) area and efficient regulations in this field as well. In European Union one of the leading regulations obliging stock companies to disclose ESG in their annual reports is NFRD (Non-Financial Reporting Directive), while ESG information, in turn, is the basis for ESG ratings, which are a synthetic assessment of companies impact, not only the social and governance aspects, but also the environmental aspect as well. (Avetisyan and Hockerts, 2017).

The goal of the research is to identify the sectors of financial markets in European Union Member States which include the highest number of stock companies with this ESG ratings. In order to achieve the set goal, a research question was formulated, namely in which sector of the financial markets of European Union Member States, where ESG reporting is most commonly found.

2 Material and methods

The research sample included stock companies of twelve economic sectors (according to *Thomson Reuters Business Classification*) of financial markets in the European Union Member States (EU-28) for the years 2011-2020. Government Activity sector was excluded from the analysis as it did not include any company in the analysed period. Despite BREXIT in year 2020, stock companies of financial markets of United Kingdom were included in the research sample, given UK was the Member State for the most of analysed period. The 10-year research horizon allowed for analysis of the changes in the number of stock companies reporting the ESG information per sector in the long term.

The empirical research was conducted using selected measures of descriptive statistics and comparative analysis. Data of companies including their ESG ratings was obtained from the Refinitiv Eikon database and in the case of lack of data from annual reports of analysed companies.

3 Results

In years 2011-2020, the number of stock companies of financial markets in EU-28 was constantly increasing. The same was recognized for stock companies with ESG ratings however, the number of ESG rated companies was growing at a faster pace, especially during periods after implementation of non-financial information reporting regulations.

Cross-sectoral analysis proved, that out of twelve economic sectors analysed, Industrials and Consumer Cyclical are the most numerous in the EU-28 in terms of number of all stock companies, while Utilities and Academic & Education unchangeably were the least numerous during the analysed period. Similar trend applies in case of ESG rated companies. However, these results are strongly affected by the overall number of companies operating in each sector. If the analysed percentage share of companies with ESG ratings in the number of companies in respective sector, the results differ and are deprived of previous distortion. Therefore, the sectors of the most common ESG reporting practices were Utilities and Industrials. In addition, Energy and Basic Materials were the sectors of high quality of ESG reporting as well. In the contrary, the smallest relative number of companies with ESG ratings granted was in Real Estate and Academic & Education, while Technology sector improved only in the last year of the analysis. The rest of the sectors, meaning Consumer Non-Cyclicals, Financials and Healthcare placed in the middle of this comparison. What is more, no dependence was observed between yearly rates of change of the number of all stock companies in EU-28 and companies with granted ESG ratings.

4 Conclusions

Current regulation on reporting ESG by corporates in European Union, fails in few areas. First and foremost, NFRD covers only large stock companies while SMEs should be included as well in order to assure transparency and possibility of realization of sustainable development goals. Secondly, current regulations do not oblige corporates to report ESG in a comparable and standardized manner which then makes ESG information of poor quality and affects the number of companies that could be ESG rated.

What is more, there is no given material penalty for avoidance of ESG reporting and corporations are not obligated to disclose ESG in an effective way. All these deficiencies create kind of a paradox - in spite of the shortcomings of current regulations and poorness of ESG information, ESG ratings relevance in EU-28 is growing and it is expected that ESG information will be reflected in the market value of stock companies as much as financial information in the future (Nakajima et al., 2021; Giese and Nagy and Lee, 2021).

The results of this study outline the importance of ESG reporting as a significant issue as companies externalities contribute to climate erosion, deepening of societal issues and interference with corporate governance. By knowing which companies fail in which areas and thusly are harmful to their surroundings, an adequate financial fees or obligation to undo the effects of their actions could be implemented and reliably enforced by the government.

Technical discussions of policy development dominate the sustainability debate. The European Union plans to replace Non-Financial Reporting Directive in 2022 by Corporate Sustainability Reporting Directive, which shall be more sufficient and will cover more stock companies to disclose ESG. However, it should be highlighted that the real challenge will not be the implementation of the regulation itself but the adaptation of different mindset by corporates and consumers. Transition from the ultimate goal of the company which is maximization of financial returns to simultaneous maximization of benefits in environmental, social and governance area may require time and shall be difficult to achieve. Nevertheless, this change is gaining importance.

The main limitation of the undertaken research results from Refinitiv Eikon data availability as information on approximately 3.000 stock companies of EU-28 was not included in this database, given continuous Refinitiv broadenings. Nonetheless, the conducted study proved on the one hand that the accountability gap of NFRD constitutes almost three fourth of all stock companies in EU-28 and on the other hand, a growing phenomenon of ESG ratings. What is more, results confirmed that commonness of ESG reporting varies across different sectors of financial markets in EU-28. The conducted research outlines that the development of financial markets as well as implementation of reporting regulation significantly contributes to higher quality of ESG information reported by stock companies, increasing the number of ESG ratings granted to companies in the analysed period. This paper provides an academic contribution to an in-depth analysis of the relationship between ESG ratings of stock companies of EU-28 financial markets and their financial and stock performance.

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DEVELOPMENT OF THE EUROPEAN BANKING SECTOR

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1 Introduction

Several studies analyse the development in various banking sectors, and the literature in these studies is mainly linked to the 2008 financial crisis. The fall of the major US investment firm Lehman Brothers was the highlight of the financial crisis, and, subsequently, the most significant economic crisis started. The last international economic and financial crisis was the U.S. crisis, the U.S. mortgage crisis, which began in 2008. The origin of this crisis has been the root causes, such as liberalisation in the financial sector, the lack of regulation and constant indebtedness. This financial crisis has affected countries' economies worldwide, and the Member States of the European Union were not an exception. The authorities of the European Union have sought to improve this adverse situation, so they have decided to take specific measures to relieve the European Union of the negative effects of this financial crisis.

These problems were addressed in particular by the principle of banking regulation and supervision of the banking sector, the main objectives of which were to establish the soundness and security of the functioning of the banking system concerned, as well as to promote the efficiency of the functioning of the banking system and monetary policy, or to ensure the necessary information for investors as well as the basic level of their protection. 2008 was an important year for the ECB to manage the interest rates and interbank interest rates of the euro area countries to access their changes, i.e. the reduction, which also inspired the central banks of other non-euro area countries and decided to reduce these rates as well. Obviously, with interest rates falling, there was a gradual increase in demand for various loans.

This article focuses on analysing the different characteristics of the European banking sector from 2008, from the beginning of the financial crisis to 2019. This analysis becomes the base for a deeper analysis of the European banking sector, which will analyse the relationship between the development of the credit market and a group of macroeconomic and bank-specific variables.

2 Material and methods

The main aim of the paper is to analyse the development of the credit market and the development of other macroeconomic and bank-specific variables in European Union countries. To fulfil the objective, the main terms used in the analytical part and methodology have to be set up, and the literature review dealing with the mentioned topic has to be prepared.

We define the main terms within the first part based on the relevant literature. Then, based on the literature review and after applying the synthesis method, we created an overview of basic terms and their definitions from the point of view of several authors. We also prepared a systematic overview of studies analysing the relationship between the credit market and other variables. This literature review creates the base for defining research questions and hypotheses tested in the analytical part of our research. Furthermore, the literature review helped us understand the development in European Union countries better. Finally, in the conclusion part, we confront the results of the analysis with the findings of other authors.

In the analytical part, we used the consolidated banking data from the European Central Bank Statistical Data Warehouse. It covers annual data for all Member States of the European Union, i.e. for the entire banking sectors at the macro level between 2008 and 2019. Therefore, we also included Great Britain in the sample of 28 EU Member States. Next, we described the development of selected macroeconomic and bank-specific variables. First, we used descriptive statistics and visualisation in the form of basic graphs (from the point of view of average value in a specific year and the point of view of average value in a particular country). Then, we applied the comparative analysis to analyse the development in a specific country from the point of view of different variables. Finally, we confronted the analysis results with the results from relevant studies.

3 Results

The main aim of the central banks in European countries is to ensure price stability. To fulfil this objective, central banks can use many monetary policy instruments. The transmission mechanism describes the process of transmission of the applied instrument to obtain the main aim of the monetary policy. In the literature (e.g. Jílek, 2004; Polouček, 2010), four main transmission mechanisms are defined. From the point of view of European central banks, the interest rate channel is the most important. Its main principle is that the change in interest rates of the central bank influences the interest rates on the money market and interest rates connected to the product provided by banks to their clients. It also affects the decision of individual subjects on the market, economic development, and price level. In addition, the development of interest rates affects the level of credit provided by banks. Many studies describe the effect of variables on credit market development in the literature, for example Altunabas et al. (2002), Worms (2003), Macit and Karakus (2012), Amidu and Wolfe (2013), Shkokani (2016), Chileshe and Akanbi (2016), Khana et al. (2016), or Sarkara and Sensarman (2016). We analyse the development in European Union countries from the point of view of different macroeconomic and bank-specific variables.

The results pointed to the fact that there exist differences between the analysed countries. In most countries, the positive development from the point of view of credit quality and capitalisation can be seen. On the other hand, we can see decreasing profitability, which was affected mainly by the decrease in net interest income of commercial banks.

The results pointed out that interest rates mainly decreased in all European countries after the financial crisis. However, it led to an increase in the volume of provided loans and an increase in indebtedness. The decreasing interest rates influenced not only the credit level but also the other bank-specific characteristics and macroeconomic development in specific countries. Based on the results of our analysis, we can also say that the development of the credit market was not influenced only by the level of interest rates. The other important factors are concentration, bank size, profitability, capitalisation, liquidity, and credit quality. So we can say that there exists a reciprocal relationship between the development of the credit market and macroeconomic and bank-specific variables.

We confronted the results of our analysis with other studies. Also, Adams and Amel (2005) pointed out that the impact of monetary policy on the credit level is weaker in countries with a more concentrated market. The negative effect of bank size, low capitalised, illiquid and low profitable banks on the credit market was also presented by Shkokani (2016). Further, Matic and Karakus (2012) and Kasmana and Kasmana (2015) found the negative effect of concentration on the market on the development of the credit market. Finally, Gomez-Gonzalez et al. (2020) point out that the increase in monetary policy interest rates reduces bank credit growth, which depends mainly on two factors. First, this primarily depends on the heterogeneity of banks, as the supply of loans by better-capitalised banks is not so sensitive to monetary policy shocks. Secondly, it is essential to note that the supply of credit and its impact on the development of short-term interest rates depend on the actual monetary policy situation.

4 Conclusions

The analysis of developments in the European banking sector is a problematic issue based on the structure of the banking sector and the credit channel. As mentioned above, the 2008 global financial crisis, which affected the individual economies of EU Member States during the reporting period 2008-2019 and the economies of the whole world, also has a share of this complexity. In addition to the global crisis, EU authorities sought to mitigate the adverse impact on EU banking sectors by introducing non-standard instruments and a comprehensive set of monetary policy measures. However, it is essential to note that the banking sectors of EU countries differ individually, and these differences are also described in detail when describing and analysing the different variables.

The main objective of this contribution was to focus more closely on individual variables, particularly the European banking sector, over the period 2008-2019. According to our results, but also based on individual expert studies, we can conclude that the respective findings of complex results are differentiated from each other. For this analysis, we used three categories of variables, i.e. the variables characterising the banking sector, the variables used in the measurement of competition/concentration and macroeconomic variables, and then, using the defined methods, compared our achieved results with other authors' studies, other relevant scientific literature.

However, ultimately, this analysis could also be complemented by individual micro-level determinants, i.e. for specific banking institutions, given the diversity of banking sectors and the variety of banks.

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FINANCIALIZATION OF THE COMMODITY MARKET DURING XXI CENTURY

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Keywords: Financialization, commodity market, pandemic.

JEL classification: G13, G15, Q02

1 Introduction

Financialization is understood as the growing role of financial markets and institutions in the world economy (Sawyer 2014). The freedom of operation of various financial institutions and entities is also included in the process of financialisation (Freeman 2010). The growing ability to allocate funds fits well with an economy that seeks to maximize the efficiency of investors' activities (Palley 2013). The commodity market is an important foundation of the international economy. Commodity trading has a long history. The first structural framework for commodity exchange appeared in the early Middle Ages (Casson 2011). At that time, fairs, markets and taverns were of the greatest importance in the sale of various types of goods. The main investment opportunities in the commodity market include direct acquisition of physical raw materials, the portfolio of companies related to the raw materials market and investments in the future contracts (Zaremba 2014). The vast majority of investors concluding contracts for commodity are not interested in the physical delivery of specific goods (Yau, Schneeweis, Robinson, Weiss 2007). Determining the actual determinants of commodity prices is crucial. The most frequently mentioned factors influencing the prices of these assets include: supply, demand, exchange rates, level of interest rates, inflation and weather factors. Along with the growing importance of the financial market in the economy, the process of investing in instruments based on commodity, such as derivatives, is gaining in importance.

The commodities examined are: gold, silver, copper, WTI crude oil and natural gas. The period of the analysis is 2000-2020. The main aim of the study is to investigate whether the activity of financial investors on the derivative instruments market affects the level of prices of the researched commodities.

2 Material and methods

The Granger causality study, within the framework of the VAR vector autoregression model, allows for short- and medium-term analysis. The adopted scale of influence of the researched factors in the dimension of financialization of the commodity market seems to be the most appropriate.

The selected period covers typical stock market trends, such as bearish or bullish, a series of short or ultra-short trends, created by sudden volume changes, instant speculation or high frequency trading. In the short term, there are also radical and sudden speculation in futures contracts. Numerous speculative attacks in many markets, which take place at the same time, affect the market, and the popularity of the scalping strategy adopted by many investors also affects the nature of the transactions. Authors of the subject literature repeatedly point out that the process of the growing importance of the financial market influences the process of valuation of areas affected by finance (Bhardwaj, Gorton, Rouwenhorst 2015).

3 Results

The Granger causality study as part of the vector autoregression model confirmed the impact of the activity of financial investors on the level of price formation of all analyzed commodities, except for natural gas, i.e. gold, silver, WTI crude oil and copper. The number of concluded futures contracts is a statistical determinant of the price creation of the researched assets. As a result of the increased activity of portfolio investors, an increase in the correlation between commodity groups, characteristic of the financialization process, appeared (Tang, Xiong 2012). During crises in the 21st century (financial 2008+ and the outbreak of the COVID-19 pandemic in 2019) most financial assets (stock indices, equities) experienced declines in profitability. A different situation took place on the commodity market. Economic recessions have a positive effect on the raw materials market and are characterized by price increases. The highest price increases in both the financial crisis and the pandemic crisis were recorded in gold and copper.

4 Conclusions

The process of financialization on the commodity market seems to be a crucial determinant of the prices of these assets. It can be concluded that there is a cyclical interaction between the spot market and the futures market of the analyzed commodities, which is reflected in the existence of a feedback loop between the prices of futures contracts and the current prices of selected commodities. There is an interaction between the intraday market for commodities and the futures for gold, silver, copper and WTI crude oil. A reflection of this state of affairs is the setting of commodity prices of futures contracts on the basis of spot prices and the cascading influence of the futures market on the current valuation of commodities. Investors' actions in the futures market started to determine the trends in prices of commodities from the beginning of the 21st century. The decrease in the importance of seasonality in the context of shaping the value of energy assets also constitutes another significant transformation of the commodity market. The advancement of the financialization of the commodity market depends mainly on the ratio of the volume of trading on the futures markets to the actual production. The growing interest of investors in futures contracts is conducive to the constant financing of commodities (Chari 2017). The volume of futures contracts has become a crucial determinant of commodity prices. The situation on the derivatives market in the context of current price creation becomes more important than real economic factors such as mining, consumption or the trade balance.

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PUMP-AND-DUMP SCHEMES ON CRYPTOCURRENCY MARKETS

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Keywords: Cryptocurrencies, pump-and-dump scheme, time series analysis.

JEL classification: G17, G41

1 Introduction

Price of stocks is created by supply and demand, i.e. by human activity, not by a firm's results written in account statements (although an account statement should be a relevant guide for an investor). The example of that is the rising value of GameStop caused by Reddit users (Morgia et al., 2021). More than stocks, cryptocurrencies (especially memecoins) are affected by the sentiment, as there is a lack of standard fundamental analysis, in part due to the expansion of social media.

It is not unusual that price of any cryptocurrency can soar thanks to the messages on social media created by specialized groups of pump-creators or by well-known influencers. Elon Musk's tweets can influence the price of Bitcoin (Tandon et al., 2021), any altcoin, but especially Dogecoin (Cary, 2021). We talk, in general, about price anomalies commonly referred to as pump-and-dump schemes (studied e.g., by Kamps and Kleinberg, 2018; Xu and Livshits, 2019, Morgia et al., 2021, Hamrick et al. 2021).

A different point of view linking human behaviour and cryptocurrencies is offered by Delfabbro et al. (2021), confirming some relations between gambling and crypto-investing preferences of individuals, especially for short-time speculative investing.

The aim of our paper is to model the timing of Elon Musk's Dogecoin tweets. We set the hypotheses, as follows.

H1: Behaviour of a market-influencer can be reversely derived from a price movements of an asset.

H2: Timing of Elon Musk's tweets fits under a certain scheme.

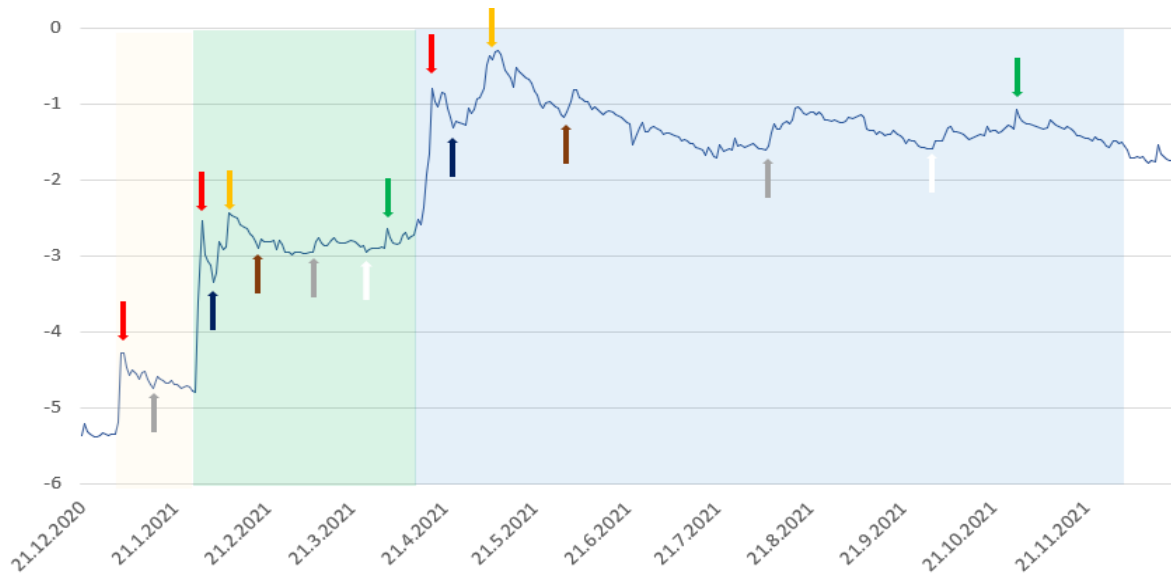
2 Material and methods

Material includes two subsets: (Coindesk, 2022; Twitter, 2022) the time series of Dogecoin price (DOGE/USD) since 28/01/2021 (large pump event), and the time series of Elon Musk's Dogecoin-related tweets during the same period. Firstly, the time model – based on the Dogecoin price movements – was created. Secondly, we made the simple projection of the dates of the tweets on the same regression line, that was created by the time model.

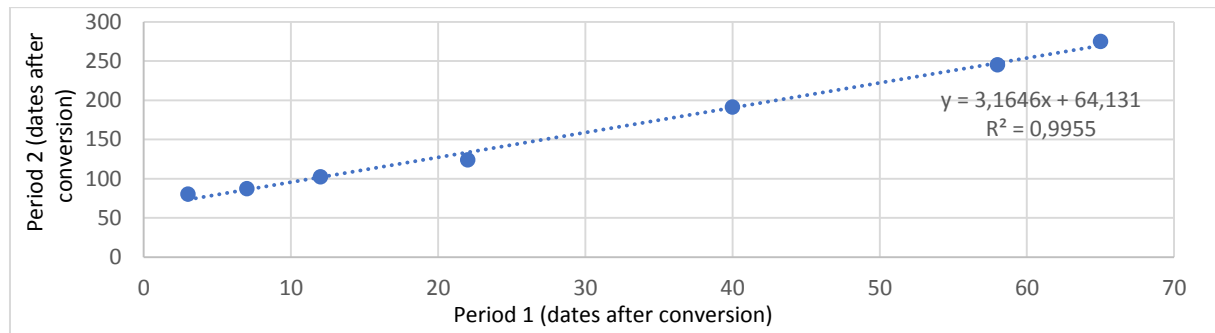
We converted all dates to simple numbers (e.g., 28/01/2021 is 1, etc.) for the analysis, as well as in the Graph 2 and 3. Explanatory, regression, and distribution analysis were applied.

3 Results

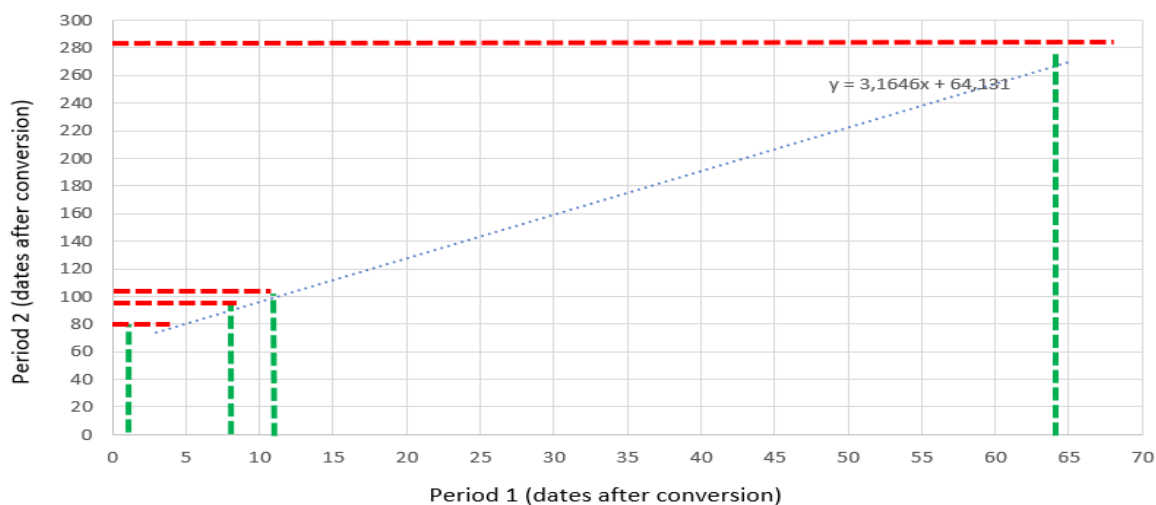
As we can see in the Graph 1, there is some replication of the price development, i.e. repeating shapes, when comparing Period 2 (blue area), to Period 1 (green area), as well as to Period 0 (white area). If we select certain points (see arrows in the Graph 1) from both Period 1 and Period 2 that obviously mutually correspond to each other (according to the assumption of shapes replication), we are able to make a time model (see Graph 2).



Graph 1 Logarithmic price of Dogecoin with highlighted replication of the shapes
Source: Own processing from Coindesk (2022), and Medzihorský (2021).



Graph 2 Regression of selected time points
Source: Own processing.



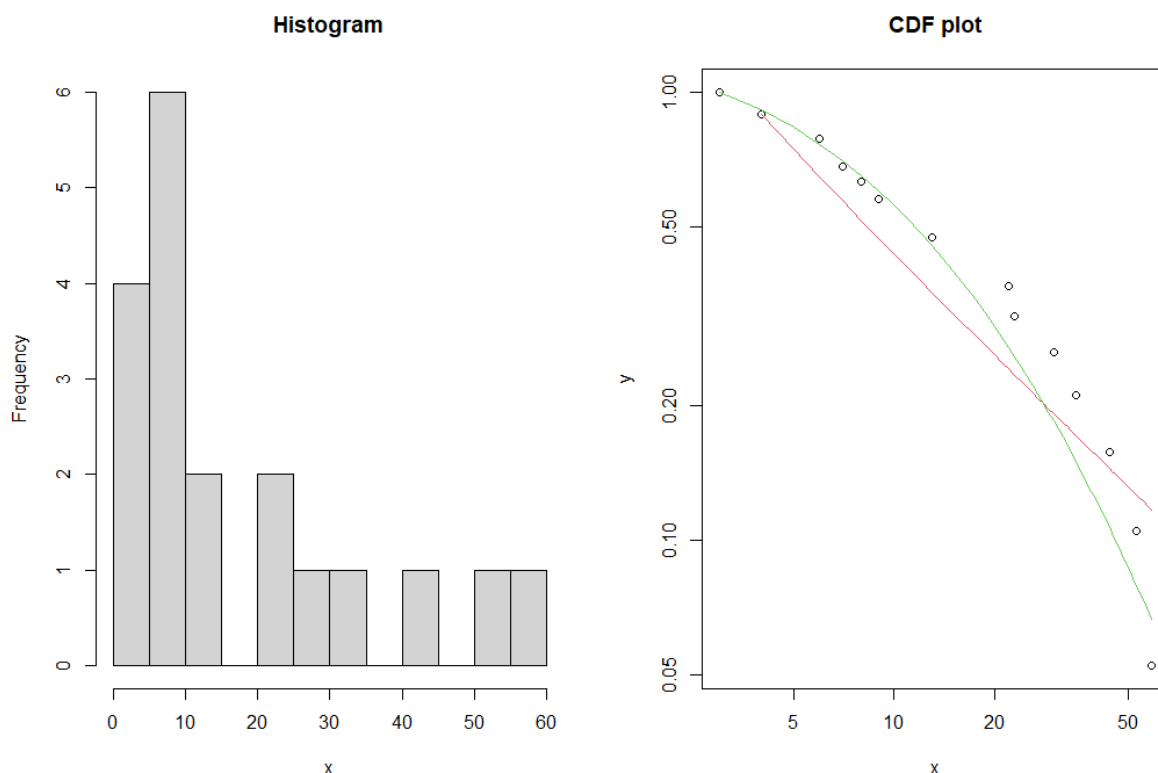
Graph 3 Timing of the tweets and their projection on the regression line of Dogecoin time points

Source: Own processing from Twitter (2022).

There is almost perfect correlation in the timing of selected points in Period 2 and Period 1 (see Graph 2). We can say that Dogecoin price development is more deterministic than stochastic. We then apply the regression line based on price movements (Graph 2) for the analysis of the tweets (Graph 3). As the intersections of the projections of tweets dates are approximately on the regression line, H1 and H2 are confirmed.

However, there are important limitations of our approach - only selected tweets can be analysed this way, there is a limited study period, the first part of the analysis focus on Dogecoin price movements that can be affected by many 'non-Elon' factors, and finally the exact timing of the tweets cannot be calculated by a simple line (there are inaccuracies in the order of days).

Finally, we also analysed a distribution of the timing of the tweets. Zwang et al. (2018) showed that highly skewed distributions are common for crypto wallets transactions, while anomalies from these distributions indicate non-human activity (bots). Aipperspach et al. (2006) confirmed such distributions for human movements in a house. Final step of our analysis, therefore, focuses on the comparison between empirical and theoretical distribution of the times between the tweets. As we can see on Graph 4, the empirical distribution is highly skewed, and there are no greater anomalies when comparing the empirical to theoretical power-law distribution (red line), but mostly to log-normal distribution (green line), thus we cannot make some unequivocal conclusions from this part of the analysis. Such results do not correspond with previous results and with H2.



Graph 4 Distribution of times (in days) between the tweets
Source: Own processing from Twitter (2022).

4 Conclusion

It is obvious that Elon Musk influences Dogecoin price. Thanks to that, we have been able to apply reversal analysis of his behaviour, i.e. to use the results of the analysis of hard financial data (price) to analyse human behaviour (tweets) that preceded and influenced financial data. However, if there were no repeating shapes of Dogecoin price, and no schematic timing of the tweets, we definitely would not be able to model the timing of human behaviour with the basic method of a simple line. Our contribution is only a first step in this analysis, and future research - focusing more closely on this issue, on any market influencer, or on any possibilities of a reverse derivation of human behaviour from price movements. This type of analysis is definitely needed. This need is also supported by many limitations of our research including the results of the last part of the paper as it did not confirm anomalies in the tweets timing.

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THE ANALYSIS OF HOUSEHOLD CONSUMPTION PATTERNS IN THE CONTEXT OF COVID-19 PANDEMICS IN EU COUNTRIES

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Keywords: Consumption structure, household expenditure, economic development, European Union.

JEL classification: P46, E21, H31

1 Introduction

The consumption is an engine of modern economy with households playing a vital role. Analysing the consumption provides relevant information about the socio-economic situation. Consumption is not limited to fuelling economy. It may help to identify issues which are hidden behind the GDP growth and other mainstream indicators. Real income and real consumption are two of the main factors of the material wellbeing (Stiglitz, Sen, Fitoussi, 2010). Higher share of expenditure on food may also indicate a less developed economy (Kindleberger, 1990). As A. Deaton underlines, individual consumption decisions may have impact on the whole economy and they are important to analyse with regard to wellbeing (Besley, 2016).

The investigation of household consumption expenditure and its structure shows differences among EU economies. There are two clusters identified based on the median expenditure on food and non-alcoholic beverages. The share of expenditure spent on food and non-alcoholic beverages is very revealing about the quality of life in a country. It is an important indicator of welfare in the context of food security, health and poverty (Zezza, et al, 2017). The expenditure on housing, water, electricity, gas and other fuels is not only a question of quality of life but also sustainability and resource efficiency (Štreimikienė and Barakauskaitė-Jakubauskienė, 2012).

The aim of the research is to identify and analyse the socio-economic aspects of the consumption patterns in the context of COVID-19 pandemics in EU countries.

2 Material and methods

Household consumption expenditure analysis is based on the statistical data from the period of 1995-2020 for the 27 EU countries. Statistical data is downloaded from the Eurostat database (Eurostat, 2022) and processed using Excel software. The consumption structure is based on COICOP classification.

The consumption expenditure of households is analysed from different angles. The median of share of consumption expenditure on food and non-alcoholic beverages is calculated. The median was calculated for the period of 1995-2020. Using this method the development of household consumption was taken into account. Considering this median, EU countries are grouped into two clusters according to the data of 2020. The clusters are presented in the maps. One map presents the cluster based on the share of expenditure on food and non-alcoholic beverages. The other map presents the cluster according to the final consumption expenditure of households per capita. The development of household spending on different groups of products is analyzed with more detailed analysis of household expenditure on housing, water, electricity, gas and other fuels as well as food and non-alcoholic beverages.

We also pay a particular attention to changes in household consumption structure at the time of crisis, especially during the COVID-19 pandemics. Consumption expenditure is also investigated with regard to GDP per capita, household income and price levels.

3 Results

Two clusters of EU countries were determined based on the consumption expenditure on food and non-alcoholic beverages of 2020. The first cluster is composed of countries with lower than median share of expenditure spent on food and non-alcoholic beverages: Belgium, Denmark, Germany, Ireland, Spain, France, Cyprus, Luxembourg, Netherlands, Austria, Finland and Sweden. The second cluster is composed of countries with higher than median share of expenditure spent on food and non-alcoholic beverages: Bulgaria, Czechia, Estonia, Greece, Croatia, Italy, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovenia, Slovakia. The first cluster represents old EU member states with Cyprus (2004) being an exception. The second group, with an exception of Italy and Greece, represents new members states which joined the EU later (in 2004, 2007, 2013). The discussion behind these clusters follows in our research.

Household consumption expenditure shifted when the COVID-19 pandemics hit. The share of spending on food increased in all EU member states as well as spending on furnishings, household equipment and routine household maintenance. The concerning tendency could be identified while analysing the increasing share of household expenditure on alcoholic beverages, tobacco and narcotics. We can witness the change in social life – spending on clothing and footwear decreased as well as spending on recreation and culture. People started spending time at home, even working from their home offices. Thus, the willingness to upgrade their home is evident. Another issue is an increasing burden of spending on housing, water, electricity, gas and other fuels. It takes a high share of household expenditure as prices of electricity, gas and other fuels started soaring in the end of 2020 in the EU, which can be an additional challenge for households together with ongoing COVID-19 pandemics, supply shortages and increasing food prices.

4 Conclusions

The consumption is very important in our consumerist society, where households and consumers are at the very centre. Analysis of data on household consumption reveals socio-economic aspects of our economies. It reflects a deeper view to economic problems than a more abstract indicator like GDP.

Some limitations of our research follow from the lack of data as the newest data on consumption from the year 2021 has not been published yet. These data could possibly indicate the later shifts in the household consumption structure due to the COVID-19 pandemics. The development of household consumption structure should be further followed to assess the effects of turbulence environment (COVID-19, soaring energy and food prices and supply shortages).

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