Volume 15 Issue 1 2023

DETUROPE

Central European Journal of Regional Development and Tourism

Czech Republic ◆ Hungary ◆ Serbia

DETUROPE

THE CENTRAL EUROPEAN JOURNAL OF REGIONAL DEVELOPMENT AND TOURISM

Volume 15, Issue 1

2023

DETUROPE – the Central European Journal of Regional Development and Tourism is an international online open-access scientific journal publishing results of theoretical and applied research in the fields of regional and rural development and tourism. The articles published in this journal pass through a double-blinded peer reviewing process.

DETUROPE is covered by Web of Science Emerging Sources Citation Index and indexed in the Scopus, ERIH plus, DOAJ (Directory of Open Access Journals), MTMT (The Hungarian National Scientific Bibliography), and the KoBSON (Serbian Consortium for Coordinated Acquisition of Electronic Resources) databases.

Published by the Regional Science Association of Subotica, Serbia in co-operation with the University of South Bohemia, Faculty of Economics and University of Pannonia, Georgikon Faculty, Kesthely, Hungary.
Address of the contact information: DETUROPE. Regionális Tudományi Társaság Szabadka/Društvo za Regionalne Nauke, Corvin Mátyás/Matije Korvina 9. 24000 Szabadka/Subotica, Serbia, deturope@gmail.com
ISSN 1821-2506

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Original scientific paper

SIMILAR CULTURE, DIFFERENT TOURIST BEHAVIOR? RESULTS FROM CROSS-CULTURAL RESEARCH ON THE TOURIST BEHAVIOR OF COLLEGE STUDENTS

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Cite this article: Závodný Pospíšil, J., Xara-Brasil, D., Závodná, L.S. (2023). Similar Culture, Different Tourist Behavior? Results from Cross-Cultural Research on the Tourist Behavior of College Students. *Deturope,* 15, (1), 4-22.

Abstract

The paper aims to enhance the understanding of the behavior of international tourists; this study (1) determines if cultural differences exist between Portuguese, Brazilian, Mexican, and Colombian college students; (2) if these students differ in their travel preferences; (3) examines if horizontal/vertical individualism correlates with the students' travel preferences. A psychographic approach based on value orientations was used to understand the relationship between travel preferences and the students' cultural tendencies to horizontal and vertical individualism and collectivism. The results showed that Portuguese, Brazilian, Mexican, and Colombian students have similar cultural dimensions at the societal level but differ at the individual cultural level. Although their tourist preferences differ fundamentally, no significant evidence of a relationship between the cultural tendencies and the tourist behavior of the measured samples of students has been found. The paper uses a combination of known and proven methods to obtain and process primary data. The findings provide new insights that can enhance the current knowledge of tourism research and marketing. The paper's results imply the need to revise the current understanding of differences in cultural tendencies on tourist behavior. However, it is necessary to consider some limitations arising from the sample selection and cultural tendencies measurement methods.

Keywords: Tourist Behavior; Cultural Differences; Portugal; Brazil; Mexico; Colombia.

INTRODUCTION

As with most customer service businesses, almost all travel destinations have to perceive and reflect the needs and desires of tourists. Understanding travelers' behavior is crucial for developing a strategy and service delivery. The presence of a large number and variety of travel destinations coupled with the expected market changes in the post-covid era reinforces the need to understand travelers' tourist behavior.

As part of the tourism business, South American tourists, or same language speaking tourists, are often perceived as one homogeneous segment (e.g., Ezeuduji et al., 2016; Kruger & Snyman, 2017; Park et al., 2008). However, South American, as well as the same language speaking countries may have different cultural backgrounds, which in turn affect the personality traits of their citizens to a certain extent (McCrae & Terracciano, 2005). In addition, in the case of countries that show similar cultural tendencies, there may be differences between the cultural tendencies of society on the one hand and the individual on the other (Triandis & Gelfand, 1998). A separate problem is a difference in verticality and horizontality in cultural tendencies in the case of individualistic and collectivist countries (Sakakida et al., 2004).

Therefore, this study aims to expand the knowledge base of college students' travel preferences by analyzing their value orientation. Brazilian, Colombian, Mexican, and Portuguese college students' travel preferences were measured in this study and compared with their value orientations. Subsequently, the significance of the influence of value orientations on the form of tourist behavior is determined. It can be assumed that this approach analysis will provide a better understanding of cross-cultural tourist preferences.

The present study (1) determines if cultural differences exist between Brazilian, Colombian, Mexican, and Portuguese college students; (2) if the college students from these countries differ in their travel preferences; (3) examines if horizontal/vertical individualism, respectively collectivism, correlates with the students' travel preferences.

THEORETICAL BACKGROUND

Tourism is considered *"a global marketplace where destinations market to and host visitors from different national cultures"* (Huang & Crotts, 2018). However, what remains unclear is the extent to which national cultural differences should be considered when reaching and serving these markets. At one end of the spectrum of opinions is the idea of a "global consumer" who shares common behavior, including a set of values and preferences (e.g., Coles et al., 2004; Dann, 1993; Dwyer, 2004). It is mostly believed that this is due to acculturation – the process by which individuals learn and accept the norms and values of a culture different from the one in which they grew up (Cleveland & Laroche, 2007; Yu et al., 2021). As a result, global consumer segments arise while associating similar meanings with certain places, people, and things (Alden et al., 1999). Such tourists are considered less affected by cultural, social, and other factors during their consumer behavior (Keillor et al., 2001).

On the other hand, it is believed that human nature is much more complex (de Mooij & Beniflah, 2017). Therefore, the idea of a global consumer emerged from a narrow focus of the original North American studies rather than from a correct understanding of consumer divergences (Goodwin et al., 2020). Although international tourists may show similarities in the choice of destinations when using the selected destinations, they are influenced by preferences partly based on their common social or cultural values (McKercher & Du Cros, 2003; Macleod, 2006; Torres et al., 2014).1 The need to recognize the behavior of tourists from heterogeneous cultures, their preferences, and choices then becomes an important issue for the success of an international destination (Soldatenko & Backer, 2019).

Hearing these calls, cultural influences on travel behavior began to be investigated by many researchers (Özdemir & Yolal, 2017; Litvin et al., 2004; Reisinger & Turner, 1997; etc.). These researchers mostly used knowledge from the field of cross-cultural research. Although the inceptions of cross-cultural research can be traced back to the 19th century, its contemporary form did not begin until the mid-1960s (Lonner, 2000). To this day, the best-known and most used framework for measuring national cultural differences is based on five dimensions of culture presented by Hofstede (2001). Although his research was originally created to measuring workplace values, it has been applied to many academic disciplines in hundreds of studies (Pizam & Fleischer, 2005). It's necessary to remember that this is not the only concept. There is a wide range of other models for measuring national cultural differences (e.g., Bond, 1988; Trompenaars, 1993; Stewart, 1971; etc.). The latest version of Hofstede's framework is based on a cross-cultural research study of IBM employees from 40 countries. Five, respectively, six dimensions distinguishing people from various national cultures were derived from the research (Huang & Crotts, 2018). These dimensions are Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI), Long-term orientation (LTO), and Indulgence (IND) (Hofstede et al., 2005; Hofstede Insights, n.d.).

It could be argued that differences among national cultures cannot be easily understood and the consequences of these cannot be considered without considering all the dimensions. As Pizam and Fleischer (2008) claim, based on their extensive research, not all constructs directly influence every behavior and often become latent depending upon the situation. In this sense, the different levels of national cultures would be specifically reflected in tourist behavior. For example, people from high UAI cultures (Hofstede et al., 2005) would prefer to participate in safe tourist activities that are well-planned and organized (Pizam & Fleischer, 2008). This will also be very similar in the collectivist, respectively individualistic, cultural orientation of travelers. For instance, according to Kim and Lee (2000), representatives of

high IDV cultures are more likely to seek newness when traveling, while those from collectivist (low IDW) cultures are instead to travel to be with family (Kim & Lee, 2000). Moreover, consumers from a collectivistic culture background also tend to avoid uncertainty (Hofstede, 2001).

When using the results of the analysis of collectivism and individualism of the studied cultures, the greatest danger is a uniform view of the representatives of the given culture. McSweeney (2002) stated that usage of an "average" score of culture dimensions across a whole population tends to produce inaccurate, narrow, and arbitrary results (McSweeney, 2002). In this regard, applying an "average culture" in tourism research may be unreliable or even invalid (Ahn & McKercher, 2018). However, this does not mean that the given cultural tendencies cannot be identified on an individual level (Triandis, 1995). The condition is to use an appropriate tool for measuring. Although Hofstede's framework is not employable on the individual levels, the other tools may be (Ahn & McKercher, 2018).

There is also a tendency to perceive individualism and collectivism in clear dichotomies (Triandis & Gelfand, 1998). In that sense, then the representatives of cultures with a similar degree of collectivism/individualism should have similar traits. However, according to Triandis (1995), collectivism and individualism are polythetic constructs, and therefore can be defined by four attributes. Different species of these constructs can also be defined by additional attributes (Triandis, 1995). Singelis et al. (1995) defined that vertical collectivism (VC) involves perceiving oneself as constituent part of a collective, where the individual respects inequalities within the collective. On the contrary, horizontal collectivism (HC) also includes considering the self as part of the collective, whereas an individual perceives and wants to perceive others as equal. In the case of vertical individualism (VI), one is perceived as an autonomous unit, which at the same time accepts existing inequalities between people. Horizontal individualism (HI), conversely, describes a given autonomous individual as focused on equality (Darwish & Huber, 2003). Simply put, the value of a horizontal cultural difference can be defined as valuing equality, while the second value, the vertical cultural difference, emphasizes hierarchy (Shavitt et al., 2011).

When this concept has been applied over the last 30 years, it has found widespread use in many research fields, including consumer psychology and marketing science (Sivadas et al., 2008). Integrating the cultural dimensions into tourism behavior research can contribute hugely to practitioners when creating future marketing strategies (Han et al., 2017). Together with personal background and social, political, and economic factors, the cultural dimensions of individualism/collectivism can help understand the tourist behavior of travelers from different cultures (Sakakida et al., 2004; Meng, 2010). Adding another dimension of

horizontality/verticality into this concept may increase the accuracy of the measurement of cultural differences.

Cultural dimensions such as HI (Horizontal Individualism), VC (Vertical Collectivism), HC (Horizontal Collectivism), and VI (Vertical Individualism) have been found to impact various aspects of tourist behavior. Studies have shown that these dimensions influence destination choices, travel motivations, travel behavior patterns, satisfaction levels, and behavioral intentions of tourists (Huang & Crotts, 2018; Woodsideet al., 2011; Li et al., 2011). For instance, individualism-collectivism has been found to significantly affect tourists' preferences for activities, social interactions, and overall travel experiences (Kim & Lee, 2000). Moreover, cultural orientations have been shown to influence decision-making processes, including destination selection, accommodation choices, and information source utilization during trip planning (Li et al., 2011).

Within the tourism market, the concept of individualism/collectivism (IDV/COL) is best used to measure tourism behavior differences between Asian and Western countries since the differences in IDV/COL level are considered to be the greatest (Turner, 2003). On average, Asian cultures are considered more collectivistic, while Western cultures are mostly individualistic (Goncalo & Staw, 2006). However, based on Hofstede's (2016) results, even some "Western" countries in Europe are more collectivistic. Although they may share a common language, some countries from different continents with different historical backgrounds or social, political, and economic factors can have very similar IDV/COL dimensions. This is precisely the case in countries such as Brazil, Colombia, Mexico, and Portugal, which, according to Hofstede (2016), have almost identical IDV/COL levels (alphabetically by country): 38, 13, 30, 27.

According to IDV/COL levels, tourists from Brazil, Colombia, Mexico, and Portugal, except for their countries' socio-geographical differences, should be treated as one consumer group with relatively similar travel preferences. Based on these assumptions, and following the above theoretical knowledge, the following research assumptions were determined:

H1: There is a statistically significant difference between the cultural tendencies of Brazilian, Colombian, Mexican, and Portuguese college students.

H2: There is a statistically significant difference between the travel preferences of Brazilian, Colombian, Mexican, and Portuguese college students.

H3: There is a correlation between the cultural tendencies and travel preferences of Brazilian, Colombian, Mexican, and Portuguese college students.

METHODS

A survey was conducted using a convenient sample of Portuguese, Brazilian, Mexican, and Colombian students. Students from each country were always from one college and were majoring in Business Economics. College students are often used in cross-cultural studies because they are considered to have comparable demographic characteristics (Van de Vijver & Leung, 1997; Flere & Lavrič, 2008) and are considered as an easily reachable homogenous group for the survey (Murray et al., 2013). Although the mass use of college students in surveys raises questions about the sample relevancy (Bello et al., 2009), this was not an issue for this research since the aim was to measure students' behavior as a primary group. Also, when applying general good practice into the research, the results, which emerged using the sample consisted of college students, could be generalized (Ashraf & Merunka, 2017).

A total of 640 questionnaires were distributed, with 555 included for analysis. Questionnaires were distributed by collaborating colleagues at respective universities to the entire class during teaching sessions. Completion was voluntary, which resulted in a portion of the questionnaires being returned either partially filled or left unfilled. These incomplete questionnaires were subsequently excluded from the subsequent data analysis. As a result, a variable response rate was observed, with 133 respondents from Portugal, 146 from Brazil, 150 from Mexico, and 126 from Colombia completing the questionnaires.

The questionnaire was first written in English and then translated into Spanish and Portuguese taking into consideration local language differences. The translation correctness was then verified using the back-translation method (Werner & Campbell, 1970).

To measure the students' *cultural tendencies* and travel preferences, a questionnaire based on Sakakida et al. (2004) was reconstructed. This was a combination of two separate questionnaire tools when measuring cultural differences between American and Japanese students — tourists. The instrument for measuring the cultural tendencies of HI, VI, HC, and VC was developed by Triandis and Gelfand (1998). This is a frequently used instrument consisting of 16 scenarios, where each situation has four possible solutions. The interviewee then selects the two answers most relevant to them, ranking them hierarchically according to his/her accord with the answer. Each of the answers represents one of the four basic cultural tendencies. As a result, there is a less biased view of the respondent’s individualistic or collectivist tendencies, as could be the case with the answers recorded on the Likert scale (Triandis et al., 1998).

The second part of the questionnaire, which examines students' *travel preferences*, was based on Plog's classic psychographic model (Plog, 1974). The original model was designed

to explain psychographic characteristic influence over the destination using the bipolar continuum of personality types – allocentric/psychocentric. For this purpose, eight travel preferences are examined based on the attributes of allocentric and psychocentric travel preferences suggested within Plog's theoretical model (1974, 1991). The items are measured on a 7-point Likert-type scale, with 1 representing "not at all desirable" and 7 representing "extremely desirable." On this basis, the continuum can be divided into five segments: a) allocentric, b) near-allocentric, c) mid-centric, d) near-psychocentric, and e) psychocentric (Park et al., 2010). Although there has also been a critique of the tool (Smith, 1990) in terms of using the model to measure the student population, the model is functional and has the additional potential for further use (Griffith & Albanese, 1996). A relatively large number of authors have studied Plog's model over the years, so sufficient situations are described in which the model is effective and when it less so. In general, it can be said that the model does not take into account the motivations, activities, and mode of transport of the traveler (Litvin and Smith, 2016). On the other hand, in cases where the goal is to measure personality predictors of tourist behavior, the model is irreplaceable (e.g., Griffith & Albanese, 1996; Litvin & Smith, 2016; Cruz-Milan, 2017; Merritt et al., 2018).

By combining the mentioned tools, a questionnaire with 27 questions was created. Of these, three questions asked the age and gender of the respondents, as well as their college. Questionnaires were distributed in printed form and were filled out during the class in the teacher's presence. Participants were treated in accordance with the ethical guidelines set out by the American Psychological Association (2009).

RESULTS

A total of 555 Portuguese, Brazilian, Mexican, and Colombian students participated in the study. On average, the sample included almost the same proportion of females (n = 287; 52%) and males (n = 268; 48%) with ages ranging from 17 to 29 (M = 20.00, SD = 1.75). However, there were more significant gender differences in the samples from individual countries, as described below. The Portuguese sample consisted of 133 students (81 females, 61% and 52 males, 39 %) with ages ranging from 18 to 26 (M = 20, SD = 1.92). The Brazilian sample consisted of 146 students (73 females, 50% and 73 males, 50%) with ages ranging from 18 to 29 (M = 21, SD = 1.86). The Mexican sample consisted of 150 students (50 females, 33% and 67 males, 67%) with ages ranging from 17 to 27 (M = 20, SD = 1.69). The Colombian sample consisted of 126 students (83 females, 66% and 43 males, 34%) with ages ranging from 18 to 29 (M = 20, SD = 1.38).

The Culture Orientation Scale (Triandis & Gelfand, 1998) was employed to measure horizontal and vertical orientation, as well as individualism and collectivism. At the international level, the cultures of the studied countries are described as collectivist (e.g., Hofstede, 2001) although it is possible to describe the culture as individualistic at the individual level. The specific results of the degree of individualism for students from each country were as follows (ordered by the highest value): Colombian 69%, Mexican 65%, Portuguese 61%, and Brazilian 51%. The individual level of collectivism and individualism is thus significantly different from the collective level, according to Hofstede (2016) when p=0.002.

Tab. 1 shows the mean scores of the Portuguese, Brazilian, Mexican, and Colombian students in HI, VI, HC, and VC. As the results show, the highest values were measured for Horizontal Individualism for all the countries, while the lowest values are for Vertical Collectivism. An ANOVA (Single Factor) test was performed to determine if there are statistically significant differences in the results of individual countries. As the results show, the fundamental differences were measured in the level of Horizontal Individualism and Collectivism (for both $p = 0.00$; where $\alpha = 0.05$). On the contrary, in Vertical Collectivism, the results of individual countries were almost identical ($p = 0.77$).

Table 1 The mean scores of the Portuguese, Brazilian, Mexican, and Colombian students in HI, VI, HC, and VC

CULTURAL TENDENCIES	SAMPLE	N	MEAN	SD	ANOVA F	ANOVA F crit	*p* Value*
HI	Portuguese	133	6.39	1.93	15.88	2.62	0.00
	Brazilian	146	5.72	1.97			
	Mexican	156	6.88	2.10			
	Colombian	128	7.27	1.83			
VI	Portuguese	133	3.32	1.60	2.36	2.62	0.07
	Brazilian	146	3.27	1.61			
	Mexican	156	3.59	1.62			
	Colombian	128	3.71	1.57			
HC	Portuguese	133	4.32	1.64	38.92	2.62	0.00
	Brazilian	146	4.95	1.62			
	Mexican	156	3.27	1.69			
	Colombian	128	3.15	1.59			
VC	Portuguese	133	1.84	1.34	0.38	2.62	0.77
	Brazilian	146	1.99	1.36			
	Mexican	156	1.95	1.20			
	Colombian	128	1.87	1.25			

NOTE: HI = Horizontal Individualism; HC = Horizontal Collectivism; VI = Vertical Individualism; VC = Vertical Collectivism. The data were based on the first choices of the participants.
** p is significant at the .05 level*

To determine the significance of individual differences in HI and HC values between the countries, the Tukey-Kramer Post Hoc Test after One-Way ANOVA was conducted. As shown in Tab. 2, only students from Mexico and Colombia did not show significant differences in Horizontal Collectivism. In addition, the students from Mexico and Portugal did not show any differences in Horizontal Individualism. However, significant differences were measured in the HI and HC levels between students from other countries.

Table 2 The significance of individual differences in HI and HC values between the countries

Compared Pairs of Countries		Brazil – Portugal	Mexico – Portugal	Portugal – Colombia	Brazil – Colombia	Mexico – Brazil	Mexico – Colombia
Cultural tendencies	**HC**	**4.51**	**7.63**	**8.11**	**12.74**	**12.47**	0.82
	HI	**4.01**	2.94	**5.06**	**9.13**	**7.15**	2.31
	VI	0.36	2.00	2.77	3.18	2.42	0.87
	VC	1.31	1.02	0.27	1.02	0.31	0.73

Critical Values of Studentized Range Distribution(*q*) for Familywise ALPHA = .05; *df=3.68.*

The student's travel preferences were measured using Plog's (1974) (allocentrism/psychocentrism) model. Tab. 3 shows the mean scores of the allocentric/psychocentric preferences of the four samples. The respondents from all four countries significantly favored allocentric types of travel (p = 0.00) more than psychocentric types. However, between the individual situations of Plog's 8-point scenario, the respondents' answers from individual countries fundamentally differed. As can be seen in the results of the ANOVA test shown in Tab. 3, apart from two situations ("*Travel to adventurous destination*" and "*Package tour when I travel*"), the behavior declared by tourist students was fundamentally different across the countries.

Table 3 The mean scores of the allocentric/psychocentric preferences of the samples

Travel preferences		Brazil Portugal	Mexico Portugal	Portugal Colombia	Brazil Colombia	Mexico Brazil	Mexico Colombia
Allocentric	Travel with a small number of people	3.13	0.18	4.34	7.52	3.05	4.64
	Travel to adventurous destination	3.08	4.69	3.3	0.33	1.63	1.24
	Travel to different destinations for each trip	5.23	5.15	5.56	0.52	0.12	0.63
	Individually arranged travel	4.68	7.89	0.17	4.47	3.24	7.64
Psychocentric	Travel to popular destinations	0.98	4.77	6.62	5.8	3.87	2.1
	Package tour when I travel	0.87	4.47	2.8	2.01	3.68	1.53
	Travel with a large number of people	7.91	4.32	8.35	0.71	3.73	4.32
	Visit the same destinations	2.22	4.35	3.57	1.46	2.17	0.62

Critical Values of Studentized Range Distribution(q) for Familywise ALPHA = .05; *df=3.68.*

Considering the individual countries, the biggest differences were between Mexican and Portuguese students, students from Colombia and Portugal, and Portugal and Brazil. On the contrary, the smallest differences in tourist behavior were then measured in students from Brazil and Mexico. In the case of individual tourist behavior situations, the biggest differences were measured in the questions concerning "*Travel with a large number of people*" and "*Individually arranged travel*". Considerable differences were also measured for questions related to "Travel to popular destinations" and "*Travel with a small number of people*".

Pearson's correlation coefficient was used to investigate the relationships between the four cultural attributes (HI, VI, HC, and VC) and each of the eight travel preferences (Tab. 4). Since the critical value of r was calculated as 0.15 (1-tailed; $\alpha = 0.05$), the correlations found are relatively weak. However, several significant connections between travel preferences and cultural tendencies were found. Interestingly, there was no significant correlation between any cultural tendency and any travel preference for the Portuguese student sample. For student samples from other countries, at least one relatively significant relationship between the cultural tendency and allocentric or psychocentric travel preference was found. The significance of these relationships will be discussed in the next part of the text.

Table 4 Correlation Coefficients of the Relationships Between Cultural Tendencies and Travel Preferences of Portugal, Brazilian, Mexican, and Colombian Students.

Cultural Tendency / Travel preference	HI	HC	VI	VC
Travel with a small number of people				
Portuguese	0.06	0.06	-0.03	-0.14
Brazilian	0.04	-0.02	-0.11	0.07
Mexican	0.04	0.01	0.02	-0.05
Colombian	-0.22	0.13	-0.07	0.17
Travel to adventurous destination				
Portuguese	0.12	0.02	-0.06	-0.09
Brazilian	0.05	0.12	-0.17	-0.16
Mexican	-0.04	0.10	-0.11	-0.08
Colombian	-0.07	-0.16	0.10	0.18
Travel to different destinations for each trip				
Portuguese	0.12	0.00	-0.12	0.03
Brazilian	0.09	-0.17	-0.07	-0.09
Mexican	-0.01	0.16	-0.19	-0.03
Colombian	-0.06	-0.04	0.09	0.00
Individually arranged travel				
Portuguese	0.03	0.02	-0.08	0.03
Brazilian	-0.22	0.11	0.04	0.00
Mexican	-0.01	0.08	0.03	-0.02
Colombian	-0.10	0.15	-0.03	-0.05
Travel to popular destinations				
Portuguese	0.14	-0.08	-0.08	0.08
Brazilian	-0.01	0.07	0.03	-0.06
Mexican	0.07	0.04	0.06	-0.17
Colombian	0.01	-0.01	-0.05	0.05
Package tour when I travel				
Portuguese	0.07	-0.09	0.00	0.09
Brazilian	0.03	-0.10	-0.04	0.16
Mexican	0.11	0.02	-0.04	-0.09
Colombian	-0.15	0.08	0.07	-0.01
Travel with a large number of people				
Portuguese	0.03	-0.08	0.03	0.07
Brazilian	0.14	-0.16	-0.07	0.09
Mexican	-0.03	-0.03	-0.01	0.04
Colombian	0.01	-0.02	0.08	-0.09
Visit the same destinations				
Portuguese	-0.01	-0.01	0.03	-0.03
Brazilian	0.02	0.12	-0.07	0.02
Mexican	-0.06	-0.05	0.22	-0.06
Colombian	0.06	-0.08	0.05	-0.02

Correlation is significant at the 0.14 level (1-tailed); $\alpha = 0.05$.

DISCUSSION

The presented research results helped to answer the set hypotheses and also brought some new challenges. The point is that the results do not correspond to any some extent to the current level of knowledge and will need to be further investigated. The individual findings will be discussed below.

The first hypothesis (**H1**), which claims that there is a statistically significant difference between the cultural tendencies of Brazilian, Colombian, Mexican, and Portuguese college students, was tested on the null hypothesis. First, the ANOVA test showed significant differences in cultural tendencies only in Horizontal Collectivism and Horizontal Individualism. Further testing with the Tukey-Kramer test showed that these differences occur between students from all countries, except for samples of students from Mexico and Colombia. The established hypothesis (**H1**) can thus be only partially confirmed, although the differences found are relatively significant.

Although hypothesis **H1 cannot be fully verified**, the findings support the significance of the Triandis model (Triandis & Gelfand, 1998), which, unlike the 6D model of Hofstede (2001), considers the horizontality and verticality of cultural dimensions. At the societal level, Hofstede's 6D model shows that the chosen countries are almost equal, both in terms of the collectivism dimension and the Power Distance Index dimension (t-Test, $p = 0.66$). These two categories are similar to the horizontal and vertical cultural models (Triandis & Gelfand, 1998). Our results show that at the individual level, the level of horizontality, except for Mexico and Colombia, varies considerably between all other countries. As the results also showed a significant difference between the results of the cultural dimensions at the societal and individual levels, further research should be made to provide data from cross-measurement on individual and societal levels.

Whereas in the case of cultural tendencies, the differences were measured only at the level of horizontalism, in the case of travel preferences, there were significant differences between all the countries examined. It was thus possible to reject the null hypothesis for the second established hypothesis (**H2**), as travel preferences differed significantly in all countries. The differences were observed at the dimensions of allocentrism and psychocentrism, as well as in the individual tourist situations. Hypothesis **H2** was thus **fully verified**.

It is also important to mention that measuring travel preferences according to Plog's model (1974) showed a slight preference for allocentric dimensions in all the countries studied. If a universal tourist were to be defined according to the results of the three most frequently

preferred travel situations for measured samples of students from all countries, then such a tourist would prefer the following situations (sorted by frequency from the highest): *"Travel to different destinations for each trip," "Travel to adventurous destination,"* and *"Travel with a small number of people."*

These findings are consistent with the assumptions of Sakakida et al. (2004), who argue that horizontal individualists are less likely to have psychocentric travel preferences. Similarly, vertical collectivism had a negative relationship with allocentric travel preferences (Sakakida et al., 2004). Given that the measured results showed the predominance of horizontal individualism in all samples of students from the studied countries, **our findings are in line with the existing theory** (e.g., Triandis & Gelfand, 1998; Mehmetoglu, 2004; Pizam & Sussmann, 1995; Pizam & Fleischer, 2005; Sakakida et al., 2004; etc.).

As mentioned above, when using Pearson's correlation coefficient, it was found that there are relatively significant relationships between the individual travel preferences of the examined student samples and their cultural tendencies. In this sense, using the null hypothesis, the third hypothesis **(H3) can be considered to be fully verified**. However, there are at least two limitations that appear to have a significant effect on the results of the performed correlation analysis. First, the critical value of r was calculated as 0.15 (1-tailed; $\alpha = 0.05$), so the correlations between individuals' cultural tendencies and their travel preferences were relatively weak, ranging from 0.16 to 0.22. Moreover, in some cases, e.g., for a sample of students from Brazil and Colombia, even a negative correlation was measured in the relationships where, according to the above-mentioned theoretical sources, there should be a strong positive correlation (Horizontal Individualism and *"Travel with a small number of people,"* and *"Individually arranged travel"*).

At this point, the article differs from most of the results of similar, previously published studies. In the case of the examined student samples, it was impossible to prove a significant connection between cultural tendencies and travel preferences. However, this may not be surprising, as some authors have previously pointed out that many other factors influence the individual behavior of tourists from different countries, such as varied ethnicities, social classes, ways of life, and other forms of behavior (McCleary et al., 2007; Ouellet, 2007). Also, in their study, Sakakida et al. (2004) aimed at understanding the relationship between travel preferences and students' cultural tendencies to horizontal and vertical individualism and collectivism, found only relatively weak correlations.

Finally, our survey results found even stronger correlations in the case of the relationship between the language spoken by students from selected samples and their travel preferences

(correlation ranging from 0.11 to 0.21; r crit (2-tailed) = 0.0832). Similar results were also found for the relationship between gender and some forms of travel preferences. These findings may lead to a relatively strong claim that cultural tendencies do not directly affect the shape of individual tourist preferences. However, this statement could be significantly affected by the research limits that need to be mentioned. At least these limits were significant: a) Only student samples from four culturally similar countries were chosen for comparison; b) samples were collected in the capitals of the countries and within only one college per city; c) the age of the samples was limited by ranging from 17 to 29 years old; d) a questionnaire containing the minimum possible number of survey questions was used to determine students' cultural tendencies.

Despite the above-mentioned limitations, our findings challenge the importance of the influence of cultural tendencies on the tourist behavior of individuals. Also, the findings have practical implications for tourism businesses and destination managers. Despite weak correlations between cultural tendencies and travel preferences, significant preference differences were observed among the student samples from Brazil, Colombia, Mexico, and Portugal. Tourism businesses and destination managers can utilize this information to tailor their offerings and marketing strategies to cater to the specific preferences of these student segments. Emphasizing unique and immersive experiences, community engagement, and cultural interactions can attract and satisfy students with allocentric preferences. Acknowledging the dominance of horizontal individualism suggests a preference for personalized and customizable travel experiences. Considering the cultural differences among the student samples, businesses can develop culturally relevant products and communication strategies. While these implications should be approached with caution due to study limitations, they serve as a starting point for businesses to understand and cater to the preferences of these student segments, enhancing their competitiveness and appeal.

Further research is needed to explore the specific correlations that emerged between horizontal/vertical individualism/collectivism and travel preferences among college students. This would allow for a deeper understanding of the reasons behind the contradictions with theoretical expectations. Additionally, investigating the influence of socio-demographic characteristics, personal preferences, and other cultural dimensions beyond individualism/collectivism would provide a more comprehensive understanding of the complexities involved in the relationship between cultural tendencies and tourist behavior. Expanding the research scope would contribute to a more comprehensive exploration of the

intricate interplay between culture and travel preferences among college students, addressing the current study's limitations and advancing our theoretical understanding in the field.

CONCLUSION

This paper aimed to determine if cultural differences exist between Brazilian, Colombian, Mexican, and Portuguese college students; if and how they are similar to the general cultural dimensions according to Geert Hofstede; if the college students from these countries differ in their travel preferences; examines if horizontal/vertical individualism, respectively collectivism, correlates with the students' travel preferences.

As our findings showed, there are significant differences in Horizontal Individualism/Collectivism and Vertical Individualism/Verticalism of the chosen samples of students from the chosen countries on the individual level. Although at the societal level, these are countries with a collectivist culture with a high Power Distance Index (Hofstede, 2001), at the individual level, horizontal individualism prevails among students from the given countries. However, our results proved that the student samples from chosen countries significantly differ only in the horizontality of their cultural tendencies. On the other hand, student samples showed significant differences in almost all cases of travel preferences. At the same time, allocentric preferences slightly prevailed over psychocentric ones in the given samples. These findings are in line with the current level of knowledge in the field.

On the other hand, the result failed in the aim to find a clear answer to the question of whether horizontal/vertical individualism, respectively collectivism, correlates with the students' travel preferences. Certain correlations were found, but all were very weak and, at the same time, in some cases contradicted the logic based on the theory. Thus, it can be argued that, given the limitations of the research, its results did not show a direct influence of cultural tendencies on the tourist behavior of the selected samples of students.

In light of the findings and the current level of knowledge, the question arises as to the significance of cultural differences in determining the tourism preferences of students. Our findings support the notion of exploring additional factors that may influence tourists' consumer behavior worldwide. At the very least, further research should be conducted to validate our findings while avoiding the influence of the above-mentioned limitations.

REFERENCES

Ahn, M. J., & McKercher, B. (2018). Hofstede's cultural indices revisited: The relationship between cultural values and international tourism. *Tourism Culture and Communication*, 18(4), 241-250.

Alden, D. L., Steenkamp, J. B. E., & Batra, R. (1999). Brand positioning through advertising in Asia, North America, and Europe: The role of global consumer culture. *Journal of Marketing*, 63(1), 75-87.

Ashraf, R., & Merunka, D. (2017). The use and misuse of student samples: An empirical investigation of European marketing research. *Journal of Consumer Behaviour*, 16(4), 295-308.

Bello, D., Leung, K., Radebaugh, L., Tung, R. L., & van Witteloostuijn, A. (2009). From the editors: student samples in international business research, letter from the editors. *Journal of International Business Studies* (JIBS), 40(1), 1-5.

Bond, M. H. (1988). Finding universal dimensions of individual variation in multicultural studies of values: The Rokeach and Chinese value surveys. *Journal of personality and social psychology*, 55(6), 1009.

Chen, F. F. (2013). Dimensions of Culture (Geert H. Hofstede)–Individualism and Collectivism. *The Encyclopedia of Cross-Cultural Psychology*, 398-403.

Cleveland, M., & Laroche, M. (2007). Acculturaton to the global consumer culture: Scale development and research paradigm. *Journal of business research*, 60(3), 249-259.

Coles, T., Duval, D. T., & Hall, C. M. (2004). Tourism, mobility, and global communities: New approaches to theorising tourism and tourist spaces. In W. F. Theobald (ed.). Global tourism (pp. 463-481). Routledge.

Cruz-Milan, O. (2017). Plog's model of typologies of tourists. In L. L. Lowry (Ed.), *The SAGE International Encyclopedia of Travel and Tourism* (pp. 954–956). Thousand Oaks, CA: SAGE Publications, Inc.

Dann, G. (1993). Limitations in the use of nationality and country of residence variables. In D. Pearce, and R. Butler (eds.). *Tourism research: Critiques and challenges* (pp. 88-112). London: Routledge

Darwish, A. F. E., & Huber, G. L. (2003). Individualism vs collectivism in different cultures: A cross-cultural study. *Intercultural education*, 14(1), 47-56.

de Mooij, M., & Beniflah, J. (2017). Measuring cross-cultural differences of ethnic groups within nations: Convergence or divergence of cultural values? The case of the United States. *Journal of International Consumer Marketing*, 29(1), 2-10.

Dwyer, L. (2004). Trends Underpinning Global Tourism in the Coming Decade. In W. F. Theobald (ed.) Global Tourism (pp. 529-545). Routledge.

Ezeuduji, I. O., November, K. L., & Haupt, C. (2016). Tourist profile and destination brand perception: the case of Cape Town, South Africa. *Acta Universitatis Danubius*. Œconomica, 12(4).

Flere, S., & Lavrič, M. (2008). On the validity of cross-cultural social studies using student samples. *Field methods*, 20(4), 399-412.

Goncalo, J. A., & Staw, B. M. (2006). Individualism–collectivism and group creativity. *Organizational behavior and human decision processes*, 100(1), 96-109.

Goodwin, J. L., Williams, A. L., & Snell Herzog, P. (2020). Cross-Cultural Values: A Meta-Analysis of Major Quantitative Studies in the Last Decade (2010–2020). *Religions*, 11(8), 396.

Griffith, D. A., & Albanese, P. J. (1996). An examination of Plog's psychographic travel model within a student population. *Journal of Travel Research*, 34(4), 47-51.

Han, H., Kiatkawsin, K., Kim, W., & Lee, S. (2017). Investigating customer loyalty formation for wellness spa: Individualism vs. collectivism. *International Journal of Hospitality Management*, 67, 11-23.

Hofstede Insights. National culture (2016). (n.d.) https://www.hofstede-insights.com/models/national-culture/ Retrieved June 2, 2021

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Sage publications.

Hofstede, G., Hofstede, G. J., & Minkov, M. (2005). *Cultures and organizations: Software of the mind (Vol. 2).* New York: McGraw-Hill.

Huang, S. S., & Crotts, J. (2018). Relationships between Hofstede's cultural dimensions and tourist satisfaction: A cross-country cross-sample examination. *Tourism Management*, 72, 232-241.

Keillor, B. D., D'Amico, M., & Horton, V. (2001). Global consumer tendencies. *Psychology and Marketing*, 18(1), 1-19.

Kim, C., & Lee, S. (2000). Understanding the cultural differences in tourist motivation between Anglo-American and Japanese tourists. *Journal of Travel and Tourism Marketing*, 9(1-2), 153-170.

Kim, M., White, C., & Kim, C. (2019). Examining relationships among cultural factors and expectations of CSR. *Journal of Communication Management*. 23, 427–443.

Kruger, M., & Snyman, W. Z. (2017). Segmenting the Latin American travel market to South Africa. *Acta Commercii*, 17(1), 1-18.

Li, X. R., Lai, C., Harrill, R., Kline, S., & Wang, L. (2011). When east meets west: An exploratory study on Chinese outbound tourists' travel expectations. *Tourism management*, 32(4), 741-749.

Litvin, S. W., & Smith, W. W. (2016). A new perspective on the Plog psychographic system. *Journal of Vacation Marketing*, 22(2), 89-97.

Litvin, S. W., Crotts, J. C., & Hefner, F. L. (2004). Cross-cultural tourist behaviour: a replication and extension involving Hofstede's uncertainty avoidance dimension. *International Journal of Tourism Research*, 6(1), 29-37.

Lonner, W. J. (2000). On the growth and continuing importance of cross-cultural psychology. *Eye on Psi Chi*, 4(3), 22-26.

Macleod, D. (2006). Cultural commodification and tourism: a very special relationship. *Tourism Culture and Communication*, 6(2), 71-84.

McKercher, B., & Du Cros, H. (2003). Testing a cultural tourism typology. *International journal of tourism research*, 5(1), 45-58.

McCleary, K. W., Weaver, P. A., & Hsu, C. H. (2007). The relationship between international leisure travelers' origin country and product satisfaction, value, service quality, and intent to return. *Journal of Travel and Tourism Marketing*, 21(2-3), 117-130.

McCrae, R. R., & Terracciano, A. (2005). Personality profiles of cultures: aggregate personality traits. *Journal of personality and social psychology*, 89(3), 407.

McSweeney, B. (2002). Hofstede's model of national cultural differences and their consequences: A triumph of faith-a failure of analysis. *Human relations*, 55(1), 89-118.

Mehmetoglu, M. (2004). A typology of tourists from a different angle. *International Journal of Hospitality and Tourism Administration*, 5(3), 69-90.

Meng, F. (2010). Individualism/collectivism and group travel behavior: a cross-cultural perspective. International Journal of Culture, *Tourism and Hospitality Research*, 4(4), 340-351.

Merritt, R., Kline, C., Crawford, A., Viren, P., & Dilworth, G. (2018). Vacation activity preferences: An examination of generational differences across psychographic categories employing Plog's model. *Journal of Park and Recreation Administration*, 36(4).

Murray, G. R., Rugeley, C. R., Mitchell, D. G., & Mondak, J. J. (2013). Convenient yet not a convenience sample: Jury pools as experimental subject pools. *Social science research*, 42(1), 246-253.

Ouellet, J. F. (2007). Consumer racism and its effects on domestic cross-ethnic product purchase: An empirical test in the United States, Canada, and France. *Journal of Marketing*, 71(1), 113-128.

Özdemir, C., & Yolal, M. (2017). Cross-cultural tourist behavior: An examination of tourists' behavior in guided tours. *Tourism and Hospitality Research*, 17(3), 314-324.

Park, K. S., Reisinger, Y., & Kang, H. J. (2008). Visitors' motivation for attending the South Beach wine and food festival, Miami Beach, Florida. *Journal of Travel & Tourism Marketing*, 25(2), 161-181.

Park, S., Tussyadiah, I. P., Mazanec, J. A., & Fesenmaier, D. R. (2010). Travel personae of American pleasure travelers: a network analysis. *Journal of travel & tourism marketing*, 27(8), 797-811.

Pizam, A., & Fleischer, A. (2005). The relationship between cultural characteristics and preference for active vs. passive tourist activities. *Journal of Hospitality and Leisure Marketing*, 12(4), 5-25.

Pizam, A., & Sussmann, S. (1995). Does nationality affect tourist behavior? *Annals of Tourism Research*, 22(4), 901-917.

Plog, S. C. (1974). Why destination areas rise and fall in popularity. *Cornell hotel and restaurant administration quarterly*, 14(4), 55-58.

Plog, S. C. (1991). *Leisure travel: making it a growth market.... again!* New York: John Wiley and Sons.

Reisinger, Y., & Turner, L. (1997). Cross-cultural differences in tourism: Indonesian tourists in Australia. *Tourism Management*, 18(3), 139-147.

Sakakida, Y., Cole, S. T., & Card, J. A. (2004). A cross-cultural study of college students' travel preferences: A value-oriented perspective. *Journal of Travel & Tourism Marketing*, 16(1), 35-41.

Shavitt, S., Torelli, C. J., & Riemer, H. (2011). Horizontal and vertical individualism and collectivism: Implications for understanding psychological processes. In M. J. Gelfand, C.-y. Chiu, and Y.-y. Hong (Eds.), *Advances in culture and psychology: Vol. 1. Advances in culture and psychology* (p. 309–350). Oxford University Press.

Singelis, T. M., Triandis, H. C., Bhawuk, D. P., & Gelfand, M. J. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-cultural research*, 29(3), 240-275.

Sivadas, E., Bruvold, N. T., & Nelson, M. R. (2008). A reduced version of the horizontal and vertical individualism and collectivism scale: A four-country assessment. *Journal of Business Research,* 61(3), 201-210.

Smith, S. L. (1990). A test of Plog's allocentric/psychocentric model: Evidence from seven nations. *Journal of Travel Research*, 28(4), 40-43.

Soldatenko, D., & Backer, E. (2019). A content analysis of cross-cultural motivational studies in tourism relating to nationalities. *Journal of Hospitality and Tourism Management*, 38, 122-139.

Stewart, R. A. C. (1971). Cross-cultural personality research and basic cultural dimensions through factor analysis. *Personality*, 2, 45-72.

Tang, M., Werner, C., & Karwowski, M. (2016). Differences in creative mindset between Germany and Poland: The mediating effect of individualism and collectivism. *Thinking skills and creativity*, 21, 31-40.

Torres, E. N., Fu, X., & Lehto, X. (2014). Examining key drivers of customer delight in a hotel experience: A cross-cultural perspective. *International Journal of Hospitality Management*, 36, 255-262.

Triandis, H. C. (1995). *Individualism and collectivism*. Boulder, CO: Westview Press.

Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of personality and social psychology*, 74(1), 118.

Triandis, H. C., Chen, X. P., & Chan, D. K. S. (1998). Scenarios for the measurement of collectivism and individualism. *Journal of cross-cultural psychology*, 29(2), 275-289.

Trompenaars, F. (1993). *Riding the waves of culture: Understanding cultural diversity in business*. London, UK: Brealey

Turner, L. W. (2003). *Cross-cultural behaviour in tourism: Concepts and analysis*. Elsevier.

Van de Vijver, F., & Leung, K. (1997). *Methods and data analysis of comparative research*. Allyn and Bacon.

Werner, O., & Campbell, D.T. (1970) Translating, Working through Interpreters, and the Problem of Decentering. In: Naroll, R. and Cohen, R., Eds., *A Handbook of Method in Cultural Anthropology*, American Museum of Natural History, New York, 398-420.

Woodside, A. G., Hsu, S. Y., & Marshall, R. (2011). General theory of cultures' consequences on international tourism behavior. *Journal of Business Research*, 64(8), 785-799.

Yu, Q., Yen, D.A., Cappellini, B., & Wang, C. (2021) 'From West to East: British Sojourners' acculturation in China.', *International marketing review*., 38 (4), 671-689.

***DETUROPE** – THE CENTRAL EUROPEAN JOURNAL OF REGIONAL DEVELOPMENT AND TOURISM*
Vol. 15 Issue 1 2023 *ISSN 1821-2506*

Original scientific paper

DETERMINANTS OF TOURISM DEMAND IN SELECTED COUNTRIES OF META: EMPIRICAL PANEL ANALYSIS

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Cite this article: Krasniqi, S., Dreshaj, K., Dreshaj, F.S. (2023). Determinants of tourism demand in selected countries of META: Empirical Panel Analysis. *Deturope*, 15(1), 23-46.

Abstract

The present study aims is to examine the influence of different factors on tourism demand for selected eight countries from META. To test the proposed hypotheses, the study was used six determinants (GDP per capita, consumer price index, investment, openness to international trade in goods and services, terrorism in destinations and one dummy variable for the emergence of the Covid-19) during the period 2010-2020. In order to estimate impact of selected determinants in tourism demand in selected eight countries from META we used dynamic panel data model-system GMM. From the variables encompassed in the model i.e., income and trade, show statistically significant positive influence on tourist arrivals in eight countries from META. Also the results show that terrorism and Covid-19 have negative impact of the tourist demand. These results imply that for any country in the eight countries from EU Med alliance to attract more arrivals of tourists, it should invest significantly in the tourism sector in terms of upgrading tourism infrastructure, increasing trade openness and promoting a peaceful reputation and safe country.

Key words: META countries, tourism demand, panel analysis

INTRODUCTION

Tourism has become one of the most significant socio-economic phenomena in the last hundred years, from activities available only to small groups of wealthy people in the first half of the 20th century, to mass after World War II, especially since 1970. It is estimated that international tourist arrivals will reach 1.8 billion by 2030 (UNWTO, 2014). The explanation of the causes (factors) of this accelerated growth of tourism is analyzed by Amelung and Viner (2006). According to his, demographics (e.g. population growth and migration flows), culture (e.g. leisure, fashion, hedonism), economy (e.g. disposable income), technology (e.g. ICT, high-speed Along with the global phenomenon of growing demand for tourism over the last decades, scientific research interest in the field of tourism has also grown. One of the most important areas of research work in tourism is modeling and forecasting tourism demand, in which both academics and practitioners are equally interested (Song & Li, 2008).

The economic impact of tourism flows on economies is often significant and acts as a driver of economic growth in small communities, but also in large countries. In order to improve the effects of tourism, it is in the interest of the private sector, but also the authorities themselves and policy makers to find appropriate analytical models (Brida & Scuderi, 2013). In general, the factors influencing tourism demand can be divided into motivators and determinants. While motivation deals with psychological factors and questions about why people travel at all and what needs they try to meet, determinants are factors that affect demand itself. Factors affecting tourism demand can be economic, sociological, demographic, political, geographical, etc. (Fletcher et al., 2018).

Tourism demand is the problem of numerous studies that seek to identify its key determinants and their impact, all with the aim of better understanding and managing tourism as an economic driver. International tourist demand is most often measured in terms of the number of tourist arrivals from the emitting country to the receptive country, in terms of tourist consumption by visitors to the destination or in terms of the number of overnight stays of tourists from the country of origin in the destination. Among the explanatory variables, the population and income of the emitting country, intra-destination prices, substitute prices, tastes, marketing, expectations and persistence of habits, and various qualitative effects that appear in the models in the form of dummy variables (Song, Witt & Li, 2009). In recent years, numerous studies have been conducted in the field of modeling and forecasting tourism demand. However, tourism demand models differ greatly in terms of selected dependent and independent variables, observed periods and data, empirical methodologies as well as pairs of emitting and receptive countries (Dogru, Sirakaya-Turk, & Crouch, 2017). More and more authors, in addition to traditional demand variables, are introducing specific regressors as determinants of tourism demand in order to adapt the models to the goals of their research. Some studies have focused on specific forms of tourism, such as academic tourism, and variables closely related to this form of tourism appear as determinants of tourism demand (Rodríguez, Martínez-Roget & Pawlowska, 2012). On the other hand, numerous studies focus on various specific issues (climate, environmental, social, political, terrorism, corruption, etc.) and their impact on tourism demand. Some authors have considered the impact of climate differences between the emitting country and destination on tourism demand (Li H., Song and Li L., 2017), but also the impact of terrorism on tourism demand (Ulucak, Yücel & İlkay, 2020).

With this in mind, countries belonging to the economic and geographical group of countries included in the Mediterranean Travel Association (META) were selected in this paper. The reason for choosing the countries of the Mediterranean region is that according to the authors,

no research has been done so far on the basic determinants (their direction and intensity of action) of tourist demand. Mediterranean is a destination that is growing in popularity and according to predictions, an increase of between 440 and 665 million tourists is expected by 2025. Given that the countries within the Mediterranean region are also defined on the basis of economic and geographical connectivity, eight countries were selected, which account for over 80 percent of total tourism spending within the region. In the context of the geographical location and the tourist products they offer. These are Croatia, Cyprus, France, Greece, Italy, Portugal, Spain and Turkey. Considering the characteristics of the socio-economic environment that affect international tourism demand, the selection of European countries belonging to the same tourist region to define the spatial dimension of the sample allows to draw general conclusions about the determinants of international tourism demand for the study region. According to the UNWTO (2014), the European tourist region in the period from 1990 to 2013 (and according to projections and beyond) remained the leader in international tourist arrivals by region of origin (or emitting tourist demand) in the world, with total with an average share of more than 52% for the specified period. The size of emitting tourist demand included in the sample countries represents more than 82% of the total emitting tourist demand of the European tourist region, so it can be stated that this sample of countries is also representative of the European tourist region. Precisely because of the above, it is possible to draw general conclusions about the determinants of emitting tourist demand after empirical testing in this paper. The selected study period from 2010 to 2020 determines the defined time dimension for the above sample of countries that will be covered by the empirical research in this paper. The choice of this period is the result of considering the availability of statistics for that period and for all variables included in the empirical testing.

A better knowledge of the factors that explain the tourists ’preferences to choose these countries as a destination place will help policy makers to design more adequate strategies to further develop this sector. Therefore, it is essential to analyze the determinants of META’s countries, tourism demand, in order for the tourism industry to apply efficient management and to correspond to infrastructure development needs. Tourism demand forecasting would help managers and investors make operational, efficient and strategic decisions. The substantial contribution of tourism in META’s countries justifies the interest in explaining the determinants of tourism demand and, therefore, the factors that influence the decision of tourists to choose the country as a destination place.

The paper is organized as follows. Section 2 briefly reviews the existing studies of the determinants of tourist demand. Section 3 introduces the empirical methodology and data.

Section 4 shows the empirical results, while, Section 5 synthesizes the paper findings and offers policy-relevant recommendations.

THEORETICAL BACKGROUND

The field of tourist demand analysis has attracted the attention of scientists and business people, with the aim of analyzing the effects of different variables on tourist demand and to enable accurate forecasting of international tourist demand. The first (pioneering) works in this area can be found in the 1960s (Guthrie, 1961, Gerakis, 1965, and Gray, 1966, cited in Song, Witt, & Li, 2009). Since then, research in this area has made significant progress in the diversity of research interests, the quality of theoretical settings and the improvement of methodologies used in research. Progress in research in this area has been significantly accelerated since the 1990s thanks to advances in various methodological techniques, such as econometric, which have only been introduced in tourism research in the last 20 years (Song, Witt & Li, 2009).

According to Candela and Figini (2012), research on the determinants of international tourism demand is at the crossroads of microeconomic and macroeconomic research. Exploring the individual preferences and behaviors of tourists as consumers, on the one hand, and then defining the determinants of international tourism demand, on the other, leads to determining the impact that international tourism has on economies of both emitting and receptive countries (Allen, Yap and Shareef, 2009).

Two basic areas are distinguished in the research and analysis of international tourism demand (Lim, 2006). These are defining the determinants of tourism demand and forecasting the future level of tourism demand (usually only for next year) (Song & Li, 2008).

According to Jones and Chu Te (1995), the determinants of tourism demand aim to determine the leading indicators by which it is possible to predict changes in the variable of interest. Defining leading indicators for the economy is widely used in the economic literature when predicting business cycles (Yap & Allen, 2011). In the case of tourist demand, this means that changes in the movement of tourist demand can be predicted based on changes in certain determinants of tourist demand (which are the leading indicators) (Yap & Allen, 2011). Song, Witt and Li (2009) see the importance of determining the relevant (leading) determinants of tourist demand in the need to know the mode of behavior of tourist consumption, in order to form a basis for forecasting tourist demand. According to them, forecasting tourism demand can be key to making business and development decisions at the level of tourism companies in a destination or at the level of the entire destination (or country).

Vanhoe (2005) sees the usefulness of determining the main determinants of international tourism demand, except for prognostic purposes, and the need to crystallize the determinants to determine why the population of certain countries has a greater propensity to travel than the population of other countries

According to Dwyer, Forsyth and Dwyer (2010), the preference for tourist spending is determined by the availability of free time and a certain amount of money that a tourist has to spend on travel and vacation. These authors conclude based on the above that tourism is a complex phenomenon, and there is a need and purpose to determine the main determinants that encourage travel.

In a study by the Organization for Economic Co-operation and Development (OECD), Dwyer et al. (2001b) distinguish three groups of determinants (factors) of tourism demand: (i) socioeconomic and demographic factors (corresponding to Fretchling push factors), (ii) qualitative factors (image, quality of service, marketing, promotion, attractiveness in the destination) and (iii) price factors (tourist factors that determine the cost, namely: the cost of transport or travel to the destination and the cost of consumer and other goods in the destination).

Middleton, Fyall, and Morgan (2009) summarize nine major factors that shape determinants of tourism demand. These are: (i) economic factors, (ii) competitive prices, (iii) demographic factors, (iv) geographical factors, (v) socio-cultural experience of tourism, (vi) mobility, (vii) government / governance, (viii)) media content and (ix) information and communication technologies.

Görmüs and Göçer (2010) conclude that in the field of international tourism demand, research differs in whether it explains theoretical starting points in defining determinants of international tourism demand, thus questioning the relevance of the variables used (Lim, 1997; Li, Song & Witt, 2005; Song & Li, 2008; Witt & Witt, 1995, etc.) or investigate the elasticity of tourism demand with respect to selected variables and predict its movements (Durbarry & Sinclair, 2003; Eilat & Einav, 2004). In doing so, research uses different indicators for the dependent variable - international tourism demand, but also different explanatory variables (Görmüs & Göçer, 2010).

Song and Li (2008) analyze the indicators of international tourism demand used in research over the last 20 years. They conclude that the variable of international tourist arrivals is the most popular indicator of international tourist demand when researching demand for a specific destination. Revenue from international tourism or tourist spending appears in the literature as the second most commonly used indicator of international tourism demand (Akal,

2004). According to Lim (2006), observing the level of tourist demand through the prism of tourist services exports or tourist services imports is a good measure of tourist demand, especially if one wants to study the influence of tourist demand on the impact of tourist consumption in both emitting and receptive countries. Lim (2006) lists other indicators of international tourism demand used in previous research, including the number of tourist nights inhotel accommodation, the length of stay of tourists, the classification of arrivals by purpose of arrival (business trips, visits to friends and relatives) and others . The tourist demand for the destination is expressed by the number of total tourist arrivals from emitting countries, and can be further analyzed according to different types or purposes of tourist arrivals. For example, Turner and Witt (2001a, 2001b) analyze international tourist travel demand (BT). More detailed research goes back to the analysis of international tourism demand differentiated according to,for example, the categories of means of transport used (Song & Li, 2008) and others.

An interesting example of a model of tourism demand with specific factors involved in the impact of tourism demand is the authors Li, Song and Li (2017). They included climatic factors as explanatory variables in the standard model of tourist demand (data on climatic conditions in the visitor's domicile, data on climatic conditions in the destination and data on the difference between the climate in the destination and the climate of the visitor's home country). factors have a significant impact on the demand for tourism in 19 tourist cities in mainland China among tourists from Hong Kong. Again, the method of generalized moments over panel data was used. The dependent variable in the model, ie the demand measure, is the number of tourist arrivals from Hong Kong, and in addition to the dependent variable with time lag, among the standard explanatory variables in this model were: GDP per capita of Hong Kong; relative price indicator calculated as the ratio of the consumer price index in destination cities and Hong Kong adjusted for the exchange rate; dummy variables due to the possible impact of well-known events on tourism demand (Beijing 2008 Olympic Games, Shanghai Expo 2010, Guangzhou Asian Games 2010).

DATA AND METHODS

Model Specifications

The works assessing the determinants of tourist demand are mostly related to countries where tourism is traditionally very important in the economy (Greece, Turkey, Egypt, France, etc.). Methods such as the least squares method (Soukazis & Proenka, 2005), two-phase and three-phase least squares methods (Allen and Yap, 2009), GMM method (Habibi et al., 2009) are

used.), and multiple linear regression models (VAR models), and numerous others (Dritsakis, 2004; Eilat & Einav, 2004). It is evident that the analyzes of the mentioned research were based on the use of time series, and only recently we have a more frequent use of data based on a set of time series and spatial data, ie panel data. Given the growing importance of panel data analysis for better modeling of various phenomena and thus tourism demand (Candela & Figini, 2012), the mentioned approach will be used in this paper. The exponential growth of empirical research on determinants of tourism demand using panel analysis methodology has been recorded since the beginning of the 21st century (Seetaram & Petit, 2012). Furthermore, the development of the use of panel models in the last ten years has led to the increasing use of dynamic panel models in the analysis of determinants of tourism demand. The advantage of applying panel data analysis according to Brooks (2008) is that panel analysis enables the investigation of more complex problems that cannot be addressed using time series or spatial (cross-sectional) data separately. According to Song, Witt, and Lee (2009) using panel analysis, it is possible to obtain robust results in modeling over economic and social variables. In such research, which simultaneously models the spatial and temporal component of a phenomenon, panel analysis has become an unavoidable econometric technique (Škrabić Perić, 2012). The most obvious advantage of panel analysis is that conclusions are made using a larger sample, ie a larger number of observations so that there is no problem of losing a large number of degrees of freedom (Seetaram & Petit, 2012). Panel data can reduce the effect of parameter bias that occurs, for example, due to missing data or atypical values (outliers). Therefore, it can be concluded that the estimators in the panels are more robust to the incomplete specification of the model. According to Baltagi (2005), panel data allow modeling of more complex econometric models, such as temporal changes in spatial units. Additionally, panel models assume data diversity and reduce correlation between variables. Namely, if it happens that two variables within one observation unit are strongly correlated, but this correlation is not expressed among the variables of other observation units, this correlation loses its significance and does not significantly affect the results. According to Seetaram and Petit (2012), one of the most important advantages of panel analysis is that it allows control of heterogeneity in a research sample.

Previous research has shown that past demand for a good or service can have an impact on future demand and that the nature of demand for tourism products, like many other economic relationships, can be characterized as dynamic. For this reason, in models involving dynamic specifications, estimators such as the simple and generalized least squares method (OLS and GLS) would cause biased and inconsistent estimates. Therefore, in order to overcome the

mentioned problem, the procedure of generalized method of moments proposed by Arellano and Bond (1991) is applied in this paper. However, in order to obtain a consistent and unbiased estimate, the generalized method of moments requires that there is no autocorrelation of the εit error (Cameron & Trivedi, 2010). For this reason, it is necessary to check by diagnostic tests whether there is a problem of autocorrelation among the first differences of residual deviations. First- and second-order autocorrelation tests are usually performed using the Arellano and Bond tests (m1 and m2 tests). If first-order autocorrelation is present among the first residual differences, parameter estimates remain consistent. On the other hand, if a second-order correlation is found among the first residual differences, the parameter estimates are not consistent. In addition, the calculation of the m2 test is possible in the case when the number of observations for each observation unit is at least 5 (Škuflić & Mlinarić, 2015).

Another diagnostic test commonly used in this type of analysis is the Sargan test, which verifies the validity of the selected instruments needed to evaluate the model by analyzing the correlation of instrumental variables with residuals. Sargan's test actually examines the pre-identification of constraints because it is assumed that the introduction of each new instrumental variable introduces a new condition, ie a constraint that needs to be met (Škuflić & Mlinarić, 2015).

The initial form of the tourist demand model based on the selected variables can be expressed as:

$$DEMAND_{i,t} = f(DEMAND_{i,t}, GDPPC_{i,t}, INV_{i,t}, INF_{i,t}, TRADE_{i,t}, TEROR_{i,t}, DUMMY_t). \quad (1)$$

Furthermore, in order for the model to take a linear form and interpret the estimated parameters as coefficients of elasticity, a logarithmic transformation was performed on the original values of tourist demand, and GDPPC were ultimately expressed by natural logarithm. Therefore, the form of model (1) takes the following form:

$$lnDEMAND_{i,t} = f(lnDEMAND_{i,t-1}, nGDPPC_{i,t}, INV_{i,t}, INF_{i,t}, TRADE_{i,t}, TEROR_{i,t}, DUMMY_t) \quad (2)$$

In addition to the above, the general form of the model of tourist demand in selected countries in this paper is expressed as:

$$Q_{i,t} = \alpha + \delta Q_{i,t-1} + \sum_{n=1}^{N} \beta_n X_{it}^n + \varepsilon_{it} \qquad \varepsilon_{it} = \upsilon_i + u_{it} \quad (3)$$

where is:
$Q_{i,t}$ number of tourist arrivals from the emitting country and in year t (i = Austria,… United Kingdom; t = 2010,…, 2020);

- α is a constant term,;
- δ speed of adjustment of the existing state of the dependent variable according to the desired state;
- Qit-1 value of the dependent variable in the previous year, ie the number of tourist arrivals in the previous year;
- β estimated parameters;
- Xit explanatory variables (income, investment, inflation, trade, terrorism, dummy);
- εit stands for the disturbance, in which νi represents the unobserved country-specific effect while *uit* denotes idiosyncratic error. (Škuflić & Mlinarić, 2015).

At the value of the term δ close to zero, there is a high speed of adjustment to the optimal level, while the value of δ close to one indicates a very slow adjustment process. The first case indicates that the industry is quite competitive, while in the second case the industry is less competitive (Athanasoglou et al. 2008).

Data and variables definition

The variables in this model were selected based on the studied relevant literature, previous research and in accordance with the availability of data. Each variable from the model, data sources as well as theoretically expected signs are explained below. In this paper we analyze the demand for tourism in selected META countries Croatia, Cyprus, France, Greece, Italy, Portugal, Spain and Turkey by tourists from European and non-European countries. The most important twenty-eight emitting markets were selected according to the number of arrivals in the specified period: Austria, Australia, Bulgaria, Canada, Croatia, Czech Republic, Cyprus, Denmark, France, Finland, Germany, Hungary, Italy, Israel, Ireland, Japan, Netherlands, Norway, Portugal, Poland, Romania, Russia, Switzerland, Sweden, Spain, Slovakia, Turkey, UK and USA. Based on a sample period of 10 years, from 2010 to 2020, the data for the study are obtained from the World Bank Reports, the World Travel and Tourism Council, the European Central Bank Statistical Data, the World Bank data, Media Services S.A. Garín-Muñoz (2006) states that the use of annual data avoids potential problems that may arise due to seasonality.

Before presenting the potential determinants of tourist demand, it is necessary to identify the dependent variable. Following the example of Garín-Muñoz (2006) and Li, Song and Li (2017), the dependent variable in the model is the number of tourist arrivals in selected countries by

tourists from the most important emitting markets (DEMANDi, t). This variable also represents a measure of tourist demand in the model. It shows the number of tourist arrivals from the emitting country in the year t (i = Austria,… United Kingdom; t = 2005, (Unur et al., 2019).

Furthemore we employ the following explanatory variables:

Dependent variable with time shift. As in other dynamic models, the value of the time-dependent variable was included in the model as an explanatory variable (DEMAND, t-1). This variable represents the demand in the previous period. Garín-Muñoz (2006; 2007) explains the reasons justifying the inclusion of past spending as a regressor. The first reason is that less uncertainty is associated with staying in a destination already known to visitors, compared to traveling to an unknown foreign destination. Another reason relates to the fact that knowledge and word about the destination spreads as tourists recount events and impressions about their trip to friends and acquaintances, thus reducing uncertainty and uncertainty for potential new visitors to the same destination. Garín-Muñoz (2006; 2007) also emphasizes that it is possible that, if the impact of past demand is ignored, the impact of the relevant variables under consideration will be overestimated. According to the results of previous research, a positive sign of this variable is expected.

The variable of tourist income that will be used for empirical testing will be approximated by the GDP *per capita* in the origin country as a measure for tourist's income in $ and in the observed period, ie time t (GDPPCit). GDPPC is generally a much better measure of the level of income earned by a country's residents, especially when it comes to modeling emitting tourist demand for holidays, than, for example, the more commonly used gross domestic product indicator p.c. (Song, Witt, & Li, 2009.) Starting from microeconomic theory as well as from previous research, a positive sign is expected for this variable.

Furthemore, we used a consumer price index in the selected META as the proxy for the cost of tourism. Using a consumer price index (CPI) as a proxy for the cost of tourism can provide a general indication of changes in the overall price level in an economy. The CPI is a measure of the average price of a basket of goods and services consumed by households, and it reflects the inflationary or deflationary trends in a country.

When using the CPI as a proxy for the cost of tourism, it assumes that the prices of goods and services relevant to tourists are captured in the CPI calculation. This includes items such as accommodation, food and beverages, transportation, entertainment, and other expenses typically incurred by tourists. By tracking changes in the CPI over time, you can assess whether the overall cost of tourism is increasing or decreasing relative to the average price level. For example, if the CPI rises by a certain percentage, it suggests that the cost of tourism has also increased by a similar proportion. Conversely, if the CPI decreases, it indicates that the cost of

tourism has decreased. However, it's important to note that the CPI may not fully capture all aspects of the cost of tourism. There may be specific items or services that are more relevant to tourists but are not adequately represented in the CPI calculation. Additionally, the CPI represents average price changes for the entire population, and individual experiences may vary.

When using the CPI as a proxy, it's crucial to consider other factors that can influence the cost of tourism, such as exchange rates, seasonal variations, local economic conditions, and specific tourism-related factors. Combining the CPI with other indicators and data sources can provide a more comprehensive understanding of the cost of tourism in a specific area or for a particular market segment.

The level of investment (INVit) of all economic sectors of the host country will be represented by the percentage share of gross investment of business sector (INVbit) and household sector (INVhit) in the country and gross domestic product and time t, Given that higher investment activity a positive link between investment activity and tourism demand is expected.

Openness to international trade in goods and services (TRADE) will be approximated by the percentage indicator of the value of total trade (exports and imports) of goods and services (excluding emitting tourist demand) per capita and in time t.

Trade and tourism demand are closely interconnected and often have a symbiotic relationship. Changes in trade patterns and economic activity can significantly influence tourism demand, and vice versa. Here are some key aspects of the relation between trade and tourism demand:

Economic Development: Trade and tourism are both influenced by the overall economic development of a country or region. Increased trade can stimulate economic growth, leading to higher income levels and disposable income for individuals. This, in turn, can boost tourism demand as people have more resources to spend on travel and leisure activities.

Business Travel: Trade activities often involve business transactions, conferences, exhibitions, and meetings. These events generate demand for business travel, including flights, accommodation, and related services. International trade can result in a rise in business tourism as individuals travel to attend trade fairs, negotiate contracts, or explore new markets.

Foreign Direct Investment (FDI): Trade can attract foreign direct investment, as companies seek to establish operations or expand their presence in new markets. FDI inflows contribute to the development of infrastructure, hospitality services, and other tourism-related sectors, creating an environment conducive to tourism demand. Increased trade and FDI can lead to the growth of both leisure and business tourism.

Destination Image: Trade can impact a destination's image and perception among potential tourists. Positive trade relationships, such as increased exports, foreign investments, and cultural exchanges, can enhance a country's reputation, making it more attractive as a tourist destination. Conversely, trade disputes, political tensions, or negative perceptions can discourage tourism demand.

Connectivity: Trade often requires efficient transportation networks, including air, sea, and land routes. Investments in transportation infrastructure can improve connectivity and accessibility to a region, making it easier for tourists to reach and explore new destinations. Improved connectivity resulting from trade can boost tourism demand by reducing travel barriers and increasing convenience.

Market Diversity: Trade can introduce new products, services, and experiences to a region. This diversification can enrich the tourism offerings and attract a broader range of tourists seeking unique experiences. For example, increased trade of cultural products, such as food, art, and handicrafts, can contribute to cultural tourism and attract visitors interested in local traditions and heritage.

Exchange Rates: Trade can influence exchange rates, which, in turn, affect tourism demand. Fluctuations in currency values can make a destination more or less affordable for international tourists. A weaker currency resulting from trade imbalances can make a destination more attractive for visitors from countries with stronger currencies, potentially increasing tourism demand.

Economic Stability: Trade can contribute to overall economic stability, which is a crucial factor influencing tourism demand. A stable economy provides a favorable environment for tourism growth, as consumers are more likely to spend on travel and leisure when they feel confident about their financial situation. Conversely, economic instability resulting from trade disruptions or imbalances can negatively impact tourism demand.

It is important to note that the relationship between trade and tourism demand is complex and can vary depending on numerous factors, including the specific characteristics of a country or region, geopolitical conditions, government policies, and global economic trends.

Terrorism in destinations. The impact of terrorism in destinations is also included in the model (TERORt). The Global Terrorism Index, published by Vision of Humanity, was chosen as a measure of terrorism in competing countries, and is based on the Global Terrorism Database (GTD), which is the most respectable source of terrorism data today. Vision of Humanity is supported by the Institute for Economics and Peace (IEP). According to the Vision of Humanity, the Global Terrorism Index (GTI) is a complex measure consisting of four indicators: incidents, deaths, injuries and property damage. The Global Terrorism Index rates

each country on a scale of 0 to 10, with 0 representing the absence of the impact of terrorism, while 10 represents the greatest measurable effect of terrorism. Countries are ranked in descending order with the worst scores at the top of the scale. As for the very definition of terrorism, the Global Terrorism Index defines terrorism as the threat or actual use of illegal force and violence by a non-state actor to achieve political, economic, religious or social goals through fear, coercion or intimidation. This definition takes into account that terrorism refers not only to the physical act of attack, but also to the psychological impact it leaves on society long after the act itself (Institute for Economics & Peace, 2020). Considering the studied literature, but also the well-known practice, it is assumed that visitors will prefer safer countries, so in the case of terrorism in destinations, they will prefer to spend their vacation in other countries. Therefore, a negative sign for the global terrorism index is expected.

The rapid spread of Covid-19 has significantly affected global tourism, which has suffered serious consequences (Estrada et al., 2020), especially attractive tourist destinations, such as France, Italy and Spain, but also countries where outbound tourism is extremely widespread, such as China and the United States (Farzanegan et al., 2020). The news that the virus has spread has caused great concern among tourists, potential tourists and the wider tourism industry. A global wave of cancellations and postponements of tourist and business arrangements followed. The (UNWTO, 2020) forecast for the COVID-19 crisis is a potential loss of 100 million jobs and $ 2.694 billion of world GDP due to declining travel and tourism. The recommendations given by the WTTC (targeting the Governments of the countries), which refer to the tourism sector are the following: reduction of travel barriers and facilitation of procedures (visas, etc.), easing fiscal policies (reduction of travel fees), support of the business sector (tax exemptions) and destination support (increased budget for promotion, development of tourist products, etc.). Bearing this in mind we also include a binary dummy for the emergence of the Covid-19 and assign a value of one for the 2020 and a value of zero for all other periods.

Tab. 1 presents the descriptive statistics for the determinants involved visitors from the observed sample was 65212424. The lowest number of arrivals was 2450000, while the highest number of arrivals was 217877000. The average value of net national income for all countries is about $ 24794.35 per capita , with a large range between the minimum and maximum values, ie the amount of $ 8536,433 per capita to $ 43,790.73 per capita. The standard deviation for this variable is also quite large. This was to be expected given that the tourist region of Europe includes old and new members of the European Union, which differ considerably in terms of the level of economic development. Average investments in selected countries in the observed period amounted to 19.25, while the range of trade was from a minimum of 46.69 to 154.5% of

GDP. Also, the selected countries together recorded the value of the global terrorism index averaging 3.7 in the observed period. The lowest impact of terrorism (TEROR) is 0.16, while the highest impact of terrorism is 8.18. Tab. 1

Table 1 Descriptive statistics

	DEMAND	GDPPC	INV	INF	TRADE	TEROR
Mean	65212424	24794.35	19.25367	2.023967	75.15304	3.703385
Median	46649000	25028.23	19.05975	1.114745	64.17706	3.75
Maximum	217877000	43790.73	29.85714	16.33246	154.5827	8.18
Minimum	2450000	8536.433	10.57804	-2.097	46.69447	0.16
Std. Dev.	61991703	9599.879	4.670496	3.497672	25.8685	2.224985
Observations	84	88	88	88	88	65

Source: Author calculations

Before evaluating the proposed model of determinants of tourism demand, it is necessary to check the correlation between potential independent variables to identify possible problems of multicollinearity between them. Pearson's correlation coefficients in pairs were calculated for all pairs of variables and are shown in Tab. 2.

Table 2 Correlation matrix

	DEMAND	GDPPC	INV	INF	TRADE	TEROR
DEMAND	1	0.6696	0.2401	-0.1307	0.4623	-0.2727
GDPPC	0.6696	1	-0.1925	-0.4886	-0.0460	-0.1738
INV	0.2401	-0.1925	1	0.7618	-0.3153	0.6230
INF	-0.1307	-0.4886	0.7618	1	-0.3084	0.6561
TRADE	0.4623	-0.0460	-0.3153	-0.3084	1	-0.6358
TEROR	-0.2727	-0.1738	0.6230	0.6561	-0.6358	1

Source: Author calculations

According to Gujarati and Porter (2009), multicollinearity is a problem when the correlation is above 0.80. As is presented in Tab. 2, all correlation coefficients were found to be below this threshold, suggesting the continuation of use of all the variables included in running the regression model.

RESULTS AND DISCUSSION

Before interpreting the results, it is necessary to first perform the necessary diagnostic tests to verify the validity of the model. The results of the Arellano-Bond and Sargan tests can be seen in Tab. 3.

Table 3 Estimation Results

Explanatory variables	**Results**
Lagged dependent variable *logDEMAND t-1*	0.629*** (0.009)
Constant	-0.957*** (0.034)
LogGDPPC	0.054*** (0.027)
INV	0.001 (0.004)
INF	0.011 (0.007)
TRADE	0.001*** (0.004)
TEROR	0.104*** (0.004)
Dummy	-1.114*** (0.014)
Number of countries	8
Sargan test (p-value)	0.256
Arellano-Bond test [AR (1)]	0.044
Arellano-Bond test [AR (2)]	0.968

Note: Standard errors are presented inparentheses.
Source: Authors' calculations

Among the first residual differences, first-order autocorrelation is present at a significance level of 0.05 because m1 (0.044) <0.05, and therefore the null hypothesis of no first- order autocorrelation is rejected. However, even with the presence of first-order autocorrelation, parameter estimates in the model may still be consistent. What is crucial is that second-order autocorrelation is not present among the first residual differences because m2 is 0.968, which exceeds the significance level of 0.05, so the hypothesis of no second-order autocorrelation can be accepted. This also makes the Arellano-Bond test criterion satisfied. The second check refers to the Sargan test whose p-value in the model is 0.256 which exceeds the significance level of 0.05 so it can be concluded that the selected instruments in the model are valid.

Since the model satisfied both diagnostic tests - Arellano-Bond and Sargan test, it can be further analyzed and interpreted in accordance with the obtained results.

The estimated coefficient with the time-dependent variable (Qi, t-1) is 0.5 and is statistically significant at a significance level of 1%. Taking into account the previously explained interpretation of this coefficient by Athanasoglou et al. (2008), it can be concluded that the tourism industry in the selected countries is moderately competitive. The coefficient of past demand of 0.5 also indicates the presence of consistency in the habits of tourists who gladly return to selected countries, as well as the possible effect of "word of mouth". Similar results on the positive impact of previous demand on future tourism demand can be found in Garín-Muñoz (2006, 2007), who also emphasizes the importance of providing high quality service in order to

gain a good reputation among tourists and attract both old and new visitors. This result is high loyalty of tourists in the selected countries and which also recognized the recommendations of relatives and friends and previous stay as the most important sources of destination information (along the Internet).

Based on the results, it is identified that income is the most important factor that determines tourism demand for selected EuroMed9 countries. Similar to the findings of (Hanafiah et al., 2011; Gan 2015; Soofi et al., 2018), income is identified to be positively related to the tourism demand. It implies that the increase in income per capita for selected EU Med countries causes the tourism demand to go higher. According to Soofi et al., (2018), the positive relationship income per capita is known as an indicator of the level of economic development that could promote tourism receipts. The current paper believes that the increase in the level of economic development implies the improvement in terms of infrastructure, facility, and security that attracts tourists to come to the host countries. Also developing countries with more GDP per capita take more place in the media. Their names are often mentioned along with organizations such as film and music festivals (Unur et al., 2019). The perfect example would be set for the city of Paris which is recognized and referred to as the capital of fashion by the worldwide media without any extra efforts, advertising and promotional activities of France with the annual GDP per capita of $ 42,000. As a result, the increase in the GDP per capita of a country has a positive impact on the country's image, and in this regard, the tourism demand for the country increases in the long-run (Schubert et al., 2011, p.381).

The results of consumer price index (CPI) variable indicates that international demand for travel to selected META countries is not sensitive to the fluctuations of this variable, because has a positive sign and is almost equal to zero but it is insignificant. These results are consistent with the findings (Khoshnevis Yazdi & Gomami, 2016).

Furthermore, the openness of the economy, i.e. the knowledge of destinations in the issuing country through various products and services that are subject to international (or bilateral) exchange, has a positive impact on the emission tourism demand. Confirmation of the above is visible in the statistical significance of the TRADE variable, a positive sign parameter with the above variable, which confirmed the sub-hypothesis by empirical testing The positive and significant impact of trade openness is consistent with (Hanafiah et al., 2011; Rasekhi & Mohammadi, 2017). The current paper argues that an increase in trade openness implies the easiness to travel and encourages tourists to come. In line with (Eilat & Einav, 2004; Phakdisoth & Kim, 2007), they found that trade partners are an important vehicle to expand tourism. A higher trade value means wider trade openness. Hence, we can conclude that higher trade value

will affect tourist arrivals regarding the trade openness As matter of fact, in trade aimed travels to a country, a product is bought from the country visited (import) or is sold to that country (export). With this regard, a successful business travel to a country leads a trade stream between countries; as a result, in the scope of new trade/business negotiations or business travels between those countries, economic relations develop. This situation is an external effect of a successful commercial business travel reveals. Thus, with externality a successful business travel creates, in the trade etc. aimed travels to that country, an increase will be under consideration. The increase of trade aimed business travels from a country to other will also certainly lead to the increase of the holiday, recreation, rest, and recreation aimed travels. However, buying goods and services from a country will indirectly pioneer to the presentation and advertisement of that country in the home country. In addition, trade between countries will cause to increase of the consumers' interest to goods and services purchased and humans to be informed about products and the country, resources of that country. Hence the interest and famousness that earlier begin with the commercial relationships between countries will guide to the touristic aimed travels in the next stage (Kulendran & Wilson 2000, p. 1002). Subject to possible caveats of the study, the following are some important policy implications for selected EU Med countries in terms of tourism and trade that can be drawn from the findings. It seems that an increase in international trade even if export or import, increases will cause growth in tourism sector, which means that most of tourist arrivals are related to tourism in especially less developed countries in the sample such as Croatia and Turkey. Hence, economic policy should focus more on trade related tourism, in order to generate more foreign trade earning to selected EU Med countries. Besides, in order to increase and sustain in the growth of tourism sector, more attention should be given to the business tourism such as meetings, incentives, academicals, conferences, workshop and exhibitions.

Furthemore, the results reveal that terrorism has a negative relationship with tourism demand, given that fear of casualty from terror attacks could be limiting the preference of potential tourists in terms of choice of destination, thereby negatively affecting the general inbound tourist arrivals into the countries. This result is in line with the fact that personal safety is one of the most important elements of tourist demand. For example, in Paris, after the attacks suffered in 2015, the large shopping centre Galeries Lafayette halved the number of visitors, in the hospitality sector the occupancy rate and room revenues fell by more than 20% during the first weekend, some meetings and activities were cancelled, others confirmed, but with reinforced controls (Varani & Bernardini, 2018). The significant impact of terrorism on tourism demand has been confirmed by, (Samitas et al., 2018; Fourie et al., 2020; Ulucak et al.,2020).

The results of this research also have implications for practice at the level of the tourist destination as a whole in the planning and implementation phase. In the planning phase, tourist destinations, especially those whose economy is significantly dependent on tourism (as is the case in our example), must implement crisis management strategies in order to deal with terrorist threats (Bilandžić & Lucić, 2015). It is imperative for destinations to implement crisis management with marketing efforts to regain lost tourist interest and rebuild a positive image. Once a situation is identified as a crisis, crisis management should be initiated until full recovery is achieved. Destinations that are susceptible to attacks should at least implement basic measures to prepare for a crisis in tourism. Managers should face the fact that terrorist attacks provoke a substitution effect on destination choice behaviors. Tourists will replace destinations considered unsafe due to terrorist threats with others considered safer. The physical distance of the tourists' home countries and their cultural and socio-economic traits influence this replacement behavior. In addition, managers must take into account that the substitution effect occurs between the European countries located in central areas and those located in peripheral areas. When terrorist attacks occur in the Mediteranian countries, tourists avoid those regions and choose peripheral destinations like Portugal (Seabra et al., 2020) Evidence also made it clear that the opposite effect also happens. Given the randomness of terrorist attacks, tourism managers should be prepared to alter quickly their marketing strategy, namely their market targeting strategies and promotion campaigns to prevent substitution effect. The findings from this study support the recommendation of providing continuous support for the security establishment of the nation to boost tourist confidence towards stimulating inbound arrivals. Because tourism earnings are very crucial to the stability of the selected countries, the current finding calls for more proactive measures for curbing terrorist attacks by strengthening security not just in the public arena alone but also at major historical sites and other popular touristic areas.

COVID-19 pandemic led to significant negative changes in international tourism, and certainly in the selected countries. Namelly, development dynamics and trends in the Mediterranean, as in the rest of the world, have suffered a severe slowdown since 2020. In many cases, they have taken the form of a sharp reversal following the outbreak of the COVID-19 pandemic and the social and economic crisis that has ensued. The pandemic crisis has weakened economic sectors that are considered vulnerable as they are more than others influenced by different variables. The Mediterranean basin and the countries of the three continents bordering it have not been spared by the crisis, and in this context one of the hardest hit sectors has been tourism. Consequently, many of the measures adopted by national

governments have focused, on the one hand, on income support for workers in the tourism sector and, on the other, on support mechanisms for the activities linked to the sector (directly or indirectly). At the same time, many Mediterranean countries, especially within the framework of multilateral and supranational initiatives, have been preparing recovery plans to tackle the post-pandemic phase and beyond. Alongside generating substantialfinancial burdens, the pandemic fostered the adoption of new routines and technologies to dynamically respond to these threats by making use of all possible organizational resources to survive the crisis and its consequences on organizational processes (Capolupo et al., 2022).

To be fully beneficial for the territories, countries and the Mediterranean region at large, sustainable and innovative tourism should therefore take into account some critical aspects such as:

- New forms of tourism, targeting not only international visitors, but also, and above all, local visitors and operators, so as to make the overall sector more resilient. Indeed, domestic tourism is providing a much needed boost to help sustain many tourism destinations and businesses, and will continue to be a key driver of recovery in the short to medium term. - Integration and synergies with other related sectors (e.g. agriculture, fisheries, restauration, transport, infrastructures for energy efficiency, etc.) to maximise the added value of local tourism (e.g. pescatourism, ecotourism, supporting immaterial heritage such as the Mediterranean diet, underwater tourism…).

- Integrated Coastal Zone Management (ICZM) and Maritime Spatial Planning (MSP) are operational governance tools that can help local ecosystems and communities; in this sense, there is a need for promoting greater integration of policies and sectors in order to maximize and rationalize the sustainable use of local assets and marine/coastal space by tourism businesses.

- As the impacts of climate change are expected to be severe for coastal communities across the Mediterranean, sustainable tourism business models and practices are to adapt to the increased challenges that they will have to face (e.g. involving more resilient and adaptive infrastructures, services/products offered, skills and capabilities, etc.).

- Digitalisation should be properly considered given that data and market intelligence will be vital Climate friendly, while sustainable travel experiences have further boosted the demand for “slow tourism” and outdoor, nature-based destinations.

The coefficients of inflation is not statistically significant, which means that tourism in META countries is not very sensitive to prices indicating that tourists do not perceive META

countries as an expensive destination and rising prices in META countries will not change their decision to travel.

The last estimated parameter refers to variable investment in META countries, which amounts to 0.001%. As for the statistical significance of this coefficient, it is not statistically significant. On the basis of this result, it can be concluded that the demand for Croatian tourist products is weakly sensitive to changes in foreign supply, because a 1% increase in capital investment would imply only 0.001%. growth in tourist demand. However, it is important to emphasize that in practice investment refers to a much wider set of different investments, including infrastructure investments, construction works, investments in human resources and many others, while this model, due to simplification, only takes into account a narrower area of investments that are related in the activities of providing accommodation and preparing and serving food (hotels and restaurants). Therefore, the low value of the coefficient can be explained by the fact that the impact of only part of the relevant investments was observed.

The research in this paper tried to overcome the mentioned limitations in the previous work of research. However, given the complexity of the research area, it is possible to identify limitations within this paper's research, and also give guidelines for future research.

The limitations of the research are manifested in:

- the impossibility of including a larger number of countries in the research sample and a longer period of time for which hypotheses were empirically tested;
- the need to investigate in more detail the social preferences of the broadcast market and define additional variables that explain it;
- it is necessary to define another proxy variable that can replace the investment variable in research and development and which can be significant in determining the emissive tourist demand;
- eventual methodological shortcomings that arise from the chosen estimator of dynamic panel models in empirical hypothesis testing.

On the given limitations of the first part of the research, it is possible to present guidelines for future research related to:

- the increase includes the number of countries and the time period of the analysis in which the socio-economic environment and its influence on the emitting touristic demand will be determined;
- an empirical investigation of other socio-economic variables on the emission market that determine tourism demand, such as the degree of urbanization, literacy rate of the population,

residential structures by age and sex, etc., then determining expectations in the economy based on the consumer confidence index or similar;

- replace research and development with new indicators such as the number of patents approved for a certain period per capita of the emitting country;

- the use of other 'possible' estimators of dynamic panel models in testing new determinants of emissive tourist demand.

CONCLUSION

Due to the exceptional importance of the tourism industry for selected countries, it is important to frequently conduct various analyzes and empirical research in order to better understand the decision-makers and tourism actors in practice the nature of tourism demand and adapt accordingly.

In this paper, a new model of foreign tourist demand in the Mediterranean region (Croatia, Cyprus, France, Greece, Italy, Portugal, Spain and Turkey) is established using panel data and generalized method of moments (GMM).

One of the main conclusions of the study looking at the period from 2010 to 2020 is the significant value of the lagged dependent variable (0.629), which shows that the habitat persistence is important to explain the tourist demand in selected countries from META . This result can be interpreted as high consumer loyalty to the destination and / or as an important word-of-mouth effect in the consumer's decision in favor of the destination. Also, according to the survey results, we have the positive relationship between tourist demand and GDPPC. Furhemore, the increase in the level of economic development implies the improvement in terms of infrastructure, facility, and security that attracts tourists to come to the host countries. Trade openness has a positive impact on Tourism demand, So that by 1% increase in trade openness in selected META countries, the incentive to travel to these countries has increased, and as a result, tourism demand will increase by 0.001%. The coefficient for terrorism in destinations shows that the 1% growth of terrorist activities in selected countries (expressed by the global terrorism index) affects the demand for tourism products in such a way that in this case it falls by 0.10%.

Based on the analysis of the impact of the Covid-19 pandemic on selected META countries, we can conclude that selected META countries in all segments of tourism achieved a large decline and losses in 2020. It follows that in the field of tourism, in the next few years, the battle for each guest will be very fierce because selected META countries are not the only ones returning to the tourism scene. If we work on good communication with the guest and provide an interesting and attractive offer, in the fight for the market we can expect in the next few

years, to come out as winners. How and how quickly selected META countries will recover from the pandemic crisis remains to be seen. Unfortunately, we cannot know what else awaits us in the fight against the corona virus, and many questions such as - what will the world look like one day, will we be able to return to what was once considered "normal", what this crisis brings us in the future, in which areas rapid changes will be needed and what kind of consequences await us "- he will look for his answers for some time to come.

This study does not face significant limitations, but their removal will certainly contribute to more robust results. First, there are no data for the selected determinants over a longer period, and we have some missing data observations in the selected period. Secondly, the selected variables fail to catch the effects of supply factors as potential determinants in explaining tourism inflows in selected META countries.

The future avenues of research on the phenomenon of tourist demand should invest the impact of other potentially relevant determinants, which are nonstrictly economic (related to quality, experience, appreciation of culture, nature, safety, and human resources) may allow finding more determinants on tourism demand. Also further researchers can different methods such: two- or three-least squares or panel co-integration models. Future research on this topic for a more detailed analysis of the impact of investment on tourism demand should include in the observation and investments such as construction, infrastructure, investment in human resources and many others.

REFERENCES

Akal, M. (2004). Forecasting Turkey's Tourism Revenues by ARMAX model. *Tourism Management,* 25, 565-580.

Allen, D., & Yap, G. (2009). Investigating Other Leading Indicators Influencing Australian Domestic Tourism Demand, 18th World IMACS/MODSIM Congress, Cairns, Australia

Amelung, B., & Viner, D. (2006). Mediterranean Tourism: Exploring the Future with the Tourism Climatic Index. *Journal of Sustainable Tourism*, 14:4, 349-366, DOI: 10.2167/jost549.0

Arellano M., & Bond, S. (1991). Some Test of Specification for Panel Data, Monte Carlo Evidence and Application to Employment Equations, *Review of Economic Studies* 58, 277– 297.

Athanasoglou, P., Brissimis, S. N., & Delis M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money* 18(2), 121-136.

Baltagi, B.H. (2005), *Econometric Analysis of Panel Data*, John Wiley & Sons:

Chichester Candela, G., & Figini, P. (2012.). *The Economics of Tourism Destinations*, Springler-Verlag: Berlin Heidelberg.

Cameron A.C., & Trivedi P.K. (2010). *Microeconometrics Using Stata*, Revised Edition, A StataPress Publication, StataCorp LP, College Station, Texas

Dritsakis, N. (2004). Tourism as a Long-run Economic Growth Factor: An Empirical Investigation for Greece Using Causality Analysis. *Tourism Economics*, 10, 305-316.

Durbarry, R., & Sinclair, M. (2003.), Market Shares Analysis: The Case of French Tourism Demand. *Annals of Tourism Research*, 30(4), 927-941.

Dogru, T., Sirakaya-Turk E., & Crouch G. I. (2017). Remodeling international tourism demand: Old theory and new evidence. *Tourism management* 60, 47-55

Dwyer, L., Forsyth, P., & Dwyer, W. (2010). *Tourism Economics and Policy*, UK: Gutenberg Press Ltd.

Dwyer, L., Forsyth, P., & Prasada, R. (2001b.). *PPPs and the Price Competitiveness of International Tourism Destinations*, OECD Seminar on Purchasing Power Partities, RecentAdvances in Methods and Applications, Washington D.C.

Eilat, Y., & Einav, L. (2004.), Determinants of International Tourism: A Three-Dimensional Panel Data Analysis. *Applied Economics*, 36, 1315-1327

Fletcher J., Fyall A., Gilbert D., & Wanhill S. (2018). *Tourism principles and practice*, London, Pearson

Garín-Muñoz, T. (2006). Inbound international tourism to Canary Islands: a dynamic panel data model. *Tourism Management* 27, 281-291

Garín-Muñoz, T. (2007). German demand for tourism in Spain. *Tourism Management* 28, 12-22

Gujarati, D.N., & Porter, D.C. (2009). *Basic Econometrics*. 5th Edition, McGraw Hill Inc., NewYork.

Görmüs, S., & Göçer, I. (2010). The Socio-Economic Determinant of Tourism Demand in Turkey: A Panel Data Approach. *International Research Journal of Finance and Economics*, 55

Habibi, F. et al. (2009). Dynamic model for International Tourism Demand for Malaysia: Panel Data Evidence. *International Research Journal of Finance and Economics*, 33, 207-217.

Hanafiah, M. H., Harun, M. F., & Jamaluddin, M. R. (2011). Trade and tourism demand: A case of Malaysia. In *International Conference on Business and Eonomic Research. Malaysia*.

Jones, S.R., & Chu Te, G.O. (1995). *Leading Indicators of Australian Visitor Arrivals*, *Occasional paper No.*19, Bureau of Tourism Research, Canberra

Khoshnevis Yazdi, S., & Gomami, M. (2016). Estimating the Function of Tourism Demand in Iran. *Journal of Economic Business Research,* 6(12), 1-12.

Li, G., Song, H., & Witt, S.F. (2005). Recent Developments in Econometric Modeling and Forecasting. *Journal of Travel Research*, 44, 82-99.

Li H., Song H., & Li L. (2017). A Dynamic Panel Data Analysis of Climate and Tourism Demand: Additional Evidence. *Journal of Travel Research*, 56(2), 158-171

Lim, C. (1997). An Econometric Classification and Review of International Tourism Demand Models. *Tourism Economics*, 3, 69-81.

Lim, C. (2006). A Survey of Tourism Demand Modeling Practice: Issues and Implications, u Dwyer, L.,& Forsyth, P. (eds.), *International Handbook on the Economics of Tourism*, Edward Elgar Publishing, Glouchester, England, 45-72

Lim, C., & McAleer, M. (2001). Cointegration analysis of quaterly tourism demand by Hong Kong and Singapore for Australia. *Applied Economics*, 33, 1599-1619.

Middleton, V.T.C., Fyall, A., & Morgan, M. (2009). *Marketing in Travel and Tourism*, 4th ed., United Kingdom: Butterworth Heinemann.

Rasekhi, S., & Mohammadi, S. (2017). Factors Affecting Tourism Demand in the Caspian Sea Littoral States. Tourism Management Studies, 12(38), 63-81. doi: 10.22054/tms.2017.6434.1148.

Rodríguez, X.A., Martínez-Roget F., & Pawlowska E. (2012). Academic tourism demand in Galicia, Spain. *Tourism Management*, 33(6), 1583-1590.

Seetaram, N., & Petit S. (2012.). Panel Data Analysis, u: Dwyer, L., Gill, A. i Seetaram, N. (eds.), Handbook of Research Methods in Tourism: Quantitative and Qualitative Approach, Edwar Elgar, Chelteman, UK.

Song, H., Witt, S. F., & Li, G. (2009). The advanced econometrics of tourism demand. Routledge, New York

Song, H., & Li, G. (2008.). Progress in Tourism Management: Tourism Demand Modelling and Forecasting - A Review of Recent Research, Tourism Management, 29, 203–220 doi:10.1016/j.tourman.2007.07.016

Škuflić, L., & Mlinarić D. (2015). Microeconomic determinants of profitability for Croatian hotel industry. Ekonomski pregled 66(5), 477-494.

Škrabić Perić, B. (2012). Utjecaj stranog vlasništva banke na njezin kreditni rizik u zemljama srednje i istočne Europe: Dinamički panel modeli, doktorska disertacija, Ekonomski fakultet, Sveučilište u Splitu.

Turner, L.W., & Witt, S.F. (2001). Factors Influencing Demand for International Tourism: Tourism Demand Analysis Using Structural Equation Modelling. *Revisited, Tourism Economics*, 7, 21-38.

Turner, L.W., & Witt, S.F. (2001b). Forecasting Tourism Using Univariate and Multivariate Structural Time-series Models. *Tourism Economics*, 7, 135-147.

Vanhoe, N. (2005). The Economics of Tourism Destinations, Oxford: Elsevier Butterworth-Heinemann.

Ulucak R., Yücel A.G.,& İlkay S.Ç. (2020). Dynamics of tourism demand in Turkey: Panel data analysis using gravity model. Tourism Economics, 26(8), 1394-1414.

UNWTO. (2014). Tourism Highlights, World Tourism Organisation

UNWTO (2020). COVID-19 Related Travel Restrictions: A Global Review for Tourism. Second Report as of 28 April 2020

Untong, A., Ramos, V., Kaosa-Ard, M., & Rey-Maquieira, J. (2015). Tourism demand analysis of Chinese arrivals in Thailand. *Tourism Economics*, 21(6), 1221-1234

Witt, S.F., & Witt, C.A. (1995.), Forecasting Tourism Demand: A Review of Empirical Research *International Journal of Forecasting*, 11, 447-475.

Yap, G., & Allen, D. (2010). Investigating other Leading Indicators Influencing Australian Domestic Tourism Demand, *Mathematics and Computers in Simulation*, 81(7), 1365-1374.

***DETUROPE** – THE CENTRAL EUROPEAN JOURNAL OF REGIONAL DEVELOPMENT AND TOURISM*
Vol. 15 Issue 1 2023 *ISSN 1821-2506*

Original scientific paper

DESTINATION PROMOTIONAL VIDEOS ON YOUTUBE: ASSESSING AUDIENCE ENGAGEMENT

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Cite this article: Coronel, M. (2023). Destination Promotional Videos On Youtube: Assessing Audience Engagement. *Deturope.* 15(1), 47-65.

Abstract

YouTube as a social media platform is used by both tourism practitioners and tourists for promoting or obtaining information about tourist destinations, thus it is paramount to use a method to assess such videos communication effectiveness. For such purpose, the study proposes a methodological approach to assess the positive and negative audience engagement of destination promotional videos (DPVs) posted on YouTube. To measure positive and negative audience engagement, four destination promotional videos about Budapest (Hungary) were selected. Previous models to measure engagement in social media were adapted and merged to suit YouTube. YouTube publicly available metrics (views, votes - likes/dislikes-, comments, and channel subscribers) were operationalised based on three dimensions: popularity, commitment and virality. Findings reveal that consumer-generated videos (CGVs) about Budapest produce a higher positive engagement than marketer-generated videos (MGVs). This study offers a methodological tool that can be easily employed by tourism practitioners and Destination Marketing Organisations (DMOs) to evaluate the marketing success of videos shared on YouTube. Moreover, this method may help practitioners from different fields to develop a clear strategy, optimize resources, reduce risk, evaluate competitors, and measure the impact of the content shared on YouTube.

Keywords: engagement, social media, promotional videos, YouTube, metrics, comments.

INTRODUCTION

Is my destination promotional video posted on YouTube effective? This often-raised question shows not only the importance of social media, and YouTube in particular, for destination marketing (Huertas et al., 2017; Tiago et al., 2019) but also the need to evaluate the performance of the content shared in the platforms. Social media platforms are often used for destination promotion, communication, and research (Leung et al., 2013); and have proven to influence consumers' decisions at every stage of the journey: pre-, on-site and post-trip (Volo & Irimiás, 2022). Tourist destination marketers are enthusiasts to promote their offerings on social media, and YouTube hosts marketer-generated videos (MGVs) and consumer-generated videos (CGVs) alike. The latter refers to the videos created independently by individuals or communities, while the former relates to videos created by Destination

Marketing Organisations (DMOs) (Lim et al., 2012; Muñiz & Schau, 2007). Given that CGVs sometimes resemble ads, they are considered unpaid marketing for tourist destinations (Muñiz & Schau, 2007). Although CGVs are unofficial sources of information, along with MGVs, they shape destination images and influence consumers' decision-making (Lim et al., 2012). YouTube's interface allows users -viewers- to express their preferences and appreciation for shared videos: they can like, dislike and/or comment on them. This interaction on social media between the user and the posted content is often referred to as 'audience engagement'.

As such, engagement is the result of previous cognitive and affective states (Hollebeek & Chen, 2014). Engagement is considered a 'tangible' process because it involves the audience's interactions (Buhalis, 2020; Vazquez, 2019) and thus can be assessed by tracking the audience's reactions. Engagement is the most popular indicator to evaluate the performance of social networks (Peters et al., 2013).

Social media content impacts many aspects of the tourism industry (Zeng & Gerritsen, 2014). Leung et al. (2013) claimed that an effective way to assess social media variables would be fruitful for tourism marketers and practitioners. However, one of the greatest challenges in developing and applying suitable metrics is the constant evolution and heterogeneity of social media platforms and metrics (Peters et al., 2013). Additionally, engagement can be positive or negative (Hollebeek & Chen, 2014; Villamediana-Pedrosa et al., 2019); therefore, it is paramount to develop an effective way to assess viewers' engagement (Zeng & Gerritsen, 2014).

Past studies have attempted to measure audience engagement with a specific focus on platforms or metrics. Studies on social networking platforms such as Twitter (Bonsón et al., 2016; Huertas et al., 2015), Facebook (Song et al., 2021; Villamediana-Pedrosa et al., 2019), and Instagram (Avila Campoverde & Ugalde, 2020) based their calculations mainly on votes (favourite, likes/dislikes), comments, and shares/retweets.

Surprisingly, YouTube has been scarcely studied in tourism despite its prominence in the Web 2.0. YouTube engagement has been measured in relation to corporate channels (Bonsón et al., 2014) and music videos (Liikkanen & Salovaara, 2015). In tourism, You Tube has been seen as a data source for video content analysis (Arora & Lata, 2020; Huertas et al., 2017; Reino & Hay, 2011; Tiago et al., 2019) or for collecting tourists' comments (Lim et al., 2012; Tussyadiah & Fesenmaier, 2009).

To fill this gap, the purpose of this exploratory study is to assess audience engagement of destination promotional videos (DPVs) posted on YouTube through a novel methodological

approach. The topic is relevant due to the increasing popularity of videos among tourists and potential tourists as reliable sources of information about tourist destinations and the increasing use of YouTube by tourism and marketing practitioners to promote their destinations. The main research question is: How to assess audience engagement of DPVs in YouTube? Drawing on past research (Bonsón et al., 2016; Bonsón & Ratkai, 2013; Villamediana-Pedrosa et al., 2019), this study investigates the positive and negative engagement of marketer-generated and consumer-generated DPVs through three dimensions: popularity, commitment, and virality.

Findings indicate that CGVs about Budapest produce a higher positive engagement than MGVs. Due to its easy applicability, the proposed method can be a helpful tool for scholars and practitioners in tourism when evaluating the performance and impact of YouTube videos. By this method, assessment of audience engagement can be done manually, with a small or medium sample size, and results can be obtained immediately. Furthermore, effective management of technologies and information leads to wiser decisions from both strategic and financial perspectives, bringing about competitive advantages for tourism organizations (Buhalis, 2020). In a broader context, assessing audience engagement of DPVs posted on YouTube helps to create a clear strategy, optimize resources, reduce risk, evaluate competitors, and measure the impact of the content shared on social media.

THEORETICAL BACKGROUND

Social media usage in the region

In recent years, social media has gained significance in several aspects of our lives. Social media are used for numerous purposes, which vary according to different factors such as nationality or age group (Dixon, 2022). Overall, Europeans use social media to send private messages, stay in touch with friends and family, comment on posts, follow people, post pictures and videos, and read the news (Dixon, 2022). By January 2023, there were 4.76 billion social media users worldwide (59.4% of the world population) (Petrosyan, 2023), with Europe representing 14.1% of global social media users (Chaffey, 2023). However, this share is expected to increase since Europe reports the highest rate of social network penetration in the world, with Northern Europe in the first place (83.6%), Western Europe in second (83.3%), followed by Southern Europe ranked third globally (76.7%) (Dixon, 2023).

When it comes to tourism, social media are widely used by DMOs and tourism promoters for marketing purposes (Leung et al., 2013). The adoption of different social networking sites by DMOs is an increasing tendency: all DMOs in the European Union have an official Facebook page (Stankov et al., 2018). A study in Switzerland unveiled that Facebook is the most popular social media platform among Swiss DMOs, followed by Twitter and YouTube (Milwood et al., 2013).

Assessing engagement in social media

Engagement is the action of generating thoughts, feelings, and behaviours (Hollebeek & Chen, 2014). Thus, engagement in social media comprises every form of feedback from the audience towards a post, expressed through different reactions (Karagür et al., 2021; Peters et al., 2013). However, there is no consensus on the way to calculate it. For example, engagement rate (ER) is calculated using different variables from one study to another:

(1) Engagement rate = [(sum of reactions/number of posts)/number of followers]*100 (Avila Campoverde & Ugalde, 2020)

(2) Engagement rate = sum of likes and comments/number of followers (Karagür et al., 2021)

In the first formula, the numerator represents the totality of interactions in the site or account (number of likes, shares, comments, retweets, and mentions) in a frame time, divided by the number of posts in the same frame time. The numerator of the second formula considers only likes and comments. The denominator is the same in both formulas and represents the number of fans or followers of the site or account. The followers count shows the size of the community, therefore, if the community grows and the number of interactions remains the same, the indicator will decrease.

Audience reactions have been widely used to assess the impact of social media communication. Tab. 1 evidences the variables and metrics used in different studies and focus on the advantages and disadvantages of applying these approaches. In most cases, the assessment approach is specific to a social network platform and relies on metrics that are not publicly available to researchers. This makes challenging the applicability and operationalisation of such models.

Table 1 Models to assess the impact of social media communication

Author(s), year	Variables	Metrics	Advantages	Disadvantages
Interactive Advertising Bureau (IAB), 2012 (cited in Castelló Martínez, 2013)	Awareness	number of followers/subscribers	-Identifies different levels of interaction of audience and the related metrics	-Some metrics are difficult to obtain as they are not publicly available i.e. number of clicks - Results can be difficult to interpret as it does not provide a reference for what can be considered a good performance
	Appreciation	number of comments number of likes		
	Action	number of clicks times a user has logged in		
	Advocacy	number of shares/ retweets number of mentions		
IAB, 2013 (cited in (Castelló Martínez, 2013)	Presence	number of followers/fans number of posts	- Renames the levels of interaction and set them in order, from the simplest i.e. presence, to the most complex i.e. suggestion	-Variables and metrics are not well defined as there are variables that have two different metrics
	Response	number of likes number of favourites		
	Generation	number of comments		
	Suggestion	number of shares/retweets		
Bonsón & Ratkai, 2013; Bonsón et al., 2016	Popularity	number of likes/ tweets favourite	-Defines three variables and the corresponding metrics	- Does not consider the negative reactions i.e. dislikes
	Commitment	number of comments/tweets commented		
	Virality	number of shares / tweets retweeted		
Villamediana -Pedrosa et al., 2019	Positive Popularity	number of like, love, haha, and wow reactions	-Takes into consideration all possible reactions -Differentiates positive from negative reactions	-Facebook-based -Formulas are difficult to interpret and apply to other social networks with different metrics
	Positive Commitment	number of positive comments		
	Adjustment to Positive Virality Index	number of shares		
	Negative Popularity	number of sad and angry reactions		
	Negative Commitment	number of negative comments		
	Adjustment to Negative Virality Index	number of shares		
Peters et al., 2013; Song et al., 2020	Lowest engagement level	likes	- Differentiates levels of engagement based on the easiness and required effort for the interaction	- Mainly descriptive - Does not allow a deeper analysis of the performance of the post
	Intermediate engagement level	comments		
	Highest engagement level	shares		

Source: Own compilation based on Bonsón and Ratkai (2013), Bonsón et al. (2016), Castelló Martínez (2013), Peters et al. (2013), Song et al. (2020), and Villamediana-Pedrosa et al. (2019).

The Interactive Advertising Bureau, IAB, Spain, proposed a "4As" model -later reinterpreted as "PRGS" - with some basic quantitative variables intended to measure the activity in social media (Castelló Martínez, 2013) (Tab. 1). Similarly, Bonsón and Ratkai (2013) developed a set of metrics to assess engagement on Facebook -then adapted to Twitter (Bonsón et al., 2016)- using three variables: popularity, commitment, and virality (Tab. 1). Audience reactions, however, are not always positive. Villamediana-Pedrosa et al. (2019) used the former variables -popularity, commitment, and virality- but distinguished a positive and a negative engagement on Facebook (Tab. 1). A positive engagement unfolds positive feedback: positive popularity (like, love, haha, and wow reactions) and positive commitment (positive comments). Conversely, negative engagement builds upon negative feedback: negative popularity (sad and angry reactions) and negative commitment (negative comments). In the case of shares, the authors proposed calculating an Adjustment to Positive Virality Index and an Adjustment to Negative Virality Index, respectively. Other studies have differentiated levels of engagement based on users' reactions: lowest level (like), intermediate level (comment), and highest level (share), taking into consideration the easiness and required effort (Peters et al., 2013; Song et al., 2021) (Tab. 1).

YouTube: A tourist ally

Social media are experiencing a steady growing in terms of users worldwide, accounting 4.62 billion social media users, which represents 58.4% of the world's total population (Kemp, 2022). Created in 2005, YouTube is the second world's most-used social platform, only after Facebook, and the biggest online video-sharing platform accounting more than 2 billion active users around the globe (Kemp, 2022; YouTube, 2021). In addition, YouTube registers the greatest total time spent and the highest average time per user among all social networking sites (Kemp, 2022). In Europe, the Eastern countries report the most significant number of YouTube users with 198.2 million, followed by Western Europe (165.2 million), Southern Europe (108.1 million), and Northern Europe (89.2 million) (Ecwid, 2022).

Users can upload an unlimited number of videos on YouTube. Videos can be watched, linked, and commented on by anyone, allowing direct interaction between the viewer and the content creator (Madden et al., 2013; Reino & Hay, 2011). As a result, YouTube has become the largest and the most accessible online video library in the world, regardless some doubts on its status as a video repository since some videos can also be easily removed (Kim, 2012).

In tourism, from the supply side, the adoption of social media marketing among tourism practitioners is steadily growing around the globe, being YouTube one of the most-used social networking sites by DMOs in the European Union (Stankov et al., 2018). As a result, destination promotional videos (DPVs) are widely found on YouTube nowadays (Leung et al., 2017) along with other video clips or spots promoting different tourism products i.e., accommodation establishments (Reino & Hay, 2011).

From the demand side, DPVs play a key role at every stage of the traveller's journey, before and during the visit as a source of travel inspiration, and after the trip evoking nostalgia and memories. In this context, YouTube has become a 'travel-hack hub', specially at the planning stage, by offering tips and advice for travellers through travel videos (Google, 2016). It has been proven that DPVs shared on YouTube stimulate imagination and increase the interest of potential travelers toward a tourist destination (Tussyadiah & Fesenmaier, 2009). Furthermore, YouTube allows users to share travel information, holiday experiences, and personal views by sharing videos or comments, thereby promoting the creation of travel communities (Tussyadiah & Fesenmaier, 2009).

Engagement in YouTube

YouTube's particularities differentiate this platform from other social media networks. YouTube interface enables active user participation through ratings (likes: thumbs-up; dislikes: thumbs-down) and other actions (share, save, subscribe, comment). YouTube can be differentiated from other social media platforms since its users can 'like' but also 'dislike' content. On Twitter or Instagram this action is not allowed. According to Liikkanen and Salovaara (2015), comments on YouTube tend to be generally positive, though negative comments trigger most responses; compared with Facebook, comments in YouTube seem less polite, less justified, and further off-topic.

Contrary to Facebook and Twitter, where content can be posted several times a day, YouTube users upload new content less frequently. This is because producing a video for YouTube demands more time, resources, and technical skills; in consequence, the interaction between viewers and content creators is also sporadic (Smith et al., 2012). The number of views from one video to another can vary greatly, from a few views to millions (Cheng et al., 2008). This difference in views can be influenced by the channel popularity and the time the video has been available on the platform. In fact, videos posted on channels with millions of

subscribers are prone to have more views. Similarly, videos that have been posted for a longer period of time are likely to have more views. Consequently, engagement on YouTube can be either positive or negative and should be calculated differently and accurately when it comes to feedback assessment.

On YouTube every action undertaken by the user is tracked, including every time a video is watched (view). As a result, valuable metadata can be collected through the platform. However, only a few pieces of data are made public since much of the data remains private for the channel or content owner. This is a considerable limitation for analysing engagement on YouTube. YouTube Studio, for instance, provides analytics and insights on the channel's performance, but it is a tool available only to the channel's owner. Moreover, YouTube Studio does not provide details on its methods. Additionally, YouTube Analytics API is a platform administered by Google, independent of the YouTube channel, which enables the channel owner to generate reports containing data concerning user activity, ad performance, or estimated revenue (Google Developers, 2021).

Researchers have attempted to unveil some performance indicators based on public traces and on YouTube metrics (Tab. 2). Video popularity is the most studied variable, along with channel popularity. Studies use different metrics; for instance, video popularity is based on the number of views (Cheng et al., 2008) or the number of comments (Chatzopoulou et al., 2010). Channel popularity comprises views per channel and number of subscribers (Bonsón et al., 2014). Other studies have proposed different methods to assess audience engagement in YouTube. For instance, Bonsón et al. (2014) used five variables to measure stakeholder engagement: views, likes, dislikes, comments and shares, which were then analysed through non-parametric test Kruskal-Wallis (Tab. 2). Findings revealed that higher channel activity (number of uploaded videos) leads to a higher visibility (number of subscribers); and that video content influences engagement. Liikkanen and Salovaara (2015) measured user engagement with YouTube music videos based on views, comments, and votes (likes/dislikes). Additionally, they employed three metrics given the difference among videos in absolute numbers: voting frequency (number of votes per thousand views), commenting frequency (comments per thousand views), and dislike proportion (share of negative votes). Eventually, the six metrics were analysed using a Multiple Analysis of Variance (MANOVA). The number of channel subscribers was not considered in this analysis.

Table 2 Selected studies on YouTube videos performance based on variables and metrics

Author(s), year	Variables	Metrics
Cheng et al., 2008	Popularity	number of views
Chatzopoulou et al., 2010	Popularity	number of views number of comments
Bonsón et al., 2014	Channel activity Channel popularity (visibility) Stakeholder engagement	number of uploaded videos number of subscribers number of views number of views number of votes (likes, dislikes) number of comments number of shares
Liikkanen & Salovaara, 2015	User engagement	number of views number of votes (likes, dislikes) number of comments voting frequency (number of votes per thousand views) commenting frequency (comments per thousand views) dislike proportion (share of negative votes)
Huertas et al., 2017	Interactivity and visibility	number of uploaded videos number of video views number of views per video number of votes (likes, dislikes) number of comments number of subscribers number of channel views

Source: Own compilation based on Bonsón et al. (2014), Chatzopoulou et al. (2010), Cheng et al. (2008), Huertas et al. (2017), and Liikkanen and Salovaara (2015).

Comments on YouTube videos represent a valuable data source and can reveal substantial information on viewers' opinions and perceptions about a destination (Tussyadiah & Fesenmaier, 2009). However, comments posted on social media are often numerous, and difficult to be fully read by both, users and researchers (Potthast & Becker, 2010). Given the plethora of information generated by comments, informatics-based solutions are often used for data analysis.

DATA AND METHODS

This study aims to assess the positive and negative engagement of MGVs and CGVs in videos shared on YouTube. Through purposive sampling, DPVs about Budapest were searched on YouTube using the following keyword combinations: 'Budapest + travel', 'Budapest + tourism' and 'Hungarian capital + tourism'. A sample of 26 DPVs was obtained and narrowed by applying some selection criteria (Tab. 3). Videos included in the sample had to:

(1) display promotional tourism content about Budapest -no other Hungarian cities or specific events.

(2) have been released before the study, pre-pandemic, between 2018 and 2019.

(3) have received at least one comment on YouTube

(4) be short (similar length)

Eventually, four DPVs were selected for analysis (Tab. 3). Although the sample is small, it is still optimal because it comprises videos with a wide range of ratios and metrics.

Table 3 Features of the destination promotional videos under scrutiny

Video title	Channel	Subscribers	Premiere	Duration	URL
1. Let us show you Budapest - Spice of Europe	Visit Hungary [Official DMO's video]	11,700	9 August 2018	0.30 min.	https://www.youtube.com/watch?v=rVrmzX1eiNc
2. Budapest – Spice of Europe – New image film	Visit Hungary [Official DMO's video]	11,700	18 October 2018	2.02 min.	https://www.youtube.com/watch?v=hlwjcWXG8cs
3. Budapest – the Best in travel	Private company's video [unactive channel]	100	29 July 2019	1.55 min.	https://www.youtube.com/watch?v=Cyg7CS1xIgU
4. Budapest: The Taste of Europe. Timelab & Havasi collaboration	Private company's video	344,000	29 July 2019	3.30 min.	https://www.youtube.com/watch?v=e10pVhxNOco&t=37s

Source: Own elaboration

To assess audience engagement with the selected DPVs, the following publicly available metrics were collected on 25th of March 2021: number of total views, total votes (likes/dislikes), total comments, channel subscribers, and release date of each video of the sample.

By adapting previous models (Bonsón et al., 2016; Bonsón & Ratkai, 2013; Villamediana-Pedrosa et al., 2019), positive and negative engagement with DPVs was assessed using three dimensions: popularity, commitment, and virality. Positive and negative popularity were based on likes and dislikes. To assess positive and negative commitment, sentiment analysis of comments was conducted. Comments were eventually categorised into positive, neutral, and negative. Since, neutral comments were irrelevant to the study, these were excluded. Virality was based on views (Tab. 4).

Positive Engagement = Positive Popularity + Positive Commitment + Positive Virality
Negative Engagement = Negative Popularity + Negative Commitment + Negative Virality

Table 4 Assessment of positive and negative engagement on YouTube posted videos

Dimension	Sign	Measure	Formula
Positive Popularity	PP1	Average number of likes per video	Number of likes/number of votes
	PP2	Positive popularity	[(PP1*number of subscribers)/actual views)]*100
Positive Commitment	PC1	Average number of positive comments per video	Number of positive comments/number of comments
	PC2	Positive commitment	[(PC1*number of subscribers)/actual views)]*100
Positive Virality	PV1	Adjusted positive virality per video	Actual views*[(PP2+PC2)/2]
	PV2	Positive virality	PV1/ number of subscribers
Negative Popularity	NP1	Average number of dislikes per video	Number of dislikes/number of votes
	NP2	Negative popularity	[(NP1*number of subscribers)/actual views)]*100
Negative Commitment	NC1	Average number of negative comments per video	Number of negative comments/number of comments
	NC2	Negative commitment	[(NC1*number of subscribers)/actual views)]*100
Negative Virality	NV1	Adjusted negative virality per video	Actual views*[(NP2+NC2)/2]
	NV2	Negative virality	NV1/ number of subscribers

Source: Own elaboration based on the methodology for the measurement of engagement on Facebook and Twitter proposed by Bonsón et al. (2016), Bonsón and Ratkai (2013), and Villamediana-Pedrosa et al. (2019).

One of the metrics proposed by the present study is the calculation of the 'actual views' of each video: Actual views= (#views -1 -#channel subscribers) / time it has been posted (in years).

According to the formula, from the number of views it is necessary to subtract one view belonging to the video creator, as a default, as well as the number of subscribers of the channel which are views for granted. The resulting number is divided by the time (in years) that the video has been available on the platform.

The community size (number of fans/followers) has been widely considered as a variable to measure engagement of social media platforms (Bonsón et al., 2016; Bonsón & Ratkai, 2013; Karagür et al., 2021; Villamediana-Pedrosa et al., 2019). Therefore, formulas to obtain the values of popularity, commitment and virality consider the equivalent to community size= number of subscribers, as well as the actual views per video (Tab. 4).

Due to the few comments on the first three DPVs (less than 40 comments per video), both comments and their replies were all computed. In contrast, video 4 had more comments (> 1,000); thus, only the top comments (including more than 20 likes) that generated more buzz or interactions were processed (65 comments in total). Replies to these comments were

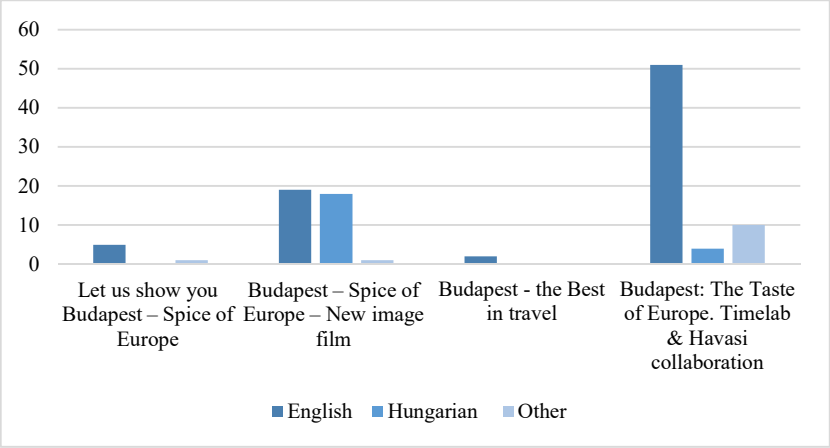
disregarded in this case. YouTube comments in other languages were translated into English with the help of Google Translate. Given the relatively small number of processed comments, the sentiment analysis was done manually to ensure an in-depth analysis of the users' opinions (Deori et al., 2021). Sentiment analysis aims to identify feelings in user's opinions, thus following a qualitative lexicon-based approach, text of comments was analysed, coded, and quantified (Gomes & Casais, 2018). Based on Gomes and Casais's (2018) categories of positive and negative feelings in YouTube user's comments, those comments that expressed: love, joy, empathy, hope, happiness, and gratitude towards the video or the destination were considered positive comments i.e., *"My God, charming city, absolutely stunning photography...!!!"*. Humour was excluded from positive feelings since it can be ambiguous. In contrast, comments expressing affliction, anguish, anxiety, frustration, humiliation, indifference, fear, hate, revulsion, sadness, and shame about the video or the destination were considered negative comments i.e., *"Very weak film, a lot of cuts, incomprehensible bindings, do not serve the desired purpose..."*. Comments neither relevant to the video or destination nor those that did not suit these categories were considered neutral, i.e., *"Stop at my channel thx..."*.

Since there are no positive or negative views, positive and negative virality was assessed through an adjusted virality (PV1, NV1). Positive and negative adjusted virality is based on each video's actual views and average popularity and commitment (Tab. 4).

RESULTS

Audience engagement of the four DPVs shared in YouTube was assessed by the analysis the publicly available metrics (views, comments, votes, subscribers, release date). The following variables were collected: video 1 (n= 87 votes; 6 comments; 9,833,501 views); video 2 (n= 611 votes; 38 comments; 66,524 views); video 3 (n=22 votes; 2 comments; 1,513 views); video 4 (n= 31,517 votes; 65 comments; 1,643,173 views). Data analysis revealed substantial differences among DPVs regarding audience engagement.

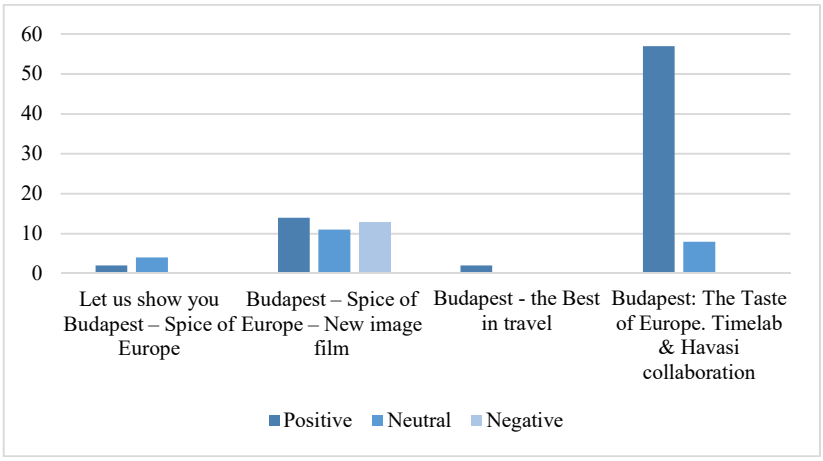
Figure 1 Language of the comments left in YouTube for the analysed DPVs



Source: Own elaboration

Fig. 1 shows that video 2 and video 4 were the most commented upon the four videos. Findings reveal that the MGV (Budapest -Spice of Europe- the new image film) was the most engaging for Hungarian viewers as 47% of the comments of this video were in Hungarian language.

Figure 2 Positive, negative and neutral comments on the analysed DPVs posted in YouTube



Source: Own elaboration

As illustrated by Fig. 2, both CGVs registered a larger number of positive comments, and a relatively small number of -or none- negative comments. In contrast, both marketer-generated videos had a significant number of negative comments (> or = to positive ones).

Table 5 Assessment of positive and negative engagement of the selected DPVs, based on YouTube metrics

	Positive popularity			**Positive commitment**			**Positive virality**			**Positive Engagement**
	Positive votes (likes)	PP1	PP2	Positively valenced comments	PC1	PC2	Actual views	PV1	PV2	**PP2+PC2+PV2**
Let us show you Budapest – Spice of Europe	84	0.97	0.30	2	1	0.31	3738224	1149827.6	98.28	98.9
Budapest – Spice of Europe – New image film	523	0.86	44.49	14	0.52	26.95	22509	804078.01	68.72	140.2
Budapest - the Best in travel	22	1	11.74	2	1	11.74	852	10000	100	123.5
Budapest: The Taste of Europe. Timelab & Havasi collaboration	31000	0.98	43.17	57	0.88	38.49	783798	32000931	93.03	174.7
	Negative popularity			**Negative commitment**			**Negative virality**			**Negative Engagement**
	Negative votes (dislikes)	NP1	NP2	Negative valenced comments	NC1	NC2	Actual views	NV1	NV2	**NP2+NC2+NV2**
Let us show you Budapest – Spice of Europe	3	0.03	0.01	0	0	0	3738224	20172	1.72	1.7
Budapest – Spice of Europe – New image film	88	0.14	7.49	13	0.48	25.03	22509	365922	31.28	63.8
Budapest - the Best in travel	0	0	0	0	0	0	852	0	0	0.0
Budapest: The Taste of Europe. Timelab & Havasi collaboration	517	0.02	0.72	0	0	0	783798	282146	0.82	1.5

Source: own calculation

Indicators of audience engagement to the DPVs are shown in Tab. 5. The results revealed that the CGV (Budapest – The Taste of Europe. Timelab & Havasi collaboration) had the highest level of positive engagement (x=174.7) compared to the other videos (v1= 98.9; v2= 140.2, v3=123.5), based on the calculation of positive popularity, commitment and virality. This high positive engagement responds to the high number of likes, positive comments and views; and suggests an overall good performance of the DPV.

Compared to the other three analysed videos, the MGV (Budapest -Spice of Europe-New image film), registered the highest level of negative engagement (x= 63.8) by calculating negative popularity, commitment, and virality (Tab. 5). It is important to highlight that the significant number of dislikes and negative comments to this official DPV, mainly from Hungarians, lead to a negative engagement as shown in Tab. 5.

DISCUSSION

The present study makes a significant methodological contribution: it proposes a novel method to assess audience engagement with videos posted on YouTube. Previous studies have

focused on user engagement on social networking sites based on metrics such as likes, shares, and comments (Bonsón et al., 2016; Bonsón and Ratkai, 2013; Villamediana-Pedrosa et al., 2019). This study adapted and merged previous models to suit YouTube-appropriate metrics, acknowledging the differences between YouTube and other social networking sites in terms of use and interface; it holds YouTube to be not only an important repository of DPVs, but also a helpful tool for practitioners to track and assess a variety of audiences' first-hand reactions to DPVs. It also confirms what Bonsón et al. (2014) claimed about the impact of video content on engagement: analysed comments mainly judge the video content.

A significant contribution is highlighting the relevance of negative engagement. Hollebeek and Chen (2014) claimed that very few studies had explored the negative valence of social media engagement; most studies focus on positive impact and engagement. The results reveal that negative engagement should be considered when thinking about rebranding a destination and using social media networks for the marketing campaign. The Budapest – Spice of Europe campaign, launched in 2018, was the first international tourism destination campaign of the Hungarian capital city. The aim was to design a fresh brand for Budapest, the most important destination of the country, with a campaign that cost more than 670,000 euros (Kovács, 2018). For the potential marketing value of social media, especially YouTube, the negative audience engagement is a particularly relevant effect that the Hungarian DMO should consider when evaluating the campaign's success.

Videos are preeminent among social media content not only in terms of cost and time of production but also in terms of effectiveness. DPVs play a key role in tourism for tourists and potential visitors before, during and after the trip. One of the effects that tourism specialists can expect from the method is that it helps to assess the effectiveness of promotional videos shared on YouTube. In this vein, assessing audience engagement of DPVs on YouTube will shed light on the real impact of the audio-visual materials produced by DMOs and tourism practitioners before being reproduced on other social networking sites and in other traditional media. This tool might become a key performance indicator and facilitate benchmarking by comparing different videos to determine the level of engagement. Additionally, users' comments, whether negative or positive, provide valuable insights for DMOs and tourism practitioners directly from the audience about their perceptions of the destination and video qualities. If a video shared on YouTube has many reactions, which means high audience engagement, it will likely go viral, which generates a high reach. These are two indicators of a successful tourism campaign.

This study, however, is not free from limitations. First, it employs YouTube metrics to assess DPVs' popularity, commitment, and adjusted virality, but YouTube does not allow access to individual commenters' demographics or identities. Nevertheless, using such metrics is justified for this exploratory study because these are the only publicly available statistics. Second, the application of the method requires the availability of all metrics i.e., videos with turn-off comments cannot be analysed. Third, it uses a limited number of videos. Future research could implement the proposed approach and test it with a larger sample. Finally, different versions of the same video can be uploaded deliberately by users to various YouTube channels, which can be another limitation of the study since the metrics can be fragmented.

One of the difficulties of using the methodology in tourism is that it fails to predict actual behavior; however, this method is highly valid to assess audience's engagement of promotional videos. This study did not specifically consider the impact of social media on the economy (Cui, 2021), thus, further research is needed to shed light on the real economic impact of social media platforms i.e., YouTube on destination marketing and the tourism industry.

REFERENCES

Arora, N., & Lata, S. (2020). YouTube channels influence on destination visit intentions. *Journal of Indian Business Research*, 12(1), 23–42. Retrieved from https://doi.org/10.1108/JIBR-09-2019-0269

Avila Campoverde, F., & Ugalde, C. (2020). Instagram: la red social con la mayor interacción para promover los destinos turísticos ecuatorianos. *Investigaciones Turísticas*, (19), 50. Retrieved from https://doi.org/10.14198/INTURI2020.19.03

Bonsón, E., Bednarova, M., & Escobar-Rodríguez, T. (2014). Corporate YouTube practices of Eurozone companies. *Online Information Review*, 38(4), 484–501. Retrieved from https://doi.org/10.1108/OIR-07-2013-0181

Bonsón, E., Bednárová, M., & Wei, S. (2016). Corporate Twitter use and stakeholder engagement: An empirical analysis of the Spanish hotel industry. *European Journal of Tourism Research*, 13, 69–83. Retrieved from https://doi.org/10.54055/ejtr.v13i.232

Bonsón, E., & Ratkai, M. (2013). A set of metrics to assess stakeholder engagement and social legitimacy on a corporate Facebook page. *Online Information Review*, 37(5), 787–803. Retrieved from https://doi.org/10.1108/OIR-03-2012-0054

Buhalis, D. (2020). Technology in tourism-from information communication technologies to eTourism and smart tourism towards ambient intelligence tourism: a perspective article. *Tourism Review*, 75(1), 267–272. Retrieved from https://doi.org/10.1108/TR-06-2019-0258

Castelló Martínez, A. (2013). El estudio del retorno de la inversión y el impacto en la relación de la comunicación empresarial y publicitaria en plataformas sociales: herramientas disponibles en el mercado. In *Revisión de políticas científicas y aportaciones*

metodológicas: Simposio Internacional sobre Política Científica en Comunicación (pp. 411–428). Facultad de Ciencias Sociales, Jurídicas y de la Comunicación.

Chaffey, D. (2023, January, 30). Our compilation of the latest social media statistics of consumer adoption and usage of social networking platforms. *SmartInsights*. Retrieved from https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/#:~:text=74%25%20in%20North%20America,and%207%25%20in%20Middle%20Africa.

Chatzopoulou, G., Sheng, C., & Faloutsos, M. (2010). A First Step Towards Understanding Popularity in YouTube. In *2010 INFOCOM IEEE Conference on Computer Communications Workshops* (pp. 1–6). IEEE. Retrieved from https://doi.org/10.1109/INFCOMW.2010.5466701

Cheng, X., Dale, C., & Liu, J. (2008). Characteristics and Potentials of YouTube: A Measurement Study. In *Peer-to-Peer Video* (pp. 205–217). New York, NY: Springer New York. Retrieved from https://doi.org/10.1007/978-0-387-76450-4_9

Cui, Z. (2021, December). Analysis of the Impact of Social Media on the Economy. In 2021 *3rd International Conference on Economic Management and Cultural Industry* (ICEMCI 2021) (pp. 3062-3066). Atlantis Press.

Deori, M., Kumar, V., & Verma, M. K. (2021). Analysis of YouTube video contents on Koha and DSpace, and sentiment analysis of viewers' comments. *Library Hi Tech*. Retrieved from https://doi.org/10.1108/LHT-12-2020-0323

Dixon, S. (2023, February, 14). Global social network penetration rate as of January 2023, by region. *Statista.* Retrieved from https://www.statista.com/statistics/269615/social-network-penetration-by-region/

Dixon, S. (2022, November, 24). Social media usage in Western Europe - Statistics & Facts. *Statista*. Retrieved from https://www.statista.com/topics/4106/social-media-usage-in-europe/#topicOverview

Ecwid. (2022). Number of YouTube users in each region of the world in 2022. Retrieved January 24, 2023, from https://www.ecwid.com/insights/youtube-users-by-region

Gomes, R. F., & Casais, B. (2018). Feelings generated by threat appeals in social marketing: Text and emoji analysis of user reactions to anorexia nervosa campaigns in social media. *International Review on Public and Nonprofit Marketing*, 15, 591-607. Retrieved from https://doi.org/10.1007/s12208-018-0215-5

Google. (2016). Travel Trends 2016: Data Reveals Hot Spots and New Consumer Insights. Retrieved June 14, 2021, from https://www.thinkwithgoogle.com/_qs/documents/286/travel-trends-2016-data-consumer-insights.pdf

Google Developers. (2021). YouTube. Retrieved October 12, 2021, from https://developers.google.com/youtube/analytics/data_model

Hollebeek, L. D., & Chen, T. (2014). Exploring positively- versus negatively-valenced brand engagement: a conceptual model. *Journal of Product & Brand Management*, 23(1), 62–74. Retrieved from https://doi.org/10.1108/JPBM-06-2013-0332

Huertas, A., Míguez-González, M. I., & Lozano-Monterrubio, N. (2017). YouTube usage by Spanish tourist destinations as a tool to communicate their identities and brands. *Journal of Brand Management*, 24(3), 211–229. Retrieved from https://doi.org/10.1057/s41262-017-0031-y

Huertas, A., Setó-Pàmies, D., & Míguez-González, M.-I. (2015). Comunicación de destinos turísticos a través de los medios sociales. *El Profesional de La Información*, 24(1), 15–21. Retrieved from https://doi.org/10.3145/epi.2015.ene.02

Hysa, B., Karasek, A. & Zdonek, I. (2021). Social media usage by different generations as a tool for sustainable tourism marketing in society 5.0 idea. *Sustainability*, 13(3), 1-27.

Karagür, Z., Becker, J.-M., Klein, K., & Edeling, A. (2021). How, why, and when disclosure type matters for influencer marketing. *International Journal of Research in Marketing*. Retrieved from https://doi.org/10.1016/j.ijresmar.2021.09.006

Kemp, S. (2022). Digital 2022: global overview report. *Datareportal.* Retrieved January 24, 2023, from https://datareportal.com/reports/digital-2022-global-overview-report

Kim, J. (2012). The institutionalization of YouTube: From user-generated content to professionally generated content. *Media, Culture & Society*, 34(1), 53–67. Retrieved from https://doi.org/10.1177/0163443711427199

Kovács, A. (2018, May 16). Soha nem látott módon népszerűsítik Budapestet. *Origo*. Retrieved November 12, 2021 from https://www.origo.hu/itthon/20180515-guller-zoltan-interju-turisztikai-ugynokseg.html

Leung, D., Dickinger, A., & Nixon, L. (2017). Impact of Destination Promotion Videos on Perceived Destination Image and Booking Intention Change. In *Information and Communication Technologies in Tourism 2017* (pp. 361–375). Cham: Springer International Publishing. Retrieved from https://doi.org/10.1007/978-3-319-51168-9_26

Leung, D., Law, R., van Hoof, H., & Buhalis, D. (2013). Social Media in Tourism and Hospitality: A Literature Review. *Journal of Travel & Tourism Marketing*, 30(1–2), 3–22. Retrieved from https://doi.org/10.1080/10548408.2013.750919

Liikkanen, L. A., & Salovaara, A. (2015). Music on YouTube: User engagement with traditional, user-appropriated and derivative videos. *Computers in Human Behavior*, 50, 108–124. Retrieved from https://doi.org/10.1016/j.chb.2015.01.067

Lim, Y., Chung, Y., & Weaver, P. A. (2012). The impact of social media on destination branding: Consumer-generated videos versus destination marketer-generated videos *Journal of Vacation Marketing*, 18(3), 197–206. Retrieved from https://doi.org/10.1177/1356766712449366

Madden, A., Ruthven, I., & McMenemy, D. (2013). A classification scheme for content analyses of YouTube video comments. *Journal of Documentation*, 69(5), 693–714. Retrieved from https://doi.org/10.1108/JD-06-2012-0078

Milwood, P., Marchiori, E., & Zach, F. (2013). A comparison of social media adoption and use in different countries: The case of the United States and Switzerland. *Journal of Travel & Tourism Marketing*, 30(1-2), 165-168.

Muñiz, Jr, A. M., & Schau, H. J. (2007). Vigilante marketing and consumer-created communications. *Journal of Advertising*, 36(3), 35-50.

Peters, K., Chen, Y., Kaplan, A. M., Ognibeni, B., & Pauwels, K. (2013). Social Media Metrics — A Framework and Guidelines for Managing Social Media. *Journal of Interactive Marketing*, 27(4), 281–298. Retrieved from https://doi.org/10.1016/j.intmar.2013.09.007

Petrosyan. A. (2023, February, 24,). Worldwide digital population 2023. *Statista*. Retrieved from https://www.statista.com/statistics/617136/digital-population-worldwide/

Potthast, M., & Becker, S. (2010). Opinion Summarization of Web Comments. In C. Gurrin & et al. (Eds.), *Advances in Information Retrieval* (pp. 668–669). Retrieved from https://doi.org/10.1007/978-3-642-12275-0_73

Reino, S., & Hay, B. (2011). The Use of YouTube as a Tourism Marketing Tool. In *Proceedings of the 42nd Annual Travel & Tourism Research Association Conference.* Ontario: Travel & Tourism Research Association.

Smith, A. N., Fischer, E., & Yongjian, C. (2012). How Does Brand-related User-generated Content Differ across YouTube, Facebook, and Twitter? *Journal of Interactive Marketing*, 26(2), 102–113. DOI 10.1016/j.intmar.2012.01.002

Song, S., Park, S. "Brian," & Park, K. (2021). Thematic analysis of destination images for social media engagement marketing. *Industrial Management & Data Systems*, 121(6), 1375–1397. Retrieved from https://doi.org/10.1108/IMDS-12-2019-0667

Stankov, U., Jovanović, T., Pavluković, V., Kalinić, Č., Drakulić-Kovačević, N., & Cimbaljević, M. (2018), A regional survey of current practices on destination marketing organizations' Facebook Pages: the case of EU and US. *Geographica Pannonica*, 22(2), 81-96.

Tiago, F., Moreira, F., & Borges-Tiago, T. (2019). YouTube Videos: A Destination Marketing Outlook. In *Strategic Innovative Marketing and Tourism* (pp. 877–884). Springer, Cham. . Retrieved from https://doi.org/10.1007/978-3-030-12453-3_101

Tussyadiah, I. P., & Fesenmaier, D. R. (2009). Mediating Tourist Experiences. *Annals of Tourism Research*, 36(1), 24–40. Retrieved from https://doi.org/10.1016/j.annals.2008.10.001

Vazquez, E. E. (2019). Effects of enduring involvement and perceived content vividness on digital engagement. *Journal of Research in Interactive Marketing*, 14(1), 1–16. Retrieved from https://doi.org/10.1108/JRIM-05-2018-0071

Villamediana-Pedrosa, J. D., Vila-Lopez, N., & Küster-Boluda, I. (2019). Secrets to design an effective message on Facebook: an application to a touristic destination based on big data analysis. *Current Issues in Tourism*, 22(15), 1841–1861. Retrieved from https://doi.org/10.1080/13683500.2018.1554625

Volo, S., & Irimiás, A. (2022). Consumer behavior in e-Tourism. In Handbook of e-Tourism (pp. 119-139). Cham: Springer International Publishing.

YouTube. (2021). Press. Retrieved April 29, 2022, from https://blog.youtube/press/

Zeng, B., & Gerritsen, R. (2014). What do we know about social media in tourism? A review. *Tourism Management Perspectives*, 10, 27–36. Retrieved from https://doi.org/10.1016/j.tmp.2014.01.001

Original scientific paper

CHEFS' TENDENCIES TO USE LOCAL FOOD IN HOTEL RESTAURANTS: A RESEARCH CARRIED OUT IN THE CONTEXT OF THE EXTENDED THEORY OF PLANNED BEHAVIOUR

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Cite this article: Ülker, M., Karamustafa, K. (2023). Understanding The Use of Local Food Through the Extended Theory of Planned Behaviour. *Deturope.* 15(1), 66-94.

Abstract

This study aims to explore chefs' intention to use local food and to understand the factors that affect their intentions within the framework of Extended Theory of Planned Behavior (ETPB). In this study, in addition to attitudes, subjective norms and perceived behavioural control which are the antecedents of behavioural intention, the connectedness variable was incorporated. Data were collected from the chefs working in accommodation industry (N=376). In terms of multiple-regression analysis positive attitudes towards local food, negative attitudes towards local food, subjective norms and perception of connectedness factors were identified as the key factors that influence use of local food intention, while the correlation between perceived behavioural control and behavioural intentions was not found to be significant. By extending the TPB, this study provides insights to develop appropriate strategies for the industry and offer practical suggestions to other stakeholders for using local food as a marketing tool.

Keywords: Local Food, Theory of Planned Behaviour, Chefs

INTRODUCTION

Food has been regarded as an academic discipline for many years (Hall & Sharples, 2003; Hegarty, 2009). In recent years, food has played an important role in the tourism industry (Kivela & Crotts, 2006; McKercher et al., 2008; Kim & Eves, 2012). Telfer and Wall (1996) also point out that the efficient use of food in tourism industry can also increase the income of hotels. For instance, Du Rand et al. (2003) state that food expenditure constitutes 8% of the total expenditure of tourists visiting South Africa and 24% of the total expenditure of domestic tourists. Similarly, it is stated that approximately one third of tourist expenditures are spent eating out (Telfer & Wall, 2000).

While some of the tourists may want to maintain their eating habits when they visit destinations with different cultures (Cohen & Avieli, 2004); the other part sees

gastronomic experience as the main purpose of their travels (Sparks et al., 2003). Therefore, local food with qualifications such as quality, uniqueness and authenticity (Hall & Sharples, 2003; Chaney & Ryan, 2012) have an important potential for the marketing of a tourism destination. Destinations that consider local food and culinary culture as important attach importance to present local food as a tourist product (Henderson, 2004; Du Rand & Heath, 2006; Horng & Tsai, 2012). Similarly, Kivela and Crotts (2009) and Dedeoğlu et al. (2022) state that local food is a travel motivation for tourists and an important factor in destination selection, tourist satisfaction, and revisit intention. Therefore, when local foods are used as a marketing tool, they can be of great benefit to destinations.

When the related literature is reviewed, it is seen that researchers (Kivela & Crotts, 2005; Kivela & Crotts, 2006; Kim et al., 2010) emphasize the necessity of using local foods in marketing planning of destinations. In recent years, food and beverage operations have been trying to encourage consumers to use local food in the food production and to support local producers (farmers). In addition to the direct purchase by consumers, the use of local food in restaurants is considered important for the increase in the use of local foods (Smith & Hall, 2003). In this respect, Strohbehn and Gregoire (2003b) indicate that food and beverage operations are new market for local food producers. Therefore; local governments provide the supply-demand relationship between local producers and restaurants so that farmers can continue producing in rural areas. In addition, the use of local food enables sustainability, support for the producers and growth of the local economy (Schneider & Francis, 2005).

The interest of academic circles in local food has been increasing in recent years (Şahin & Yılmaz, 2022). Local food has been mainly studied with (a) non-tourism consumers (Kumar & Smith, 2018; Memon, et al., 2020; Jung, et al., 2020), (b) tourists (Kim et al., 2009; Chang, et al., 2010; Ryu & Han, 2010; Mak et al., 2012; Frisvoll et al., 2016; Choe & Kim, 2018; Ghanem, 2019; Lewitt et al., 2019), and (c) chefs or restaurant managers (Reynolds-Allie, 2012; Curtis & Cowee, 2009; Inwood et al., 2009; Sharma et al., 2014; Özdemir, et al., 2015). Although chefs are the only people to decide whether to use locally produced products or not, studies conducted with chefs are scarce when compared with the ones that are conducted with other stakeholders. It is also stated that although chefs perceive local foods positively in terms of their freshness, nutritiveness, quality, affordability, uniqueness, etc., there are some purchasing obstacles (Hall & Sharples, 2003;

Inwood et al., 2009; Murphy & Smith, 2009). Research findings have also confirmed that chefs' perceptions of local food qualities and local food purchasing barriers affect their intention to purchase local food (Özdemir et al., 2015). In the study carried out by Yarış and Cömert (2015), it was concluded that the advantages of using local food in restaurants outweigh the disadvantages.

It is noteworthy that the number of studies on local food use of chefs working in tourism operations is limited. Besides, there is a limited number of studies (Kang & Rajagopal, 2014) using TPB when chefs' intention to purchase local food is considered. TPB, which is a theory especially used in understanding behaviors is widely used in consumer behavior. Given the scarcity of studies conducted on the local food consumption of chefs, particularly as there are very few studies examining local food use of chefs within the framework of TPB, this study aims to fill the gap in the related literature. The conceptual framework regarding the intentions of chefs to use local food is presented above, but no empirical evidence on this subject has been found in the relevant literature, which formed a ground for conducting this study. Therefore, the main objective of this study is to reveal the role of behavioral factors (ATB – attitude towards behavior, SN – subjective norms, PBC – perceived behavioral control) and personal factor (CONP – connectedness perception) on chefs' intention to use local food within the scope of extended TPB. By providing insights on the chefs' opinions on local food, this study aims to provide implications to both theory and practice.

Hotels are considered as service businesses (Özdemir, 2006). The use of local food makes an important contribution to gain a competitive advantage in hotels. In this context, it can be thought that presenting local food ingredients that can reflect the culture of the society to the guests in these hotels will be beneficial for both businesses and visitors. In particular, the promotion of food, which is a reflection of the local culture, in such hotels will also benefit local producers and suppliers. For this reason, the use of local food ingredients in the meals served in hotels provides benefits in all three ways. Therefore, it is thought that it is important to determine the intention of the executive chefs working in hotels to use local food.

Every study is unique in terms of methodology, in this respect this study attempts to contribute to the body of knowledge with its unique approach to the issue. For this purpose, this study tries to understand the use of locally produced food though previous studies generally focuses on the purchasing of locally produced food. In addition, it is seen

that the sample sizes in studies on local food-related behaviors of managers who are in a decision-making position in the business are quite limited (Sharma et al., 2014; Sims, 2010; Murphy & Smith, 2009; Curtis & Cowee, 2009). In this study, it is important to reach 364 kitchen chefs and collect data according to the quotas (executive chef, executive sous chef, chef de partie) in order to ensure generalizability. Another feature that distinguishes this study from similar studies is the examination of the effect of CONP on chefs' intentions towards local food-related behaviors. In similar studies, the main variables of TPB were generally tested.

THEORETICAL BACKGROUND

Local food in tourism

In recent years, local food consumption culture has become an important for touristic destinations because tourists have been considered local products. Although there is no common definition (Jones et al., 2004; Zepeda & Li, 2006), local food is defined by Sharma et al. (2009) as products that can be produced in the region and purchased from local markets or local producers. There are also studies explaining the locality by distance. For example, Onozaka et al. (2010) stated that participants perceived the concept of "local food" as a distance. In the same study, more than 70% of the respondents answered the concept of "local food" as products produced within 50 miles of the region. Similarly, Kang and Rajagopal (2014) describe local food as products purchased within 200 miles of the region. Özdemir et al. (2015) determine the characteristics of local food; (a) produced in a region, (b) purchase from local markets and producers, (c) a certain distance boundary between the place of production and consumption, and (d) reflecting the region's food culture. In the related literature, it is seen that the local food is conceptualized as an ingredient or meal. While local food as an ingredient considered local food ingredients in the food production, local food as a meal refers to local cuisines. In this study, local food is considered as ingredient and locally produced product.

Local food is seen as unique and different products used to differentiate and compete with other destinations (Mak et al., 2012). Some unique features of local food such as its taste, appearance, freshness, and quality make it important for stakeholders (Hall & Sharples, 2003). A number of countries are successful in using local food as a marketing tool. For example, Lyon, which has 140 kinds of cheese, 61 Michelin restaurants, many

local products and vineyards, is regarded as the gastronomic capital of not only France but also the world (Harrington & Ottenbacher, 2010). Similarly, Oktoberfest attracts a huge number of tourists and 6.7 million liters of beer were consumed in 2013 alone. (Yılmaz, 2015). It is also stated that Taiwan, which has a variety of local foods, has a certain gastronomic identity (Lin et al., 2011). In this context, local foods play a role in the tourists' travel decision to destinations which has strong gastronomic identity (Chang et al., 2011).

In recent studies it is seen that the interest in local food is increasing (Onozaka et al., 2010). In the related literature, it is seen that researchers evaluate local food in terms of supply and demand. Studies evaluating local food in terms of demand seem to emphasize the tendency of (a) tourists, (b) chefs or restaurant managers, and (c) non-tourism consumers to consume local food. Studies examining local food in terms of tourist demand (Kim et al., 2009; Chang et al., 2010; Mak et al., 2012) indicate that many factors, such as cultural, social, physiological, motivational, exposure, past experience, and food related personality trait have an impact on the tendency of tourists to consume local food. On the other hand, it is seen that the studies about the chefs' or managers' local food consumption are focused on (a) the perception of local food attributes (Strohbehn & Gregoire, 2003b; Curtis & Cowee, 2009; Onozaka et al., 2010), (b) the obstacle perception of purchasing local food (Strohbehn & Gregoire, 2003b; Inwood et al., 2009; Kang & Rajagopal, 2014; Green & Dougherty, 2008; Curtis et al., 2008), (c) the benefit perception of purchasing local food (Strohbehn & Gregoire, 2003a), and (d) the experiences related local food (Sharma et al., 2014), (e) the local food purchase intention (Strohbehn & Gregoire, 2003b; Curtis & Cowee, 2009; Inwood et al., 2009; Kang & Rajagopal, 2014; Shin et al., 2020).

Hotels and restaurants purchase in bulk when they use local food. Lillywhite and Simonsen (2014) state that the chefs are eager to have dishes made from local food in their menu. The most important factor leading to the purchase of local food by hotels and restaurants is desire of the chefs to use local food. Similarly, Curtis and Cowee (2009) concluded that most of the participating chefs were independent in their purchase decisions. Therefore, it is important to investigate the factors affecting chefs' intention to use local food in food production. Strohbehn and Gregoire (2002) found that many hotels were interested in making purchases from local producers but were afraid of high prices. In a different study (Yarış & Cömert, 2015), it was concluded that restaurant owners who have local meal in their menu express a more positive opinion about the use of local foods.

The use of special food (like local, fresh, diet, vegetarian) would benefit all stakeholders if there is a strong demand to include local foods in the menus and if the producers can provide fresh food (Lillywhite & Simonsen, 2014; Karamustafa & Ülker, 2020). It can also be stated that the use of local foods, especially in local operations, will benefit the local economy, local producers, and tourists to get to know the local culture. However, considering the difficulty of tourism enterprises to buy local food directly from the producer, it may be considered necessary to work with suppliers. Therefore, the supply chain between local producers and enterprises is considered very important (Inwood et al., 2009; Casselman, 2010).

When the literature on the use of local food in restaurants is examined, it is obvious that the studies are carried out from different perspectives. There are many studies examining the perceived obstacles and benefits of restaurants in purchasing local food (Gregorire & Strohbehn, 2002; Yarış & Cömert, 2015), the benefits and obstacles of the connection between producers and businesses (Du Rand et al., 2003; Dougherty & Green, 2011), the perceptions of businesses towards local products and their use of these products (Nummedal & Hall, 2006), and the issues that affect the decision to buy local food (Sharma et al., 2014). In general, it is determined that the perceptions of restaurants regarding the benefit of using local food are positive, but there are some obstacles to the use of local food (Gregorire & Strohbehn, 2002). It is supported by the research findings that the use of local food in businesses is high and the use of local food is important in the promotion of the destination (Nummedal & Hall, 2006). There are also studies on local foods from a consumer perspective. For example, in the study conducted by Brown (2003), it was found that individuals have a significant interest in local foods and perceive local foods as low-priced and high-quality products. In the study conducted by Zepeda and Leviten-Reid (2004), it is understood that the two most important reasons underlying the purchase of local food by individuals are the freshness and quality of the product. Similarly, it is stated that consumer attitudes have an effect on consumers' intention to buy local food (Campbell, 2013a).

Extended Theory of Planned Behavior (ETPB)

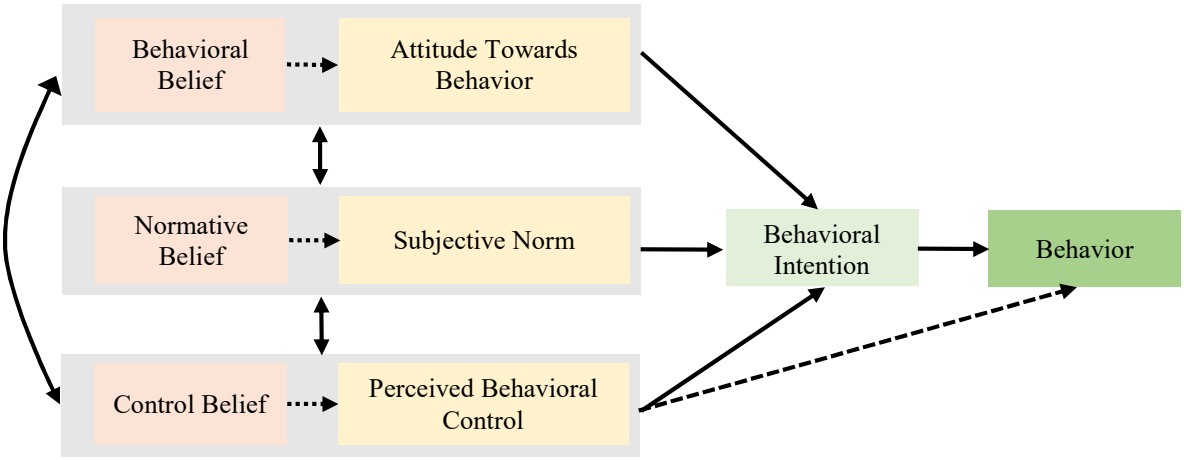
Researchers who believe that social factors have an effect on behaviours have aimed to predict and explain human behaviour by examining the relationship between attitude and

behavior (Ajzen, 1991; Cook et al., 2005). One of the most fundamental theories examining this relationship is Theory of Reasoned Action (TRA) developed by Fishbein and Ajzen (1977). However, TRA is limited to the individual's controlled behaviours and therefore new ideas have started in the field of social psychology (Goh, 2009). Therefore, one of the most important theories in which behaviours that are not under the control of individuals are also added to the model is Theory of Planned Behavior (TPB), which is the extended version of TRA (Ajzen, 1991; Verdurme & Viaene, 2003). The validity of this theory is revealed in the studies conducted on consumer behaviour in the field of tourism. In this context, it is considered appropriate to use TPB for the purpose of this study.

TPB is based on the idea that individuals' intentions are influenced by their attitude, subjective norm and perceived behavioral control variables (Ajzen, 1991; Dommermuth et al., 2011). In particular, the PBC variable, which incorporated into theory, appears to strengthen the theory. In this context it is possible to state that the theory is a frequently used tool in explaining human behaviour. Fig. 1 shows the structure and relationships between the variables of TPB. At the centre of the model is the individual's intention to behaviour. The main variables affecting the behavioural intention (BI) are; (a) ATB, which includes favourable or unfavourable evaluation of the behaviour, (b) SN that express perceived social pressure to perform or not perform the behaviour, and (c) PBC that indicate the self-efficacy of an individual towards a behavior (Ajzen, 2008; Yang et al., 2012). As distinct from TRA, it is seen that SN and ATB as well as PBC should be taken into consideration in order to predict behaviour in TPB.

TPB has some fundamental assumptions. These assumptions are expressed by Ajzen and Fishbein (2005) as follows; (a) BI is the immediate antecedent of behaviour, (b) BI is determined by ATB, SN, and PBC, (c) ATB, SN, and PBC are respectively determined by behavioural, normative, and control beliefs, (d) attitudinal, normative, and control beliefs may vary according to wide range of background factors. While attitudinal beliefs express the assessments of likelihood of the behaviour's consequences, normative beliefs are defined as the assessments about what some other influential people (such as family or close friends) might think of the behaviour (Pavlou & Fygenson, 2006; Jalilvand & Samiei, 2012). Lastly, control beliefs are known as perceptions of how particular behaviour can be controllable by the individual who will perform the behaviour (Fig. 1).

Figure 1 Model of TPB



Source: Hrubes et al. (2001)

Behavioral intention (BI)

Environmental and biological factors have a mediating effect on behaviour (Ajzen, 1991) and cognitive self-regulation has a significant effect on human behaviour. It can be said that cognitive self-regulation will be higher for a behaviour that will be performed for the first time, even if it is not for continuous behaviour. For example, when a chef who has been using local food for a long time in his restaurant compared to a chef who will make a decision to use local food in his meals, the cognitive self-regulation of the chef who will start using the local products should be higher than a chef who has been buying his foods from the local producers for a long time. In this way, thoughts can turn into behaviour.

It is accepted that the BI includes motivational factors that activate individual's behaviour (Cook et al., 2005). In this context, BI can also be defined as the level of desire for behaviour. Ajzen (1991) stated that the BI is indication of how hard people are willing to try and how much of an effort they are planning to exert in order to perform the behaviour. It is known that factors affecting the BI are ATB, SN, and PBC in the TPB. According to all this considerations, it can be stated that the stronger the individual's intention to perform behaviour, the better his/her performance would be. For example, if an individual thinks that he can cook, he believes that the people around him will have positive thoughts about his cooking and that cooking is not a difficult task. These perceptions will further stimulate his/her behaviour. However, in order for a behavioural intention to become behaviour, an individual must be able to decide whether s/he can perform the related behaviour or not.

Attitudes towards behaviour (ATB)

ATB is seen as the primary antecedent of BI (Ajzen et al., 1982) and is considered a factor used in many studies in the field of social psychology. Attitudes play a very important role in shaping the future of the hospitality industry (Karamustafa et al., 2022). However since it is thought that the attitude of an individual towards an object is not sufficient to determine the behaviour, the researchers focused on the ATB (Ajzen & Fisbein, 1977). Therefore, Goh (2009) defines ATB as positive or negative evaluations of an individual towards a specific behaviour. For example, ATB shows the evaluations of the individual towards a particular behaviour (Chen & Tung, 2014).

In most of the studies using TPB, attitude is seen as one of the most important determinants of BI (Bissonnette & Contento, 2001; Vermeir & Verbeke, 2008). ATB is affected by two situations: (a) thoughts about possible outcomes of behaviour and (b) evaluation of possible outcomes. For example, the intention of hotel managers to use local food in their operations can be influenced by the idea that profits will increase and that local producers will be supported. Accordingly, managers can perform behaviour by considering benefits and challenges after using local food.

Studies in the context of restaurants suggest that chefs and managers' attitudes about the characteristics and origin of the local product play an important role in the decision to purchase local food (Sharma et al., 2014), chefs tend to purchase local food to be more competitive in the market they serve (Curtis & Cowee, 2009) and that individuals' belief in the freshness and taste of local food influences their intention to buy local food (Inwood et al., 2009). In the study conducted by Kang and Rajagopal (2014), it was concluded that the attitude of hotel managers was influential on the local food purchase intention. Similarly, in the study conducted by Shah Alam and Mohamed Sayuti (2011) using TPB, it was concluded that individuals' intention to purchase halal food was explained by the ATB variable. There are many studies (Kang & Rajagopal, 2014; Campbell et al., 2015) that have found that ATB has an impact on the local food purchase and use intention of non-tourism consumers as well as chefs and managers. According to Chen and Tung (2014) w hile positive ATB of an individual help perform the behaviour, having negative ATB may cause the individual to avoid the behaviour. In general, it is accepted that ATB is one of the main factors explaining the intention of chefs to purchase local food in the relevant

literature. Considering that attitudes towards behavior can be either positive or negative, the first two hypotheses of the study are formed as follows:

H_1: Positive attitudes towards local food use affect chefs' intention to use local food.

H_2: Negative attitudes towards local food use affect chefs' intention to use local food.

Subjective norm (SN)

SN is known as perceived social pressure applied by other reference groups who are important to any person to perform or not perform a particular behaviour (Ajzen, 1991; Goh, 2009; Baker & White, 2010). Chen and Tung (2014) define SN as perceptions of what other people who are of importance to the individual think about the individual while performing a behavior. In other words, positive or negative thoughts of the people around us regarding a targeted behaviour may have an impact on the behaviour. In the light of all these evaluations, SN can be defined as perception of environmental pressure effects on the behaviour of individuals.

One of the reasons why SN variable is included in the model is that ATB may fail to explain behaviours. For example, an individual may consider that eating out is costly, unhealthy, and unnecessary; however, s/he may eat out with the encouragement of the people around him/her. Therefore, the individual who initially has a negative attitude towards eating out can decide to perform the act this with the pressure of the reference groups. The important point here is how much the individual cares about other people's opinions.

Similar social pressures can have an impact on chefs' use of local food, and chefs may decide to use local food thinking that other people they care about would be satisfied. Özdemir et al. (2016) also stated that the SN variable may have an effect on the local food purchase intention of chefs, as well as many factors. On the other hand, Campbell (2013a) concluded that SN does not have an impact on non-tourism consumers' local food purchase intentions and Ryu and Han (2010) concluded that SN does not have an impact on the intention of tourists to experience local cuisine. However, in the study of Kang and Rajagopal (2014), it was determined that SN was influential on the local food purchase intention of hotel managers, and in the study by Bianchi (2017), it was emphasized that the SN variable should continue to be examined in future studies. Although researchers have found conflicting findings about subjective norms related to local food purchasing

behavior, in the relevant literature, SN is shown as an important determinant of behavioral intentions related to local food. Based on this, the third hypothesis of the study was formed as follows:

H_3: Subjective norms have an impact on chefs' intention to use local food.

Perceived behavioural control (PBC)

Another variable that affects BI is PBC. According to Mathieson (1991), PBC is the control perception of the individual to perform the behaviour. In other words, PBC is defined as the perceived benefits and challenges of the individual while performing certain behaviour (Trafimov et al., 2002). Moreover, PBC is affected by the difficulties and obstacles encountered in past experiences. PBC also refers to the perceived control rather than the control of the individual's behaviour (Notani, 1998). For example, think about whether the individual's control to perform behaviour in itself can cause an obstacle for behaviour (Conner & Armitage, 1998). It is stated that PBC in TPB can affect behaviour directly as well as through BI (Langdridge et al., 2007; Pavlou & Fygenson, 2006; Jalilvand & Samiei, 2012).

The direct effect of the PBC on BI can be explained as follows: where the intention for a particular behaviour is constant, the effort to realize the behaviour is only possible with an increase in PBC. For example, considering two different tourists who have the same intention to participate in adventure tourism activity, more confident tourists can be expected to be more successful than others. Therefore, it can be stated that trust and belief represent control belief.

It is stated that PBC, like many variables, has an effect on individuals' local food purchase and consumption intention (Özdemir et al., 2016). Within the scope of the TPB, it was supported by the research findings (Levitt et al., 2019; Ahmad et al., 2020; Memon et al., 2020) that the PBC has a positive effect on the intentions of tourists to buy and consume local food and ethnic food. In some studies (Gakobo et al., 2016; Shin & Hancer, 2016), it has been concluded that PBC has a positive effect on non-tourism consumers' intention to consume and purchase local food. Although in the study of Kumar and Smith (2018), PBC was found not to have an impact on non-tourism consumers' intention to purchase local food, as seen above, according to many research findings, as the level of PBC increases, individuals' intention to purchase and consume local food also increases. Therefore, the fourth hypothesis of the research is as follows:

H_4: PBC has an impact on chefs' intention to use local food.

Connectedness perception (CONP)

Connectedness can be defined as an agri-food networks that include relationships with local food vendors, local food producers and other local food consumers (Campbell, 2013a). It is known that agri-tourism experiences increase consumers' intentions to purchase local food (Brune et al., 2021). Therefore, the connectedness between chefs, guests, producers and suppliers must be ensured well in order to use local food in hotel or restaurant kitchens (Inwood et al., 2009). In addition, Murphy and Smith (2009) state that restaurant chefs have local food on their menus and thus establish good connections with local producers.

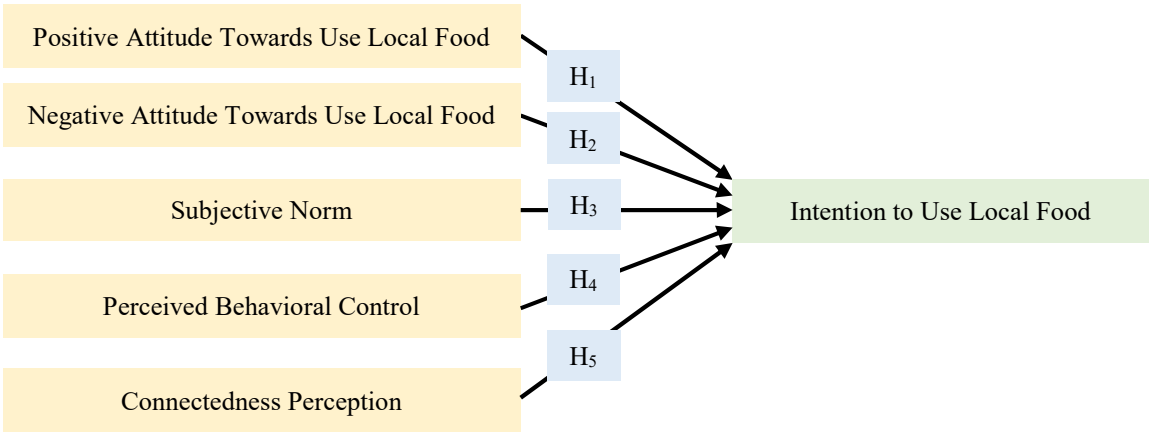
Although CONP is thought to have an impact on purchasing and consuming local food, the effects of connectedness perception on behavioural outcomes remain mixed and underexplored (Campbell et al., 2015). In one of the limited number of studies on connectedness perception (Green & Dougherty, 2008), the main connectedness obstacles between customers and local producers were identified as delivery and service quality, inconsistency in prices and lack of connectivity. On the contrary, Cambell (2013a) states that CONP is not an important determinant of purchase intentions. However, Campbell et al. (2015) found that connectedness related to local products is related to purchase intention. In summary, it is believed that the more local food consumers see themselves connected to farmers' markets and local producers, the more likely they are to purchase local food (Hinrichs, 2000). Based on this, the fifth hypothesis of the study was formed as follows:

H_5: CONP has an impact on chefs' intention to use local food.

Based on the in-depth literature review, studies using TBP in the field of food and beverage regard it as a theory that responds to research problems and can explain consumer intentions and behaviors. However, it is accepted that the least examined subject in studies using TPB in the field of tourism and hospitality is employee behavior and intentions (Huh et al., 2009). In this context, it can be said that it is necessary to conduct a study on the employees working in the tourism sector (especially the managers who have decision-making authority). Therefore, the aim of this study is to examine the relationship between the behavioral (ATB, SN and PBC) and individual factors (CONP) of the chefs working in the hotel kitchens (executive chef, executive sous chef, chef de partie) towards the use of

local products in food production and the intention of chefs to use local food. The proposed research model (Fig. 2) is expected to offer a more comprehensive understanding of chefs' intention to use local food in the food production integrating extended TPB.

Figure 2 Hypothesized model



DATA AND METHODS

Measures

The survey used in the study consists of three sections. In the first section, demographics of the chefs were asked. In the second part, their perceptions of connectedness were measured by the 3 items taken from Campbell, Marinelli et al. (2015). Lastly, to measure ATB, SN, and PBC which are the dimensions of TBP, 30 items were specified. While 27 of these 30 items were taken from the study conducted by Kang and Rajagopal (2014), 3 items were added through expert opinion. The process of item inclusion is as follows: firstly, the original English scales were translated into Turkish, and then checked by bilingual experts to ensure that the meanings of the items were the same across the scales.

At this stage, the researchers examined whether the translations were consistent with each other or not and ended the translation process by consulting the opinions of both instructors on issues where there were differences. In this section, some minor inconsistencies were corrected by the authors. In addition to this rigour, to ensure translation equivalence a pilot test was conducted in 5-19 December 2016 with the participation of 15 chefs. As a result of the pilot test, items that were misunderstood by the chefs and created confusion were arranged, and three items that were not included in the questionnaire form but recommended by the chefs were added. The added items are related

to that local food requires more effort, requires more mastery, and enhances the flavor of the dish. The authors were attentive to maintain the content integrity of items as they were in Ajzen (1991) and Kang and Rajagopal (2014) studies. A second pilot test was conducted with the participation of 91 chefs in 18-21 January 2017 to test the content and comprehensibility of the scale and therefore to avoid common method bias (Mackenzie & Podsakoff, 2012). The results indicated that the scale items are comprehensible by the study sample. ATB, SN, PBC, BI, and CONP of the participants were measured with a 5-point Likert-type scale (1= strongly disagree with, 5= strongly agree with).

Data collection

It would be appropriate to apply the convenience sampling method in cases where it is not possible to apply probability sampling techniques (Han et al., 2017; Song et al., 2012). In this study, both convenience, purposive and quota sampling methods were used together. The data were collected from executive chefs, executive sous chefs and chef de parties working in the accommodation establishments in Antalya. The reason why Antalya was determined to be the research area is that it is one of the cities in Turkey that attracts a large number of tourists. According to data from the Ministry of Culture and Tourism of 29.25% of foreign visitors arriving in Turkey in 2017, 31.49% in 2018, and 32.51% in 2019 visited Antalya. There were 635 4- and 5-star accommodation establishments in Antalya in 2016 (Antalya Provincial Directorate of Culture and Tourism).

Although the number of accommodation establishments in Antalya is known, the number of chefs working in executive chef, executive sous chef, and chef de partie positions could not be reached. For this reason, the accommodation establishments in Antalya were listed according to the districts they are located in (15 districts in total) and at least 5 operations from each district were called and the number of people they employed in these positions was learned. Then, the number of chefs working in these positions in accommodation establishments in all districts was determined hypothetically. Accordingly, it has been assumed that 635 executive chefs, 1064 executive sous chefs, and 3882 chef de parties making a total of 5581 chefs work in 635 4- and 5-star accommodation establishments in Antalya. It is stated that a sample of 362 people can be considered sufficient to represent a population of this size at the 0.5 level (Barlett et al., 2001; DeVellis, 2014).

The data were collected through managers with whom the researchers made contacts. The data collection process took place in 15 March - 28 April 2017. 19 surveys were invalid as they were not filled completely. Therefore, 376 surveys were kept for further analysis. Considering the sample sizes reached by studies on similar groups ranged from 128 to 237 (Gregoire & Strohbehn, 2002; Nummedal & Hall, 2006; Curtis & Cowee, 2009; Sharma et al., 2014), the number of surveys collected in this study can be considered sufficient.

Analysis

Data were analysed in three steps. First, descriptive statistics were analysed. Then, explaratory factor analysis was applied to determine the dimensions of the expanded TPB. Although factor analysis was applied to TBP regarding the behaviors of chefs towards local foods, in this study, it was necessary to make an exploratory factor analysis (EFA) due to the inclusion of different scale items and the formation of different dimensions. While applying EFA, principal component analysis was selected, Varimax vertical rotation technique was used, and data below 0.40 were not taken into account. In addition, when an item is loaded on two or three factors, it was decided that the load difference is at least 1.0. Finally, items that could not be loaded on any factor were removed from the scale. Finally, multiple regression analysis was conducted to examine the relationships between the dimensions.

RESULTS

Sociodemographic characteristics of the sample

Findings regarding the demographics and professional qualifications of the participants are shown in Tab. 1. As Tab. 1 shows a significant portion of the participants are male, generally between the ages of 23-42 and, high school graduates. Considering the professional qualifications of the participants, more than half of the participants have been working in the tourism sector for 11-20 years, they mostly work in independent hotels and most of them work in the position of chef de partie.

Table 1 Demographic profile of respondents

Variable		N	%	Variable		N	%
Gender (*N=364*)	Male	314	86,3	**Total years worked in tourism sector** (*N=363*)	1-10	91	25,1
	Female	50	13,7		11-20	197	54,3
Age (*N=363*)	23-32	137	37,7		21-30	58	15,9
	33-42	155	42,7		31-40	13	3,6
	43 years and above	71	19,6		41 years and above	4	1,1
Education level (*N=362*)	Primary school	46	12,7	**Job Position** (*N=364*)	Executive chef	43	11,8
	Secondary school	99	27,3		Executive sous chef	88	24,2
	High school	169	46,7		Chef de partie	233	64
	Associate degree	31	8,6	**Ownership status of the operation** (*N=345*)	National chain hotel	105	28,8
	Undergraduate degree	14	3,9		International chain hotel	100	27,5
	Postgraduate degree	3	0,8		Independent hotel	140	38,5
Total years worked in current operation (*N=361*)	1-5	272	75,3	**Total number of employees working in the kitchen** (*N=355*)	1-40	94	26,5
	6-10	57	15,8		41-80	150	42,2
	11-15	22	6,1		81 and above	111	31,3
	16-20	5	1,4				
	21 years and above	5	1,4				

Refinement of the scales

EFA was conducted to determine the underlying factors of the intention to use local food. Maximum likelihood method is used together with Varimax rotation technique. Both Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (.819) and Bartlett test of sphericity (2459.419) results show that the data are suitable for EFA. Scale items with load factors below 0.40 and loaded to two different factors at the same time with the difference below 0.10 were excluded from the analysis (a total of 12 items). Finally, six factors were obtained with eigenvalues greater than one, which explained 63.31% of the variance in the TPB scale (Tab. 2). The first dimension “intention to use local food (BI)” consists of 6 items and explains 24.41% of total variance. The second dimension “connectedness perception (CONP)” consists of 3 items and explained 12.70% of the total variance. The third dimension “negative attitude towards using local food (ATLFN)” consists of 6 items and explained 9.77% of total variance. Each of the subjective norms (SN), positive attitude towards local food use (ATLFP) and perceived behavioral control (PBC) factors consist of 2 items and the explained variance rates are 6.25%, 5.13%, and 5.02% respectively. Cronbach's alpha reliability values of the six factors vary between .676 and .853 and it is

possible to say that all factors except one factor are above the recommended values (Hair et al., 1998). Cronbach's alpha coefficients of the six factors vary between .676 and .853 and it is possible to say that all factors except for one are above the recommended values (Hair et al., 1998). EFA results show similarities to the studies of Kang and Rajagopal (2014) and Campbell et al. (2015). The study results differentiate from others as ATB dimension in this study is formed as two different dimensions, namely ATLFP and ATLFN.

The notion that local foods have high nutritional value and that local foods do not harm the natural environment are influential in the formation of positive attitude of chefs towards the use of local food. Similarly, in the research conducted on consumers by Zepeda and Leviten-Reid (2014), it was concluded that the notion of not harming the natural environment is among the positive attitudes towards local food. Based on this finding, if chefs think that local foods are high in nutritional value and they damage to the nature is considerably lower, they may be more tended to form a more favourable attitude toward purchasing and using it.

The most important issues in the formation of negative attitudes of chefs towards the use of local food are that local foods may have food safety problems, they are expensive, they cannot be purchased in large quantities, and they require more effort. Similarly, Weatherell et al. (2003) and Thilmany et al. (2008) found that consumers attach importance to food safety in their food choices. In addition, Strohbehn and Gregoire (2005) concluded in their research that there are obstacles in purchasing local food as they cannot be purchased in bulk and they are expensive. Özdemir et al. (2015) concluded that the costs of local food are high according to chefs. Therefore, the results support some of the previous studies.

Table 2 Measurement properties of scales

Constructs	Factor loadings	Means	Variance explained (%)	Cronbach's alpha
Local food usage intention		3.78	24.41	.853
25. I will purchase more local foods, if it is cost effective.	.766	3.86		
26. I am willing to purchase local foods, if I can receive product of consistent quality.	.802	3.96		
27. I am willing to buy foods, if there is a flexible return policy.	.758	3.81		
28. I will purchase local foods, if there is a single point/ source for purchasing.	.702	3.72		
29. I intend to purchase local foods, if producers of local foods contact me.	.658	3.57		
30. I will make an effort to purchase local foods.	.662	3.78		
Connectedness perception (CONP)		3.38	12.70	.835
31. When I shop for locally produced foods I feel like I connect with producer.	.754	3.47		
32. When I shop for locally produced foods I feel like I connect with store(s).	.860	3.36		
33. When I shop for locally produced foods I feel like I connect with other local food consumers.	.831	3.32		
Attitude towards local food (negative) (ATLFN)		3.71	9.77	.720
1. When compared to foods from conventional sources, local foods are more expensive.	.528	2.84		
7. When compared to foods from conventional sources, local foods have more preparation hours.	.661	2.78		
8. Meals prepared with local food require more effort.	.718	2.67		
9. Meals prepared with local food require more mastership.	.652	2.77		
10. Local foods cannot be purchased in whole quantities.	.650	2.81		
14. When compared to foods from conventional sources, local foods have more safety issues.	.587	3.25		
Subjective norm (SN)		3.28	6.25	.710
17. I feel pressure from my competitors to include more local foods in my foodservice operations.	.750	3.24		
18. My staff expects I will buy more local foods for this food service operation.	.690	3.32		
Attitude towards local food (positive) (ATLFP)		3.01	5.13	.676
5. When compared to foods from conventional sources, local foods are more nutritious.	.750	3.80		
6. The production, transportation, preparation and consumption of local foods are harmless to the natural environment (ecology).	.809	3.63		
Perceived behavioral control (PBC)		3.06	5.02	.798
21. The decision to purchase local foods for this operation is beyond my control.	.831	3.22		
22. I do not have the time or resources to visit local food vendors.	.685	3.33		

Total variance explained: 63.31%; KMO: .819; Bartlett's Test of Sphericity: 2459.419 (.000)

Regression analysis

At the next stage of the analysis, a multiple-regression analysis was performed for testing the relationship between the chefs' intention to use local food (BI) and ATLFP, ATLFN, SN, PBC, CONP, BI were used as dependent variable and ATLFP, ATLFN, SN, PBC, and CONP variables were used as the dependent variables. Since the VIF values of all independent variables are below two, it can be said that there is no multicollinearity problem (Hair et al., 1998). In addition, none of the relationships between independent variables are above 0.50. It was concluded that the power of ATLFP, ATLFN, SN, and CONP dimensions to explain the intention to use local food is 33.1%. The results revealed that ATLFP (β = .355) and CONP (β = .273) are the most important factors in determining to use local food (Tab. 3). Although it is mentioned in the related literature that there is a negative relationship between ATLFP and purchasing behaviors of consumers (Zepeda & Leviten-Reid, 2004), in the study conducted by Kang and Rajagopal (2014), there is a positive relationship between the attitudes of chefs and managers towards local food purchase and purchase intention which is in line with our finding. Similarly, there are studies (Campbell, 2013b; Kumar & Smith, 2018) in which a positive relationship was determined between consumer attitudes and intention to buy local food. The relationship between CONP and BI has been examined in many different studies. In the study conducted by Bianchi (2017), a positive relationship was determined between the connectedness with environment of Chilean consumers and the local food purchase intention. There are also findings (Autio et al., 2013) that using local food provides connectedness with the local environment. On the other hand, SN (β = .164) and ATLFN (β = -.134) had the lowest effect on use of local food. In a study examining local food-related behaviors within the scope of TPB (Shin & Hancer, 2016), it was concluded that SN had a significant effect on the intention to purchase local food. Similarly, in the study conducted by Kang and Rajagopal (2014), it was concluded that SN has an effect on the managers' intention to buy local food. In this case, the fact that SN is effective in studies examining local food-related behaviors through TPB supports the results of this study. Interestingly, although PBC is one of the three factors affecting BI in TPB and this factor was found to have an impact on intention in many studies, it was concluded that in this study PBC does not have a significant impact on the intention to use local food. Although PBC was found to have an impact on the intention to visit a wine destination (Sparks, 2007), the intention to participate in gastronomic tourism (Akkuş, 2013), the intention to purchase halal food (Shah Alam & Mohamed Sayuti, 2011), and the intention to purchase local food (Kang & Rajagopal, 2014), it was not found to have a

significant effect on the intention to use local food in this study. This may be due to the sample used in this study. Because in hospitality operations, chef de parties may have enough authority to make the decision to use local food as much as executive chefs and executive sous chefs. Therefore, this variable may not have an impact on local food use intention. As a result, the H1, H2, H3 and H5 hypotheses were accepted, while the H4 hypothesis was rejected. The fact that the variables of TPB and the CONP revealed in this study have an effect on the intention to use local food shows that TPB is largely confirmed.

Table 3 Influences of the dependent variables on intention to use local food

Hypotheses	Independent variables	Dependent variable	B	B(SE)	β	t-value	Decisions
	Constant		1.627	.236		6.898	
H_1	ATLFP	BI	.305	.038	.355*	7.968	Accepted
H_2	ATLFN	BI	-.084	.027	-.134*	-3.087	Accepted
H_3	SN	BI	.134	.039	.164*	3.433	Accepted
H_4	PBC	BI	.029	.051	.025	.558	Rejected
H_5	CONP	BI	.221	.039	.269*	5.677	Accepted

$R^2 = .331$
*$p < .05$

DISCUSSION AND CONCLUSION

In this study it was aimed to investigate the impact of ATLFP, ATLFN, SN, PBC, CONP on intention to use local food. For this purpose, TPB which was developed by Ajzen (1991) was used through extending. In other words, the TPB model was expanded by adding the CONP variable. The findings of the study show that all factors except for PBC affect chefs' intention to use local food. In general, findings of this study are considerably similar to the findings of Kang and Rajagopal (2014) and Campbell et al. (2015).

Theoretical implications

One of the distinguishing results obtained in this study is that the ATB variable, which created a one-dimensional structure in previous studies, created a two-dimensional structure, namely; positive and negative, in this study. One of the reasons for this situation may be the creation of an item pool before conducting the study, increasing the number of statements and revising the statements by referring to expert opinion more than once. According to Chen and Tung (2014), positive attitudes affect people's intentions positively, while negative attitudes can affect people's intention towards a behavior negatively. After the explaratory factor analysis, the first hypothesis tested in the study was whether the positive attitudes of the chefs had an

impact on their intention to use local food. The findings of the study show that 33.5% of chefs' intention to use local food can be predicted by their positive attitude towards local food use. On the other hand, ATLFN negatively affects the intention of chefs to use local food (-13.4%). In many studies using TPB before, attitude was determined as the most important determinant of intention (Bissonnette & Contento, 2001; Vermeir & Verbeke, 2008). When the relevant literature is examined, the beliefs and attitudes of non-tourism consumers towards the freshness and taste of local food (Zepeda & Leviten-Reid, 2004; Inwood et al., 2009; Carpio & Isengildina-Massa, 2009; Campbell, 2013b; Campbell et al., 2015), hotel managers' attitudes towards local food (Kang & Rajagopal, 2014) appear to have an impact on local local food purchase intention. Therefore, it can be said that the result of the first hypothesis in this study and the results of the studies in the literature are similar.

In accordance with the third hypothesis of this study, the impact of the SN variable on the BI variable was examined and it was concluded that SN explained the BI at the level of 16.4%. This finding suggests that factors like competitors' use of local food in food production and that close friends of chefs want them to use local food are important in establishing the intention of chefs to use local food. The finding in this study is also confirmed by the study on local food purchase intentions by Campbell (2013a). In this study, the researcher determined the impact of SN on non-tourism consumers' local food purchase intention. In a different study (Weatherell et al., 2003) it was suggested that rural residents mostly visit farmers' markets (local markets), but urban individuals meet this need from supermarkets. Therefore, in this case, it is possible to say that the individuals are affected by those around them while making a decision. Interestingly, in a study examining the intention of tourists to experience local cuisine, the impact of the SN variable on intention was not confirmed. In this case, individuals' reactions may change depending on which side of the service individuals are (like receiver or provider). In the study conducted by Kang and Rajagopal (2014), the impact of SN on local food purchase intentions was confirmed. In general, it can be said that this finding is mostly supported by the relevant literature. In the current study, the results clearly indicate that chefs' perceptions regarding connectedness significantly affect their intention to use local food (%26.9). This finding is consistent with the results of previous studies which show that connectedness is related to purchase intention (Hinrichs, 2000; Campbell et al., 2015). Similarly, Green and Dougherty (2008) found that the lack of familiarity of consumers with producers is an obstacle to purchasing local food. In brief, this finding highlights that establishing the sense of connectedness between local food producers, suppliers, other users and chefs may increase the use of local food eventually.

Practical implications

The findings of this study provide useful implications to hospitality businesses, local producers and suppliers. First, research findings show that the ATLFN of chefs negatively affects their intention to use local food. For example, the belief that there are food safety problems regarding local food is a negative attitude. To change this attitude, local producers may be recommended to switch to the label system and obtain some food safety certificates. Second, another factor affecting chefs' intention to use local food is SN. Especially, the use of local food by rival businesses and/or chefs may lead other businesses to use local food. For this reason, chefs should participate in events organized by chef associations and exchange information. In this way, the intention to use local food can be formed and local producers can be supported. Third, it is supported by the findings of this research that ATLFP have the strongest influence on chefs' intention to use local food. From this point of view, in order for chefs to have detailed information about the products, it may be suggested that product information cards, which include nutritional values, can be prepared by the producers and presented with the products. In addition, the use of local food minimizes the damage to the environment as it prevents food from being transported over long distances. For this situation to be adopted by chefs, it may be suggested that human resources departments, especially in hotels, give training at regular intervals and explain the benefits of using local food for both the business and the natural environment in these trainings. Finally, the effect of CONP on intention to use local food can be seen as an important practical outcome. It was concluded that the chefs feel close to the producers, other consumers, and sellers by using local food, and therefore they intend to use local food in production. For this reason, it can be suggested to local food suppliers to bring together chefs, producers, and other consumers to establish a communication network. With this network, the CONP of the chiefs will develop while their SNs will also take action.

Limitations of the study and future research recommendations

It is plausible that a number of limitations may have influenced the results obtained. First, this research was conducted in Antalya, where sea-sand-sun tourism is dominant. Future research can be carried out within the context of city hotels, hotels with much less bed capacity, or restaurants in cities and/or regions famous for their local flavours. Second, only the behavior of chefs was examined in this research. It may be suggested to carry out a similar study by changing the sample in the future. Perspectives of managers, owners and managers of purchasing departments of limited bed capacity hotels on local food can be of particular

interest of the academic circles. Last, the quantitative approach was adopted in this study. Therefore, a qualitative research involving chefs, manufacturers and suppliers can be carried out to resolve in-depth communication barriers and problems.

Acknowledgement

This research has been compiled from the MSc thesis titled "The use of local food ıngredients in the food production by chefs working in the kitchen" written by Mustafa ÜLKER (PhD) in Erciyes University Institute of Social Sciences (Advisor: Prof. Dr. Kurtuluş KARAMUSTAFA).
This research has been supported by the Scientific Research Project Coordination Unit of Erciyes University. Project Number: SYL-2016-6604.

REFERENCES

Ahmad, M. S., Jamil, A., Latif, K. F., Ramayah, T., Leen, J. Y. A., Memon, M., & Ullah, R. (2019). Using food choice motives to model Pakistani ethnic food purchase intention among tourists. *British Food Journal*, 122(6), 1731-1753. DOI: 10.1108/BFJ-01-2019-0024

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Process*, 50(2), 179-211.

Ajzen, I. (2008). Consumer attitudes and behaviour. In P. M. Herr, & F. R. Cardes (Eds.), *Handbook of consumer psychology* (pp. 525-548). New York: Lawrence Erlbaum Associates.

Ajzen I., & Fishbein, M. (2005). The influence of attitudes on behaviour. In: D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173-221). NJ: Erlbaum: Mahwah.

Ajzen, I., Timko, C., & White, J. B. (1982). Self-monitoring and the attitude-behavior relation. *Journal of Personality and Social Psychology*, 42(3), 426-435.

Akkuş, G. (2013). *Yemek turizmine katılma niyeti: Planlı davranış teorisi çerçevesinde bir inceleme*. Erciyes University Institute of Social Sciences. Unpublished Master's Thesis. Kayseri.

Autio, M., Collins, R., Wahlen, S., & Anttila, M. (2013). Consuming nostalgia? The appreciation of authenticity in local food production. *International Journal of Consumer Studies*, 37(5), 564-568. DOI: 10.1111/ijcs.12029

Baker, R. K., & White, K. M. (2010). Predicting adolescents' use of social networking sites from an extended theory of planned behaviour perspective. *Computers in Human Behavior*, 26(6), 1591-1597. DOI: 10.1016/j.chb.2010.06.006

Barlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology*, *Learning, and Performance Journal*, 19(1), 43-50.

Bianchi, C. (2017). Exploring urban consumers' attitudes and intentions to purchase local food in Chile. *Journal of Food Products Marketing*, 23(5), 553-569. DOI: 10.1080/10454446.2015.1048021

Bissonnette, M. M., & Contento, I. R. (2001). Adolescents' perspectives and food choice behaviors in terms of the environmental impacts of food production practices: Application of a psychosocial model. *Journal of Nutrition Education*, 33(2), 72-82. DOI: 10.1016/S1499-4046(06)60170-X

Brown, C. (2003). Consumers' preferences for locally produced food: A study in southeast Missouri. *American Journal of Alternative Agriculture*, 18(4), 213-224. DOI: 10.1079/AJAA200353

Brune, S., Knollenberg, W., Stevenson, K. T., Barbieri, C., & Schroeder-Moreno, M. (2021). The influence of agritourism experiences on consumer behavior toward local food. *Journal of Travel Research*, 60(6), 1318-1332. DOI: 10.1177/0047287520938869

Campbell, J. (2013a). Antecedents to purchase intentions for Hispanic consumers: a 'local' perspective. *The International Review of Retail, Distribution and Consumer Research*, 23(4), 440-455. DOI: 10.1080/09593969.2013.796565

Campbell, J. M. (2013b). Muy local: Differentiating Hispanic and Caucasian shoppers of locally produced foods in US grocery. *Journal of retailing and Consumer Services*, 20(3), 325-333. DOI: 10.1016/j.jretconser.2013.01.009

Campbell, J., Martinelli, E., & Fairhurst, A. (2015). Italian and US consumers of local foods: An exploratory assessment of ınvariance. *Journal of International Consumer Marketing*, 27(4), 280-294. DOI: 10.1080/08961530.2015.1022919

Carpio, C. E., & Isengildina-Massa, O. (2009). Consumer willingness to pay for locally grown products: The case of South Carolina. *Agribusiness*, 25(3), 412-426. DOI: 10.1002/agr.20210

Casselman, A. L. (2010). *Local foods movement in the Iowa catering industry*. Iowa State University Foodservice and Lodging Management. Unpublished Master's Thesis. Iowa.

Chaney, S., & Ryan, C. (2012). Analyzing the evolution of Singapore's world gourmet summit: An example of gastronomic tourism. *International Journal of Hospitality Management*, 31(2), 309-318. DOI: 10.1016/j.ijhm.2011.04.002.

Chang, R. C., Kivela, J., & Mak, A. H. (2010). Food preferences of Chinese tourists. *Annals of Tourism Research*, 37(4), 989-1011. DOI: 10.1016/j.annals.2010.03.007

Chang, R. C., Kivela, J., & Mak, A. H. (2011). Attributes that influence the evaluation of travel dining experience: When East meets West. *Tourism Management*, 32, 307-316. DOI: 10.1016/j.tourman.2010.02.009

Chen, M. F., & Tung, P. J. (2014). Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels. *International Journal of Hospitality Management*, 36, 221-230. DOI: 10.1016/j.ijhm.2013.09.006

Choe, J. Y. J., & Kim, S. S. (2018). Effects of tourists' local food consumption value on attitude, food destination image, and behavioral intention. *International Journal of Hospitality Management*, 971, 1-10. DOI: 10.1016/j.ijhm.2017.11.007

Cohen, E., & Avieli, N. (2004). Food in tourism: Attraction and impediment. *Annals of tourism Research*, 31(4), 755-778. DOI: 10.1016/j.annals.2004.02.003

Conner, M., & Armitage, C. J. (1998). Extending the theory of planned behavior: A review and avenues for further research. *Journal of Applied Social Psychology*, 28(15), 1429-1464.

Cook, A. J., Moore, K., & Steel, G. D. (2005). Taking a position: A reinterpretation of the theory of planned behaviour. *Journal for the Theory of Social Behaviour*, 35(2), 143-154.

Curtis, K. R., & Cowee, M. W. (2009). Direct marketing local food to chefs: Chef preferences and perceived obstacles. *Journal of Food Distribution Research*, 40(2), 26-36. DOI: 10.22004/ag.econ.99784

Curtis, K. R., Cowee, M. W., Havercamp, M., Morris, R., & Gatzke, H. (2008). Marketing local foods to gourmet restaurants: A multi-method assessment. *Journal of Extension*, 46(6), 16-24.

Dedeoğlu, B. B., Mariani, M., Shi, F., & Okumus, B. (2022). The impact of COVID-19 on destination visit intention and local food consumption. *British Food Journal*, 124(2), 634-653. DOI: 10.1108/BFJ-04-2021-0421

DeVellis, R. F. (2014). *Ölçek geliştirme: Kuram ve uygulamalar (Çeviri editörü: Tarık Totan) Third ed.* Ankara: Nobel Yayıncılık.

Dommermuth, L., Klobas, J., & Lappegård. T. (2011). Now or later? The theory of planned behavior and timing of fertility intentions. *Advances in Life Course Research*, 16(1), 42-53. DOI: 10.1016/j.alcr.2011.01.002

Dougherty, M. L., & Green, G. P. (2011). Local food tourism networks and word of mouth. *Journal of Extension*, 49(2), 1-8.

Du Rand, G. E. D., Heath, E., & Alberts, N. (2003). The role of local and regional food in destination marketing: A South African situation analysis. *Journal of Travel & Tourism Marketing*, 14(3-4), 97-112. DOI: 10.1300/J073v14n03_06

Du Rand, G. E., & Heath, E. (2006). Towards a framework for food tourism as an element of destination marketing. *Current Issues in Tourism*, 9(3), 206-234.

Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research. *Philosophy and Rhetoric*, 10(2), 130-132.

Frisvoll, S., Forbord, M., & Blekesaune, A. (2016). An empirical investigation of tourists' consumption of local food in rural tourism. *Scandinavian Journal of Hospitality and Tourism*, 16(1), 76-93. DOI: 10.1080/15022250.2015.1066918

Gakobo, T. W., Jere, M. G., & Griffith, C. (2016). An application of the theory of planned behaviour to predict intention to consume African indigenous foods in Kenya. *British Food Journal*, 118(5), 1-15.

Ghanem, M. S. (2019). The behavioral intention of tourists toward local foods: An applied research on the local foods served in Egyptian Siwa Oasis. *Journal of Service Science and Management*, 12(6), 714-741. DOI: 10.4236/jssm.2019.126049

Goh, E. (2009). Understanding the heritage tourist market segment. *International Journal of Leisure and Tourism Marketing*, 1(3), 257-270.

Green, G. P., & Dougherty, M. L. (2008). Localizing linkages for food and tourism: Culinary tourism as a community development strategy. *Community Development*, 39(3), 148-158. DOI: 10.1080/15575330809489674

Gregoire, M. B., & Strohbehn, C. (2002). Benefits and obstacles to purchasing food from local growers and producers. *Journal of Child Nutrition and Management*, 26(2), 1-10.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis (5th edition)*, New Jersey: Prentice Hall.

Hall, C. M., & Sharples, L. (2003). The consumption of experiences or the experience of consumption? An introduction to the tourism of taste. In: C. M. Hall, L. Sharples, R. Mitchell, N. Macionis, & B. Cambourne (Eds.), *Food tourism around the world: Development, management and markets* (pp. 1-24). Routledge.

Han, H., Meng, B., & Kim, W. (2017). Emerging bicycle tourism and the theory of planned behavior. *Journal of Sustainable Tourism*, 25(2), 292-309. DOI: 10.1080/09669582.2016.1202955

Harrington, R. J., & Ottenbacher, M. C. (2010). Culinary tourism - A case study of the gastronomic capital. *Journal of Culinary Science & Technology*, 8, 14-32. DOI: 10.1080/15428052.2010.490765

Hegarty, J. A. (2009). How might gastronomy be a suitable discipline for testing the validity of different modern and postmodern claims about what may be called avant-garde?. *Journal of Culinary Science & Technology*, 7, 1-18. DOI: 10.1080/15428050902788295.

Henderson, J. C. (2004). Food as a tourism resource: A view from Singapore. *Tourism Recreation Research*, 29(3), 69-74. DOI: 10.1080/02508281.2004.11081459

Hinrichs, C. C. (2000). Embeddedness and local food systems: notes on two types of direct agricultural market. *Journal of Rural Studies*, 16(3), 295-303. DOI: 10.1016/S0743-0167(99)00063-7

Horng, J. S., & Tsai, C. T. S. (2012). Culinary tourism strategic development: An Asia-pacific perspective. *International Journal of Tourism Research*, 14(1), 40-55. DOI: 10.1002/jtr.834

Hrubes, D., Ajzen, I., & Daigle, J. (2001). Predicting hunting ıntentions and behavior: An application of the theory of planned behavior. *Leisure Sciences*, 23(3), 165-178. DOI: 10.1080/014904001316896855

Huh, H. J., Kim, T. T., & Law, R. (2009). A comparison of competing theoretical models for understanding acceptance behavior of information systems in upscale hotels. *International Journal of Hospitality Management*, 28(1), 121-134. DOI: 10.1016/j.ijhm.2008.06.004

Inwood, S. M., Sharp, J. S., Moore, R. H., & Stinner, D. H. (2009). Restaurants, chefs and local foods: Insights drawn from application of a diffusion of innovation framework. *Agriculture and Human Values*, 26(3), 177-191. DOI: 10.1007/s10460-008-9165-6

Jalilvand, M. R., & Samiei, N. (2012). The impact of electronic word of mouth on a tourism destination choice: Testing the theory of planned behavior (TPB). *Internet Research: Electronic Networking Applications and Policy*, 22(5), 591-612. DOI: 10.1108/10662241211271563

Jones, P., Comfort, D., & Hillier, D. (2004). A case study of local food and its routes to market in the UK. *British Food Journal*, 106(4), 328-335. DOI: 10.1108/00070700410529582.

Jung, S. E., Shin, Y. H., & Dougherty, R. (2020). A multi theory–based investigation of college students' underlying beliefs about local food consumption. *Journal of Nutrition Education and Behavior*, 52(10), 907-917. DOI: 10.1016/j.jneb.2020.07.002

Kang, S., & Rajagopal, L. (2014). Perceptions of benefits and challenges of purchasing local foods among hotel industry decision makers. *Journal of Foodservice Business Research*, 17(4), 301-322. DOI: 10.1080/15378020.2014.945889

Karamustafa, K., & Ülker, P. (2020). Impact of tangible and intangible restaurant attributes on overall experience: A consumer oriented approach. *Journal of Hospitality Marketing & Management*, 29(4), 404-427. DOI: 10.1080/19368623.2019.1653806

Karamustafa, K., Ülker, P., & Çalhan, H. (2022). Do level of tourism development and its type make a difference in residents' perceptions? Learning from Turkish cases. *Journal of Hospitality and Tourism Insights*, 5(1), 138-165. DOI: 10.1108/JHTI-06-2020-0111

Kim, Y. G., & Eves, A. (2012). Construction and validation of a scale to measure tourist motivation to consume local food. *Tourism Management*, 33(6), 1458-1467. DOI: 10.1016/j.tourman.2012.01.015

Kim, Y. G., Eves, A., & Scarles, C. (2009). Building a model of local food consumption on trips and holidays: A grounded theory approach. *International Journal of Hospitality Management*, 28(3), 423-431. DOI: 10.1016/j.ijhm.2008.11.005

Kim, Y. H., Goh, B. K., & Yuan, J. (2010). Development of a multi-dimensional scale for measuring food tourist motivations. *Journal of Quality Assurance in Hospitality & Tourism*, 11(1), 56-71. DOI: 10.1080/15280080903520568

Kivela, J., & Crotts, J. C. (2005). Gastronomy tourism: A meaningful travel market segment. *Journal of Culinary Science & Technology*, 4(2-3), 39-55. DOI: 10.1300/J385v04n02_03

Kivela, J., & Crotts, J. C. (2006). Tourism and gastronomy: Gastronomy's influence on how tourists experience a destination. *Journal of Hospitality & Tourism Research*, 30(3), 354-377. DOI: 10.1177/1096348006286797

Kivela, J., & Crotts, J. C. (2009). Understanding travelers' experiences of gastronomy through etymology and narration. *Journal of Hospitality & Tourism Research*, 33(2), 161-192. DOI: 10.1177/1096348008329868

Kumar, A., & Smith, S. (2018). Understanding local food consumers: Theory of planned behavior and segmentation approach. *Journal of Food Products Marketing*, 24(2), 196-215. DOI: 10.1080/10454446.2017.1266553

Langdridge, D., Sheeran, P., & Connolly, K. J. (2007). Analyzing additional variables in the theory of reasoned action. *Journal of Applied Social Psychology*, 37(8), 1884-1913. DOI: 10.1111/j.1559-1816.2007.00242.x

Levitt, J. A., Zhang, P., DiPietro, R. B., & Meng, F. (2019). Food tourist segmentation: Attitude, behavioral intentions and travel planning behavior based on food involvement and motivation. *International Journal of Hospitality & Tourism Administration*, 20(2), 129-155. DOI: 10.1080/15256480.2017.1359731

Lillywhite, J. M., & Simonsen, J. E. (2014). Consumer preferences for locally produced food ingredient sourcing in restaurants. *Journal of Food Products Marketing*, 20(3), 308-324. DOI: 10.1080/10454446.2013.807412

Lin, Y. C., Pearson, T. E., & Cai, L. A. (2011). Food as a form of destination identity: A tourism destination brand perspective. *Tourism and Hospitality Research*, 11(1), 30-48. DOI: 10.1057/thr.2010.22

MacKenzie, S. B., & Podsakoff, P. M. (2012). Common method bias in marketing: Causes, mechanisms, and procedural remedies. *Journal of Retailing*, 88(4), 542-555. DOI: 10.1016/j.jretai.2012.08.001

Mak, A. H., Lumbers, M., Eves, A., & Chang, R. C. (2012). Factors influencing tourist food consumption. *International Journal of Hospitality Management*, 31(3), 928-936. DOI: 10.1016/j.ijhm.2011.10.012

McKercher, B., Okumus, F., & Okumus, B. (2008). Food tourism as a viable market segment: It's all how you cook the numbers!. *Journal of Travel & Tourism Marketing*, 25(2), 137-148. DOI: 10.1080/10548400802402404

Memon, M. A., Mirza, M. Z., Lim, B., Umrani, W. A., Hassan, M. A., Cham, T. H., & Shahzad, K. (2019). When in Rome, do as the Romans do: Factors influencing international students' intention to consume local food in Malaysia. *British Food Journal*, 122(6), 1953-1967. DOI: 10.1108/BFJ-09-2018-0636

Murphy, J., & Smith, S. (2009). Chefs and suppliers: An exploratory look at supply chain issues in an upscale restaurant alliance. *International Journal of Hospitality Management*, 28(2), 212-220. DOI: 10.1016/j.ijhm.2008.07.003

Notani, A. S. (1998). Moderators of perceived behavioral control's predictiveness in the theory of planned behavior: A meta-analysis. *Journal of Consumer Psychology*, 7(3), 247-271. DOI: 10.1207/s15327663jcp0703_02

Nummedal, M., & Hall, C. M. (2006). Local food in tourism: An investigation of the New Zealand South Island's bed and breakfast sector's use and perception of local food. *Tourism Review International*, 9(4), 365-378. DOI: 10.3727/154427206776330571

Onozaka, Y., Nurse, G., & McFadden, D. T. (2010). Local food consumers: How motivations and perceptions translate to buying behavior. *Choices*, 25(1), 1-6. DOI: 10.2307/choices.25.1.03

Özdemir, B. (2006). *Örgütsel öğrenme, çevre ve örgütsel performans ilişkisi: otel yöneticilerinin algılamaları üzerine bir araştırma*. Akdeniz University Institute of Social Sciences. Unpublished PhD Thesis. Antalya.

Özdemir, B., Yılmaz, G., Çalışkan, O., & Aydın, A. (2015). *Şeflerin yerel yiyeceğe ilişkin algılamaları ile yerel yiyecek satın alma niyetleri arasındaki ilişki*. 16. Ulusal Turizm Kongresi (pp. 418-437). Ankara: Detay Yayıncılık.

Özdemir B., Yılmaz, G., & Ünal, C. (2016). *Fiyat-kalite ilişkisi ve yenilik merakının turistlerin yerel yiyecek satın alma niyetine etkisi*. 17. Ulusal Turizm Kongresi (pp.232-243). Ankara: Detay Yayıncılık.

Pavlou, P. A., & Fygenson, M. (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS Quarterly*, 30(1), 115-143. DOI: 10.2307/25148720

Reynolds-Allie, K., & Fields, D. (2012). A comparative analysis of Alabama restaurants: Local vs non-local food purchase. *Journal of Food Distribution Research*, 43(1), 65-74. DOI: 10.22004/ag.econ.139432

Ryu, K., & Han, H. (2010). Predicting tourists' intention to try local cuisine using a modified theory of reasoned action: The case of New Orleans. *Journal of Travel & Tourism Marketing*, 27(5), 491-506. DOI: 10.1080/10548408.2010.499061

Schneider, M. L., & Francis, C. A. (2005). Marketing locally produced foods: Consumer and farmer opinions in Washington County, Nebraska. *Renewable Agriculture and Food Systems*, 20(4), 252-260. DOI: 10.1079/RAF2005114

Shah Alam, S., & Mohamed Sayuti, N. (2011). Applying the theory of planned behavior (TBP) in halal food purchasing. *International Journal of Commerce and Management*, 21(1), 8-20. DOI: 10.1108/10569211111111676

Sharma, A., Gregoire, M. B., & Strohbehn, C. (2009). Assessing costs of using local foods in independent restaurants. *Journal of Foodservice Business Research*, 12(1), 55-71. DOI: 10.1080/15378020802672089

Sharma, A., Moon, J., & Strohbehn, C. (2014). Restaurant's decision to purchase local foods: Influence of value chain activities. *International Journal of Hospitality Management*. 39, 130-143. DOI: 10.1016/j.ijhm.2014.01.009

Shin, Y. H., & Hancer, M. (2016). The role of attitude, subjective norm, perceived behavioral control, and moral norm in the intention to purchase local food products. *Journal of Foodservice Business Research*, 19(4), 338-351. DOI: 10.1080/15378020.2016.1181506

Shin, Y. H., Kim, H., & Severt, K. (2021). Predicting college students' intention to purchase local food using the theory of consumption values. *Journal of Foodservice Business Research*, 24(3), 286-309. DOI: 10.1080/15378020.2020.1848259

Sims, R. (2010). Putting place on the menu: The negotiation of locality in UK food tourism from production to consumption. *Journal of Rural Studies*, 26(2), 105-115. DOI: 10.1016/j.jrurstud.2009.09.003

Smith, A., & Hall, C. M. (2003). Restaurants and local food. In C. M. Hall, L. Sharples, R. Mitchell, N. Macionis, & B. Cambourne (Eds.), *Food tourism around the world: Development, management and markets* (pp. 249-267). Oxford: Butterworth-Heinemann.

Song, H. J., Lee, C. K., Kang, S. K., & Boo, S. J. (2012). The effect of environmentally friendly perceptions on festival visitors' decision-making process using an extended model of goal-directed behavior. *Tourism Management*, 33(6), 1417-1428. DOI: 10.1016/j.tourman.2012.01.004

Sparks, B. (2007). Planning a wine tourism vacation? Factors that help to predict tourist behavioural intentions. *Tourism Management*, 28(5), 1180-1192. DOI: 10.1016/j.tourman.2006.11.003

Sparks, B., Bowen, J., & Klag, S. (2003). Restaurants and the tourist market. *International Journal of Contemporary Hospitality Management*, 15(1), 6-13. DOI: 10.1108/09596110310458936

Strohbehn, C. H., & Gregoire, M. B. (2002). *Institutional and commercial food service buyers' perceptions of benefits and obstacles to purchase of locally grown and processed foods* (Project No. 2001-38). Ames, Iowa: Leopold Center for Sustainable Agriculture.

Strohbehn, C. H., & Gregoire, M. B. (2003a). *Institutional and commercial food service buyers' perceptions of benefits and obstacles to purchase locally grown and processed foods*. Leopold Center Completed Grant Reports, 4-8.

Strohbehn, C. H., & Gregoire, M. B. (2003b). Case studies of local food purchasing by central Iowa restaurants and institutions. *Foodservice Research International*, 14(1), 53-64. DOI: 10.1111/j.1745-4506.2003.tb00177.x

Strohbehn, C. H., & Gregoire, M. B. (2005). Local foods: From farm to college and university foodservice. *Foodservice Systems Management Education Council*, 1, 1-20.

Telfer, D. J., & Wall, G. (1996). Linkages between tourism and food production. *Annals of Tourism Research*, 23(3), 635-653. DOI: 10.1016/0160-7383(95)00087-9

Telfer, D. J., & Wall, G. (2000). Strengthening backward economic linkages: Local food purchasing by three Indonesian hotels. *Tourism Geographies*, 2(4), 421-447. DOI: 10.1080/146166800750035521

Thilmany, D., Bond, C. A., & Bond, J. K. (2008). Going local: Exploring consumer behavior and motivations for direct food purchases. *American Journal of Agricultural Economics*, 90(5), 1303-1309. DOI: 10.1111/j.1467-8276.2008.01221.x

Trafimow, D., Sheeran, P., Conner, M., & Finlay, K. A. (2002). Evidence that perceived behavioural control is a multidimensional construct: Perceived control and perceived difficulty. *British Journal of Social Psychology*, 41(1), 101-121. DOI: 10.1348/014466602165081

Verdurme, A., & Viaene, J. (2003). Consumer beliefs and attitude towards genetically modified food: Basis for segmentation and implications for communication. *Agribusiness*, 19(1), 91-113. DOI: 10.1002/agr.10045

Vermeir, I., & Verbeke, W. (2008). Sustainable food consumption among young adults in Belgium: Theory of planned behaviour and the role of confidence and values. *Ecological Economics*, 64(3), 542-553. DOI: 10.1016/j.ecolecon.2007.03.007

Weatherell, C., Tregear, A., & Allinson, J. (2003). In search of the concerned consumer: UK public perceptions of food, farming and buying local. *Journal of Rural Studies*, 19(2), 233-244. DOI: 10.1016/S0743-0167(02)00083-9

Yang, S., Lu, Y., Gupta, S., Cao, Y., & Zhang, R. (2012). Mobile payment services adoption across time: An empirical study of the effects of behavioral beliefs, social influences, and personal traits. *Computers in Human Behavior*, 28(1), 129-142. DOI: 10.1016/j.chb.2011.08.019

Yarış, A., & Cömert, M. (2015). Mardin ilindeki restoranların yerel ürün kullanımındaki avantaj ve dezavantajları ile ilgili algı düzeyleri. *Uluslararası Sosyal Araştırmalar Dergisi*, 8(37), 991-998. DOI: 10.17719/jisr.20153710664

Yılmaz, G. (2015). *Turizm destinasyonlarında restoran biçimleşmeleri üzerine nitel bir araştırma: kapadokya örneği*. Akdeniz University Institute of Social Sciences. Unpublished Master's Thesis. Antalya.

Şahin, A., & Yılmaz, G. (2022). Local food research: a bibliometric review using Citespace II (1970–2020). *Library Hi Tech*, 40(3), 848-870. DOI: 10.1108/LHT-07-2021-0227

Zepeda, L., & Leviten-Reid, C. (2004). Consumers' views on local food. *Journal of Food Distribution Research*, 35(3), 1-6. DOI: 10.22004/ag.econ.27554

Zepeda, L., & Li, J. (2006). Who buys local food?. *Journal of Food Distribution Research*, 37(3), 5-15. DOI: 10.22004/ag.econ.7064

Original scientific paper

LOCAL DIMENSIONS OF REGIONAL INCOME INEQUALITIES IN THE 2010S - GEOGRAPHICAL PROXIMITY BASED EXPERIENCES FROM HUNGARY

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Cite this article: Egri, Z. (2023). Local Dimensions of Regional Income Inequalities in the 2010s - Geographical Proximity Based Experiences from Hungary. *Deturope.* 15(1), 95-124.

Abstract

In this paper, we look at how geographical proximity influences settlement income trends in the period following the 2008 economic crisis. In the first part of the paper, we highlight the general impact of geographical proximity effects on socio-economic processes, followed by a discussion of the spatiality of income inequality phenomena in Hungary.

The income inequality analyses are carried out using spatial econometric methods: global and local spatial autocorrelation (Global and Local Moran I, Getis-Ord General G, Getis-Ord Gi*), kernel density estimation, and 'spaceless' Markov-, Spatial- and LISA Markov chains expressing income mobility. Our LISA Markov chain analysis is experimentally based on the Getis-Ord Gi* categories, which, to the best of our knowledge, is unique in the spatial econometric income inequality literature.

The results show that spatial income processes in the 2010s are related to both Myrdal's theory of cumulative causality and Richardson's theory of polarization reversal. In a period of income expansion, territorial income spillovers are limited and localised, and in practice reinforce the contiguous central region west of the capital, while peripheral regions are not significantly dissolved and in many cases are re-enforced. The results of the period under review highlight that Hungary is still a transitional country in terms of spatial inequalities.

Keywords: Local Moran I, Getis-Ord Gi*, income distribution, centre-periphery

INTRODUCTION

In the period following the regime change, the socio-economic transformation of the Central and Eastern European region can be described by very clear spatial features (Gorzelak, 1997; Leibenath et al, 2007; Rechnitzer et al. 2008, Szabó & Farkas, 2014; Smetkowski 2014; ESPON 2012, 2014). Compared to the previous period (socialism), new and novel phenomena (innovations, transnational corporations, foreign direct investment, international competition, metropolisation, economic restructuring, the emergence of infocommunications, etc.) have significantly modified and are still modifying the spatial structure of each country (Enyedi 2004; Lux, 2012; Nemes Nagy, 2009; Nölke−Vliegenthart, 2009; Capello−Perucca, 2013, Smetkowski, 2018; Lengyel, 2021).

In explaining these phenomena, as well as development and backwardness, spatial parameters such as geographical length, distance from capitals, other centres and western borders, access to higher transport infrastructures (motorways, trans-European networks) and neighbourhood effects are again having an independent and reinforced explanatory power. (Gorzelak, 2001; Győri & Mikle, 2017; Jakobi, 2018).

Hungary's territorial disparities also reveal the socio-economic effects of the above spatial parameters. The central and north-western regions (the Central Hungary and the Central and Western Transdanubian regions), which are well served by the creative destruction[1] (Schumpeter 1942) and are well served by accessibility and location, account for more than two-thirds of Hungary's gross domestic product, while the other regions are members of the lowest income convergence club in the European Union (European Commission, 2017; Immarino et al, 2017). The main spatial features are not only visible at the large scale, but also at the lower territorial levels (Lukovics & Kovács, 2011; Pénzes & Demeter, 2021; Faluvégi, 2020).

In our paper, we focus on geographical proximity and the role of neighborhood proximity among the above phenomena. Tobler's (1970) first law of geography, according to which 'everything is related to everything else, but near things are more related than distant things', has been/is manifested in many socio-economic dimensions in the Hungarian context. Such regionalising phenomena in Hungary include, for example, different labour market characteristics (employability, unemployment, adult education), the level of education of the population, income status, health status, economic activities, entrepreneurial activity, socio-economic development, or the population of foreign origin (Alpek–Tésits, 2019; Lőcsei, 2010; Hajdú & Koncz, 2022; Pénzes et al, 2018; Tóth & Nagy, 2013; Pénzes et al, 2014; Egri & Kőszegi, 2016; Egri, 2017; Szakálné Kanó, 2017; Jeneiné Gerő et al, 2021; Kincses & Tóth, 2019; Jakobi, 2018; Farkas & Kovács, 2018).

The aim of our study is the analysis of income inequalities in Hungary based on spatial proximity effects, during which we describe in detail the local mechanisms of the spatial organization of income structure and its spatial changes in the conjunctural period following the 2008 economic crisis.

THEORETICAL BACKGROUND

In the last two or three decades, the issues of regional income inequalities have appeared prominently both in academic research and in economic and regional policy ideas (Barro,

[1] „…process of industrial mutation that continuously revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one." (Schumpeter 1942)

1991; Quah, 1996; Komlósi, 2014). The topic aroused keen interest in Central and Eastern Europe, including Hungary, at the time of the regime change and in the subsequent period (Nemes Nagy & Németh, 2005; Németh & Kiss, 2007; Capello & Perucca, 2013; Smętkowski, 2018). The development of regional income inequality trends, the factors shaping inequalities and growth/convergence, as well as the positioning of certain types of settlements in a privileged position (the most backward, or a certain circle of cities), the change in their situation, the transformation of certain sample areas following regime change are all prominent research trends in Hungary and in Central and Eastern Europe (Paas et al., 2007; Czaller, 2016; Molnár et al., 2018; Lengyel & Kotosz, 2018).

International convergence studies examining income catch-up and territorial convergence point out that although income differences may decrease, convergence is not an automatic mechanism (Barro, 1991; Karahasan, 2020). Using the Markov chain model, Quah (1996) points out that regions with the same initial conditions converge and form specific clubs, the differences between which can become permanent. In other words, multiple spatial equilibrium states can be observed.

The spillover effects resulting from geographical proximity play a significant role in the formation of convergence clubs (Le Gallo, 2001; Bufetova, 2016; Karahasan, 2017; Karahasan, 2020). The assumption that territorial economies are independent of each other has long been untenable, as technological transfers, knowledge spillovers, labour migration, institutional spillovers, and economic crises testify to the fact that economies 'interact' with each other and are actually spatially dependent on each other (Varga, 2009; Czaller, 2016).

The spatiality and spatial interactions of economic and social phenomena (and to a significant extent neighbourhood effects) can be interpreted as the interaction of centrifugal and centripetal forces, as well as in the context of their feedback (Varga, 2009). This was explained by several classic and new models, presenting the main spatial relationships of agglomerations, center-periphery relations, urbanization, transport infrastructure, sectoral linkages, other forms of local characteristics, innovation, economic growth and development (Marshall, 1920; Myrdal, 1957; Pottier, 1963; Boudeville, 1968; Lausén, 1973; Richardson, 1980; Faragó, 1995; Krugman, 1991; Haggett, 2006; Crescenzi, Rodriguez & Pose, 2008; Panico & Olivella, 2009; de Bok & van Oort, 2011; Lengyel, 2021).

Le Gallo (2001) points out that areas close to higher-income regions have a greater chance of moving up (catch-up) within the income distribution, while in the case of poor neighbours, falling behind is typical. Several authors have used global and local spatial autocorrelation methods (Moran I, Getis Ord Gi*) and Markov chain analysis based on spatial categories to

highlight the local persistence or mobility of the spatial income situation in the EU, the US and Mexico (Le Gallo & Ertur, 2000; Fischer & Stirbock, 2006; Gutiérrez & Rey, 2013; Le Gallo & Fingleton, 2013; Smetkowski, 2014; Ayouba & Le Gallo, 2019). The results all showed marked center-periphery relations in the examined spaces.

The role of geographical proximity in income inequality (with a special focus on Hungary)

In studies of regional income inequality in Hungary, the effects of geographic proximity are clearly evident, both explicitly and implicitly. Nemes Nagy and Németh (2005) use the values of the income of neighbouring sub-regions as the factors that determine the distribution of income between 1988 and 2003. In the regression models, the spatial dimension can be defined as a clear phenomenon accompanying the socio-economic transformation, and the authors explain this by the regionalising centre-periphery phenomenon. Csite and Németh (2007) show the β-convergence of the HDI[2] (Human Development Index) at the sub-regional level after the regime change (1994-2005). A significant contribution to this is made by geographical proximity, which, according to the authors, also reflects spatial differentiation. Czaller (2016) presented the conditional β-convergence of gross value added at the sub-regional level for the period 1993-2012. Its results show that the external economies of scale and the free mobility production of factors contributed to rapid convergence. Pannon Elemző et al. (2013) use spatial econometric methods to analyse the impact of EU support schemes on territorial cohesion (the economic strength of settlements[3]). Among the aid schemes implemented, spill-over effects (i.e. developmental effects on neighbours) are only observed for R&D and higher education aid and for aid to enterprises. The analysis also shows that developments in the Central Hungary region, while further increasing the weight of the central region, are also spilling over to other parts of the country, positively influencing the economic value added of the small regions. The territorial competitiveness analysis of Tóth and Nagy (2013) draws attention to the fact that spillover effects are not automatic in the proximity of large cities, and the catchment areas of competitive county seats tend to show a competitive disadvantage in many cases, rather than supporting each other. The detection of convergence clubs in income inequality in Hungary is implicit in most cases: on the one hand, different levels of the settlement hierarchy form independent and stable clubs, and on the

[2] HDI is a composite index that includes dimensions of decent living standards (income), education and healthy life (UNDP 1990).
[3] For a disaggregated version of the GDP indicator at a lower territorial level, see Csite-Németh (2007).

other hand, districts and counties composed of settlements may form income and income inequality clubs (Dusek, 2006; Németh & Kiss, 2007; Pannon Elemző et al., 2013; Pénzes, 2019). Dusek (2006), for example, used the spatial moving average method to illustrate local income groups at the settlement level based on spatial similarities between the regime change and the millennium period (metropolitan agglomerations, outer and inner peripheries, etc.). Németh and Kiss (2007), analysing the trends of internal income inequality in small regions, show that levelling, stagnating and differentiating spaces are clearly regionalised on the basis of geographical proximity. Pénzes and co-authors (2014) described the variation in spatial clubs of per capita income between 1988 and 2012 using settlement level "layers" of local autocorrelation for different periods. Egri (2020) explains the temporal variability of incomes (1988-2017) in Békés County by various factors (settlement size, distance dependence, initial income level, etc.). The author uses a spatial lag maximum likelihood regression model to demonstrate the spatially embedded substantive nature of the process. In addition, by comparing the average pattern of spatial inequality and spatial divergence, the author also shows the spatial spread and backwash effects in income structure.

From the above, it is clear that in Hungary, even at the lower territorial levels, there are forces acting in the direction of spatial income clubbing, which shape the spatial distribution of the phenomenon under study with different amplitudes.

In this paper, we aim to highlight the linkages of Hungarian income inequality processes at the settlement level based on geographical proximity. Our research seeks to answer the following questions:

Research Question (1) How does spatial proximity contribute to inequalities in income mobility/stability at the settlement level? In other words, in our paper we assume that geographical proximity not only influences static income positions, but also fundamentally affects dynamics (contributing to catching-up and lagging behind.)

Research Question (2) Do income (convergence) clubs appear as a result of movements in settlement incomes? In our study, we hypothesise that income mobility resulting from geographical proximity ‘pushes’ neighbouring settlements towards club formation. In this way, similarities in the spatial pattern of settlement income positions can be discovered, which are ordered by neighbourhood effects.

Research Question (3) To what extent can settlement level income clubs based on neighbourhood relations be considered stable? Our hypothesis is that income trends in Hungary (following the 2008 economic crisis) typically change the spatial configuration of incomes.

DATA AND METHODS

Answers to the research questions will be given using ETSDA (Exploratory Time-Space Data Analysis) and ESTDA (Exploratory Space-Time Data Analysis). The two acronym methods differ in their 'origin', in that they extend from the analysis of temporal processes to space (ETSDA), or they add the time dimension to the spatial modelling (ESTDA) (Rey 2019). The methods we use include the classic and spatial Markov chains for ETSDA and the Moran I, Local Moran I, Getis-Ord local Gi* and LISA[4] Markov chains for ESTDA. The relationship between the research questions/hypotheses and the methodology can be seen in Tab. 1.

Table 1 The relationship between research questions/hypotheses and applied methods in the study

Research questions/ hypotheses	**Applied Methods**	**Applied software(s)**
1.	Global Moran I, Local Moran I, Kernel density estimation, classic and spatial Markov chain	GeoDa, ArcGIS, Stata, IBM SPSS, own calculation
2.	Getis-Ord Gi*	ArcGIS
3.	LISA Markov chain based on Getis-Ord Gi*	own calculation based on ArcGIS outputs

Source: Authors' own construction

The key feature of the analyses is geographical proximity, which is described using spatial autocorrelation methods. The global approach is used to explore the average pattern of income in the Hungarian settlements. This is illustrated using Global Moran's I (Anselin, 1995; Tóth, 2014).

$$I = \frac{n}{2A} \frac{\sum_{i=1}^{n}\sum_{j=1}^{n}\delta_{ij}(y_i-\bar{y})(y_j-\bar{y})}{\sum_{i=1}^{n}(y_i-\bar{y})^2},$$

where

- n is the number of spatial units indexed by i and j,
- y is the variable of interest (income per capita),
- $\bar{y}$ is the mean of y,
- A is a matrix of spatial weights with zeroes on the diagonal,
- and the δ_{ij} coefficient is 1 if i and j are neighbours and 0 otherwise.

[4] Local indicators of spatial association.

If I > -1/(n-1), the spatial autocorrelation correlation is positive, if I < -1/(n-1), the autocorrelation correlation is negative. If I = -1/(n-1), there is no autocorrelation between the territorial units. In our study, we used distance weight (K-nearest neighbours, distance band, kernel) and contiguity weight (queen, rook) matrices to operationalize neighbourhood relations.

The spatial pattern of incomes was examined using Hot spot analysis, the Getis-Ord local Gi* statistic (Getis & Ord, 1992; Anselin & Rey, 2014; Vida, 2016). The resulting z- and p-values show where high and low income settlements are clustered in Hungary. The formula is as follows:

$$G_i^* = \frac{\sum_{j=1}^{n} w_{i,j}x_j - \bar{X}\sum_{j=1}^{n} w_{i,j}}{S\sqrt{\frac{\left[n\sum_{j=1}^{n} w_{i,j}^2 - \left(\sum_{j=1}^{n} w_{i,j}\right)^2\right]}{n-1}}}$$

where:

- $\bar{X} = \frac{\sum_{j=1}^{n} x_j}{n}$ és $S = \sqrt{\frac{\sum_{j=1}^{n} x_j^2}{n} - (\bar{X})^2}$.
- x_j is the x variable in j settlement,
- n is the number of spatial units,
- w_{ij} is a matrix of spatial weights.

According to the Getis-Ord statistics, a higher than average income value (positive z-score, Gi*>1.96) indicates a 'hot spot', a lower than average value (negative z-score, Gi*<-1.96) indicates a 'cold spot', while -1.96 <Gi*<1.96 indicates non-significant spaces. Unlike the Local Moran I statistic, the Getis-Ord approach does not take into account spatial outliers.

The density-based approach of the convergence kernel aims to capture the evolution of the distribution of per capita income between settlements over time. From this point of view, convergence occurs when the shape of the cross-sectional distribution becomes unimodal over time. In this nonparametric framework, the appearance of multiple modes is usually associated with the existence of convergence clubs (Quah 1996), which contradicts general and unique convergence (Karahasan 2017).

Danny T. Quah (1996) used the classical Markov chain method to study income convergence because of the limitations of traditional β- and σ-convergence analyses. In this case, the method, by using transition probability matrices with stochastic properties, contributes to the description of the detection of the movement of settlements from one period to another. For the basic Markov chain, we used a panel approach, categorising each

settlement according to the annual change. The analysis is based on 22,078 transitions. To discretise the state space, we used the equal number of observations option, dividing the settlements into five equal parts, with 20 per cent of the settlements belonging to each income class. This forms the five income classes of the Markov model. The bottom 20 percent make up the first income class, and the top 20 percent make up the fifth.

Mobility (and its presentation) is an important criterion and objective of the study, so the related indicators are also presented. The stability index provides information on the stability of the process - on the probability of remaining in the given category. The higher its value, the greater the chance of 'non-movement', i.e., in terms of income inequalities, of low-level convergence (Monfort 2020). The same phenomenon is expressed in a different way by the mobility or Shorrocks index (Shorrocks 1978). The so-called ergodic (invariant, stationary) distribution assumes a state where the distribution does not change any more, it can be interpreted as a future resting point (long-term equilibrium state) (Monfort, 2020; Le Gallo & Fingleton 2013). The rate at which the initial distribution presumably approaches the long-term equilibrium state can also be determined. This is called the half-life of the chain, which expresses how much time is required from the initial distribution to reach half of the equilibrium state (Monfort, 2020; Shorrocks, 1978).

Pearson's Q and Likelihood Ratio (LR) tests were used to examine spatial heterogeneity and temporal stationarity (Bickenbach & Bode, 2003), to determine whether or not the investigated phenomenon can be considered homogeneous in space and time. Both tests point to the significance of the correlations. (Larger values indicate significant outputs.)

An important question is how spatial interactions (knowledge, information, technology, trade, capital and labour movements, economies of scale, transfer payments, etc. (Rodríguez, Pose, & Tselios, 2015) due to geographical proximity contribute to income inequalities, such as mobility, or centre-periphery relations, or possible polarisation (Pellegrini, 2002). The spatial Markov matrix transforms the two-dimensional transition matrix into a three-dimensional one by using the initial static income values of the neighbouring observation units. The model assumes that the neighbourhood environment has an impact on a given spatial unit, contributing to catching-up or even to lagging behind, i.e. movement between transitions (Le Gallo 2001; Bickenbach & Bode, 2003). The so-called spatial conditioning was done along five categories (quintiles): poorest, below median, median income, above median, rich neighbours. The analysis of mobility is again based on the panel database.

Last but not least, the LISA Markov model is used to analyse the dynamics of the spatial dependence of incomes. The method allows us to describe the movements of local positions over the period considered. The technique is originally based on the quadrants of the Moran scatter plot, which give the possible states of the Markov chain (Rey, 2019` Le Gallo & Fingleton, 2013; Kotosz, 2016). In our article, we experimentally analyze the spatial dependence of incomes with the Getis-Ord local Gi* statistic, also with the help of the LISA Markov chain, in order to find out how local income inequalities change in space and time. Spatial clusters based on local statistics can also be interpreted as convergence clubs (Le Gallo & Ertur, 2000; Fischer & Stirböck, 2006; Rey, 2019; Gutiérrez & Rey, 2013). During the analysis, we use the panel approach again. The annual changes form the transition probability matrix of the LISA Markov chain. (22,078 observations.)

The above methods allow to study how the income performance of a settlement can be explained by its geographical environment and point to the role of space in the emergence of possible income convergence clusters (Le Gallo, 2001; Le Gallo & Fingleton, 2013; Karahasan, 2020).

The data source is the National Spatial Development and Planning Information System database. The basic indicator for income inequality at the settlement level is taxable income per capita. Like GDP, this indicator has a number of shortcomings and limitations (Major & Nemes Nagy, 1999; Kiss, 2007), but should be treated as an important dimension of socio-economic development.

It is assumed that the different geographical proximities observed in the Hungarian settlement space are also reflected in the dynamics of personal income and have a marked influence on the spatial structure of income. The focus of the study is the growth period following the economic crisis (2012-2019). After the crisis, from 2012, constant growth is typical in Hungary.

The spatial framework of the analyzes is the settlement level (there are 3155 settlements in Hungary). Annex 1 describes the Hungarian administrative classification and main spatial structure characteristics.

RESULTS

The role of spatial proximity in income inequalities

To answer the first research question, we first analyze the stability and mobility of spatial income inequalities. To operationalise the neighbourhood relations, we first tested the spatial

dependence of per capita income using several spatial weight matrices. Since the analysis covers several years, we finally decided to use the most elementary weight matrix: the first-order queen matrix. Thus, the settlements included in the analysis are those that shared a border section with a settlement or were contiguous at a common point.

First, the spatial and temporal stability of the spatial autocorrelation of the phenomenon under study was examined. For this task, we used the Global and Local Moran I values and z-scores. (Tab. 2.) The Moran's I value shows an almost similar average pattern between 2012 and 2019, and the very high and statistically significant z-scores suggest that similar income values are clustered in space. Thus, in the period under review, settlements with high per capita taxable incomes in neighbouring settlements, also have high incomes, while those with low incomes in their neighbourhood, have low incomes.

The stability of this phenomenon over time and space is clearly confirmed by the results of correlation analysis on Local Moran I values expressing the nature and extent of neighborhood similarity. (Second half of Tab.2.)

The Spearman rank correlation coefficient is above +0.96 at all time points and is always highly significant ($p < 0.001$). The relationship between the initial and final period Local Moran I values is slightly weakened, but the result still shows a very close and statistically robust relationship. These results suggest that no really significant changes in the income spatial pattern can be expected.

Table 2 The main characteristics of the global spatial autocorrelation at settlement level (2012-2019)

	Moran I	**z-score**	**standard deviation (I)**	**period**	**Spearman's rho**
2012	0.584***	54.93	0.0106	-	-
2013	0.552***	50.08	0.0110	2012-2013	0.968***
2014	0.569***	52.57	0.0108	2013-2014	0.972***
2015	0.564***	52.75	0.0107	2014-2015	0.962***
2016	0.585***	54.78	0.0107	2015-2016	0.966***
2017	0.571***	52.91	0.0108	2016-2017	0.969***
2018	0.565***	53.00	0.0107	2017-2018	0.971***
2019	0.597***	56.03	0.0106	2018-2019	0.968***
-	-	-	-	2012-2019	0.849***

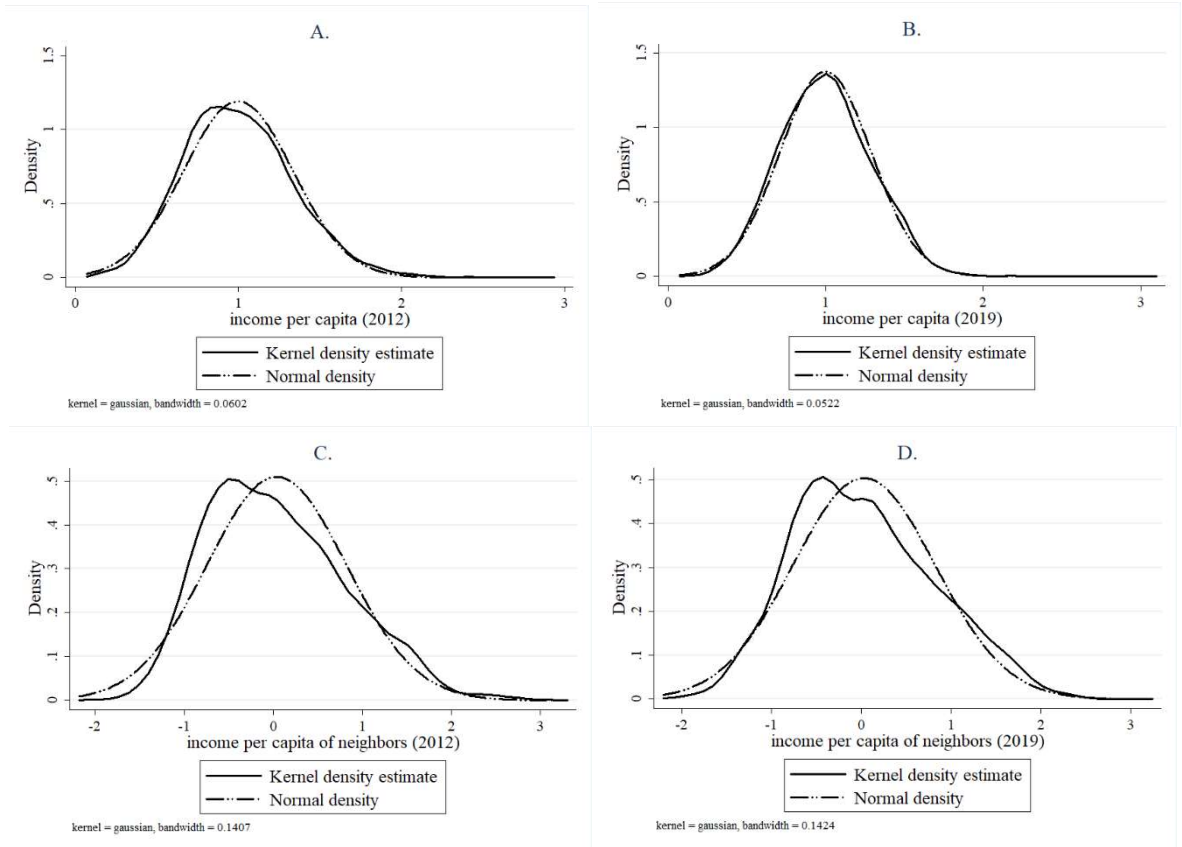
Note: Spearman's rank correlation coefficient shows the relationships between Local Moran I values per year. Spatial weight matrix: first-order queen. *** Significant at the - 0.001 level. The value of -1/(n-1) is -0.0003 in all cases.
Source: Authors' own construction

To analyse the income distribution and its spatial context, the kernel estimation method was used to determine the distribution functions of relative per capita income and

neighbourhood income values. (Fig. 1.) Based on the kernel density function for the initial (2012) and final (2019) income dates, the convergence phenomenon can be observed. (The A. and B. parts of Fig. 1.) The method does not reveal any income convergence clubs at the settlement level, and there are no significant changes in the distributions. Both kernel distributions clearly approach the normal distribution, clubs with exceptional income performance do not appear at any time.

However, the income position of the settlements is explained in a relevant way by their geographical proximity, especially near the median values. (C. and D. parts of Fig. 1.) The exception is the position of the most developed settlements (above one and a half times the national average). It is important to highlight that, in addition to the general convergence, there is a clear polarization of neighbourhood incomes in 2019 (especially around median incomes and above-average performance, there are marked club formation). Density estimations clearly show the differences between settlement and neighbourhood income situations, but not how they interact (especially the effects of neighbourhood). We therefore move on to spatial Markov chain methods.

Figure 1 Kernel density estimations of settlement and neighbourhood incomes (2012, 2019)



Note: Settlement neighbourhood incomes are based on the first-order queen matrix.
Source: Authors' own construction

The first local (spatial Markov-) matrix analyses the impact of geographical proximity on settlement income inequality and convergence. For the analysis, in addition to the original ('spaceless') Markov matrix, five 5x5 spatially conditioned transition probability matrices are created. These are intended to indicate the likelihood that a given settlement will remain or move in income clusters relative to the national average, by controlling for the income categories of its neighbours. The results obtained should be interpreted as a function of the original transition matrix, which does not take into account geographical proximity (Le Gallo 2001, Bickenbach & Bode 2003).

By including the neighbour's values from the initial period (2012), the results clearly provide a more complex picture of the settlement level income convergence processes. (Tab. 3.). The related test statistics (Q = 501.67 and LR = 463.52; with 32 degrees of freedom, p<0,000) show that the spatial context cannot be excluded from the explanation of income mobility at the settlement level, the income convergence significantly related to geographical proximity. The values indicate that the income classes of the original matrix differ significantly from the same rows of the spatially conditioned matrices, that is, for each income class, the difference is statistically robust.

Table 3 Spatial transition probability matrices of settlements (2012-2019)

income class	no. of observations	transition probabilities					homogeneity tests		
		1	2	3	4	5	d.o.f.	Qi; Q	LR
1	4406	*0.904*	0.096				4	*79.19*	*75,55*
2	4400	0.069	*0.811*	0.120			8	*74.30*	*72,87*
3	4391		0.094	*0.806*	0.100		8	*111.41*	*100,20*
4	4395			0.101	*0.822*	0.077	8	*90.28*	*87,05*
5	4400				0.088	*0.912*	4	*146.49*	*127,85*
					whole matrix		32	*501.67*	*463.52*
Spatial lag 1. (poorest neighbours)									
1	2361	*0.938*	0.062				1	*65.92*	*34,95*
2	1252	0.081	*0.843*	0.076			2	*34.29*	*27,58*
3	507		0.148	*0.785*	0.067		2	*24.28*	*19,84*
4	205			0.171	*0.751*	0.078	2	*11.67*	*9,45*
5	66				0.258	*0.742*	1	*24.01*	*16,35*
					whole matrix		8	*160.17*	*108.17*
Spatial lag 2. (neighbours with below median income)									
1	1241	*0.882*	0.118				1	*9.45*	*6,30*
2	1461	0.068	*0.832*	0.099			2	*8.98*	*6,39*
3	1104		0.106	*0.837*	0.057		2	*31.20*	*27,03*
4	471			0.144	*0.796*	0.059	2	*12.36*	*10,17*
5	120				0.225	*0.775*	1	*28.85*	*20,42*
					whole matrix		8	*90.83*	*70.30*

Table 3 (continued)

Spatial lag 3. (neighbours with median income)									
1	557	*0.855*	0.145				1	*18.00*	*13,75*
2	1044	0.064	*0.778*	0.158			2	*18.96*	*13,24*
3	1376		0.079	*0.820*	0.101		2	5.12	3,72
4	1092			0.120	*0.832*	0.048	2	*21.58*	*18,00*
5	326				0.181	*0.819*	1	*37.91*	*27,66*
					whole matrix		8	*101.57*	*76.37*
Spatial lag 4. (neighbours with above median income)									
1	221	*0.814*	0.186				1	*21.50*	*16,48*
2	536	0.054	*0.759*	0.187			2	*26.57*	*20,57*
3	1136		0.083	*0.794*	0.123		2	*10.61*	*7,51*
4	1486			0.093	*0.840*	0.067	2	5.02	3,47
5	1017				0.127	*0.873*	1	*24.80*	*17,03*
					whole matrix		8	*88.50*	*65.06*
Spatial lag 5. (rich neighbours)									
1	26	*0.769*	0.231				1	*5.47*	4,07
2	107	0.065	*0.738*	0.196			2	*6.05*	5,08
3	268		0.063	*0.701*	0.235		2	*58.78*	*42,11*
4	1141			0.063	*0.813*	0.124	2	*65.68*	*45,97*
5	2871				0.054	*0.946*	1	*117.34*	*46,39*
					whole matrix		8	*253.33*	*143.62*

Note: d.o.f. - Degree of freedom, Qi, Q - Pearson's Q-test per row and per matrix, LR - Likelihood ratio. In italics, significant test statistic values at the 0.05 level or above are shown. The matrix shows a stationary distribution over time. Cells that take a value of zero to two decimal places have been removed from the matrix. For transition probabilities, any deviation from 1.0 is due to rounding.
Source: Authors' own construction

Most of the individual rows of the transition probability matrices with different spatial lags differ significantly from the national average mobility probabilities. (Columns Qi, Q and LR in Tab. 3 show this, most of the values are highly significant.)

The table also clearly shows that the effects of geographical proximity vary significantly across the national settlement space. Settlements with lower-income neighbours have a much lower chance of catching up than similar rows in the ‘spaceless’ basic matrix. For example, with the poorest neighbours, the probability of moving up the income class of the least developed (p_{12}[5]) is only 6.2 percent, compared to 9.6 percent for the original matrix. In addition, the push back effect is significant for lower-income neighbours.

For neighbours below median income, the probability of being left behind in the most advanced category (p_{54}) is 22.5 per cent, compared to a base case of only 8.8 percent. The reverse is also true, with significantly higher chances of catching up and lower chances of lagging behind in an above-median spatial environment. The proximity of rich neighbours significantly increases the catching-up chances of the poorest income class (from 9.6 percent

[5] p represents the probability of the movement, the first number represents the row, while the second represents the column.

to 23.1 percent [p_{12}], which Karahasan [2017] calls the 'hinterland effect'), while significantly decreases the lagging behind (fifth income class: 5.4 per cent versus 8.8 percent, [p_{54}]). Overall, with one or two exceptions, the relationship can be considered almost linear in terms of catching-up and lagging behind levels for different geographical proximities. Neighbourhood effects also have a clear impact on stability. Poorer neighbours tend to conserve low income settlements (while more developed ones are downwardly mobile), while the same phenomenon is reversed for richer neighbours.

Table 4 Main values of mobility and convergence by different spatial lags (2012-2019)

	Hungary	spatial lags				
		1.	2.	3.	4.	5.
stability	0.851	0.812	0.825	0.821	0.816	0.794
mobility	0.186	0.235	0.219	0.224	0.230	0.258
half-lives (year)	15.368	10.313	8.916	11.145	8.269	7.784

Source: Authors' own construction

Spatial conditioning clearly accelerates income mobility compared to the 'spaceless' model, irrespective of neighbourhood positions, and the phenomenon is particularly striking for half-lives. (Tab. 4.) According to the calculation, in each income neighbourhood, processes are more mobile and faster than the national average (since all mobility, stability, and half-life times differ from the national average). The extent to which each micro-regional environment can affect income convergence is also an important question for the movement. As can be seen from Tab. 4, it is the environments at the extremes (i.e. the poorest, but especially the richest) that are characterised by the most dynamic impact mechanism. (The high value of mobility, as well as the aggregated Q and LR test results in Tab. 3, indicate this.)

In other words, the most significant forces of mobility associated with income convergence in the period under study essentially support, maintain or reinforce polarization (centre-periphery relations). The results of the analysis show a picture of strong and spatially differentiated mechanisms of action in settlement income convergence (and development), which is locally significant everywhere, with one or two exceptions. In other words, settlement convergence and its main components (catching-up, stagnation, lagging behind) are closely linked to neighbourhood proximity effects and cannot be understood without them.

Pessimism about catching up is realistic for settlements in the lowest income clusters and micro-environments, while upward mobility is much more likely in the (most) wealthiest neighbourhoods. The results in Tab. 3 and Annex 2 show that there are spatial multiple

equilibria for settlement incomes, and these vary according to geographical context. Thus, the results in fact also provide evidence that spatial interactions lead to income convergence clusters in the spatial structure of Hungary. This is supported by both the initial and ergodic distributions, which show a relative majority of settlements corresponding to spatial proximity. (Annex 2.) The invariant distributions that can be predicted from the movements observed over the period under study do not indicate significant changes, and the spatial distributions based on geographical proximity and income convergence clubs will persist in the future.

The results on the dependence of settlement development on neighbouring spaces draw attention to the importance of spatial development based on spatial interactions, which have a fundamental influence on the success of economic development interventions at the local-regional level. The issue is particularly sensitive in relation to the lowest income neighbourhood clusters.

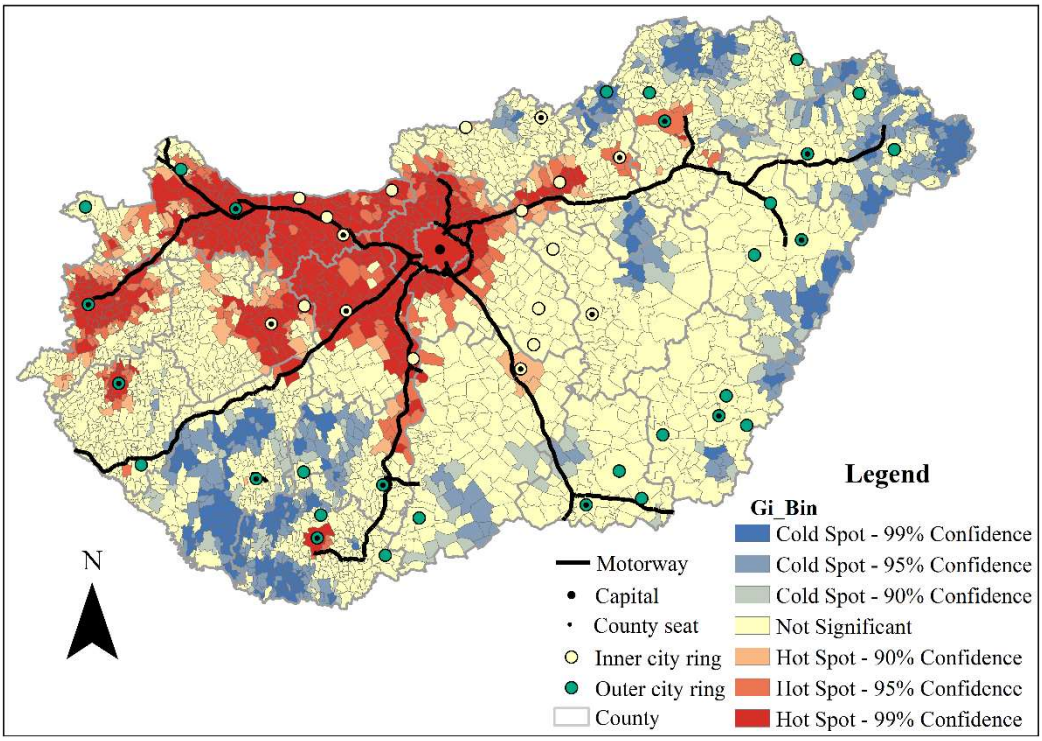
Income (convergence) clubs as results of movements in settlement incomes

The second research question refers to the emergence of income mobility clubs in Hungary as a result of geographical proximity.

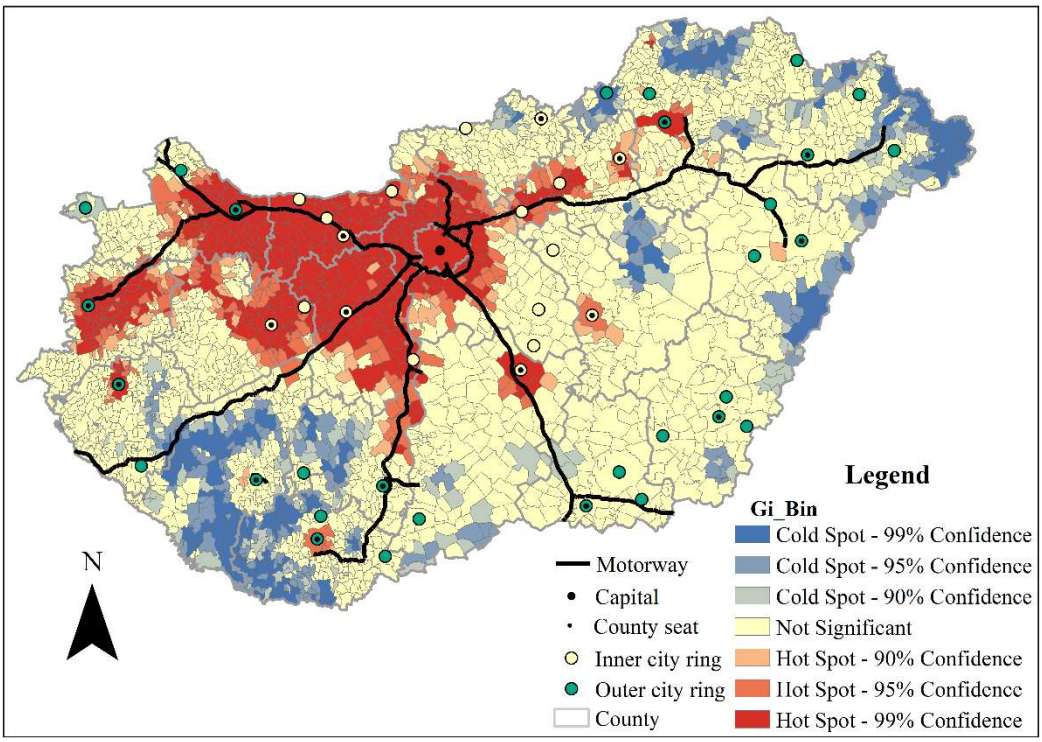
The spatial structure of incomes based on geographical proximity was analysed using the High/Low Clustering (Getis-Ord General G) method and Hot spot analysis. Based on the results of the former method, the p-value for the period 2012-2019 shows a low value (0.000) and a high significance level in all cases, i.e. spatial clustering of incomes is observed. The z-scores show a positive value in each year (ranging from 24.27 to 28.38), i.e. high-income settlements are clustered in Hungary in the period under study.

The income spatial structure in the examined period is very stable, indicating a clearly spatially separated meso (larger scale) centre-periphery pattern (income convergence clubs). The results shown on the map confirm the spatial correlations reported in sources on spatial income autocorrelation in the 2010s (Tóth & Nagy, 2013; Pénzes et al., 2014), with no significant visual differences between the two dates. (Fig. 2)

Figure 2 Local spatial patterns of income per capita (2012, 2019)



Source: Authors' own construction



Source: Authors' own construction

During the period under study, a very significant part of the settlements in North-West Hungary merged with the agglomeration of Budapest, thus forming a coherently stable developed hot spot. In addition, the metropolitan agglomerations (Miskolc, Eger, Pécs, Zalaegerszeg, Szombathely, etc.) located along the main expressway axes (M3, M6, M7,

M86) represent the hot spot cluster members. The cold spot settlements also form extensive stable peripheral clusters in the north-east, south-west and in the eastern parts of the country along the border and Lake Tisza.

The spatial autocorrelation results show the local clubs behind the meso-level (NUTS2) convergence clubs (European Commission 2017), which overall have a very significant spatial extent. The local results partly indicate the imprints of Hungarian urbanization and, on the other hand, the higher-order transport network.

Stability/mobility of clubs based on neighbourhood relations

The third research question related to this chapter is: to what extent do spatial income clubs exhibit temporal variability? To what extent can Hungary's spatial income centre-periphery pattern be considered stable/mobile? Can the spatial transition be modelled?

For the research tasks, the income dynamics of the period following the economic crisis are analysed using the LISA Markov chain method. The method describes the dynamics of the spatial dependence of per capita income, modelling the probabilities of movements between the categories of the Getis-Ord local Gi* statistic with the addition of non-significant categories.

Table 5 LISA Markov chain results (2012-2019)

	0	-3	-2	-1	1	2	3	no. of observations
0	***0.956***	0.000	0.002	0.022	0.017	0.002	0.001	12643
-3	0.003	***0.897***	0.098	0.002	0.000	0.000	0.000	1502
-2	0.010	0.109	***0.762***	0.119	0.000	0.000	0.000	1813
-1	0.201	0.002	0.182	***0.615***	0.000	0.000	0.000	1293
1	0.234	0.000	0.000	0.000	***0.530***	0.235	0.001	813
2	0.023	0.000	0.000	0.000	0.134	***0.717***	0.126	1186
3	0.002	0.000	0.000	0.000	0.001	0.045	***0.953***	2828
initial	0.573	0.068	0.088	0.057	0.034	0.056	0.125	
ergodic	0.503	0.086	0.080	0.054	0.037	0.062	0.177	

Legend: 0 – not significant, -3 – Cold spot 99 percent confidence, -2 – Cold spot 95 percent confidence, -1 – Cold spot 90 percent confidence, 1 – Hot spot 90 percent confidence, 2 – Hot spot 95 percent confidence, 1 – Hot spot 99 percent confidence.
Source: Authors' own construction

Over the growth period 2012-2019, real income growth has been outstanding, with taxable income rising by 70.6 percent in real terms and per capita income by 73.1 percent[6]. In the initial and final years of the analysis, the composition of spatial clubs did not change significantly, with the share of cold spots increasing from 21.3 to 21.8 percent and the share

[6] The growth results are based on our own calculations, which are also confirmed by the statistics of the Hungarian Central Statistical Office. (https://www.ksh.hu/stadat_files/mun/hu/mun0070.html)

of hot spots from 21.4 to 22.7 percent. These preliminary results may suggest that there are no really significant spatial changes in the spatial structure based on geographic proximity during periods of income growth.

However, according to the LISA Markov chain based on the panel approach, the above statement is in any case modified, and a detectable movement dynamic between the two time points can be detected. (Tab. 5.) Most of the most stable 'extreme' categories (cold and hot spots in the 99 percent confidence interval) have very high persistence. Thus, the consistent presence of income convergence clubs is very clear, and the domestic income spatial structure is characterised by stable centre-periphery relations, clearly separated in time and space, even during the growth period. There is also a slight decline in peripherals, with the rate of movement from the most stable cold spot to -2 (Cold spot 95 percent confidence) at 9.8%. On the other hand, the movements of -1 and -2 cold spots are not so clear-cut, with dynamic exchanges between the settlement of the groups. Among the hot spots, the cluster with the weakest significance level (1, Hot spot 90 percent confidence) shows a larger scale improvement or strengthening (23.5% upward movement), while category 2 shows a dynamic movement in the relation between clusters 1 and 3. So, overall, there is no linearity between average income growth and spatial convergence, peripheries are being regenerated, as are centres. This is also suggested by the ergodic distributions defined on the basis of current movements, which indicate a more significant increase in the centres and a slight increase in the peripheries, with a future strengthening of regionalisation. The stability of the centre and peripheral areas of the LISA Markov chain confirm Myrdal's (1957) cumulative causality theory, (spatial) backwardness is caused by backwardness itself, while the same is true for development.

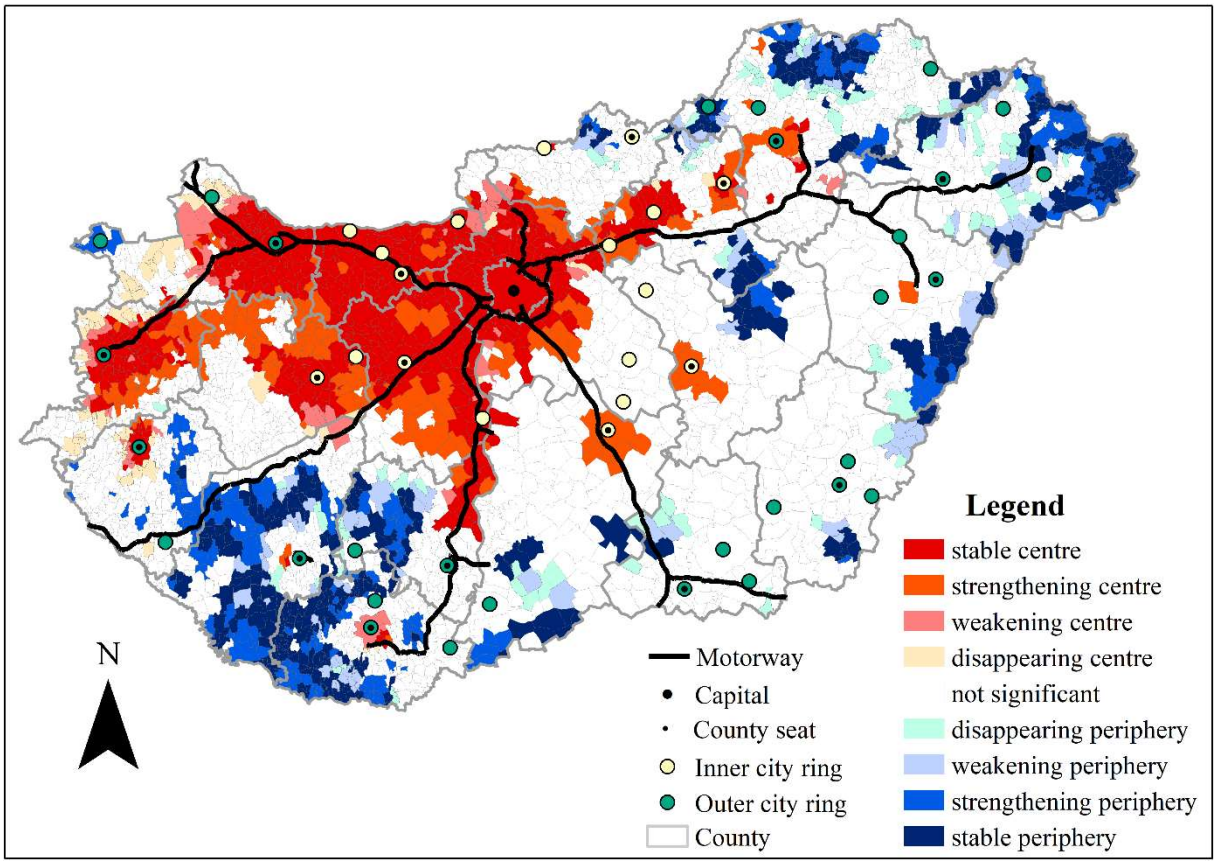
The LISA Markov method has been used to model the relationship between local movements, but these analyses by their very nature do not answer the question ‘where are these processes taking place?’, i.e. which settlements and which contiguous (and non-contiguous) clubs are affected by these spatial movements. In order to avoid redundancy, hot and cold spot settlements that do not change category are labelled as stable, category changers are labelled as weakening or strengthening, and settlements that become member of non significant cluster are labelled as disappearing. These settlement stability and mobility (increase, decrease) are illustrated in the Fig. 3. The spatial income inequality processes of the 2010s indicate a close relationship with Richardson's (1980) theory of polarization reversal.

In the income conjuncture period, the expansion of the contiguous hot spot cluster (the ‘spread’ effects) is most significant, with four-fifths of the growing centre regions located here. There is a marked spread along the high-income club. (Especially in its west-south-

western part, affecting small and medium-sized urban spaces, e.g. the areas of Vasvár, Celldömölk, Pápa, Balatonalmádi-Balatonkenese and Sárbogárd.)

Thus, in the settlement space west of the Budapest agglomeration, the Richardsonian (1980) phase of economic spatial dispersion appears, with a more even, uniform income spatial structure. The income spatial structure also reflects a phase of interregional decentralization, at both small and large urban scales. For example, the agglomerations of Kecskemét, Szolnok and Miskolc (with favourable accessibility) are strengthening their position in the income space. The period of interregional decentralization is associated with a further differentiation of spatial development and expansion, with the average income conjuncture not affecting peripheral spaces in the same way. Significant and increasing spatial marginalisation characterises the South Transdanubian region (especially Somogy County), Zala County and the eastern border regions of Hajdú-Bihar, Szabolcs-Szatmár and Borsod-Abaúj-Zemplén, while the South Great Plain is characterised by a significant peripheral decline. In addition, the opposite processes of spatial interregional decentralization are also apparent, for example, the income role of Pécs in spatial processes decreases in this period.

Figure 3. Spatial changes in spatial income configuration between 2012 and 2019



Source: Authors' own construction

It can be observed that during the income growth period, income 'spread' and 'backwash' effects are observed on a neighbourhood basis in the settlement space. The effects take the form of spatially differentiated interregional decentralization and economic dispersion (suburbanization) phases, or inverse versions of these. Again, it is important to note that the relationship between growth and spatial convergence is not linear over the period under study. In other words, the Richardson processes based on neighbourhood effects also exhibit very heterogeneous characteristics in terms of spatial income processes. For example, the peripheralisation of south-western settlement clusters is further intensified along the income conjuncture, or the centre areas are slightly reduced along the west Transdanubian hotspot.

The majority of the 'spread' and 'backwash' effects appear along contiguous income blocks. This also indicates that, during the income growth phase, the major spatial 'spread' effects do not necessarily promote the retreat and development of income peripheries, but rather the areas of Kecskemét and Szolnok, which are relatively close to the capital (and the contiguous hot spot) and belong to Hungary's inner urban ring.

In our opinion, the latter processes confirm the spatial organisation of the metropolitan region around Budapest described by György Enyedi (2012)[7]. It is also worth noting here that the spatial spreading processes clearly show the differential and localised economic development role of the higher road networks (M3, M35, M6), highlighting the importance of transport and (also) development axes (Pottier, 1963).

The eastern Hungarian corners of the outer ring of cities (Debrecen, Nyíregyháza, Békéscsaba, Szeged) are still missing in the income spatial structure, with neither large cities nor their local spillovers. Moreover, the former center of heavy industry Ózd (also an outer suburb) today forms a stable periphery with its catchment area in the northern part of the country.

It is also important to highlight that the economic suburbanisation of hot spot areas west of the Budapest agglomeration is more significant, while the East-Hungary axis (along the M3 motorway) also shows a growing but much lower concentration.

DISCUSSION

With regard to the first research question and hypothesis, we can state that spatial proximity clearly determines not only the static but also the dynamic evolution of income inequality in settlements (catching-up, lagging behind, stagnation). Our results agree with the results of

[7] The cornerstones are Tatabánya, Székesfehérvár, Kecskemét, Szolnok, Gyöngyös and Vác.

spatial Markov chain studies performed at a higher territorial level (NUTS2, NUTS3 level regions) (Le Gallo, 2001; Gutiérrez & Rey, 2013; Bufetova, 2016; Karahasan, 2017; Karahasan, 2020). That is, regions whose neighbours belong to high income classes are more likely to move into higher income classes, while peripheral regions associated with the poor become increasingly isolated. In our opinion, our analysis of Hungarian settlements describes the role of spatial proximity in the characteristics of income inequality between 2012-2019 in a much more nuanced way. We consider it particularly important to demonstrate the differential impact mechanisms of neighbours with different incomes. It is an important phenomenon that, in the case of taxable incomes that are much more balanced compared to the GDP indicator, dynamic polarization is experienced as a result of spatial proximity. Similar indirect results based on GDP/capita are provided by Le Gallo (2001). In addition, in our opinion, the poverty trap can be interpreted as a result of weak endogenous endowments (Hacker, 2021; Kiss, 2007; Káposzta, 2014) and also as a result of significant neighbourhood effects, the regional environment, consisting of the most deprived settlements, has a clear negative impact on development opportunities, resulting in a geographical 'lock-in club'. The existence of peripheral areas in the urban network, the lack of cooperation between settlements and the accessibility of centres and their catchment areas are among the serious problems of the spatial structure in Hungary (Tóth & Csatári, 1983; Salamin et al., 2008; Izsák et al. 2011). In Hungary, several attempts have been made to develop economic and spatial policies based on central places (National Concept for the Development of Settlement Networks, the Pole Programme, the Modern Cities Programme). However, it is also worth pointing out that the spillover effects in the metropolitan-catchment area dimension has either not been 'treated', not been reinforced (Bereczki, 1989; Izsák et al., 2011), or it is not actually evident in all cases and everywhere, the two spatial structural units do not necessarily support each other (Tóth & Nagy, 2013). For this reason, further analysis of local-level correlations is necessary in the future.

The second research question and hypothesis were also confirmed, i.e. mobilities based on local neighbourhood effects result in income convergence clubs. Evidence for the creation of convergence clubs can be found at a higher sub-national level (Le Gallo, 2001; Rey, 2001; Ayouba & Le Gallo, 2019), but here you can also find results at the local level (district, settlement) related to East-Central Europe (Stankov & Dragićević, 2015; Kozera, Głowicka & Wołoszyn, 2017; Török & Benedek, 2018; Netrdová & Nosek, 2020; Ręklewski, 2022). Similar to the results in Serbia, Poland, Romania and the Czech Republic, the presence of socio-economic interactions behind the center-periphery relations can also be clearly assumed

in the case of Hungarian income clubs. (For example knowledge spillovers, commuting, economies of scale, flow of transfers, political interventions, socio-economic characteristics, see Rodríguez, Pose & Tselios 2015.) In Hungary, similarly to Romania (Török & Benedek, 2018), the east-west axis of development appears in the organization of settlement clubs, while the Polish and Serbian results (Stankov & Dragićević, 2015; Kozera, Głowicka & Wołoszyn, 2017; Ręklewski, 2022) show income center-peripheries along the city network.

The third hypothesis was partially confirmed, in the period of the income boom between 2012-2019, there was a partial change in Hungary's spatial structure. Behind the phenomenon, on the one hand, the spatial evidence of cumulative causality can be seen, and the analogy of Myrdal (1957) is correct: (spatial) backwardness is caused by backwardness itself, while the same is true for development. In addition, the picture of income mobility after the economic crisis is related to Richardson's (1980) theory of polarization reversal (phase of interregional decentralization). In connection with this hypothesis, NUTS2 level results concerning the study period are available (Ayouba-Le Gallo, 2019), but local level studies are scarce. The results of Stankov & Dragićević (2015) for the period 2000-2010 show the decline of the settlement income centers and the stability of the peripheries. In the period following the crisis, however, the strengthening of local centers can be seen in Poland (Ręklewski, 2022), similarly to Hungary. Furthermore, we note that the LISA Markov chain (based on the Getis-Ord Gi* statistics) we used for the first time describes local spatial income inequality processes in a new and nuanced way.

We emphasise that the path dependence of territorial units is also a factor to be taken into account, and several studies point to the endogeneity of the spatial structure of development, i.e. that the phenomenon (development/underdevelopment) is characterised by long-term determinants (Győri-Mikle, 2017, Pénzes, 2020).

CONCLUSION

In our paper we investigated the role of geographical proximity, which has been revalued in the period of regime change, and its impact on settlement level income inequality in Hungary.

In our research, we focused on dynamic rather than static relationships, looking for answers to the question of how geographical proximity shapes the stability and mobility of settlement incomes, whether the phenomenon of convergence clubs of incomes is detectable, and to what extent the income spatial structure in Hungary can be considered stable.

We have addressed our research questions and hypotheses using the ETSDA and ESTDA methods used in spatial econometrics.

Our analyses show that geographical proximity significantly affects the income dynamics of settlements, and it can be argued that the evolution of income inequality cannot be interpreted without including geographical proximity. In Hungary, different neighbourhood effects shape the chances of settlements with different strengths, crucially influencing the chances of catching up and lagging behind as well as stability.

The income processes of the settlement space based on geographical proximity and showing similar trajectories point to the phenomenon of multiple spatial equilibria, which are predominantly shaped by the neighbourhood microenvironment. These settlement spaces are organized into significant income clubs based on spatial proximity.

The patterns of income centre-periphery and its changes in the post-crisis period are linked to the classical theories of regional economics, Richardson's (1980) theory of spatial structure polarization reversal and Myrdal's (1957) theory of cumulative causality. Based on cumulative causality, the spatial location of centres and peripheries can be considered to be mostly constant. The settlement processes underlying the spatial persistence result in a significant and mesoscale (spatial scale) centre-periphery split in the country. In addition, spread and backwash effects are also clearly reflected in the dynamic spatial income structure between 2012 and 2019.

The results show that settlement level income inequality processes in Hungary are spatially embedded to a considerable extent. They also indicate that Hungary is still rather a transition (transforming) market economy in terms of spatial inequalities. The temporal and spatial stability and mobility of income centres and peripheries may represent an opportunity for spatial and economic policy makers to address spatial disparities. Based on the existing socio-economic (globalisation) processes, the national and international literature and the present results, the objective of dissolving the spatial centre-periphery relation can be formulated (OFTK 2014), but the results are still rather pessimistic.

Acknowledgement

The research of Zoltan Egri was supported by the János Bolyai Research Scholarship of the Hungarian Academy of Sciences

REFERENCES

Alpek, B. L., & Tésits, R. (2019). A foglalkoztathatóság mérési lehetőségei és térszerkezete Magyarországon. *Területi Statisztika*, 59 (2), 164–187.

Anselin, L. (1995). Local Indicators of Spatial Association – LISA. *Geographical Analysis*, 27 (2), 93–115.

Anselin, L., & Rey, S. J. (2014). *Modern Spatial Econometrics in Practice: A Guide to GeoDa*, GeoDaSpace and PySAL. Chicago: GeoDa Press.

Ayouba, K., & Le Gallo, J. (2019). *D2.5. Report on Spatiotemporal ESDA on GDP, Income and Educational Attainment in European regions*. D2.5, 2019. ffhal-02789469ff

Barro, R.J. (1991): Economic growth in a cross section of countries. *The Quarterly Journal of Economics*,106 (2), 407–443.

Bereczki, A. (1989). Békés megye gazdaságilag elmaradott térségei. In Simon, I. (Ed.), *Alföldi Tanulmányok* 1989 (pp. 169-184). Békéscsaba: MTA-RKK AKCS.

Bickenbach, F., & Bode, F. (2003). Evaluating the Markov Property in Studies of Economic Convergence. *International Regional Science Review*, 26 (3), 363–392.

Boudeville, J. (1968). *L' espace et les poles de croissance*. Paris: Presses Universitiaires de France.

Bufetova, A. (2016). Trends toward the concentration of economic activity and uneven spatial development of Russia. *ERSA conference papers* ersa16p104, European Regional Science Association.

Capello, R., & Perucca, G. (2013). Do Eastern European Regions Move Towards an Endogenous Growth Pattern? A Diachronic Perspective of Regional Success Factors. *GRINCOH Working Paper Series*, Paper No. 1.15.

Crescenzi, R., & Rodríguez-Pose, A. (2008). Infrastructure endowment and investment as determinants of regional growth in the European Union. In Strauss, H. (Ed.), *Infrastructure investment, growth and cohesion The economics of regional transport investment* (pp. 62−101). Luxembourg: EIB Papers.

Czaller, L. (2016). Agglomeráció, regionális növekedés és konvergencia. *Területi Statisztika*, 56 (3), 275–300.

Csite, A., & Németh, N. (2007). Az életminőség területi differenciái Magyarországon: a kistérségi szintű HDI becslési lehetőségei. *Budapest Working Papers On The Labour Market* Budapesti Munkagazdaságtani Füzetek BWP – 2007/3.

de Bok, M., & van Oort, F. (2011). Agglomeration economies, accessibility, and the spatial choice behavior of relocating firms. *The Journal of Transport and Land Use*, 4 (1), 5–24.

Dusek, T. (2006). Regional income differences in Hungary: a multi-level spatio-temporal analysis. *Conference Paper, 46th Congress of the European Regional Science Association*, Volos. http://www-sre.wu.ac.at/ersa/ersaconfs/ersa06/papers/284.pdf

Egri, Z., & Kőszegi, I. R. (2016). Az egészségi állapot szerepe hazánk területi gazdasági fejlődésében. *Területi Statisztika*, 56 (5), 520–548.

Egri, Z. (2017). Magyarország városai közötti egészségegyenlőtlenségek. *Területi Statisztika*, 57 (5), 537–575.

Egri, Z. (2020). A területi jövedelemegyenlőtlenségek változása Békés megyében, 1988–2017. *Területi Statisztika*, 60 (4), 477–512.

Enyedi, G. (2004). Regionális folyamatok a posztszocialista Magyarországon. *Magyar Tudomány*, 49 (9), 935–941.

Enyedi, G. (2012). *Városi világ*. Budapest: Akadémiai Kiadó.

ESPON [European Observation Network for Territorial Development and Cohesion] (2012). *SGPTD Second Tier Cities and Territorial Development in Europe: Performance, Policies and Prospects Final Report*. Luxembourg: ESPON Coordination Unit.

ESPON [European Observation Network for Territorial Development and Cohesion] (2014). *ET2050 Territorial Scenarios and Visions for Europe Final Report*. Luxembourg: ESPON Coordination Unit.

European Commission (2017). *Competitiveness in low-income and low-growth regions The lagging regions report*. Commission Staff Working Document. Brussels.

Faluvégi, A. (2020). A magyar kistérségek fejlettségi különbségei. *Területi Statisztika*, 60 (1), 118–148.

Faragó, L. (1995). Kína a növekedési póluselmélet gyakorlati megvalósítója. *Tér és Társadalom*, 9 (3-4), 179-189.

Farkas, J., & Kovács, A. D. (2018). Kritikai észrevételek a magyar vidékfejlesztésről a vidékföldrajz szempontjából. *Területi Statisztika*, 58 (1), 57–83.

Fischer, M.M., & Stirböck, C. (2006). Pan-European regional income growth and club-convergence Insights from a spatial econometric perspective. *The Annals of Regional Science*, 40, 693–721.

Getis, A., & Ord, J. K. (1992). The Analysis of Spatial Association by use of Distance Statistics.
Geographical Analysis, 24 (3), 189–206.

Gorzelak, G. (1997). Regional Development and Planning in East Central Europe. In Keune, M. (Ed.): *Regional Development and Employment Policy: Lessons from Central and Eastern Europe* (pp. 62–76). Budapest: ILO.

Gorzelak, G. (2001). Regional Development in Central Europe and European Integration. *Informationen zur Raumentwicklung Heft*, 2001, 11/12.

Gutiérrez, M. L. S., & Rey, S. J. (2013). Space-time income distribution dynamics in Mexico. *Annals of GIS*, 19 (3), 195-207.

Győri, R., & Mikle, G. (2017). A fejlettség területi különbségeinek változása Magyarországon, 1910–2011. *Tér és Társadalom*, 31 (3), 144–164.

Hacker, B. (2021). *Unequal Europe Tackling regional disparities in the EU*. Friedrich-Ebert-Stiftung - Foundation for European Progressive Studies (FEPS). https://library.fes.de/pdf-files/bueros/stockholm/18349.pdf

Haggett, P. (2006). *Geográfia*. Budapest: Typotex.

Hajdú, D., & Koncz, G. (2022). Employment data of participants in supported adult training for jobseekers and their territorial pattern in Hungary, 2010–2020. *Regional Statistics*, 12 (2), 117–148.

Iammarino, S., Rodríguez-Pose, A., & Storper, M. (2017). *Why Regional Development matters for Europe's Economic Future*. Working Papers Directorate-General for Regional and Urban Policy WP 07/2017. Luxembourg: Publications Office of the European Union.

Izsák, É., Baji, P., & Vajas, Á. (2011). Az 1971-es OTK néhány tanulsága Kell-e performatív fordulat a településfejlesztésbe? In Csapó, T. (Ed.), *Az 1971. évi OTK és hatása a hazai településrendszerre: szuburbanizáció, aprófalvak, településszerkezet* (pp. 71-82). Szombathely: Savaria University Press.

Jakobi, Á. (2018). A térbeli elhelyezkedés differenciáló szerepe a 20. század eleji Magyarországon. In Demeter, G. – Szulovszky, J. (Ed.): *Területi egyenlőtlenségek nyomában a történeti Magyarországon Módszerek és megközelítések* (pp. 117-145). Budapest-Debrecen: MTA BTK, DE Társadalomföldrajzi és Területfejlesztési Tanszék, SzuloPress Bt.

Jeneiné Gerő, H. E., Kincses Á., & Tóth G. (2021). A hazai mikro-, kis- és középvállalkozások térbeli jellegzetességei. *Területi Statisztika*, 61 (6), 769–796.

Káposzta, J. (2014). Területi különbségek kialakulásának főbb összefüggései. *Gazdálkodás*, 58 (5), 399-412.

Karahasan, B. C. (2017). Distributional Dynamics of regional incomes in Turkey: 1987-2014. *Marmara Journal of Economics*, 1, 95-97.

Karahasan, B. C. (2020). Can neighbor regions shape club convergence? Spatial Markov chain analysis for Turkey. *Letters in Spatial and Resource Sciences*, 13, 117-131. https://doi.org/10.1007/s12076-020-00248-z

Kincses, Á., & Tóth, G. (2019). A Magyarországon élő külföldi kötődésű népesség térbeli autokorreláltsága. *Területi Statisztika*, 59 (6), 579–606.

Kiss, J. P. (2007). *A területi jövedelemegyenlőtlenségek strukturális tényezői Magyarországon*. Szeged–Budapest: Szegedi Tudományegyetem, Földtudományok Doktori Iskola.

Komlósi, É. (2014). A regionális jövedelmi egyenlőtlenségek alakulása Japánban 1970 és 1995 között. *Tér és Társadalom* 28 (3), 85–109.

Kotosz, B. (2016). A konvergencia területisége és lokális szintű mérése: elméleti áttekintés. *Területi Statisztika*, 56 (2), 139–157.

Kozera, A. B., & Głowicka-Wołoszyn, R. (2017). Spatial Autocorrelation of Communes' Income in Selected Metropolitan Areas. *Folia Oeconomica Acta Universitatis Lodziensis*, 4, 330, 155-168.

Krugman, P. (1991). *Geography and Trade*. Cambridge: MIT Press.

Lausén, J. R. (1973). Urbanization and development. The temporal interaction between geographical clusters. *Urban Studies*, 10, 163-188.

Le Gallo, J., & Ertur, C. (2000). *Exploratory spatial data analysis of the distribution of regional per capita GDP in Europe, 1980-1995*. [Research Report] Laboratoire d'analyse et de techniques économiques (LATEC).

Le Gallo, J., & Fingleton, B. (2013). Regional Growth and Convergence Empirics. In Fischer, M.M., & Nijkamp, P. (Ed.), *Handbook of Regional Science* (pp. 291-316). New York Dordrecht London: Springer Heidelberg.

Le Gallo, J. (2001). *Space-time analysis of GDP disparities among European regions: a Markov chains approach*. [Research Report] Laboratoire d'analyse et de techniques économiques (LATEC).

Leibenath, M., Hahn, A., & Knippschild, R. (2007). Der „Mitteleuropäische Kristall" – zwischen „Blauer Banane" und „osteuropäischem Pentagon". Perspektiven der neuen zwischenstaatlichen deutsch-tschechischen Arbeitsgruppe für Raumentwicklung. *Angewandte Geographie*, 31 (1), 36–40.

Lengyel, I. (2021). *Regionális és városgazdaságtan*. Szeged: Szegedi Egyetemi Kiadó.

Lengyel, I., & Kotosz, B. (2018): Felzárkózás és/vagy távolságtartó követés? A visegrádi országok térségeinek fejlődéséről. *Tér és Társadalom* 32 (1), 5–26.

Lőcsei, H. (2010). *Területi növekedési pályák Magyarországon*, 1990-2008. Budapest: ELTE TTK Földtudományi Doktori Iskola.

Lukovics, M., & Kovács, P. (2011). A magyar kistérségek versenyképessége. *Területi Statisztika*, 51 (1), 52–71.

Lux, G. (2012). Reindusztrializáció Közép-Európában. In Baranyi, B., & Fodor, I. (Ed.), *Környezetipar, újraiparosítás és regionalitás Magyarországon* (pp. 21-34). Pécs–Debrecen: Magyar Tudományos Akadémia Közgazdaság- és Regionális Tudományi Kutatóközpont Regionális Kutatások Intézete.

Major, K., & Nemes Nagy, J. (1999). Területi jövedelemegyenlőtlenségek a kilencvenes években. *Statisztikai Szemle*, 77 (6), 397-421.

Marshall, A. (1920). *Principles of economics An introductory volume*. London: Macmillan and Co.

Molnár, E., Dézsi, Lengyel, I. M., & Kozma, G. (2018). Vidéki nagyvárosaink gazdaságának összehasonlító elemzése. *Területi Statisztika* 58 (6), 610–637.

Monfort, P. (2020). *Convergence of EU Regions Redux Recent Trends in Regional Disparities*. Working Papers 2/2020. Brussels.

https://ec.europa.eu/regional_policy/en/information/publications/working-papers/2020/convergence-of-eu-regions-redux-recent-trends-in-regional-disparities

Myrdal, G. (1957). *Economic Theory and Underdeveloped Regions*. London: University Paperbacks, Methuen.

Nemes Nagy J., & Németh N. (2005). Az átmeneti és az új térszerkezet tagoló tényezői. In Fazekas, K. (Ed.), *Munkapiac és regionalitás Magyarországon* (pp. 75-137). Budapest: MTA Közgazdaságtudományi Intézet.

Nemes Nagy, J. (2009). *Terek, helyek, régiók*: A regionális tudomány alapjai. Budapest: Akadémiai Kiadó.

Németh, N., & Kiss, J. P. (2007). Megyéink és kistérségeink belső jövedelmi tagoltsága. *Területi Statisztika*, 47 (1), 20-45.

Nosek, V., & Netrdová, P. (2020). Spatial Dimension of Unemployment: Space-Time Analysis Using Real-Time Accessibility in Czechia. *International Journal of Geo-Information*, 9(6), 401.

Nölke, A., & Vliegenthart, A. (2009). Enlarging the varieties of capitalism. The emergence of dependent market economies in East Central Europe. *World Politics*, 61 (4), 670–702.

OFTK 1/ 2014. (I. 3.) OGY határozat. Nemzeti Fejlesztés 2030 Országos Fejlesztési és Területfejlesztési Koncepció [National Development 2030 National Development and Spatial Development Concept] http://www.terport.hu/webfm_send/4616

Paas, T., Kuusk, A., Schlitte, F., & Vörk, A. (2007). *Econometric analysis of income convergence in selected EU countries and their NUTS 3 level regions*. The University of Tartu Faculty of Economics and Business Administration Working Paper No. 60-2007, Tartu.

Panico, C., & Olivella, R. M. (2009). Myrdal, Growth Processes and Equilibrium Theories. In Salvadori, N. (Ed.), *Geography, Structural Change and Economic Development* (pp. 183-202). Northampton: Edward Elgar Publishing.

Pannon Elemző – Revita Alapítvány – Hétfa Elemző Központ – Budapest Intézet (2013): *A fejlesztési források szerepe a leszakadó térségek dinamizálásában. Értékelési Jelentés*. https://hetfa.hu/wp-content/uploads/2013/08/Leszakad%C3%B3-t%C3%A9rs%C3%A9gek-dinamiz%C3%A1l%C3%A1sa_%C3%89rt%C3%A9kel%C3%A9si-jelent%C3%A9s_.pdf

Pellegrini, G. (2002). Proximity, polarization, and local labor market performances. *Networks and Spatial Economics*, 2 (2), 151−173.

Pénzes, J., & Demeter, G. (2021). Peripheral areas and their distinctive characteristics: The case of Hungary. *Moravian Geographical Reports*, 29 (3), 217-230.

Pénzes, J. (2019). *A hazai területi egyenlőtlenségek alakulása jövedelmi mutatók tükrében*. Presentation. A Magyar Regionális Tudományi Társaság XVII. Vándorgyűlése Területi kutatások Közép-Európában, Sopron, 2019. október 11. http://www.mrtt.hu/vandorgyulesek/2019/07/penzes.pdf

Pénzes, J. (2020). The impact of the Trianon Peace Treaty on the border zones – an attempt to analyse the historic territorial development pattern and its changes in Hungary. *Regional Statistics*, 10 (1), 60–81.

Pénzes, J., Kiss, J. P., Deák, A., & Apáti, N. (2018). Térségi sokszínűség és stabilitás: az iskolázottság települési szintű egyenlőtlenségeinek változása Magyarországon 1990–2011 között. *Területi Statisztika*, 58 (6), 567–594.

Pénzes, J., Pálóczi, G., & Pásztor, Sz. (2014). Social frontiers in Hungary in the mirror of the centre-periphery dichotomy of incomes. Eurolimes, 17, 11–23.

Pottier, P. (1963). Axes de communication et développement économique. Revue Economique 14., 58-132.

Quah, D. (1996). Empirics for Economic Growth and Convergence European. *Economic Review,* 40 (6), 1353-1375.

Rechnitzer, J., Grosz, A., Hardi, T., Kundi, V., Surányi, J., & Szörényiné Kukorelli, I. (2008). *A magyarországi Felső-Duna szakasz fejlesztési kérdései*. Győr: MTA RKK NYUTI.

Ręklewski, M. (2022). Zastosowanie statystyki przestrzennej do analizy wynagrodzeń na poziomie powiatów. *The Polish Statistician*, 67 (1), 38-56.

Rey, S.J. (2019). Spatial Dynamics and Space-Time Data Analysis. In Fischer M., & Nijkamp P. (Ed), *Handbook of Regional Science* (pp. 1365-1384). Berlin: Heidelberg Springer.

Richardson, H. W. (1980). Polarization reversal in developing countries. *Papers of the Regional Science Association*, 45, 67–85.

Rodríguez-Pose, A., & Tselios, V. (2015). Toward inclusive growth: Is there regional convergence in social welfare? *International Regional Science Review*, 38 (1), 30–60.

Salamin, G., Radvánszki, Á., & Nagy, A. (2008). A magyar településhálózat helyzete. *Falu város régió*, 3, 6-26.

Schumpeter, J. A. (1994) [1942]. *Capitalism, Socialism and Democracy*. London: Routledge.

Shorrocks, A.F. (1978). The Measurement of Mobility. *Econometrica*, 46 (5), 1013-1024.

Smętkowski, M. (2014). Spatial Patterns of Regional Economic Development in Central and Eastern European Countries. *Geographia Polonica*, 88 (4), 539-555.

Smętkowski, M. (2018). The role of exogenous and endogenous factors in the growth of regions in Central and Eastern Europe: the metropolitan/non-metropolitan divide in the pre- and post-crisis era. *European Planning Studies*, 26 (2), 256-278.

Stankov, U., & Dragićević, V. (2015). Changes in the Spatial Pattern of Net Earnings: Evidence from Serbia. *Acta Oeconomica*, 65 (3), 351-365.

Szabó, P., & Farkas, M. (2014). Kelet-Közép-Európa térszerkezeti képe. *Tér és Társadalom*, 28 (2), 67–86.

Szakálné Kanó, I. (2017). A gazdasági aktivitás térbeli eloszlásának vizsgálati lehetőségei. In Lengyel I. (Ed.), *Két évtizedes a regionális tudományi műhely Szegeden: 1997–2017* (pp. 357-378). Szeged: JATEPress.

Tobler, W. R. (1970). A Computer Model Simulating Urban Growth in the Detroit Region. *Economic Geography*, 46, 234–240.

Tóth, G., & Nagy, Z. (2013). Eltérő vagy azonos fejlődési pályák? A hazai nagyvárosok és térségek összehasonlító vizsgálata. *Területi Statisztika*, 53 (6), 593–612.

Tóth, G. (2014). Térinformatika a gyakorlatban közgazdászoknak. Miskolc: Miskolci Egyetem.

Tóth, J., & Csatári, B. (1983). *Az Alföld határ menti területeinek vizsgálata*. Területi Kutatások, 6, 78-92.

Török, I., & Benedek, J. (2018). Spatial Patterns of Local Income Inequalities. *Journal of Settlements and Spatial Planning*, 9 (2), 77-91.

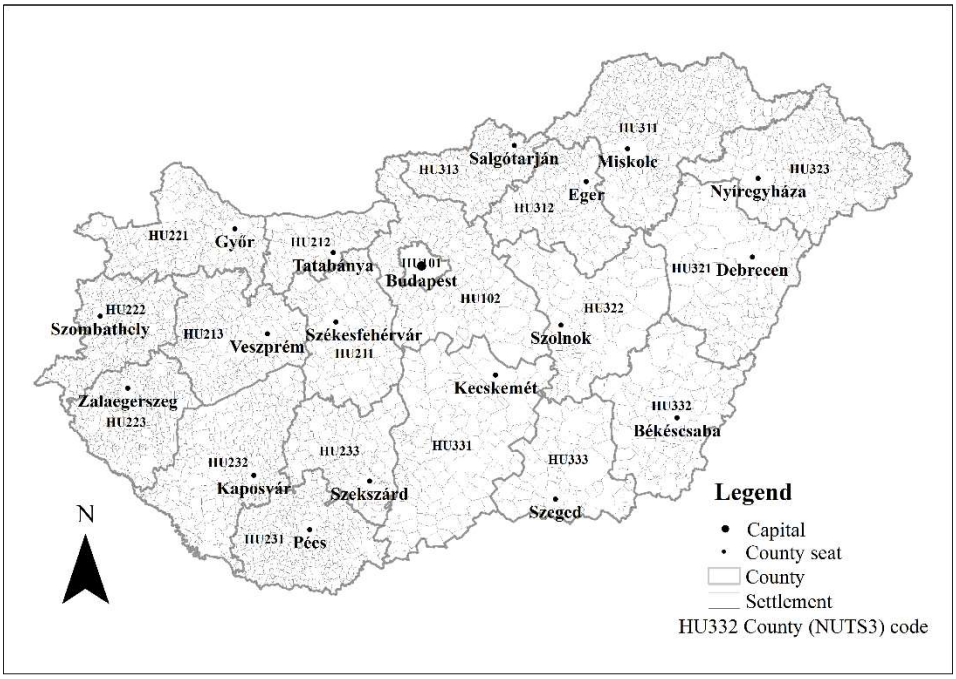
UNDP [United Nations Development Programme] (1990). *Human Development Report 1990: Concept and Measurement of Human Development*. New York: Oxford University Press.

Varga, A. (2009). T*érszerkezet és gazdasági növekedés*. Budapest: Akadémiai Kiadó.

Vida, G. (2016). Az egyenlőtlen politikai reprezentációt létrehozó választási földrajzi hatótényezők mérési lehetőségei. *Területi Statisztika*, 56 (6), 643-659.

Annex 1

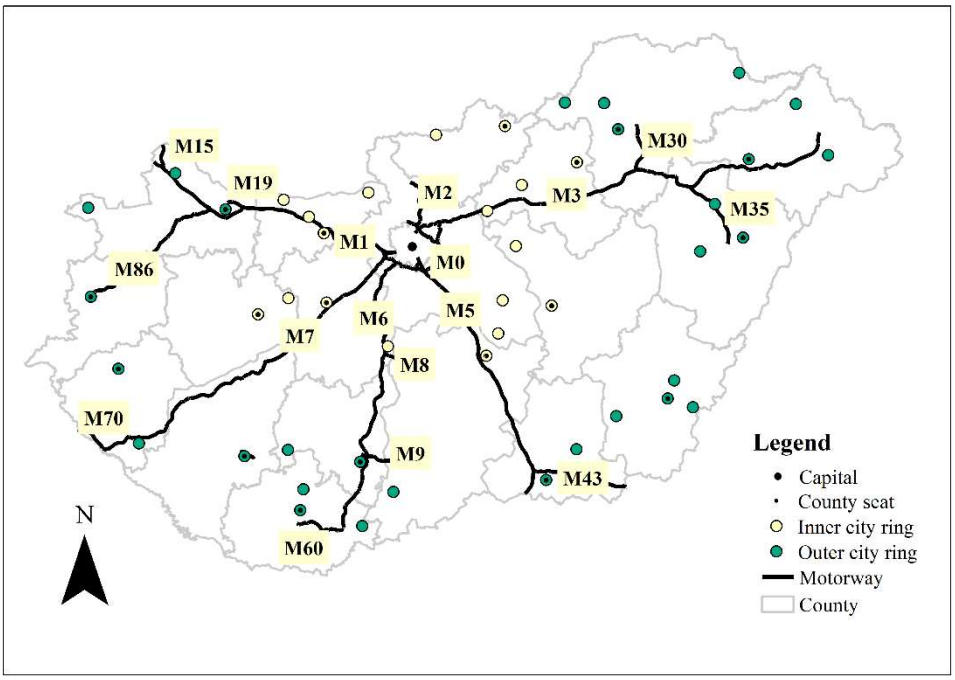
Administrative classification of Hungary



Note: County (NUTS3) codes – HU101: Budapest, HU102: Pest, HU211: Fejér, HU212: Komárom-Esztergom, HU213: Veszprém, HU221: Győr-Moson-Sopron, HU222: Vas, HU223: Zala, HU231: Baranya, HU232: Somogy, HU233: Tolna, HU311: Borsod-Abaúj-Zemplén, HU312: Heves, HU313: Nógrád, HU321: Hajdú-Bihar, HU322: Jász-Nagykun-Szolnok, HU323: Szabolcs-Szatmár-Bereg, HU331: Bács-Kiskun, HU332: Békés, HU333: Csongrád-Csanád.

Source: Authors' own construction

The main (settlement and motorway) networks in Hungary



Source: Authors' own construction

Annex 2 Initial and ergodic distributions of the model using different spatial lags (2012-2019)

initial distribution	1	2	3	4	5
Hungary	0,200	0,200	0,200	0,200	0,200
spatial lag 1.	0,535	0,283	0,118	0,047	0,016
spatial lag 2.	0,283	0,332	0,251	0,108	0,027
spatial lag 3.	0,127	0,240	0,311	0,247	0,074
spatial lag 4.	0,050	0,120	0,260	0,338	0,232
spatial lag 5.	0,005	0,025	0,059	0,259	0,652
ergodic distribution	1	2	3	4	5
Hungary	0,136	0,192	0,245	0,237	0,190
spatial lag 1.	0,412	0,323	0,173	0,069	0,023
spatial lag 2.	0,170	0,320	0,334	0,140	0,036
spatial lag 3.	0,083	0,193	0,349	0,296	0,079
spatial lag 4.	0,043	0,126	0,290	0,361	0,180
spatial lag 5.	0,009	0,038	0,088	0,298	0,567

Source: Authors' own construction

Original scientific paper

PERCEPTION OF TOURIST TRAVEL DURING THE COVID 19 PANDEMIC

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Cite this article: Čaušević, A., Osmanović, M. (2023). Perception of Tourist Travel During the Covid 19 Pandemic. *Deturope*, 15(1), 125-140.

Abstract

This study examined the relationship between the intention to travel in 2022 and the conditions that the tourist destination must meet during the crisis caused by the COVID-19 pandemic, the influence of socio-demographic factors on the significance of the conditions that the tourist destination must meet during the specific health crisis, as well as the connection between vaccination and the intention to travel in 2022. The data was collected through an online survey on a convenience sample of 265 respondents in the period from March 2nd, 2022 until May 17th, 2022. The results show that the oldest respondents pay more attention to the importance of the conditions that a tourist destination must fulfill in relation to the youngest respondents, just as pensioners pay more attention than others, employees, and especially students. When analyzing the individual factors of the significant conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic, two factors stand out: "Staff should be vaccinated" and "Food establishments must comply with health protection rules", in relation to the remaining three factors that show less important: "Accommodation units must comply with health protection rules", "The infection rate of the area should be less than 3 per 1000 inhabitants" and "Other tourists should be vaccinated". The results also show that the importance of the conditions that the tourist destination must fulfill is related to the fact that the staff should be vaccinated and other tourists should be vaccinated, but there is no relationship between the other variables and the variable "To what extent do you think you will travel in 2022 in the context of the current situation with by the COVID-19 pandemic?".

Keywords: the COVID-19 pandemic; the intention of travel; tourism; health; Bosnia and Herzegovina

INTRODUCTION

The declaration of the COVID-19 pandemic at the beginning of 2020 left its mark on the economy of countries all over the world. The purpose of the study is to investigate tourists' perception of travel during the COVID-19 pandemic.

The COVID-19 pandemic has affected all the countries of the world, which are facing the health crisis in different ways. Public health measures adopted to prevent the spread of disease, which include social distancing, quarantine, travel and movement restrictions but also campaigns aimed at getting people to stay in their homes, depending on the intensity and

manner of their introduction and implementation, affect various economic sectors, of which tourism stands out as one of the most affected.

In all countries, various measures have been recommended or imposed by governments to control and suppress the spread of COVID-19. The dominantly imposed measures had a significant impact on travel, and the consequences of the pandemic were felt most by the tourism sector, and the decline during this period is still difficult to estimate. However, people traveled again for different needs.

This study examines the relationship between the intention to travel in 2022 and the conditions that the tourist destination must meet during of this health crisis, the influence of socio-demographic factors on the significance of the conditions that a tourist destination must meet during the crisis caused by the COVID-19 pandemic, as well as the connection between vaccination and intention to travel in 2022.

The main research questions posed in this study are: what is the influence of socio-demographic variables on the significance of the conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic, what is the significance between the intention to travel in 2022 and the conditions the tourist destination must fulfill during of this crisis? The last research question is: “Is there a relationship and statistical significance between vaccination and the intention to travel in 2022”?

THEORETICAL BACKGROUND

Many aspects of social life in the past period were affected by the COVID-19 pandemic, but no human activity was as threatened as tourism. In the context of tourism, the pandemic affected travel decisions and the choice of destination (Cretu et al., 2021).

Tourism is an activity that is sensitive to security and health changes (Mao C.K. et al. 2010; Blake & Sinclair, 2003; Cavlek, 2002). The presence of real or perceived risks affects travel plans and travel behavior (Cartwright, 2000; Henderson, 2015). The emergence of the COVID-19 pandemic has led to widespread fear (Mawby, 2000; Garg, 2015) due to its easy and rapid spread. A correspondingly similar fear has developed among tourists due to the ease of transmission of the disease from person to person and the long incubation period (Hong et al., 2020; Flaherty 2020). Although viruses are not new to tourists around the world, the scale and risks associated with the COVID-19 pandemic are the greatest in human history.

Perceived risk plays an important role in tourist behavior (Moutinho, 1987). Risk perception refers to subjective beliefs regarding uncertain situations resulting from a certain risk (Bauer, 1960). In fact, the same is influenced by socio-demographic characteristics (Roehl & Fesenmaier, 1992), previous travel experiences (Sönmez & Graefe, 1998), level of education (Pizam et al., 2004), gender, nationality, and cultural differences (Weber & Hsee, 1998).

COVID-19 is a limiting factor that affects the perception of tourists regarding the safety of their vacation. Risk interferes with routine decision-making (Bratic et al., 2021), so tourists who perceive risk before traveling may need additional information to adjust their vacation plans or cancel a planned trip altogether.

Existing research shows that risks affect the overall travel intentions of tourists (Chiu et al., 2019) both in relation to domestic and international trips (Qi C.X et al., 2009). In addition, safety and security are the main reasons for choosing a destination (Oppewal et al., 2015).

Some empirical studies recognize a difference in the perceived image depending on socio-demographic characteristics (Beerli & Martín, 2004). Beerli and Martín (2004) found a statistically significant difference between socio-demographic factors and factors related to the perceived image of the destination. They concluded that there is a significant, but moderate relationship between the affective and cognitive components of the image and the socio-demographic characteristics of travelers related to gender, age, level of education, and social class.

As a complement to existing studies, this study aims to investigate the socio-demographic variables of people traveling during the COVID-19 pandemic, and for this purpose, the research question is defined as:

RQ1: What is the impact of socio-demographic variables on the conditions the tourist destination must fulfill during the crisis caused by the COVID-19 pandemic?

This study seeks to investigate and connect how age, gender, job, and owning a car or motorcycle influence the perception of tourists about the conditions that a tourist destination should meet during the COVID-19 pandemic.

Several studies have investigated the relationship between the COVID-19 pandemic and travel intentions. Fear of the COVID-19 pandemic directly affects travel anxiety and has direct negative effects on travel intention (Luo & Lam, 2020). The pandemic had significant partial effects on tourists' intentions when it comes to international travel (Riestyaningrum et al. 2020). Zenker et al. (2021) investigated how tourists' travel intentions are influenced by

their intrapersonal anxiety. Zheng et al. (2021) claim that travel intentions are influenced by tourists' assessment of risks and coping strategies during the COVID-19 pandemic. However, these studies have focused on the impact of negative information about the COVID-19 pandemic on travel intentions, while little attention has been paid to possible positive changes in travel intention that may occur when the situation improves (Li et al. 2022).

The basis for the second research question was the study by Cretu et al. 2021, which points out that a number of factors in the era of the COVID-19 pandemic affect the perception of tourists, and above all the conditions that the destination must meet in terms of hotels, restaurants, bars, and cafes. In the aforementioned study, the perception of tourists in traveling within and outside the borders of Romania was examined, and it was concluded that during the COVID-19 pandemic, tourists prefer traveling within their own country. As a supplement to the aforementioned study, this study aims to examine the perception of the inhabitants of Bosnia and Herzegovina about travel. In this sense, the research question is defined below:

RQ2: What is the significance between the intention to travel in 2022 and the conditions the tourist destination must fulfill during the crisis caused by the COVID-19 pandemic?

One of the key factors that can help restart travel and revitalize both international and domestic tourism is vaccination (Moreno-González et al., 2020; Sánchez-Cañizares et al., 2021; Wang et al., 2021), combined with other responsible behavior of tourists such as washing hands and wearing masks (Kim et al., 2021). However, there is still a lack of empirical studies dedicated to the analysis of trust in the COVID-19 vaccine and tourism. Williams et al. (2020) assume that with the release of vaccines against COVID-19, attitudes toward vaccination could have a significant impact on travel intentions. Consequently, tourists may gravitate towards destinations that have adopted a certain type of vaccine, certain types of rules and restrictions, and countries that are more or less indecisive in their policies. Therefore, it can be assumed that confidence in the vaccine against COVID-19 may be related to future travel intentions (Read, 2021). According to the above, the following research question was defined, which will complement the study of the connection between vaccination and the travel intentions of tourists in 2022.

RQ3: Is there a relationship and statistical significance between vaccination and the intention to travel in 2022?

This study points out that the desire to travel is still present, but it is bound by restrictions, social norms, and tourists' perceptions of a certain destination.

DATA AND METHODS

This paper aims to analyze the perception of travel in the upcoming period in the context of the current situation of the COVID-19 pandemic. To analyze the perception of the inhabitants of Bosnia and Herzegovina about travel for tourist purposes during the COVID-19 pandemic, it was necessary to survey the population to identify the results of the research. The quantitative research approach was used in the study. The data was collected through an online survey using Google Forms on a convenience sample of 265 respondents in the period from March 2nd, 2022 to May 17th, 2022. The questionnaire link was distributed electronically, via e-mail, and on Facebook. The respondents are citizens of Bosnia and Herzegovina. The application of this questionnaire coincided with the beginning of the easing of the adopted COVID-19 measures in the world and Bosnia and Herzegovina.

RESULTS

The statistical program IBM SPSS Statistics 26.0 was used to analyze the obtained data. Statistical tests (Spearman's correlation coefficient, Kruskal-Wallis, and Mann-Whitney U test) and descriptive statistics were used to analyze and interpret the obtained data.

In Tab. 1, the internal consistency test of the scale "Importance of conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic" was performed by calculating the Cronbach's Alpha coefficient.

Table 1 Cronbach's Alpha coefficient

Variable	Number of Items	Cronbach's Alpha
Importance of conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic	5	0.817

Source: Research results, 2022.

As can be seen in the previous table, Cronbach's Alpha coefficient is above 0.8, which confirms the very high reliability of the measuring instrument.

Descriptive statistics were used to describe the research results by variables and as a basis for statistical tests. Statistical tests are selected according to the type of data processed in the analysis. Tab. 2 shows the demographic characteristics of the respondents.

Table 2 Demographic data on the sample of respondents

		Frequency	Percent
Sex	male	94	35.5
	female	171	64.5
	Total	265	100.0
Age	18 – 30	145	54.7
	31 – 50	84	31.7
	over 50	36	13.6
	Total	265	100.0
Education	Elementary education	1	.4
	Secondary education	90	34.0
	College/University education	132	49.8
	Postgraduate education	42	15.8
	Total	265	100.0
Monthly household income (BAM)	Under BAM 500	16	6.0
	BAM 500 – BAM 1500	91	34.3
	BAM 1500 – BAM 2500	87	32.8
	Over BAM 2500	71	26.8
	Total	265	100.0
Number of people in the household	1 – 2	84	31.7
	3 – 4	158	59.6
	5 and more	23	8.7
	Total	265	100.0
Do you own a car	YES	187	70.6
	NO	78	29.4
	Total	265	100.0
Do you own a motorcycle	YES	17	6.4
	NO	248	93.6
	Total	265	100.0
Marital status	Single/unmarried	146	55.1
	Married	98	37.0
	Widowed	7	2.6
	Divorced	9	3.4
	Does not want to respond	5	1.9
	Total	265	100.0

Source: Research results, 2022.

Specifically, Tab. 2 shows the demographic data of the sample of respondents, where: 94 (35.5%) respondents are men, and 171 (64.5%) are women; 145 (54.7%) respondents are between 18 and 30 years old, 84 (31.7%) respondents are between 31 and 50 years old, while 36 (13.6%) respondents are over 50 years old; 1 (0.4%) respondents have elementary school education, 90 (34.0%) respondents have secondary school education, 132 (49.8%) respondents have college or university education, while 42 (15.8%) respondents have postgraduate education; 102 (38.5%) respondents are students, 129 (48.7%) respondents are employed, 17 (6.4%) are pensioners, and 17 (6.4%) others; 16 (6.0%) respondents have a monthly income of under BAM 500, 91 (34.3%) respondents have monthy income between BAM 500 and 1500, 87 (32.8%) respondents have monthly income between BAM 1500 and 2500, while 71 (26.8%) respondents have monthly income of more than BAM 2500; 84 (31.7%) respondents live in households with 1-2 members, 158 (59.6%) respondents live in households with 3-4 members, while 23 (8.7%) respondents live in households with 5 or more members; 187 (70.6%) respondents own a car, while 17 (6.4%) respondents own a

motorcycle; 146 (55.1%) respondents are single, 98 (37.0%) respondents are married, 7 (2.6%) respondents are widowed, 9 (3.4%) respondents are divorced, and 5 (1.9%) respondents did not want to answer the question about marital status.

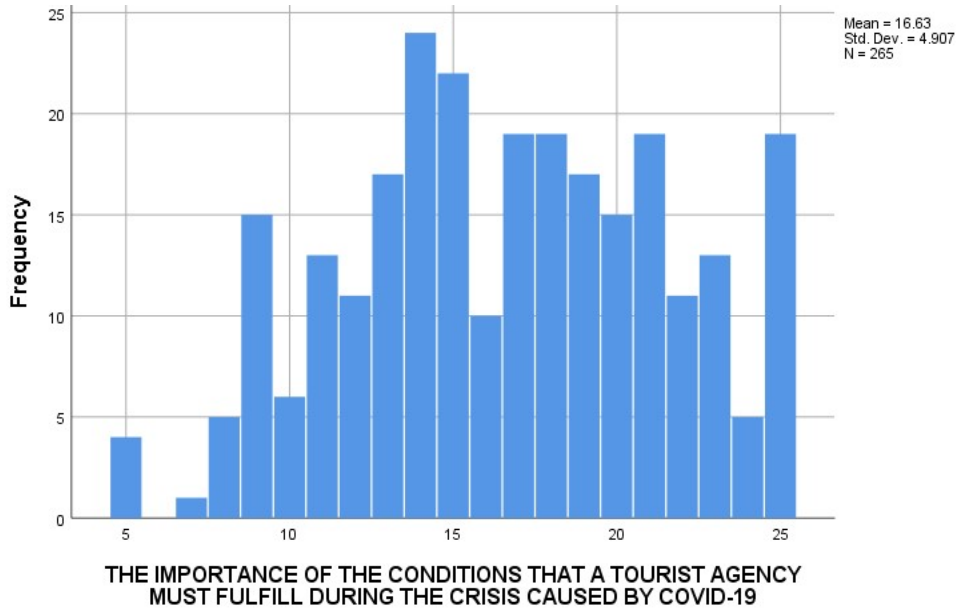
In Tab. 3, the normality of the distribution was tested for the variable importance of the conditions that the tourist destination must fulfill during the crisis caused by the COVID-19 pandemic.

Table 3 Testing the normality of the distribution for the variable importance of the conditions that the tourist destination must fulfill during the crisis caused by the COVID-19 pandemic

	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**		
	Statistic	df	Sig.	Statistic	df	Sig.
The Importance Of The Requirements That A Tourist Destination Must Fulfill During The Crisis Caused By The Covid-19 Pandemic	.075	265	.001	.975	265	.000
a. Lilliefors Significance Correction						

Source: Research results, 2022.

Graph 1 Histogram



Source: Research results, 2022.

Since the Kolmogorov-Smirnov distribution normality test for the variable importance of the conditions that the tourist destination must fulfill during the crisis caused by the COVID-19 pandemic (at the significance level of 0.01) deviates from the normal distribution, non-parametric Man -Whitney and Kruskal-Wallis test were used. Accordingly, Tab. 4 shows the group statistics of the influence of socio-demographic factors on the significance of the conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic.

Table 4 Group statistics of the influence of socio-demographic factors on the significance of the conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic

The significance of the conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic Group		**Mean Rank**	**Mann-Whitney Kruskal-Wallis [b]**	**z**	**p**
Sex	male	120.78	6888.000 [a]	-1.929	.054
	female	139.72			
Age	18 – 30	115.74	20.578 [b]		.000
	31 – 50	144.40			
	over 50	175.90			
Employment	Student	122.59	11.712 [b]		.008
	Employed	133.28			
	Pensioners	191.09			
	Other	135.24			
Owning a car	YES	137.89	6378.500 [a]	-1.612	.107
	NO	121.28			
Owning a motorcycle	YES	125.59	1982.000 [a]	-.413	.680

Source: Research results, 2022.

The non-parametric Kruskal-Wallis test shows that during the COVID-19 pandemic, the oldest respondents (M = 175.90) statistically significantly ($p < 0.01$) pay attention to the significance of the conditions that the tourist destination must fulfill compared to the youngest respondents (M = 115.74), as well as pensioners (M = 191.09) statistically significantly more ($p < 0.05$) pay attention to the importance of the conditions that a tourist destination must meet compared to others, employed and especially students (M = 122.59).

Tab. 5 shows descriptive statistics for the variable importance of conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic.

Table 5 Descriptive statistics for the variable „Importance of conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic“

Group statistic				
	M	**s**	**z**	**p**
Food establishments must comply with health protection rules	3.99	1.116	-3.291 [b]	.001
Staff should be vaccinated	4.05	1.067	-2.441 [b]	.015
Other tourists should be vaccinated	2.92	1.400	-6.194 [b]	.000
The rate of infection in the area should be less than 3 per 1000 inhabitants	2.86	1.417	-10.811 [b]	.000
Accommodation units must comply with health protection rules	2.81	1.412	-6.718	.000

Source: Research results, 2022.

The table of descriptive statistics and individual factors of significant conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic singles out two individual factors that are particularly important: "Staff should be vaccinated" (M = 4.05, s = 1.067) and "Food establishments must comply with health protection rules" (M = 3.99, s = 1.116), in relation to the remaining three factors that are less important: "Accommodation units must comply with health protection rules" (M = 2.81, s = 1.412), "The rate infection of the area should be less than 3 per 1000 inhabitants" (M = 2.86, s = 1.417) and "Other tourists should be vaccinated" (M = 2.92, s = 1.400).

Table 6 Correlations

Spearman's Correlations – DURING COVID-19					
		The significance of the conditions that the tourist destination must fulfill during the crisis caused by the COVID-19 pandemic	**To what extent do you think you will travel in 2022 in the context of the current situation with the COVID-19 pandemic?**	**Staff should be vaccinated**	**Other tourists should be vaccinated**
The significance of the conditions that the tourist destination must fulfill during the crisis caused by the COVID-19 pandemic	Correlation Coefficient	1.000	-.020	.593**	.870**
	Sig. (2-tailed)	.	.740	.000	.000
	N	265	265	265	265
To what extent do you think you will travel in 2022 in the context of the current situation with the COVID-19 pandemic?	Correlation Coefficient		1.000	.047	-.065
	Sig. (2-tailed)		.	.448	.292
	N		265	265	265
Staff should be vaccinated	Correlation Coefficient			1.000	.313**
	Sig. (2-tailed)			.	.000
	N			265	265
Other tourists should be vaccinated	Correlation Coefficient				1.000
	Sig. (2-tailed)				.
	N				265
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

Source: Research results, 2022.

The correlation matrix shows that the variable “Significance of the conditions that the tourist destination must fulfill during COVID-19” are statistically significantly related to the variable "Staff should be vaccinated” ($r = 0.593$), and variable “Other tourists should be vaccinated” ($r = 0.870$, $p < 0.01$), but there are no statistically significant associations of other variables with the variable "To what extent do you think you will travel in 2022 in the context of the current situation with the COVID-19 pandemic?" ($p > 0.05$).

DISCUSSION

Several research questions were asked in this study. The discussion provides answers to each from these questions.

What is the impact of socio-demographic variables on the conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic?

From the conducted research, it can be concluded that tourism during the duration of the COVID-19 pandemic will be dependent on demand because tourist offers are still active and offer various programs. This study emphasizes that there is a desire to travel and that respondents are still interested in traveling in the current conditions.

Chiu et al. (2019) claim that risks affect the overall travel intentions of tourists both in relation to domestic and international trips. Roehl & Fesenmaier (1992) concluded that risk perception is influenced by socio-demographic characteristics. Beerli and Martín (2004) found a statistically significant difference between socio-demographic factors and factors related to the perceived image of the destination. They concluded that there is a significant, but moderate relationship between the affective and cognitive components of the image and the socio-demographic characteristics of travelers related to gender, age, level of education, and social class. This research confirms this because the socio-demographic characteristics of the respondents are closely related to their perception of the tourist destination.

In this research, among the socio-demographic factors that influence the conditions that a tourist destination must fulfill during the crisis caused by the COVID-19 pandemic, the following stand out as statistically significant: age, education, monthly household income, and car ownership. Respondents aged 18-30 (54.7%) pay the least attention to the conditions that the destination must meet during the crisis caused by the COVID-19 pandemic, in contrast to the oldest respondents aged over 50 (13.6%) who significantly pay attention to the conditions that the tourist destination must meet, which can be connected to the anxiety and fear caused by the pandemic. This age category of the population belongs to the health-endangered

category, which was also shown during the COVID-19 pandemic. Education also stands out as statistically significant, because those respondents who have completed secondary education or college believe that the conditions that a tourist destination must meet are essential for further trips during the COVID-19 pandemic. Also, respondents who own a car will travel more during the crisis caused by the pandemic than those respondents who do not own a motorcycle or a car.

What is the significance between the intention to travel in 2022 and the conditions that the tourist destination must fulfill during the crisis caused by the COVID-19 pandemic?

Cretu et al. (2021) point out that a number of factors in the era of the COVID-19 pandemic affect the perception of tourists, and above all the conditions that the destination must meet in terms of hotels, restaurants, bars, and cafes. Zheng et al. (2021) claim that travel intentions are influenced by tourists' assessment of risks and coping strategies during the COVID-19 pandemic. However, these studies have focused on the impact of negative information about the COVID-19 pandemic on travel intentions, while little attention has been paid to possible positive changes in travel intention that may occur when the situation improves (Li et al. 2022).

This research confirms the results obtained in the study by Cretu et al. (2021) because analyzing the individual factors that a tourist destination should fulfill during the COVID-19 pandemic, two factors stand out as statistically significant. Among them, the leading factor is "Staff should be vaccinated" (M = 4.05, s = 1.067) and "Food establishments must comply with health protection rules" (M = 3.99, s = 1.116). Other factors turned out to be less important.

Is there a relationship and statistical significance between vaccination and the intention to travel in 2022?

One of the key factors that can help restart travel and revitalize both international and domestic tourism is vaccination (Moreno-González et al., 2020, Sánchez-Cañizares et al., 2021, Wang et al., 2021), in combination with other responsible behavior of tourists such as washing hands and wearing masks (Kim et al., 2021). The research results confirm the facts from the aforementioned studies because the results showed that there is a significant correlation between the conditions that the tourist destination must meet during the COVID-19 pandemic with the individual factors "Staff should be vaccinated" and "Other tourists should be vaccinated".

In this context, vaccination is significantly correlated with future travel intentions and affects the perception of tourists in the country and abroad. This study sought to explain the

link between vaccination and future tourism trends. In connection with the above, the research question complimented the analysis of the conditions that a tourist destination should meet during the COVID-19 pandemic, where it turned out that vaccination is one of the key factors that a certain destination should meet in terms of future tourist movements during the pandemic. In this regard, tourists may gravitate towards countries that have implemented mass vaccination or towards countries that have adopted a certain type of vaccine and imposed it as an imperative on the population.

According to the results of the survey questionnaire, there is no significant connection between the other variables and the variable "To what extent do you think you will travel in 2022 in the context of the current situation with the COVID-19 pandemic?" ($p > 0.05$). Such research results emphasize that the desire to travel is still present, but it will depend on the social norms and restrictions of certain countries. Undoubtedly, respondents will still tend to travel, but their perception of a certain destination will depend on the conditions that the tourist destination must meet during the pandemic, especially the conditions regarding vaccination of both staff and other tourists.

CONCLUSION

This paper aims to highlight the perception of tourist travel during the COVID-19 pandemic. All tourist destinations and all tourist companies were massively affected by unprecedented travel restrictions and therefore felt social and economic blockades. COVID-19 has caused significant changes in all continents, countries, regions, rural and urban communities. The consequences of the pandemic have also affected families, lifestyles, and the thinking of each individual. International and domestic flights have been halted in a number of countries, and travel restrictions have made tourism the most affected sector. Most businesses related to tourism, such as travel agencies, hotels, and restaurants, are closed or operating with limited capacities, such as airlines. All this has led to uncertainty, accompanied by a reluctance to travel even after the easing of measures and restrictions.

Due to the COVID-19 pandemic; the behaviors and demands of tourists and even their travel attributes have changed. Recognizing the change in tourist behavior, especially in the choice of tourist destination and service, is of vital importance for restoring the lost trust of tourists and reviving tourism. Therefore, this research analyzed the change in tourist behavior patterns due to the outbreak of the COVID-19 pandemic. The article builds on the study "Tourists' Perceptions Regarding Traveling for Recreational or Leisure Purposes in Times of

Health Crisis" and conducts the same study on the population of Bosnia and Herzegovina and expands on the relationship between vaccination, the conditions that a tourist destination must meet and the intention to travel.

The results explain the tendency of the inhabitants of Bosnia and Herzegovina to travel in the coming period. Fear of infection and perceived risk significantly influenced respondents' behaviors, but intentions to travel were maintained. The research results show that during the COVID-19 pandemic, the oldest respondents dedicate attention to the importance of the conditions that a tourist destination must fulfill in relation to the youngest respondents, just as pensioners pay more attention to the significance of the conditions that a tourist destination must fulfill in relation to employees, students, and others.

The findings of the study show that two individual factors stand out in the conditions that the tourist destination must meet during the crisis caused by the COVID-19 pandemic, namely: "Staff should be vaccinated" and "Food establishments must comply with health protection rules", in relation to to the remaining three factors that are less important: "Accommodation units must comply with health protection rules", "The infection rate of the area should be less than 3 per 1000 inhabitants" and "Other tourists should be vaccinated". The results also show that there is a statistically significant relationship between some conditions that the tourist destination must meet, such as that the staff should be vaccinated and other tourists should be vaccinated with the variable "To what extent do you think you will travel in 2022 in the context of the current situation with the COVID-19 pandemic?".

The results of this study could be useful in planning and considering the activities of the tourism industry in the coming period. The findings of this study could have implications for the planning of tourism destination, service providers and tour operators' policies in the event of a renewed COVID-19 pandemic, as well as new health crises. Furthermore, the identification of the conditions that the tourist destination must fulfill during the COVID-19 pandemic are important in meeting the needs of tourists, especially during possible future pandemic situations.

This research used a quantitative research method, based on a convenience sample of 265 respondents (residents of Bosnia and Herzegovina). Also, the questionnaire was distributed electronically (via social networks - Facebook and e-mail). These are also the main limitations of this work. Since an online questionnaire was used with the provided answers, the respondents were not able to comment on the answers or write their own opinion. Only those residents of Bosnia and Herzegovina who are computer literate and have access to the

Internet, that is, those who have a personal e-mail or a Facebook profile could answer the questions.

Accordingly, the recommendations for further research are to include a larger number of respondents in the sample, so that the results could be generalized for the entire population of Bosnia and Herzegovina. Also, those who do not have access to the Internet should be included in the sample, so that the results are relevant. This research was carried out in Bosnia and Herzegovina during the period when the restrictions and loosening of the adopted measures began so that further study of this topic in other countries and new situations can provide a lot of other useful information. Future research would be good to conduct among tourism service providers as well. This research is a good starting point. Also, the recommendation for future research is that the research lasts for a longer period of time, because the measures taken to suppress the virus and the restrictions changed on a weekly basis, and the infection rates on a daily basis. One of the recommendations is a qualitative approach to research through in-depth interviews, due to the aforementioned limitations.

This study, as well as similar research, can be a good guide in the future in case of outbreaks of new viruses because the world has faced various health crises before. Although the empirical evidence in this article focuses only on the short-term response of the domestic market (residents of Bosnia and Herzegovina) on tourism travel during the COVID-19 pandemic, the results may offer valuable implications for policy and practice. This research can create a complete picture of the perception of tourists about traveling in times of health crises. Such research is important because tourists' perception of tourist destinations, i.e. the connection between the intention to travel and the conditions that the tourist destination must fulfill in times of crisis, are important for predicting future tourist demands and developing appropriate recovery strategy.

The study identified that the vaccination of tourists and staff is very important for the intention to travel, and this information can be useful to service providers, managers of tourist destinations and tour operators. It is important for tour operators, but also for transport companies, that people who do not own a car or motorcycle are less willing to travel during the pandemic. Also, in the event of a new pandemic, special attention must be paid to people over 50 years old as well as people who have completed high school and college, because the fulfillment of the conditions that the tourist destination must fulfill is a condition for travel. The results of this research can be used by numerous institutions in Bosnia and Herzegovina, but also by the tourism sector in the whole world.

REFERENCES

Bauer, R.A. (1960). Consumer behavior as risk taking. In Dynamic Marketing for a Changing World; Hancock, R.S., Ed., American Marketing Association: Chicago, IL, USA, pp. 384–398.

Beerli, A., & Martín, J. (2004). Factors influencing destination image. *Annals of Tourism Research*, 31(3), 657–681. http://dx.doi.org/10.1016/j.annals.2004.01.010

Blake, A., & Sinclair, M.T. (2003). Tourism crisis management: US response to September 11. *Ann. Tour. Res.*, 30(4), 813–832.

Bratić, M., Radivojević, A., Stojiljković, N., Simović, O., Juvan, E., Lesjak, M., & Podovšovnik, E. (2021). Should I Stay or Should I Go? Tourists' COVID-19 Risk Perception and Vacation Behavior Shift, S*ustainability*, *13*(6), 3573. doi.org/10.3390/su13063573.

Cartwright, R. (2000). Reducing the Health Risks Associated with Travel. *Tour. Econ, 6(2)*, 159–167.

Cavlek, N. (2002). Tour operators and destination safety. *Ann. Tour. Res.*, 29 (2), 478–496.

Chiu, L.K., Ting, C., Alananzeh, O.A., & Hua, K. (2019). Perceptions of risk and outbound tourism travel intentions among young working Malaysians. *Dirasat. Hum. Soc. Sci.*, 46(1), 365–379

Cretu, C.M., Turtureanu A.G., Sirbu, C.G., Chitu, F., Marinescu, E. S., Talaghir, L.G., & Robu, D.M. (2021). Tourists' Perceptions Regarding Traveling for Recreational or Leisure Purposes in Times of Health Crisis. *Sustainability*, 13, 2-24.

Garg, A. (2015). Travel Risks vs Tourist Decision Making: A Tourist Perspective. *Int. J. Hosp. Tour. Syst.*, 8(1), 1–9.

Henderson, J.C. (2007). *Tourism Crises: Causes, Consequences and Management*; Elsevier: Burlington, VT, USA. https://doi.org/10.4324/9780080466033

Hong, Y., Cai, G., Mo, Z., Gao, W., Xu, L., Jiang, Y., & Jiang, J. (2020). The Impact of COVID-19 on Tourist Satisfaction with B&B in Zhejiang, China: An Importance–Performance Analysis. *Int. J. Environ. Res. Public Health*, 17(10), 3747.

Kim, M. J., Bonn, M.,, & Hall, C. M. (2021). What influences COVID-19 biosecurity behaviour for tourism? *Current Issues in Tourism*, 25(1), 1–7.

Li, J., Nguyen, T. H. H., & Coca-Stefaniak, J. A. (2021). Coronavirus impacts on post-pandemic planned travel behaviours. *Ann. Tour. Res,* 86, 102964. doi: 10.1016/j.annals.2020.102964

Luo, J. M., and Lam, C. F. (2020). Travel anxiety, risk attitude and travel intentions towards "travel bubble" destinations in Hong Kong: effect of the fear of COVID-19. *Int. J. Environ. Res. Public Health*, 18(17), 7859. doi: 10.3390/ijerph17217859.

Mao, C.K., Ding, C.G., & Lee, H.Y. (2010). Post-SARS tourist arrival recovery patterns: An analysis based on a catastrophe theory. *Tour. Manag.*, 31(6), 855–861.

Mawby, R.I. (2000). Tourists' Perceptions of Security: The Risk—Fear Paradox. *Tour. Econ*, 6(2), 109–121.

Moreno-González, A. A., León, C. J., & Fernández-Hernández, C. (2020). Health destination image: The influence of public health management and well-being conditions. *Journal of Destination Marketing and Management*, 16, 100430. doi: 10.1016/j.jdmm.2020.100430

Moutinho, L. (1987). Consumer Behaviour in Tourism. *Eur. J. Mark.*, 21(10), 5–44.

Oppewal, H., Huybers, T., & Crouch, G.I. (2015). Tourist destination and experience choice: A choice experimental analysis of decision sequence effects. *Tour. Manag.*, 48, 467–476.

Pizam, A., Jeong, G. H., Reichel, A., van Boemmel, H., Lusson, J. M., Steynberg, L., ... & Montmany, N. (2004). The Relationship between Risk-Taking, Sensation-Seeking, and the Tourist Behavior of Young Adults: A Cross-Cultural Study. *J. Travel Res.*, 42(3), 251–260.

Qi, C.X., Gibson, H.J., & Zhang, J.J. (2009). Perceptions of Risk and Travel Intentions: The Case of China and the Beijing Olympic Games. *J. Sport Tour.*, 14(1), 43–67

Read, J. (2021, January 4). What COVID-19 vaccines mean for the return of travel. *NationalGeographic*. https://www.nationalgeographic.com/travel/article/what-will-COVID-19-vaccines-mean-for-travel-coronavirus

Riestyaningrum, F., Ferdaos, E., & Bayramov, B. (2020). Customer behavior impact on international tourist's travel intention due to Covid-19. *J. Sustainable Tourism Entrepreneurship*, 1(3), 231–243. doi: 10.35912/joste.v1i3.367

Roehl, W.S., Fesenmaier, D.R. (1992). Risk Perceptions and Pleasure Travel: An Exploratory Analysis. *J. Travel Res.*, 30(4) 17–26.

Sánchez-Cañizares S.M., Cabeza-Ramírez L.J., Muñoz-Fernández G., & Fuentes-García F.J. (2021). Impact of the perceived risk from COVID-19 on intention to travel. *Curr. Issues Tour,* 24(7), 970–984. doi: 10.1080/13683500.2020.1829571.

Sönmez, S.F., Graefe, A.R. (1998). Determining Future Travel Behavior from Past Travel Experience and Perceptions of Risk and Safety. *J. Travel Res.*, 37(2), 171–177.

Wang, M., Kunasekaran, P., & Rasoolimanesh, S. M. (2021). What influences people's willingness to receive the COVID-19 vaccine for international travel? *Current Issues in Tourism*, 1–6. doi: 10.1080/13683500.2021.1929874

Weber, E.U., & Hsee, C. (1998). Cross-Cultural Differences in Risk Perception, but Cross-Cultural Similarities in Attitudes towards Perceived Risk. *Manag. Sci.*, 44(9), 1205–1217.

Williams, N. L., Wassler, P., & Ferdinand, N. (2020). Tourism and the Covid-(Mis) infodemic. *Journal of Travel Research*., 61 doi:10.1177/0047287520981135

Zenker, S., Braun, E., & Gyimóthy, S. (2021). Too afraid to travel? Development of a pandemic (COVID-19) anxiety travel scale (PATS). *Tour. Manag*, 84, 104286. doi: 10.1016/j.tourman.2021.104286

Zheng, D., Luo, Q. J., & Ritchie, B. W. (2021). Afraid to travel after COVID-19? Self-protection, coping and resilience against pandemic 'travel fear'. *Tour. Manag*, 83, 104261. doi: 10.1016/j.tourman.2020.104261

***DETUROPE** – THE CENTRAL EUROPEAN JOURNAL OF REGIONAL DEVELOPMENT AND TOURISM*
Vol. 15 Issue 1 2023 *ISSN 1821-2506*

Original scientific paper

CHARACTERISTICS OF THE HUNGARIAN MARKET FOR COASTAL BOAT TRIPS IN GREECE

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Cite this article: Fenyvesi, É, Krekó, D., Kovács Székely, I., Polák-Weldon, R. (2023). Characteristics of the Hungarian Market for Coastal Boat Trips in Greece. *Deturope*, 15(1), 141-157.

Abstract

Research on Hungarian tourists is available for hotel cruises, but not for other forms of nautical tourism. Our aim is therefore to explore the characteristics of the demand and supply of Hungarian excursion boating tourism in Greece. The characteristics of the demand side were measured with the help of a questionnaire, while the supply side was investigated by content analysis of the websites of Hungarian travel agencies. Interviews with professionals helped to identify further important links with both the demand and supply sides. The exploration of the characteristics of the Hungarian participants in coastal boat trips was carried out by hypothesis testing, which was tested with a two-sample z-test, a test of correlation, a Spearman's correlation test and a Wilcoxon signed rank test using IBM SPSS Statistics 28. For content analysis, we used NVivo12 Plus content analysis software. Our main findings show that Hungarian consumers are price sensitive, they prefer lower than the average product prices. Higher proportion of women in case of excursion boating, but other demographic characteristics do not influence the purchase of the product. Most people take part with their families or partners. The main motivation for taking part in a one-day shipping is to see the natural and cultural values of Greece and the experience of the cruise itself. The products offered by Hungarian travel agencies meet the needs of Hungarian consumers.

Keywords: excursion boating tourism, Greece, Hungarian tourists, travel agencies

INTRODUCTION

Researchers are focusing on tourism as one of the fastest growing industries (Katits et al., 2019; Németh et al., 2021). In economic terms, the analyses concentrate on two subsystems (supply and demand) of tourism. Demand refers to potential tourists in the sending area, while supply refers to the receiving area and the range of services offered to tourists (Lengyel, 1997).

Tourism is characterised by intersectorality, so it has an impact not only on the tertiary sector where it is located, but also on the primary, secondary, and quaternary sectors. This also means that it is highly sensitive to any changes in its environment (Michalkó, 2016; Verikokkou, 2021). As a result, the Covid-19 pandemic has hit the sector hard, setting back its dynamic growth (Németh et al., 2021; Pókó, 2021). The sector suffered a global loss of

US$4.5 trillion in 2020, with international tourist arrivals down 73% and tourism receipts down 64% (UNWTO, 2020a; WTTC, 2021).

The pandemic has hit nautical tourism particularly hard (Pókó, 2021), which is now playing an increasingly important role in tourism in countries with a coastline. This is confirmed by the dynamic growth in demand for these tourism products before the epidemic (Irimiás et al., 2019). A similar increase in demand was observed in Greece, one of the most visited countries by Hungarian tourists, where, in addition to the favorable naturalconditions, the rich cultural and historical heritage is also very attractive for travelers. (Diakomihalis & Lagos, 2011; MTÜ, 2018).

Consequently, our objective is to investigate the demand for nautical tourism products available in Greece, with a special focus on the characteristics of Hungarian consumers and their preferences for the products under investigation. Furthermore, we want to find out which Greek shipping products are most commonly available from Hungarian tour operators and what are the characteristics of these products. The research questions supporting our objective were:

1. What are the characteristics (demographic characteristics, willingness to pay, factors motivating the purchase of the service) that describe the demand of Hungarian consumers for nautical tourism products available in Greece?
2. What are the characteristics (most typical products, most popular Greek destinations, price categories, complementary products) of the nautical tourism products offered by Hungarian travel agencies in Greece?

THEORETICAL BACKGROUND

Shipping tourism

Types of water tourism include bathing tourism, water hiking, water sports tourism (swimming, kayaking, canoeing), water adventure tourism (white water, free diving, canyoning), fishing tourism and passenger boating (Csapó & Darabos, 2011). Our research topic is related to passenger boating, which in tourism refers to those longer trips on water using larger, usually mechanically propelled vessels, for recreational purposes, i.e., basically without physical activity (Csapó & Darabos, 2011).

"Maritime tourism" is a broader concept that encompasses several tourism activities related to the sea or the coast. These include coastal boat trips, hotel boats, yachts, sea sports, but also activities such as beach walks (Diakomihalis, 2007). The term "cruise" is often used in this context. „Cruise tourism can be defined as a luxurious form of travelling, involving an all-inclusive holiday on a cruise ship of at least 48 hours, with a set and specific itinerary, in

which the cruise ship calls at several ports or cities" (Asero & Skonieczny, 2018:95). In addition, vessels must have a capacity of at least 100 people (Pallis, 2015).

There are two main categories of shipping tourist: inland waterways and maritime shipping. The two categories differ in several characteristics. For example, the route, the capacity and parameters of the vessels, the requirements for the ports (Jászberényi, 2019). For both inland and maritime shipping, hotel cruises are the fastest growing tourism product. In this case, the attraction is the ship itself and the services offered on board and the destinations visited (Miskolczi et al., 2020). Journeys can range in length from a few days to several weeks, or even several months. The hotel ship has all four factors needed to create tourism: attractiveness, tourism infrastructure, primary and secondary superstructure (Irimiás, et al., 2019). Tourism infrastructure includes all facilities that ensure the marketability of the attraction, such as museums, visitor centers, transport facilities. Superstructure, on the other hand, is the set of services that enable and enrich the tourist's stay, which can be further broken down into primary and secondary superstructures. The former includes accommodation and catering establishments. Secondary superstructures can be defined as all services involved in meeting the needs of tourists, such as retail outlets like hairdressers, gift shops, etc. (Mihalkó, 2016).

In addition to hotel boats, there are also smaller excursion boats and small cruise ships. These are smaller capacity, typically offer a maximum of one-day tours and lack the

specifications needed for longer trips, such as cabins or restaurants (Diakomihalis, 2007). In the maritime sector, the share of small vessels is low, accounting for only 4.5% of all vessels used for passenger transport. These boats are best used in areas where the coasts are indented, with many peninsulas and islands. In Europe, for example, the fjords of Sweden or Norway, the islands of Great Britain, the Dalmatian coast in the Mediterranean or the Aegean Sea (Csapó & Darabos, 2011).

Although most of the revenue of ferries comes from freight transport, their role in tourism is not negligible. Ferries serve as an extension of roads, creating a corridor between two land areas. They are practical for tourists, as they can accommodate not only passengers but also vehicles. They typically travel short distances, but trips longer than a day are also common (Csapó & Darabos, 2011). In the latter case, cabins for hire and leisure facilities are also available on board. Higher quality ferries are entering the market to compete with luxury hotel cruises (Gračan, et al., 2017).

Yachting is an increasingly popular tourism product. These are small or medium-sized boats that can carry up to 36 people (Akova et al., 2011). The vehicles can be motor-driven or sailing (Dimou & Vandorou, 2018). Yachting is an exclusive service, especially when chartering a boat with crew for several days (Jancsik et al., 2019). There are no designated

ports where the boat is stationed, giving tourists a much freer and more personalized experience. Also, the smaller size allows them to sail into minor bays (Akova, et al., 2011).

Economic, social, and environmental impacts of shipping tourism

Shipping tourism has an impact on (1) destinations and the global economy, (2) the socio-culture of port communities, (3) the coastal and aquatic natural environment (Lengyel, 1997; Klein, 2011; Verikokkou, 2021).

(1) In many destinations, nautical tourists account for the largest share of tourist arrivals. In addition, spending by ship crews generates significant revenue for port service businesses. In addition to local tourism operators, market players in shipbuilding and repair, fuel companies are also affected (Burchacz, et al., 2017). The economic impacts of nautical tourism can be grouped into direct, indirect, and induced impacts. Direct impacts concern operators who sell products or services directly to passengers, crew, or the ship itself (Brida & Zapata, 2009). Indirect impacts are generated through the spending of suppliers, such as restaurants as suppliers of raw materials (Burchacz, et al., 2017; Brida & Zapata, 2009). Induced impacts result from increased income spending by direct and indirect stakeholders (Brida & Zapata, 2009), i.e., increased revenues in some industries are spent in other areas, where they also generate revenue growth. Their impact is felt at regional or even national economic level (Burchacz, et al., 2017). These induced effects are also known as multiplier effects (Michalkó, 2016).

    Shipping tourism can also have a negative impact on the economy, mainly due to the uneven distribution of income between cruise lines and destinations (Klein, 2011). For example, hotel ships encourage their passengers to spend their money on board and not in the ports they visit (Larsen et al., 2013). As a result, the destination may not be able to cover the costs of shipping tourism from the revenues generated. Furthermore, competition between nearby ports is forcing local governments to impose the lowest possible taxes on ships and passengers. This could result in a significant loss of revenue (Klein, 2011). The positive economic impacts include the contribution of nautical tourism to job creation. However, dockers and ship's personnel may be employed illegally for very low wages while working much longer hours than the average (Brida & Zapata, 2009).

(2) Tourism has an impact on the daily life and culture of local communities. By local communities in this case, we mean the population of the port areas (Brida & Zapata, 2009). Local people could show and "sell" to boating passengers the authentic culture of the destination they are visiting. At the same time, locals can learn about new cultures and customs, making them more open and accepting (Ehtiyar, 2016).

Several examples of the negative social and cultural impacts of shipping tourism can be found in the literature (Ehtiyar, 2016). One problem is when the number of visitors to a destination exceeds the carrying capacity of the local infrastructure and makes the destination unliveable for residents (Klein, 2011). However, the number of ships entering the port is not usually limited, as this would lead to a loss of revenue (Ehtiyar, 2016). A further problem is the homogenisation of destinations and the loss of their uniqueness. Traditions are being replaced by tourist-oriented elements (Klein, 2011).

(3) The impact on the natural and built environment is a very sensitive issue, which can be caused by ships, businesses associated with the shipping company and tourists alike. (Ehtiyar, 2016; Brida & Zapata, 2009; Verikokkou, 2021). However, the primary polluters are ships. The negative impacts mainly affect the immediate port environment and aquatic wildlife. Pollutants from ships include sewage, bilge water, ballast water, air pollutant gases and solid waste, including many hazardous wastes (Brida & Zapata, 2009). The pollutants are putting a serious strain on the ecosystem, causing the death of aquatic plants, fish, and other organisms within a radius of about 5 kilometers from the port (Burchacz, et al., 2017). The impact on the built environment is also significant. For example, in Venice, giant cruise ships visiting the bay cause serious damage to both coastal buildings and cultural heritage (Trancoso-González, 2018). The seriousness of the situation is illustrated by the temporary ban on cruise ships from the Giudecca Channel in 2021, under pressure from UNESCO (Guaraldo, 2021). But one can also mention the Greek port city of Piraeus, where the harmful effects of ship emissions on port buildings have also been shown (Tzannatos, 2010). In the long run, irresponsible boating tourism may even endanger the industry itself, leading to the decline of the destination, with consequences for the whole local society and economy (Plog, 1998).

Maritime tourism in Greece

Tourism is one of the most important sectors of the Greek economy and a key driver of economic growth (OECD, 2020; Mavrommarti et al., 2021). Tourism accounted for 30.9% of the country's GDP and 43.3% of total services exports in 2018 (OECD, 2020; Papadopoulou, 2020). The sector employed 381,800 people, accounting for 10% of all jobs (OECD, 2020). Greece is the 4th most visited country in Europe's Mediterranean region with 33.1 million international tourist arrivals, after Spain, Italy, and Turkey (OECD, 2020; UNWTO, 2020b).

Cultural tourism is one of the most dominant in the country. Archaeological sites related cultural and historical monuments and museums are the main attraction for most tourists in Greece (Kalogeropoulou, 1996). The most important regions for cultural tourism are mainly

central and western Greece, the Peloponnese and Crete. This is mainly because these areas are home to some of the most visited ancient monuments, such as Athens, Olympia, the Oracle of Delphi, and the city of Thebes. The other main motivating factor for tourists visiting Greece, apart from cultural tourism, is a beach holiday. The country's climate and geography are also very attractive: a Mediterranean climate, numerous islands, seas ideal for swimming (Gyuricza, 2009).

Cruising in Greece is very popular with both domestic and foreign tourists (Diakomihalis, 2007). The port of Pireaus is the 8th most visited port in Europe by number of cruise tourists (MedCruise, 2020). All forms of tourist passenger shipping are present in Greece. It is also a very popular European destination among Hungarian tourists (Pavlogeorgatos et al., 2019; Rácz, 2020).

Cruising tourism in Greece started to develop in the 1930s. The first shipping company to offer Mediterranean cruises appeared on the market was from Greece (Diakomihalis, 2007).

Until 2012, the so-called cabotage regime was applied, which is synonymous with maritime protectionism. This has meant that non-Greek shipping companies have had far fewer port services and restrictions on the embarkation and disembarkation of tourists on these ships. Its abolition helped to boost cruise tourism by increasing the number of cruises to the country (Vaggelas & Stefanidaki, 2015).

Port infrastructure plays an important role for nautical tourism. The most developed ports in Greece are in Piraeus, Heraklion (Iraclio) and Corfu. However, most smaller ports are significantly underdeveloped in terms of overall infrastructure and services. There are few passenger terminals and no piers of sufficient length to accommodate modern cruise ships. Only in Piraeus and Heraklion can vessels longer than 350 meters dock, and only 38.5% of ports can accommodate cruise ships with a draught of more than 11 meters. However, the fact that most major ports are no more than 60 km from airports is a huge advantage (Galanos & Yfantis, 2013). These are the areas where the EU's long-term development plan, "Blue Growth", which focuses on developing coastal and maritime tourism, can make a difference. The European Union provides financial support for the necessary investments, which Greece has benefited from in recent years (Irimiás, et al., 2019; Banousis et al., 2016).

DATA AND METHODS

Data collection

Data collection was carried out in several ways. On the one hand, we have collected the available maritime tourism products in Greece through the websites and catalogues of tour operators operating in Hungary. We found 16 agencies that sell holidays in Greece and offer

boat trips as an optional program. Thus 82 boat trips were identified and characterized. More information on the supply side was obtained through interviews with professionals with relevant information on tourism (the managing directors of two travel agencies and a tour guide living in Greece). The third data collection method was an online questionnaire we designed to explore the characteristics of demand for maritime ship tourism. The questionnaire was completed by 702 people, and during the data cleaning process we found only one questionnaire that had to be excluded from the processing. The sample included 563 women (80.3%) and 138 men (19.7%). Most respondents (57.8%) were aged 41-60,
29% were under 41. 37.8% have secondary education and 61.3% have tertiary education. Almost half of respondents (49.8%) have a gross monthly income between HUF 250,000-500,000.

The method of data processing

Data from the questionnaire were analyzed using IBM SPSS Statistics 28 and Microsoft Excel. For day cruises, Spearman's rank correlation coefficient was used to test the closeness of the relationship between the variables measured on the ordinal scale. The Wilcoxon test was used to test the participation in boat trips and the role of age in influencing it.

Content analysis was used to investigate whether the products mentioned as most popular in the questionnaire and interviews are available and can be purchased from Hungarian tour operators or whether they are only available in the destination. In addition, we grouped the products tested according to predefined categories: price, type and whether they were sold as part of a package.

The results of the content analysis were compared with the results of the interviews and the questionnaire to see to what extent the travel agencies' offer meets the demand of Hungarian tourists. Data were processed and evaluated using NVivo12 Plus content analysis software.

RESULTS

Demand side results

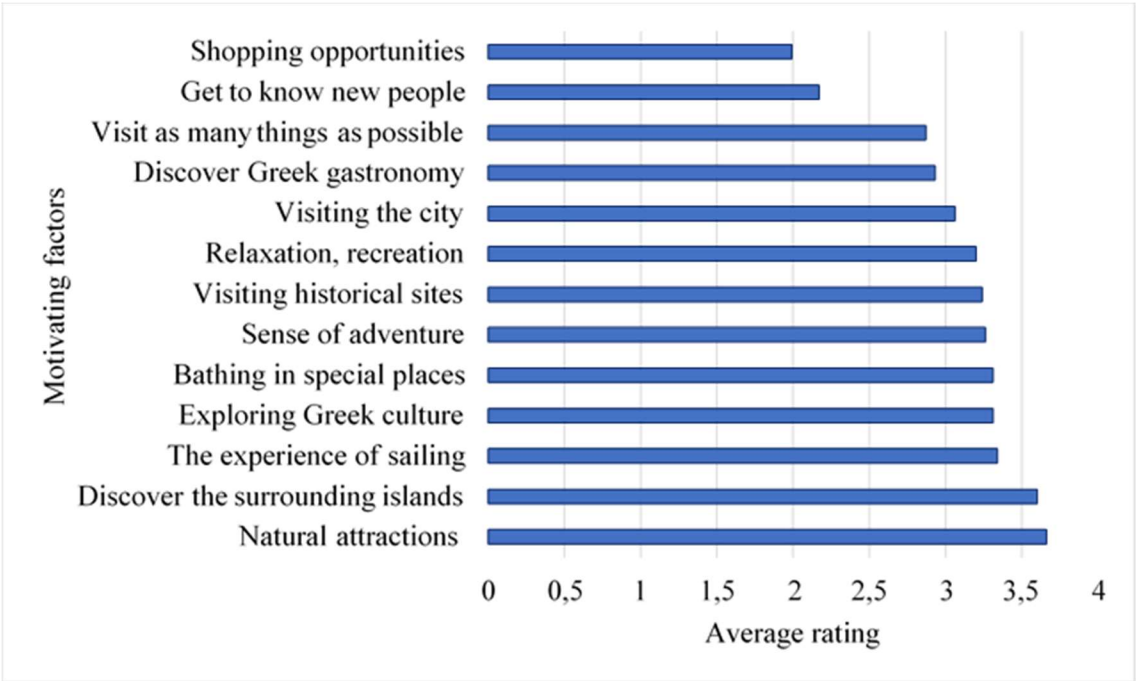
Of the 701 valid completions, 659 participated in coastal boat trips, 42 in a cruise and 69 in a yachting/sailing trip. On this basis, hypothesis testing could only be carried out for coastal boat trips, so detailed statistical analysis was only carried out for this type of cruise. One- day cruises are emerging as a complementary product on the market, as 97.6% of respondents do not travel to Greece primarily for the excursion. However, coastal boat trips are a popular

complementary product, as shown by the high participation rate and the fact that almost half of the respondents (49.6%) have taken a cruise more than 3 times during their holiday in Greece. Many respondents (394) took part in these cruises with their families. They are followed by those travelling with their partner (318 people) and then those who went with friends (244 people). Only 27 respondents said that they had used the program alone.

Demographic characteristics were examined to see how gender, age, education, and income affect participation in coastal boat trips in Greece. Differences between participation rates by gender and residence were tested using a two-sample z-test. The test function for gender was z0=-3.495 with significance p=0.000237. The results show a higher participation

rate for women. The test function for place of residence is z0=-0.997 and p=0.318947, i.e., there is no significant difference in the participation rate between rural and metropolitan residents. The Wilcoxon test showed that age did not influence participation in cruises (W=15269, p=0.2475). The association between income and participation in cruises in Greece is weak according to the coefficient of variance (H=0.19). The association between education and participation in cruises in Greece is weak (C=0.17) according to the Cramer association measure. Overall, therefore, it can be concluded that demographic characteristics other than gender do not significantly influence participation in cruises in Greece.

Figure 1 Ranking of motivating factors to participate in coastal boat trips



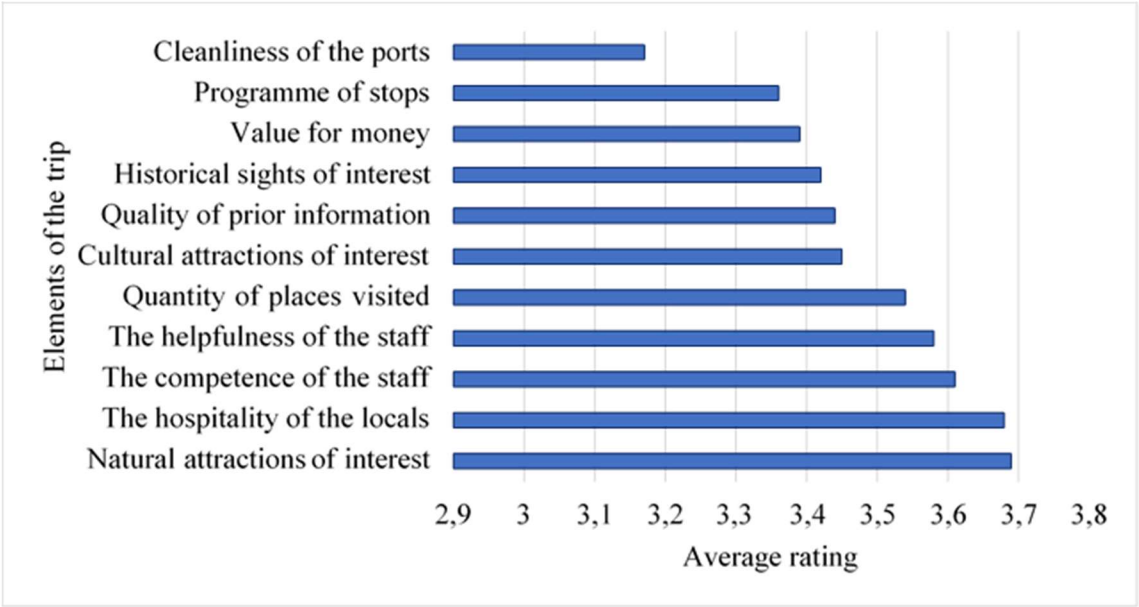
Source: Authors' elaboration

We also examined whether willingness to pay is affected by the gross monthly income of respondents. Using Spearman's rank correlation coefficient, we found that there is a weak relationship between income and willingness to pay (S=37033761, p=0.000029, ρ=0.164).

The ranking of motivational factors and satisfaction with each element of the excursion was obtained by arithmetically averaging the scores of the 4-point Likert scales (Fig. 1). The main incentive for Hungarian tourists to take a coastal boat trips in Greece is to discover the natural attractions and the surrounding islands. The sailing and the experience of sailing, as well as the opportunity to get to know Greek culture and swim in special places, are also important motivating factors for Hungarian tourists. The least motivating factors are meeting new people and the shopping facilities available at the stops.

Respondents were most satisfied with the natural attractions. The other highest scores were for human factors: the hospitality of the locals and the helpfulness and competence of the staff. Tourists were the least satisfied with the cleanliness of the ports and the quality of the facilities at the stopovers, mainly due to the lack of infrastructure and superstructure in the ports and their poor state of repair. The average of the responses to value for money is also considered low, i.e., the service received for the price paid is not considered proportionate by the purchasers of the product (Fig. 2).

Figure 2 Ranking each element of the trip according to tourist satisfaction

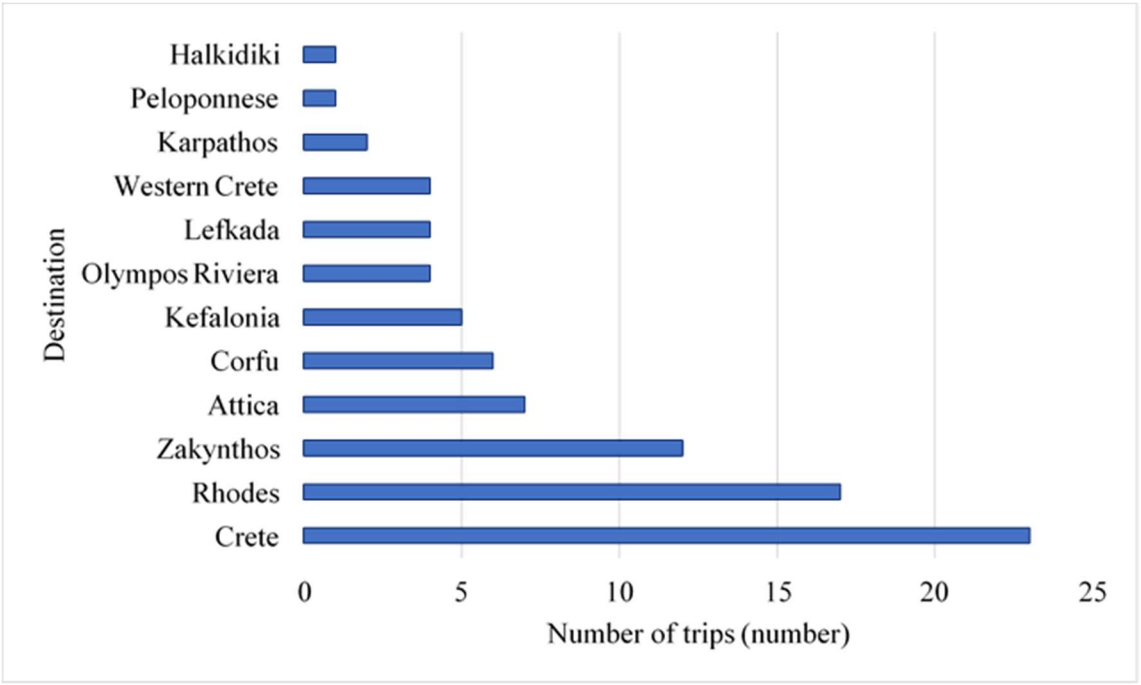


Source: Authors' elaboration

Supply-side results

The characteristics of the Greek cruise products available from the travel agencies surveyed are largely the same. The reason for the match is that the agencies do not sell the boat trips as their own product, but as a broker for the trips of partner operators in Greece. This also means that 100% of the excursions (82) are optional and can be booked on the spot. Looking at the location of product sales, it is possible to identify the most popular Greek destinations (Fig. 3). The largest number of boat trips (23) is offered by the surveyed agencies in Crete, with Santorini being the number one destination. This finding is supported by the fact that this product was offered by all the tour operators surveyed. Crete is followed by Rhodes, with 17 excursions, the most popular of which are cruises to the island of Symi, famous for its shipbuilders and sponge fishing. Zakynthos is in 3rd place with 12 trips. Each of the 7
Attica excursions is an optional itinerary to the islands of the Saronic Gulf, offered as part of the Athens city break.

Figure 3 Frequency of Boat Trip locations



Source: Authors' elaboration

The largest number of coastal boat trips (21) is offered by IBUSZ Utazási Irodák Kft (Tab. 1). IBUSZ organizes trips to almost all the destinations surveyed, which confirms its leading position in the Hungarian tour operator market. Also worth mentioning is the offer of Unitravel Utazásszervező Kft. With their help, you can visit 5 destinations and buy 10

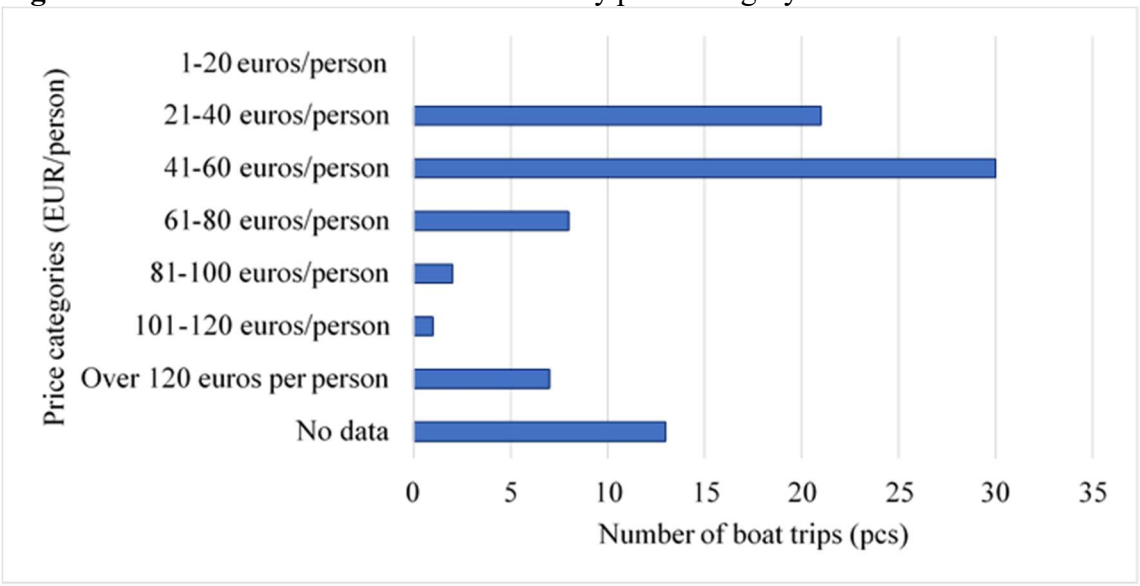
coastal boat trips. Sun & Fun Holidays Ltd. offers the 2nd highest number of excursions (11), but they are only available in 3 destinations (Tab. 1).

Table 1 A crosstab on travel agencies and the destinations of the Greek trips they offer

Travel agency \ Destination	Attica	Halkidiki	Karpathos	Kefalonia	Corfu	Crete	Lefkada	Olympos Riviera	Peloponnese	Rhodes	Zakynthos	**Total**
1000Út	-	-	-	-	-	4	-	-	1	1	-	**6**
Anett Tours	-	-	-	-	-	-	-	2	-	-	-	**2**
Anubis Travel	-	-	-	-	-	2	-	-	-	3	-	**5**
Budavár Tours	2	-	-	-	2	-	-	-	-	1	2	**7**
Fehérvár Travel	2	-	-	-	-	-	-	1	-	-	-	**3**
IBUSZ	1	1	2	4	2	2	4	1	-	1	3	**21**
Kartago Tours	-	-	-	-	-	4	-	-	-	2	2	**8**
Morea	-	-	-	-	-	1	-	-	-	-	-	**1**
OTP Travel	-	-	-	-	-	-	-	-	-	4	-	**4**
Proko Travel	-	-	-	-	-	1	-	-	-	-	-	**1**
Sun&Fun	-	-	-	-	-	5	-	-	-	4	2	**11**
Unitravel	-	-	-	1	2	3	-	-	-	1	3	**10**
Utazom.com	1	-	-	-	-	-	-	-	-	-	-	**1**
Vista	1	-	-	-	-	1	-	-	-	-	-	**2**
Total	**7**	**1**	**2**	**5**	**6**	**23**	**4**	**4**	**1**	**17**	**12**	**82**

Source: Authors' elaboration

Figure 4 Evolution of the number of cruises by price category



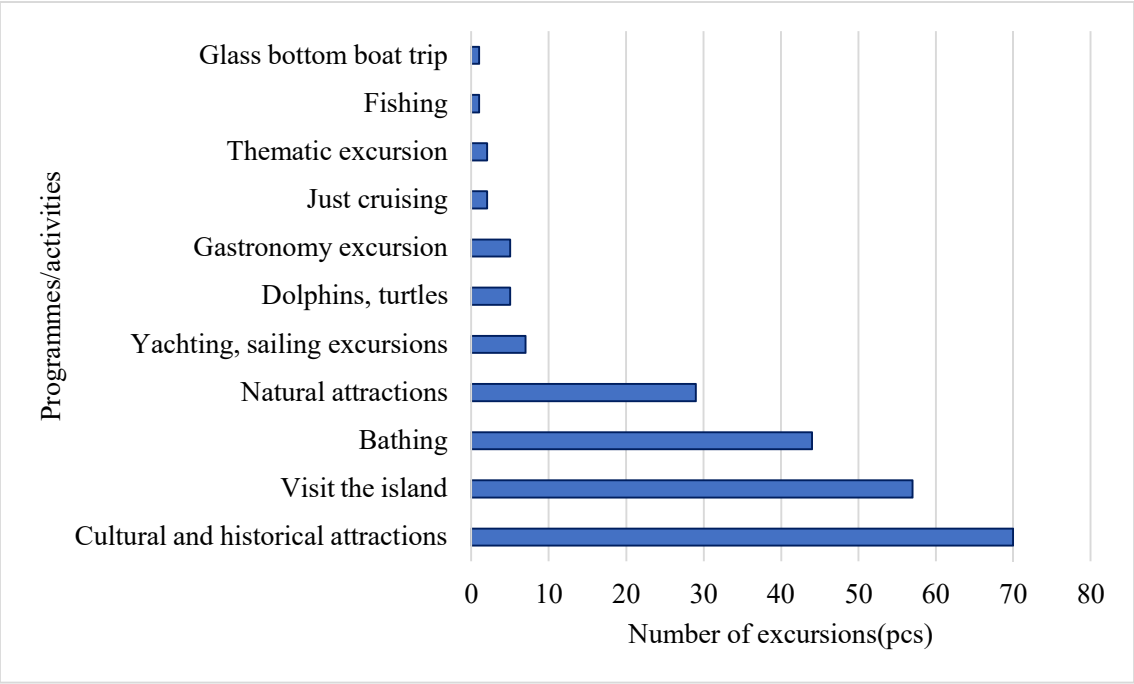
Source: Authors' elaboration

The travel agencies surveyed offer similar products at almost the same price. Looking at the price categories, 37.0% (30) of the trips fall into the €41-60 per person price category and

25.9% (21) into the €21-40 per person price category, i.e., these two categories cover almost two thirds of the trips. All products priced above €120 per person are Santorini coastal boat trips. This is because Santorini is one of the most popular Greek islands, so there is a high demand for excursions that introduce tourists to the island (Fig. 4).

When grouped by programs and activities, some coastal boat trips are listed in several categories (Fig. 5). The grouping was based on the main purpose(s) of the trip. For example, a trip was only included in the subcategory "monasteries and other sacred attractions" if its primary program was to visit a monastery or church, and not just as an additional program during a city visit. However, if both a visit to the city and a visit to the monastery were part of the main program of the trip, then both categories were assigned to the product. It can be said that the coastal boat trips mainly take tourists to a nearby island, where cultural and historical attractions are most often presented. One fifth of the trips (44) include the possibility of swimming, but this is rarely the sole purpose of the trip. The number of excursions to natural attractions is also high, but even in this category, most of them are combined with some other activity (bathing, city visit, island visit). Travel agencies offer few yacht (catamaran) excursions to passengers, with only 7 of the products surveyed. Tourists do not get these products through tour operators but buy them from a local supplier.

Figure 5 Grouping of boat trips by program/activity



Source: Authors' elaboration

DISCUSSION

Within the tourism sector, shipping tourism is one of the most dynamically growing sectors today (Irimiás, et al., 2019; Klein, 2011). It contributes to the growth of local economies by creating many jobs and generating extra revenue for businesses directly and indirectly involved in nautical tourism. But the costs of setting up and maintaining the infrastructure needed to provide a good quality service are huge. The biggest problem for coastal boat trips is that tourists do not spend a night in the destination they visit, so they spend less (Brida & Zapata, 2009; Burchacz, et al., 2017; Klein, 2011). And the very nature of mass tourism has a negative impact on the living standards and living conditions of the local population in the absence of regulation and coordination (Klein, 2011). They are also destructive to the built and natural environment, both for ships and their passengers (Verikokkou, 2021). This is why it is important to have a certain level of monitoring and regulation of nautical tourism to minimize the negative impacts and maximize the positive ones. This will improve the quality of life of the local population and make tourists more satisfied with the product (Ehtiyar, 2016; Brida & Zapata, 2009).

It is worth looking at the products of nautical tourism separately, as the consumers of each product have significantly different characteristics. Hotel cruise passengers are more likely to be older and have higher incomes, and their main motivation to buy is relaxation and recreation, as well as the amenities available on board (CLIA, 2021; Hung & Petrick, 2011). The results of our research show that price plays a significant role in coastal boat trips, as they are only a complementary product in the tourism market, and thus consumers are more price sensitive than for hotel cruises. In addition, the main motivating factor for day cruises is to visit the natural and cultural attractions in the area. These results are supported by a number of previous research findings (Diakomihalis & Lagos, 2011; Diakomihalis, 2007). Yachting and sailing is a niche market in tourism. The main motivation for this market segment is the feeling of freedom, the love of boating as a sport and the increase of prestige. Typically, older, high-income men are the primary consumers of the product (Diakomihalis, 2007; Ilchuk, et al., 2019). The results of the analyses carried out in our research are very similar to the international results mentioned above.

CONCLUSION

Based on the literature review, it can be concluded that the analysis of nautical tourism is worthwhile to focus on. As well as being one of the fastest growing sectors in tourism today,

it also has a significant impact on the environment (Klein, 2011; Irimiás, et al., 2019). It has the potential to contribute to the growth of local economies by creating many jobs and generating additional income for businesses directly and indirectly involved in nautical tourism. But the costs of setting up and maintaining the necessary infrastructure are huge. One of the biggest problems of boat tourism is that tourists do not spend the night in the visited destination, and therefore do not spend money (Brida & Zapata, 2009; Klein, 2011; Burchacz, et al., 2017). Regarding the impact on the social environment, it is essential to note that, in the absence of regulation and coordination, and due to the nature of mass tourism, it negatively affects the living conditions of the local population (Klein, 2011). Both the built and natural environment are damaged by ships and their passengers. This is why it is important to monitor and regulate nautical tourism to minimise the negative impacts and maximise the positive ones. This will improve the quality of life of the local population and make tourists more satisfied with the product (Brida & Zapata, 2009; Ehtiyar, 2016).

The research suggests that travel agencies should focus on shipping tourism products in Greece, as there is a strong demand for coastal boat trips and cruise tours are becoming increasingly popular in the Hungarian market. Shipping, like almost every other industry, has been affected by the Covid19 virus, but in the long term no major changes are expected in the market, according to the experts surveyed. It is important to stress, however, that the recovery of the passenger shipping industry after the pandemic will not be immediate but may take a year or two.

Hungarian tourists on coastal boat trips in Greece are demanding and have high expectations. This is supported by the fact that the motivation survey shows that for them, boating alone, bathing and recreation are not enough. During the excursions, there is a desire to learn about Greek cultural values and to discover natural treasures. Travel agencies should focus more on products that meet this kind of demand. Human factors also play an important role in satisfaction and it is important to keep this in mind. The human factors that had the greatest impact on the participants were the helpfulness and competence of the staff.

Thanks to the high response rate, our results can be used as a starting point for further research involving a wider population. This information can be useful for domestic travel operators to further tailor their offer to domestic demand.

REFERENCES

Akova, O., Sariisik, M., & Turkay, O. (2011). How to manage yacht tourism in Turkey: A swot analysis and related strategies. *Procedia - Social and. Behavioral Sciences*, 24, 1014-1025. https://doi.org/10.1016/j.sbspro.2011.09.041

Asero, V., & Skonieczny, S. (2018). Cruise Tourism and Sustainability in the Mediterranean. Destination Venice. InTech. https://doi.org/10.5772/intechopen.71459

Ariza-Montes, A., Han, H., Lück, M., & Radic, A. (2020). Fear and Trembling of Cruise Ship Employees: Psychological Effects of the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health,* 17(18), 6741. https://doi.org/10.3390/ijerph17186741

Banousis, D., Bourtzis, T., & Kyriazi, Z. (2016). Social Economy as a key factor for enhancing Blue Growth in Greece.: A conceptual perspective. *AIMS Environmental Science,* 3(4), 815-826. https://doi.org/10.3934/environsci.2016.4.815

Brida, J. G., & Zapata, S. (2009). Cruise tourism: economic, socio-cultural and environmental impacts. *International Journal of Leisure and Tourism Marketing,* 1(3), 205-226. https://doi.org/10.1504/IJLTM.2010.029585

Burchacz, M., Kalinowski, M., Koba, R., Kowalczyk, U., Piotrowicz, J., & Staśkiewicz, A. (eds.) (2017). Common standards in the measurement of economic effects by cruise tourism. [online] https://projects.interreg-baltic.eu/fileadmin/user_upload/Library/Outputs/Green_Cruise_Port_Common_Standards_in_the_measurement_of_economic_effects_by_cruise_tourism_Vin.pdf (retrieved on 15.11.2022)

CLIA (2021). State of the Cruise Industry Outlook. [online] https://cruising.org/-/media/research-updates/research/2021-state-of-the-cruise-industry_optimized.ashx. (retrieved on 10.12.2022)

CLIA (2022). State of The Cruise Industry Outlook. [online] https://cruising.org/-/media/clia-media/research/2022/clia-state-of-the-cruise-industry-2022_updated.ashx (retrieved on 17.11.2022)

Connell, J., & Taulealo, T. (2021). Island Tourism and COVID-19 in Vanuatu and Samoa:An Unfolding Crisis. *Small States & Territories,* 4(1), 105-124.

Csapó, J., & Darabos, F. (2011). Vízi közlekedés. In: Veres, L., (Ed.), *Turizmus és közlekedés*. (pp. 103-125). Pécsi Tudományegyetem. [online] https://oszkdk.oszk.hu/storage/00/01/26/41/dd/1/Turizmus s_k zleked s.pdf (retrieved on 17.01.2023)

Diakomihalis, M. N., & Lagos, D. G. (2011). An empirical approach to coastal leisure shipping in Greece and an assessment of its economic contribution. *Tourism Economics,* 17(2), 437-456. https://doi.org/10.5367/te.2011.0038

Diakomihalis, M. N. (2007). Greek Maritime Tourism: Evolution, Structures and Prospects. *Research in Transportation Economics*, 21(1), 419-455. https://doi.org/10.1016/S0739-8859(07)21013-3

Dimou, I., & Vandorou, V. (2018). Jacht tourism in Greece: Current issues and prospects for development. In: Alexandris, K., Christou, E., & Fotiadis, A., (Eds.) *TOURMAN 2018 Conference Proceedings.* (pp. 366-373). Thessaloniki: Alexander Technological Institute of Thessaloniki.

Ehtiyar, V. R. (2016). The Rising Trend of Tourism: Cruise Tourism. In: Avcikurt, C., Dinu, M. S., Hacioglu, N., Efe, R., Soykan, A., & Tetik, N. (Eds.) *Global Issues and Trends in Tourism.* (pp. 235-247). Sofia: St. Kliment Ohridski University Press.

Feng, Z. H., Luo, H. J., Qin, Z., Song, H. L., Wang, H., Wang X. Y., Xu, J. W., & Ye, L. (2020). Deep thought of COVID-19 based on Diamond Princess's quarantine and home quarantine. *European Review for Medical and Pharmacological Sciences,* 24(7), 4027-4029. https://doi.org/10.26355/eurrev_202004_20872

Galanos, G., & Yfantis, A. (2013). The competitiveness of cruise tourism: The case of Greece. [online] https://mpra.ub.uni-muenchen.de/110734/1/MPRA_paper_110734.pdf (retrieved on 20.11.2022)

Gračan, D., Haahti, A., Kizielewicz, J., & Luković, T. (2017). The segmentation of the demand for ferry travel – a case study of Stena Line. *Economic Research-Ekonomska Istraživanja,* 30(1)*,* 1003-1020. https://doi.org/10.1080/1331677X.2017.1314789

Guaraldo, E. (2021). Resisting the Tourist Gaze. Art Activism Against Cruise Ship Extractivism in the Venice Lagoon. *Lagoonscapes*, *The Venice Journal of Environmental Humanities,* 1(1), 101-124. http://doi.org/10.30687/LGSP//2021/01/008

Gyuricza, L. (2009). *A turizmus nemzetközi földrajza.* Budapest-Pécs: Dialóg Campus Hung, K., & Petrick, J. F., 2011. Why do you cruise? Exploring the motivations for taking

cruise holidays, and the construction of a cruising motivation scale. *TourismManagement,* 32(2), 386-393. https://doi.org/10.1016/j.tourman.2010.03.008

Ilchuk, K., & Marques, J. & Pereira, E., 2019. Yacht Cruisers Profile And Nautical Tourism Development. In: Bielons, G. & Bodet, G. & Breitbarth, T. & Burilo Naranjo P. & Fernandez Luna Á. (Eds.), *Conecting sport practice and science.* Sevilla: European Association for Sport Management. (pp. 128-130). [online] https://fis.dshs-koeln.de/portal/files/5059097/BOAEASM2019.pdf#page=128 (retrieved on 21.10.2022)

Irimiás, A., Jászberényi, M., & Michalkó, G. (2019). *A turisztikai termékek innovatív fejlesztése.* [e-book] Budapest: Akadémiai Kiadó. https://mersz.hu/hivatkozas/m580turtei_0#m580turtei_0

Jancsik, A., Jászberényi, M., & Kökény, L. (2019). *Az utazásszervezés új dimenziói* [e-book] Budapest: Akadémiai Kiadó. https://mersz.hu/hivatkozas/m523utszerv_0#m523utszerv_0

Jászberényi, M. (2019). *Vízi turizmus és közlekedés: termékek, trendek, regionalitás.* [e- book] Budapest: Akadémiai Kiadó. https://mersz.hu/hivatkozas/m522vituk_0#m522vituk_0

Kalogeropoulou, H. (1996). Cultural Tourism in Greece. In: Richards, G. (Ed.) *Cultural Tourism in Europe*. (pp. 183-196.) Wallingford: CAB INTERNATIONAL.

Katits, E., Szalka, É., Nagy F., & Könczöl, T. (2019). A magyar top cégek a turizmusban, avagy egy sikerre éhes ágazat pénzügyi diagnózisa. *Multidiszciplináris kihívások, sokszínű válaszok*, (2), 71-97. https://doi.org/10.33565/MKSV.2019.02.04

Klein, R. A. (2011). Responsible Cruise Tourism: Issues of Cruise Tourism and Sustainability. *Journal of Hospitality and Tourism Management,* 18(1), 107-116. https://doi.org/10.1375/jhtm.18.1.107

Larsen, S., Marnburg, E., Øgaard, T., & Wolff, K. (2013). Belly full, purse closed: Cruise line passengers' expenditures. *Tourism Management Perspectives,* 6*,* 142-148. https://doi.org/10.1016/j.tmp.2013.02.002

Lengyel, M. (1997). A Turizmus versenyképességét befolyásoló tényezők. [online] Budapesti Közgazdaságtudományi Egyetem, Vállalatgazdaságtan tanszék. http://edok.lib.uni-corvinus.hu/212/1/MT_16_Lengyel.pdf (retrieved on 20.09.2022)

Mavrommarti, A., Pendaraki, K., Kontogeorgos, A., & Chatzitheodoridis, F. (2021). A Panel Data Model of International Tourism Demand for Greece. *Deturope.* 13(3), 142-157. https://doi.org/10.32725/det.2021.024

MedCruise (2020). Cruise Activities in MedCruise Ports: Statistics Report 2019. [online] https://www.medcruise.com/news/3d-flip-book/2019-medcruise-statistics-report (retrieved on 20.07.2022)

Michalkó, G. (2016). *Turizmológia.* [e-book] Budapest: Akadémiai Kiadó. https://mersz.hu/dokumentum/dj59t 1/

Miskolczi, M., Jászberényi, M., Munkácsy, A., & Nagy, D. (2020). Accessibility of major Central and Eastern European cities in Danube cruise tourism. *Deturope.* 12(3), 133-150. https://doi.org/10.32725/det.2020.025

MTÜ (2018). A magyar lakosság belföldi és külföldi utazásai 2017-ben. [online] https://mtu.gov.hu/documents/prod/magyarok_utazasai_2017.pdf (retrieved on 22.07.2022)

Németh, E., Gergely, Sz. L., & Mikes, B. (2021). A Turizmus helyzete a járvány előtt és alatt. [online] https://www.asz.hu/hu/publikaciok/elemzes-2021-ev/2/ (retrieved on 20.07.2022)

OECD (2020). *OECD* Tourism Trends and Policies 2020. Párizs: OECD Publishing

Pallis, T. (2015). Cruise Shipping and Urban Development: State of the Art of the Industry and Cruise Ports. [online] University of the Aegean. https://www.internationaltransportforum.org/jtrc/DiscussionPapers/DP201514.pdf (retrieved on 08.08.2022)

Pavlogeorgatos, G., Rempis, N., & Tsilimigkas, G. (2019). Cruise tourism and coastal cities landscape. Evidence from Crete Island, Greece. In: Gospodini, A. (Ed.) *Proceedings of the International Conference on Changing cities IV: Spatial, Design, Landscape & Socioeconomics Dimensions.* (pp. 387-396). Volos: Department of Planning and Regional Development, University of Thessaly Laboratory of Urban Morphology and Design.

Plog, S. C. (1998). Why destination preservation makes economic sense. In: Theobald, W.
F. (Ed.) *Global Tourism.* (pp. 251-264). Oxford: Butterworth-Heinemann.

Pókó, N. (2021). Reziliencia a szállodahajó-turizmusban. *Turizmus Bulletin,* 21(3), 44-53. https://doi.org/10.14267/TURBULL.2021v21n3.5

Trancoso-González, A. (2018). Venice: the problem of overtourism and the impact of cruises. *Investigaciones Regionales – Journal of Regional Research*, (42), 35-51.

Tzannatos, E. (2010). Ship emissions and their externalities for the port of Piraeus - Greece.
Atmospheric Environment, 44(3), 400-407. https://doi.org/10.1016/j.atmosenv.2009.10.024

UNWTO (2020a). Global and regional tourism performance. [online] https://www.unwto.org/global-and-regional-tourism-performance (retrieved on 08.08.2022)

UNWTO (2020b). International Tourism Highlights 2020 Edition. [online] https://www.e-unwto.org/doi/pdf/10.18111/9789284422456 (retrieved on 08.08.2022)

Vaggelas, G. K., & Stefanidaki, E. (2015). The cabotage abolishment in the Greek cruise market: An initial assessment vis-à-vis homeport operations. [online] European Conference on Shipping, Intermodalism & Ports-ECONSHIP. https://www.academia.edu/13833806/The_cabotage_abolishment_in_the_Greek_cruise_market_An_initial_assessment_vis_%C3%A0_vis_homeport_operations (retrieved on 18.08.2022)

Verikokkou, A., Kaika, D., & Milioti, C. (2021). Analysis of the impact of tourism flows on environmental degradation. Case study: Municipality of Naxos & Small Cyclades, Greece IOP Conf. Ser.: Earth Environ. Sci. 899 012051 https://doi.org/10.1088/1755-1315/899/1/012051

WTTC (2021). Global Economic Impact and Trends 2021. [online] https://wttc.org/Portals/0/Documents/Reports/2021/Global%20Economic%20Impact%20and%20Trends%202021.pdf (retrieved on 08.08.2022)

***DETUROPE** – THE CENTRAL EUROPEAN JOURNAL OF REGIONAL DEVELOPMENT AND TOURISM*
Vol. 15 Issue 1 2023 *ISSN 1821-2506*

Original scientific paper

SIGNIFICANCE OF THE PUBLIC TRANSPORT FOR TOURISM DEVELOPMENT IN DESTINATIONS

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Cite this article: Samková, L., Navrátil, J. (2023). Significance of the public transport for tourism development in destinations. *Deturope.* 15(1), 158-189.

Abstract

Economic and environmental consequences of transport connected to tourism are important topic in tourism transition. Public transport is in many countries strongly underated even though its potential for economic as well es environmental development is considered to be high. The aim of the contribution is to evaluate how the stakeholders involved in the development and management of tourism destinations perceive the importance of public transport and other transport services. A partial goal is to find out how this importance differs between countries and between different types of destinations and what effect public transport has on the development of a given tourism area. International comparison as well as comparison among types of destination in tourism centres for the Czech Republic, Germany, Austria, Italy, the Netherlands, and Mexico was done. Factorial repeated measures ANOVAs was used to test potential differences among those six countries and three types of destinations based on 121 questionnaires. The research was based on the data of expert estimates of stakeholders, i.e. on what the managers who make decisions and formulate policies think. It was therefore not a real state, because it is not about exact measured values. We have found that the contribution of individual means of transport to local development is perceived by stakeholders significantly different. Regardless of the country, public transport is considered the most important development element. Furthermore, it was found that public transport is generally considered to be the most environmentally friendly. It can also be stated that tourism experts expect further development of transport in their destination, but they are not completely satisfied with the state of development preparations. The level of public transport is the worst rated in Mexico, but the experts there are most aware of its influence on the development of tourism and the benefit to the local population. In the Netherlands and Italy, the public administration motivates the use of public transport the most, while in Mexico and the Czech Republic, this support is perceived to be comparatively less. In the Netherlands, Italy and Mexico, they are open to the integration of shared means of transport (e.g., shared bicycles, scooters or Uber) into the public transport system, on the contrary, the Czech Republic is more sceptical of these alternative means of transport. Further development of public transport is planned in all studied countries, and local public administration participates in its operation.

Keywords: Development, public transport, destination, tourism, ecology

INTRODUCTION

Mobility is very important for participation in tourism, and one of its basic elements is transport (Pourová, 2010; Vystoupil et al., 2011; Rodrigue, 2020). Every year, thanks to transport, millions of people from all over the world can participate in tourism, which Pásková and Zelenka (2012) define as the sum of activities and temporary stays of travelers outside their residence together with the sum of services and products provided to these

travelers. As stated by Nelson (2013), there is a strong relationship between transport and tourism because tourism creates demand for transport services. At the same time, transport is considered a necessary part of tourism and is taken as one of its most important components. As Virkar and Mallya (2018) pointed out, transportation is an important element for tourism development and helps tourists in a destination.

Private individual transport (e.g. car) or commercial public transport (e.g. air, bus) plays the most important role in tourism. Public transport is provided publicly to all persons, so it involves traveling with other people and thus there is social interaction during travel. Among the means of public transport in the city and its surroundings can be including a bus, trolleybus, tram, train, underground, ferry or cable car. These transport services follow timetables and transport schedules, passengers pay for their use and can be integrated into integrated transport system (ITS). We can also talk about non-conventional public transport, which offers, for example, shared bicycles and scooters. The importance of public transport providing transport on regular lines according to timetables and subsidized to a significant extent from public budgets is rather marginal and plays a larger role only in countries with a tradition of public transport. These include, for example, Great Britain or Spain, but also post-socialist countries in Eastern Europe, such as the Czech Republic. On the contrary, its position in the USA or countries outside the world economic core is completely different. As Cheng and Chen (2015) mention, the level of mobility of a city depends on a good organization of the transport system and a user-friendly public transport system that allows good connectivity and accessibility of stops.

In general, there is an effort to suppress individual journeys by private car, which are the least ecological, and more emphasis is placed on the development of public transport (Adamec et al., 2005). However, there are significant changes in the field of public transport, for example in connection with the development of integrated transport systems, which can significantly shift the possibilities of using public transport by participants in the tourism industry.

The issue of the possibilities of using public transport in tourism destinations is not sufficiently researched. That is why the aim of this paper is to evaluate how the stakeholders involved in the development and management of tourism destinations perceive the importance of public transport and other transport services. A partial goal is to find out how this importance differs between countries and between different types of destinations and what effect public transport has on the development of a given tourism area.

THEORETICAL BACKGROUND

Importance of Transport in Tourism Destinations

Traveling is necessary for tourism, as it involves the movement of the passenger to destinations and subsequently within the destinations (Kalousová & Jarábková, 2015). Orieška (2010) and Šejvlová et al. (2011) mention that the most important role in developing tourism is the transport infrastructure and its quality besides other issues of destination management (Navrátil et al. 2012, 2013, 2018). Crouch and Ritchie (1999) perceive transport as a supporting resource that affects access to a tourism destination. It is an integral part of the core activity of tourism, and its quality contributes to the destination's competitiveness.

Currently, the influence of public transport on tourism is growing more and more, therefore authors such as Hoenninger (2003) or Gronau and Kagermeier (2007) deal with its planning, passenger awareness, traffic restrictions within city districts, or the possibility of involving alternative means of transport that support mobility. High-quality public passenger transport helps support the development of tourism (Mrníková, Poliak, Šimurková, & Reuter, 2018). Public transport is more flexible in providing access to more places for a greater number of visitors, therefore, it is important for the development of low-carbon tourism (Gössling, 2010). Yang (2010) and Mandeno (2011) state that cities with an extensive and efficient public transport network are more attractive to tourists. Even more public transport involves traveling with other people, so there is considerable social interaction between tourists and local inhabitants (Currie & Stanley, 2008). It is advisable to effectively replace individual car transport with public transport or other alternative means of transport (e.g., cycling and walking). At the same time, public transport reduces the negative externalities of cars and increases the quality of the environment in a given locality (see the next chapter for more details).

Among the means of urban public transport, it can include buses, trolleybuses, trams, subway, or even trains, cable cars or ferries (Simon, 2012; Le-Klähn, Hall, & Gerike, 2014). Complementary to these means of transport can be alternative means of transport, such as shared transport (bikesharing, scootersharing, carsharing, ridesharing), or taxi services and car rental companies. On the other hand, rural areas of tourism are mainly served by bus service. According to the authors Thompson and Schofield (2007), Farag and Lyons (2012) or Le-Klähn, Hall and Gerike (2014), users of public transport in rural areas differ from users in cities, and the age of the passengers also affects the choice of transport. Barr and Prillwitz

(2012) also mention the difference in the choice of means of transport depending on the type of passengers, which they divide into:

- reluctant users of public transport – elderly people with limited access to a car,
- committed ecological travelers – middle-aged people, often managers, who use different means (including active transport),
- aspiring eco-travellers and
- dependent car users.

Transport availability and connectivity influence the choice of a tourist destination. If tourist attractions are not well connected by public transport, travelers prefer to choose a car (Su & Wall, 2009; Xiao, Jia, & Jiang, 2012). Ho and Mulley (2013) claim that the complexity of the selected tour of the area is also important for the choice of transport mode – tourists with complex itineraries are more likely to use private transport, while visitors who have multiple destinations near one destination with good connectivity prefer to choose public transport. As, e.g., Grigolon, Kemperman and Timmermans (2012) or Masiero and Zoltan (2013) state, it is important to understand the factors that influence the choice of means of transport, as it also affects the choice of destination and accommodation.

Lumsdon and Page (2007) address the difference between the use of transport for tourism - i.e., for the purpose of relocating and the necessary movement of passengers, and transport that is itself tourism and brings added value. In the second case, the transport is taken as an attraction that the passenger deliberately chooses because of some peculiarity (e.g., sightseeing cruises, historical drives, etc.). These two forms of transport use intertwine and thus form a continuum.

Different means of transport can have different meanings for different destinations in individual countries. **Hypothesis H1** was therefore established: **Different means of transport in the destination have different meanings, which is influenced by the cultural milieu and the type of destination.**

The Importance of Different Means of Transport for the Environment

Transport is constantly developing and modernizing, but it also has negative effects on the environment. These negative externalities include especially (Gao et al., 2018):

- pollution (i.e., emissions and waste),
- congestion,
- land take,

- noise,
- vibration,
- congestion, etc.

The ecological aspect is currently a much-discussed topic not only in transport. Society tries to behave pro-ecologically. There are also so-called "green consumers" (Pícha & Navrátil, 2019), but it is necessary to distinguish between a real interest in the environment or a mere attitude toward social prestige. Nilsson and Küller (2000) mention that commuters do not look at the environmental aspect. Convenience and speed of transportation are more important to them when traveling on a daily basis.

As Manniche, Larsen, Broegaard, and Holland (2018) state, transport offers many opportunities for improvement and environmental sustainability. Possibilities for reducing the negative impacts of tourist travel include, for example, a smaller number of trips, traveling shorter distances, longer stays in the destination or the use of ecological means of transport. For sustainable transport, it is necessary to pay attention to the reduction of emissions and greenhouse gases, the use of vehicles with alternative drive (electric and hybrid) or alternative vehicles (bicycles, scooters, etc.), traffic regulation, the possibility of shared transport, suitable infrastructure, ecological production of vehicles, sustainable fleet management or driver training on ecological driving.

Yatskiv, Budilovich, and Gromule (2017) mention that public transport helps reduce the negative impacts of private cars. According to available statistics and authors Elias and Shiftan (2012), it is transport that contributes the most to environmental pollution and CO_2 emissions in urban areas. For this reason, there is an effort to transition from cars to the use of public transport or shared means of transport and walking. It is precisely these active forms of mobility (bicycle, scooter, skates, walking) that are the most ecological and at the same time safer and healthier than classic transport. For their greater use, it is necessary to invest in shared multimodal infrastructure (integration of cycle paths, charging stations for e-bikes, etc.), but it is expected that they could reduce global CO_2 emissions by 70% by 2040 and also reduce costs for European households by 70% by 2050.

In an article by Mazal (2020) focusing on the impact of public transport on city life, analyst Jil Gonzalez from WalletHub is quoted as saying that even the ITS reduces emissions of harmful substances around transport routes, helps the city's economic growth and saves passengers travel costs. A quality transport system, therefore, has the potential to improve the environment, public health, transport sustainability and the economy. The need is to

streamline the level of transport services and reduce traffic and travel (Givoni & Banister, 2010).

According to experts, there is an increasing effort to be environmentally friendly, i.e., to make ecological means of transport more attractive. Public transport is thus preferred over individual transport for the transfer of passengers, as it reduces the negative impacts of transport (Adamec et al., 2005). Manniche, Larsen, Broegaard and Holland (2018) also mention that using greener means of transport would lead to a reduction in the negative impacts of tourist travel. The negative effects of transport development on the destination and the consequences of pollution lead to the devaluation of the destination (Hall, 1998; Duval, 2007).

Hypothesis H2 was chosen for the topic concerning the impact of different means of transport on the environment in individual coutries: **Different means of transport in the destination are perceived differently from the point of view of impact on the environment, and the cultural milieu and the type of destination influences this perception.**

Support for the Development of Public Transport in Destinations

The transport offer and its development are governed by demand from residents and tourists, who decide according to their preferences whether to use individual car transport or public transport to move around the city. Discrete choice models or disaggregated demand models can be used to choose from several options (McFadden, 1981; Schakenbos, La Paix, Nijenstein, & Geurs, 2016). As Hagman (2003) states, nowadays car transport is more attractive than public transport because it is more comfortable, more free, in most cases faster, more reliable, and the passenger feels a better social status. Schödlbauer (2009) states that in order for passengers to prefer public transport, positive motivation is needed, i.e., to show its positive aspects (modern and safe vehicles, frequency of connections, speed and smoothness of driving through the city, etc.). The interest in ecology and the quality of urban life is still growing. For this reason, urban public transport is also being addressed more recently (Bok & Kwon, 2016).

One of the most important factors for evaluating the quality of transport is the transport infrastructure, therefore, it is important to pay attention to its quality, scope, and modernization and invest in it effectively. The level of mobility can be improved thanks to an effective ITS, in which it is necessary to solve connections, coordination of timetables,

availability of stops, multimodal terminals, ticketing system or P+R parking (Cheng & Chen, 2015). Providing efficient and affordable public transport should be one of the goals for policy makers worldwide (Saghapour, Moridpour, & Thompson, 2016). Janic (2001) agrees that the development of ITS should be the goal of national and local authorities and administrations.

Public transport is subsidized from public sources; therefore, it is an integral part of the planning process of local and regional development. According to the American Public Transportation Association (APTA, 2020), there are social, environmental and economic reasons for investing in public transport. Investments impact the area's economy, money flow, and job creation and help reduce the growth of individual car transport. Public transport provides mobility for people who do not own a car but also offers benefits to car users. Good public transport accessibility also improves the availability of other services because there is better connectivity of localities and people (Abreha, 2007). Yatskiv, Budilovich and Gromule (2017) deal with door-to-door mobility, as it offers a more attractive form of public transport for passengers and further claim that the development of the transport service industry is a very important factor of social quality. According to Janic (2001), the solution is integrating different means of public transport and the integrating individual transport and public transport systems.

Transport is also a very important element in the development of tourism destinations, and its role is key, as the public transport system enables the flow of arriving visitors to the destination, and access to tourist destinations and thus appeals to a wider market of potential tourists (Prideaux, 2000). There are several possible steps to promote public transport in tourism. First of all, it is necessary to identify the key target groups in the destination, then to ensure the connection of various means of transport to the public transport system, and promote the offer appropriately to potential customers (Gronau & Kagermeier, 2007). These authors also mention other possibilities to support recreation using public transport. It can be, for example, a discount on the entrance fee when buying a ticket or restricting the accessibility of tourism destinations by car (e.g., adjusting parking or restricting entry). As an example, they cite the metropolitan area of Munich in Germany, where a €2 parking fee at an amusement park helped increase public transport use by 5%. Hall (1999) and Duval (2007) also draw attention to the negative impact of transport development on the destination, as it can lead to greater traffic congestion or air pollution, thereby devaluing the destination. There is so-called community-based tourism (CBT), which is based on the fact that the community

plays an important role in the development of tourism and emphasizes the cooperation between local residents, local authorities, the private sector and tourists (García Sánchez, Crespo Stupková, & Coria Téllez, 2021). These authors also mention that despite mass tourism, tourism can strengthen the local community and thus have a positive impact. Hall (1996) states that community involvement in tourism development aims to create a more sustainable industry.

Support for transport development in tourism destinations can be perceived differently and in several different areas there can be a different priority and level of support. For a closer examination of this issue, **hypothesis H3** was stated: **Support for the development of individual means of transport is perceived differently and is influenced by the cultural milieu and the type of destination.**

DATA AND METHODS

Study Area and Respondents

To test our hypotheses data were collected in broad spectrum of countries representing all main types of countries regarding public transport issues with special attention paid to central European countries. The Czech Republic was chosen as the typical example of post-socialist Central European country. Two other countries from Central Europe, namely Germany and Austria, were chosen for comparison as examples of "western" countries with tradition of public transport. Furthermore, Italy was selected as a representative of one of the most important tourist destinations worldwide. The Netherlands was included as an example of a typical Western European destination with a tradition of international travel and as an important source and destination country outside Central European realm. At the same time, public transport and alternative means of transport, such as bicycle transport, are well developed in this country. Finally, Mexico was chosen as an example of Newly Industrialized Countries (NIC) with a different history and functioning of public transport than in European countries.

Furthermore, individual countries will be also marked according to official international codes - the Czech Republic (CZE), Germany (DEU), Austria (AUT), Italy (ITA), the Netherlands (NLD) and Mexico (MEX).

Data collection was carried out among experts and practitioners in tourism from two cities of selected Europe Union countries (in the capital city, which is considered the main tourism

destination, and one randomly selected regional city – all the selected cities are the seats of universities with experts in tourism, travel and transport as well as seats of national/regional destination managements and public administration), so that data from individual countries could be compared. The following cities were selected: Czech Republic – Prague and České Budějovice, Germany – Berlin and Munich, Austria – Vienna and Linz, Italy – Rome and Milan, and the Netherlands – Amsterdam and Rotterdam. Research in Mexico was conducted in the cities of Zamora, Guadalajara, Cancún, Mérida, and Mexico City. As mentioned above, these cities were considered as centres of tourist destinations.

Among the selected experts in tourism were university employees with a given focus, transport experts, employees of travel agencies, guides, local self-government authorities, or destination management of the given destinations and public administration. These experts were selected on the basis of available contacts, which were obtained through online searches, personal visits to institutions in the given countries, and subsequently by the snowball method, when the contact was recommended by an already contacted respondent. In each country 40 respondents were addressed to obtain comparable amount of responses from each country as analyses based on means of responses were intendet to use in further analyses. Data collection took place directly in individual cities from September 18, 2021 to September 27, 2022. Respondents were personally approached after contacting them by email in advance. During these researches, tourism experts in individual countries were personally visited, or subsequent online meetings were arranged.

The final number of questionnaires received in individual country was – the Czech Republic 20, Germany 18, Austria 22, Italy 17, the Netherlands 21, and Mexico 23. The return rate of the questionnaires was 50,4% with comparable number of respondents in each country.

Questionnaire

In order to fulfill the goal of our study, which is (i) to evaluate the importance of public transport and other transport services for tourism development, (ii) to find out the differences in such importance among selected countries and among different types of destinations, and (iii) the influence of public transport on the development of a given area of tourism, three hypotheses were chosen. The data needed to test our research hypotheses stated in previous part were obtained by the means of a questionnaire survey among experts in the tourism industry. Based on the analysis of available sources, a bank of questions measuring the

specified variables was prepared, which was piloted on a test sample of eight experts. The questions became part of an inquiry tool solving a wider range of problems in destinations, dealing with the issue of shared accommodation. Only the results related to public transport are presented in this paper. The final questionnaire was translated into the official languages of the countries in which it was subsequently carried out.

The questionnaire consisted of several parts dealing separately with each of our hypotheses.

First part was dedicated to the typology of selected destinations. Respondents had to rate six main possible potentials of development of their destination: Recreational, Cultural-social, Spa, Congress, Rural tourism and Nature, natural parks and natural heritage. This question was chosen to identify the types of tourism areas in the selected countries and was used in further analyses as independent variable alongside the country of origin of the respondent. Each potential was measured on 5-point scale (1 = very poor potential, 2 = poor potential, 3 = not poor but not good potential, 4 = good potential, 5 = very good potential).

Second part was dealing with our first hypothesis. Respondents had to rated how different means of transport within the destination contribute to local development. Four most common transport services were to be evaluated: Public transport, Uber, Taxi, and Car rental. These four options are the basic transport options offered within the city and its surroundings. Each service was evaluated on 5-point scale (1 = very negative contribution, 2 = negative contribution, 3 = not negative but not positive contribution, 4 = positive contribution, 5 = very positive contribution).

Third part was dealing with our second hypothesis. Respondents had to rated how different means of transport within the destination influence the environment of the destination. Three most common transport services were to be evaluated: Public transport, Uber, and Taxi. Each service was evaluated on 5-point scale (1 = very negative influence, 2 = negative influence, 3 = not negative but not positive influence, 4 = positive influence, 5 = very positive influence).

The last part was dealing with our third hypothesis. Respondents had to evaluate their perception of the level of support for transport development in individual countries based on the level of agreement with seven statements connected different aspects:

- Level: The level of public transport in the given region is sufficient.
- Impact: A high-quality transport system has an impact on the development of the given area and on tourism.
- Benefit: Public transport is beneficial for the local population.

- Motivation: The public administration motivates the use of public transport.
- Alternative: It would be possible to connect shared bicycles and scooters or taxi service vehicles/Uber to public transport in the given area.
- Preparation: The development of public transport and service of the region is being prepared in the given area.
- Operation: The local administration participates in the operation of public transport.

To measure the agreement with those seven statements a 5-point Likert scale was used (1 = strongly disagree, 2 = disagree, 3 = neutral dis/agreement, 4 = agree, 5 = strongly agree).

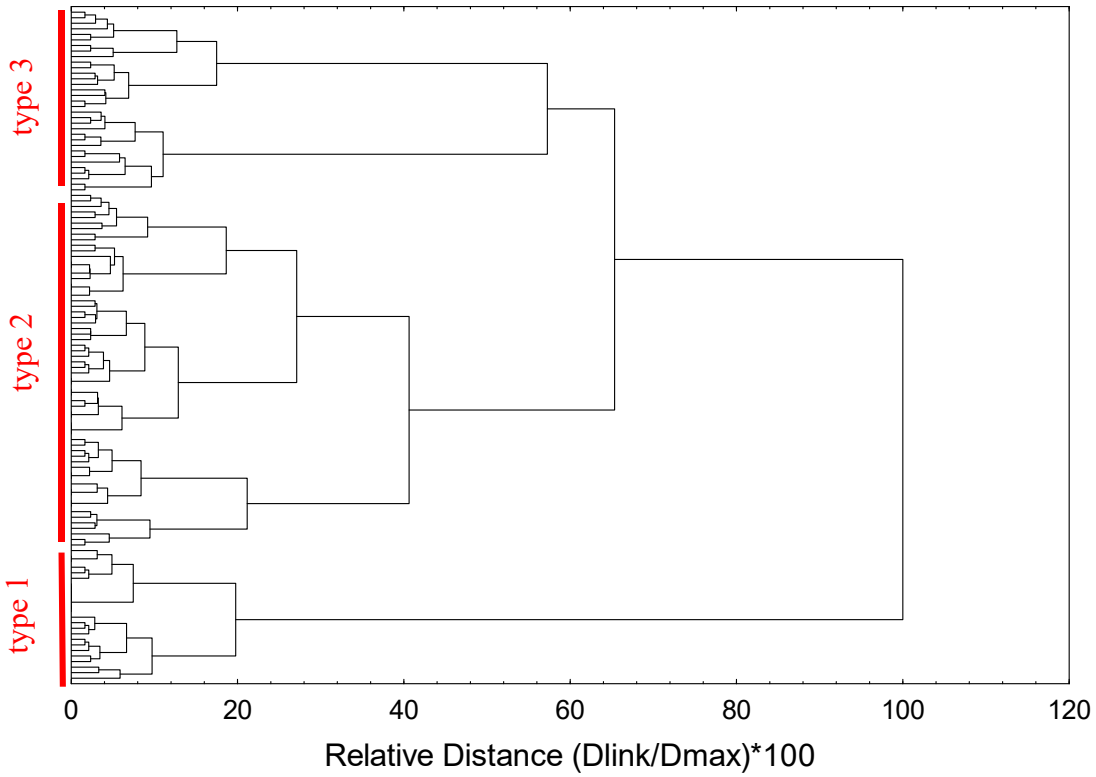
Data Handling and Analyses

Type of Destination

Before testing of our hypotheses, we have identified the type of destination from which the individual experts came as reponses of respondent could not be influenced only by the country of origin of the respondent but also by the type of destination – all destinations are urban-based, but the cities of our interest are also centres of larger destinations, that have different levels or tourism resources. All respondents were divided into destination types using the hierarchical clustering method of respondents based on their responses to the first part of the questionnaire – we have identified three types of destinations that were determined from the six above mentioned potentials of development of destination (please see further paragraphs in this section). Ward's method was used, and the similarity of individual experts was measured by Euclidean distance, which allowed us to have a uniform scale on which the experts answered. The respondent's belonging to the cluster was determined on the basis of 60% loss of information. Potential differences between clusters in the representation of individual sub-types of tourism were assessed using One-way ANOVA with Tukey's post-hoc test for an unequal number of n. The type of destination together with the country of origin were used as independent variables in our further analyses. The potential dependency between our two independent variables (country and type of destination) was assessed by Fisher's exact test.

Using the hierarchical clustering method, three relatively well-defined and at the same time approximately equally large groups of areas from which the respondents came from were obtained (Fig. 1).

Figure 1 Cluster analysis according to the main types of destinations identified by respondents



Source: own inquiry

The differences between clusters of respondents are statistically significant for all monitored types of tourism (see Tab. 2). The differences are mainly between group 1, in which experts rate the potential of all sub-types of tourism in their region as above average, and group 3, in which these ratings are below average (Tukey's post-hoc test, $p < 0.05$); group 2, i.e., with an average rating, is then always located between them (these results are not shown).

Table 2 One-ANOVA results of three destination types

Variable	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
Recreational	108.876	2	54.438	74.363	118	0.630	86.383	< .001
Cultural-social	6.240	2	3.120	66.867	118	0.5667	5.506	< .01
Spa	96.733	2	48.367	78.787	118	0.668	72.439	< .001
Congress	28.801	2	14.400	133.629	118	1.1324	12.716	< 0.01
Rural tourism	55.495	2	27.747	145.662	118	1.2344	22.478	< .001
Nature, natural parks and natural heritage	52.107	2	26.053	122.125	118	1.0349	25.173	< .001

Source: own inquiry

The representation of individual groups differs between countries (see Tab. 3 for the frequency representation of individual countries in tourism types; Fisher's exact test: p = .0004998). In most of the selected European countries, group 2 dominates. Only in Italy dominates group 3. In Mexico, there is an equal number of type 1 and 3 destinations.

Table 3 Cross-tabulation of countries and types of destinations (numbers of respondents are shown)

Cluster Membership	MEX	NLD	ITA	DEU	AUT	CZE
above average meaning (type 1)	11	2	1	3	4	3
average meaning (type 2)	2	16	5	11	14	16
below average meaning (type 3)	10	3	11	4	4	1

Source: own inquiry

Hypotheses Testing

All three hypotheses were tested separately by testing the average values of respondents' answers by country and type of destination. For this, a fully factorial combined ANOVA model was used, including testing the additivity of factors (three-way full-factorial repeated measures ANOVA - hereinafter referred to as ANOVA) - the type of destination and the country of origin of the respondent were used as factorial categorical variables and the given groups of question categories of the given hypothesis were considered as repeated measurement. Factorial repeated measures ANOVA was used because the responses to the given factors in the given variable cannot be considered mutually independent (for example, we ask an expert about the importance of different means of transport for local development, and there are four means of transport – Public transport, Uber, Taxi, Car rental). Therefore, it is necessary to adequately reduce the number of degrees of freedom. Subsequently, a Tukey HSD post-hoc test for an unequal number of n was performed.

The STATISTICA 13 software (Tibco) was used for all statistical analyses except Fisher's exact test, that was calculated in R software.

RESULTS

Importance of Different Means of Transport in the Destination

By testing hypothesis H1 (Tab. 4), it was possible to identify differences in the perception of the importance of transport for the development of destinations on the basis of primary data. This different perception is influenced by the respondent's country of origin. A different level of perception of the importance of transport development in individual types of destinations was also identified.

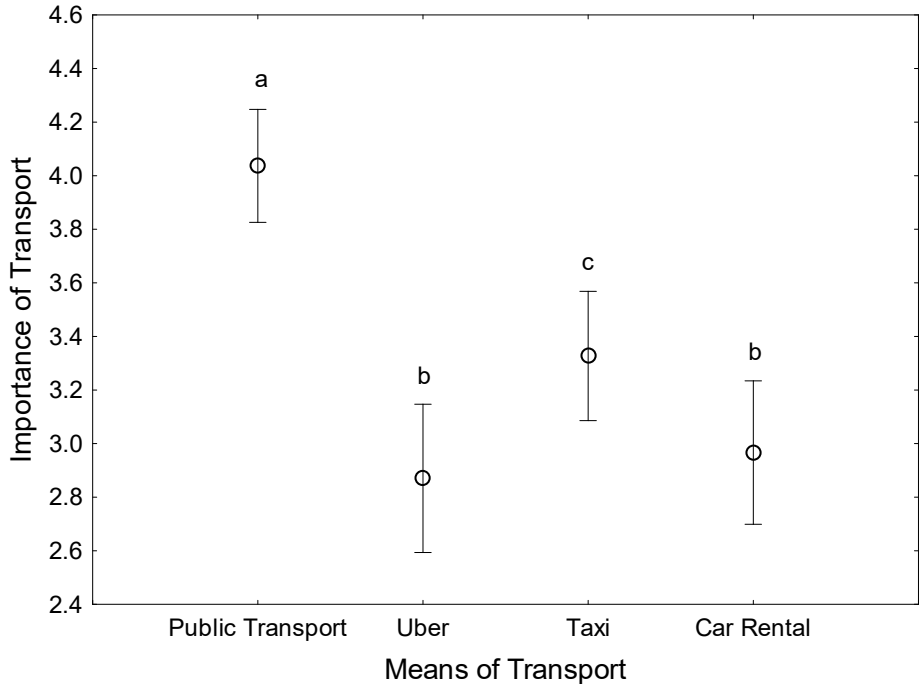
Table 4 ANOVA result for the importance of transport means in the destination

	SS	Degr. of Freedom	MS	F	p
Intercept	2555.416	1	2555.416	1111.866	< .001
Cluster Membership	48.383	2	24.192	10.526	< .001
Country	21.686	5	4.337	1.887	n.s.
Cluster Membership*Country	21.965	10	2.196	0.956	n.s.
Error	234.428	102	2.298		
Means of transport	49.238	3	16.413	34.125	< .001
Means of transport *Cluster Membership	2.634	6	0.439	0.913	n.s.
Means of transport *Country	13.476	15	0.898	1.868	< .05
Means of transport *Cluster Membership*Country	14.489	30	0.483	1.004	n.s.
Error	147.174	306	0.481		

Source: own inquiry

In all answers, public transport is perceived as the most important development element. On the contrary, Uber and rental companies are perceived as the least important. Taxis are between them. Regardless of the country, public transport is considered to be significantly more beneficial for local development than the other selected means of transport (Fig. 2).

Figure 2 The importance of individual means of transport

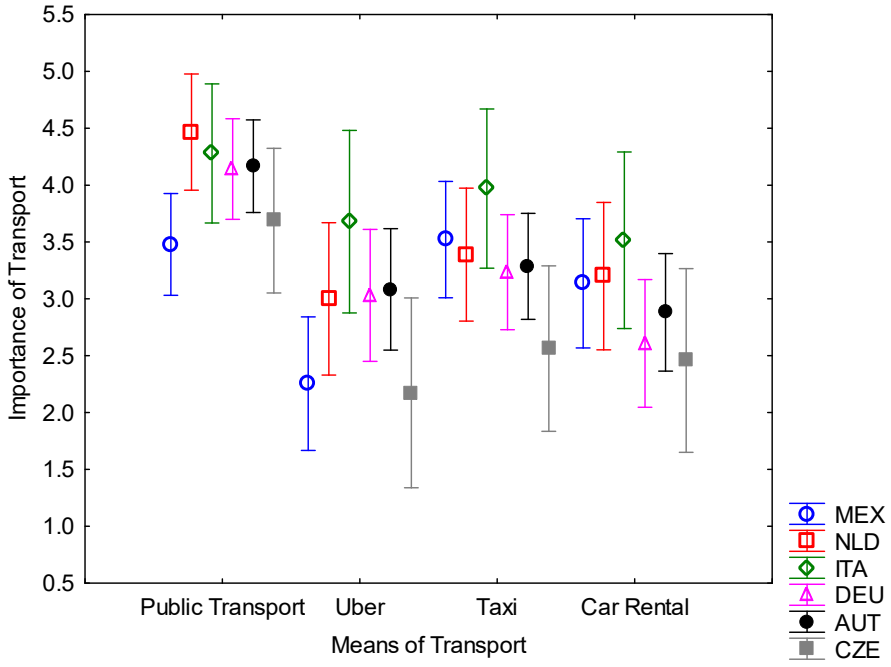


Source: own inquiry
Notes: Means and 95% confidence intervals are shown; means marked with the same letter do not differ based on Tukey's post-hoc test at the p = .05 level of significance

In this analysis, a significant effect of the Means of Transport factor was found. For this finding, a subsequent Tukey HSD post-hoc test for an unequal number of n was performed. According to the results of this test, it turned out that all means of transport are significantly different from each other, and at the 5% significance level, Uber and the Car rental company do not differ. Thus, three homogeneous groups were identified - Public transport (a), Uber and Car rental (b) and Taxi (c).

It is interesting, that this meaning differs quite fundamentally between individual countries (see Fig. 3). Compared to the overall model, in the case of Mexico, the importance of public transport is significantly suppressed and the importance of taxis is strengthened, whose average values are almost identical. The opposite is the case in the Czech Republic, where the importance of other means of transport than public transport is small. All four monitored means of transport have almost equal importance in Italy, but public transport again dominates a bit.

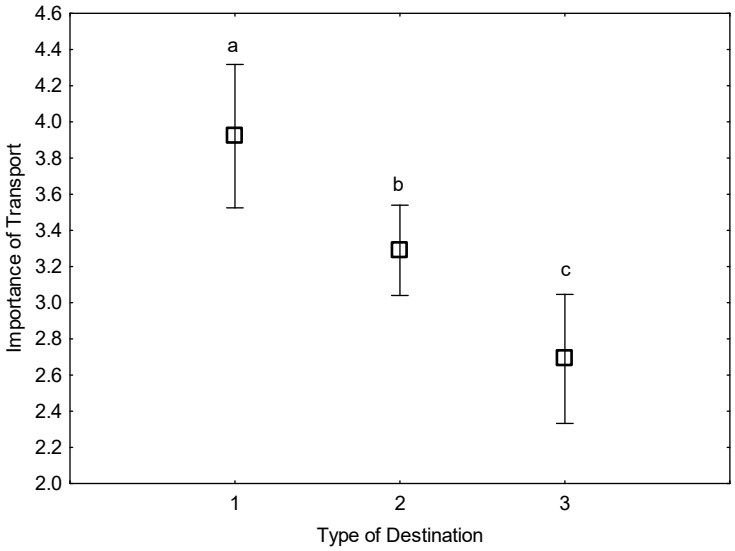
Figure 3 The importance of individual means of transport in individual countries



Source: own inquiry

The importance of different means of transport for local development is perceived differently between individual types of destinations (see Fig. 4).

Figure 4 Importance of transport in individual types of destinations



Source: own inquiry

Notes: Means and 95% confidence intervals are shown; means marked with the same letter do not differ based on Tukey's post-hoc test at the p = .05 level of significance

The Influence of Means of Transport on the Environment in the Destination

The importance of these means of transport (without car rental) for the development of the destination was then further investigated by asking about their effect on the environment in the destination (hypothesis H2). After carrying out ANOVA, differences were identified in the same factors as in the previous question, and also for individual countries (Tab. 5).

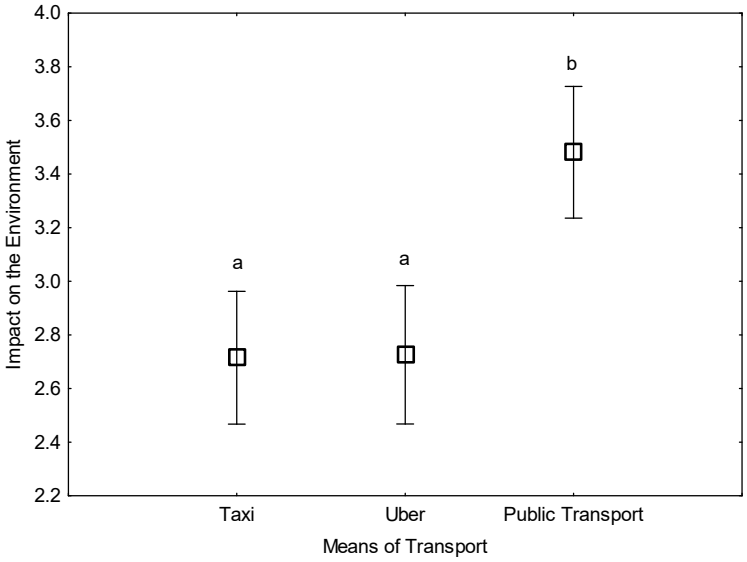
Table 5 ANOVA result for the perception of the influence of transport means on the environment in the destination

	Repeated Measures Analysis of Variance; Sigma-restricted parameterization Effective hypothesis decomposition				
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	1511.984	1	1511.984	838.606	< .001
Cluster Membership	14.779	2	7.390	4.099	< .05
Country	40.683	5	8.137	4.513	< .001
Cluster Membership*Country	31.153	10	3.115	1.728	n.s.
Error	183.903	102	1.803		
Means of transport	21.973	2	10.986	23.797	< .001
Means of transport *Cluster Membership	0.953	4	0.238	0.516	n.s.
Means of transport *Country	14.066	10	1.407	3.047	< .01
Means of transport *Cluster Membership*Country	5.671	20	0.284	0.614	n.s.
Error	94.182	204	0.462		

Source: own inquiry

For individual means of transport, it can be found that public transport is considered the most environmentally friendly (Fig. 5).

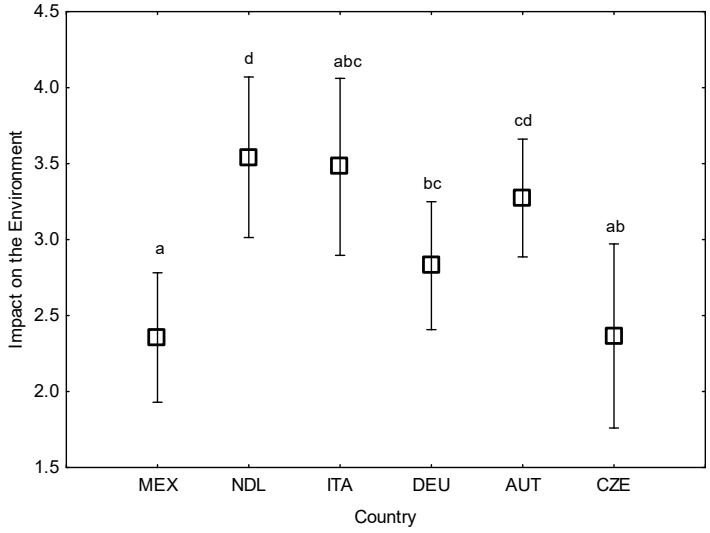
Figure 5 The impact of individual means of transport on the environment



Source: own inquiry
Notes: Means and 95% confidence intervals are shown; means marked with the same letter do not differ based on Tukey's post-hoc test at the p = .05 level of significance

The overall view of the environmental consideration among all means of transport is perceived worst in the case of the Czech Republic and Mexico. Experts from the Netherlands and Italy are convinced of the opposite (see Fig. 6).

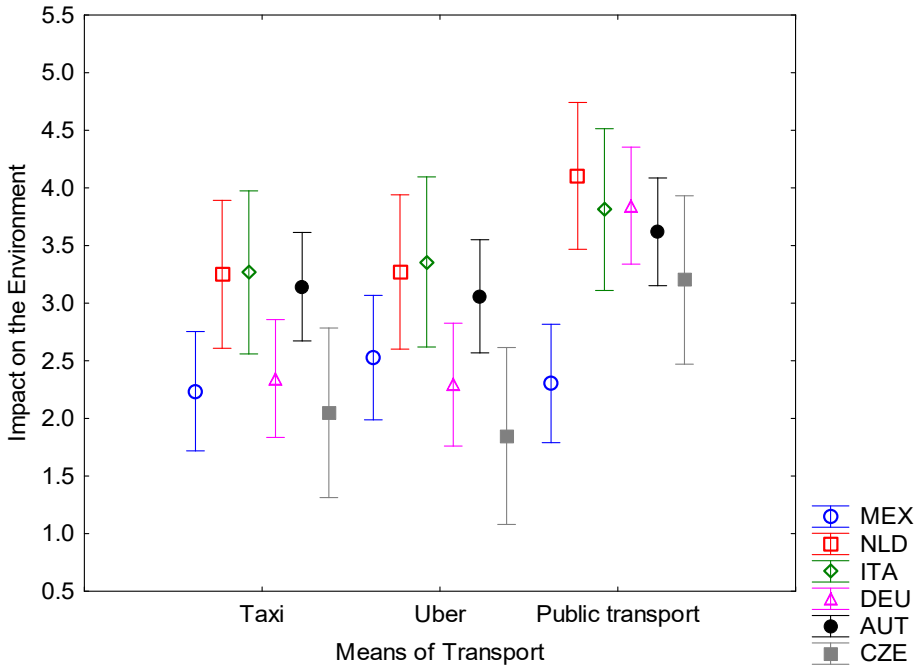
Figure 6 The impact of transport on the environment in individual countries



Source: own inquiry
Notes: Means and 95% confidence intervals are shown; means marked with the same letter do not differ based on Tukey's post-hoc test at the p = .05 level of significance

Furthermore, it can be said that this view differs between countries, and behind this difference is Mexico, where no difference is perceived between means of transport on the environment - for all other countries, the model presented for the set of responses applies, i.e., that public transport is the most environmentally friendly (see Fig. 7).

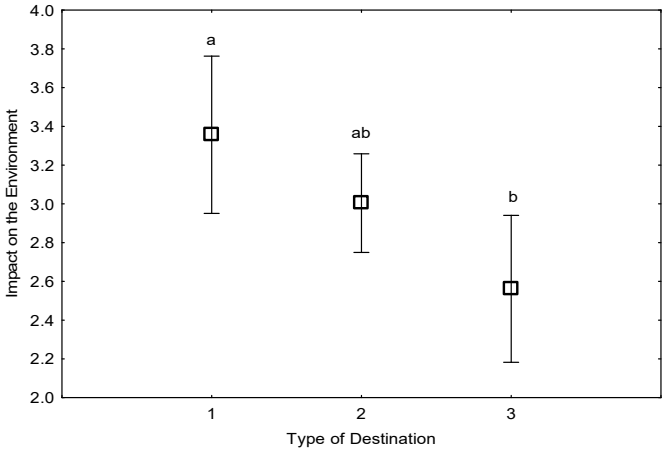
Figure 7 The impact of individual means of transport on the environment in individual countries



Source: own inquiry

Even in the case of environmental impact, differences were found between destinations of type 1 and type 3, destination type 2 is between them (Fig. 8).

Figure 8 The impact of transport on the environment in individual types of destinations



Source: own inquiry
Notes: Means and 95% confidence intervals are shown; means marked with the same letter do not differ based on Tukey's post-hoc test at the p = .05 level of significance

Support for the Development of Public Transport in Destinations

The perception of the level of support for public and other transport in destinations was measured by seven statements. The analysis shows that this support is significantly differentiated between types of destinations and countries but mainly between individual statements of the perception of support (see Tab. 6).

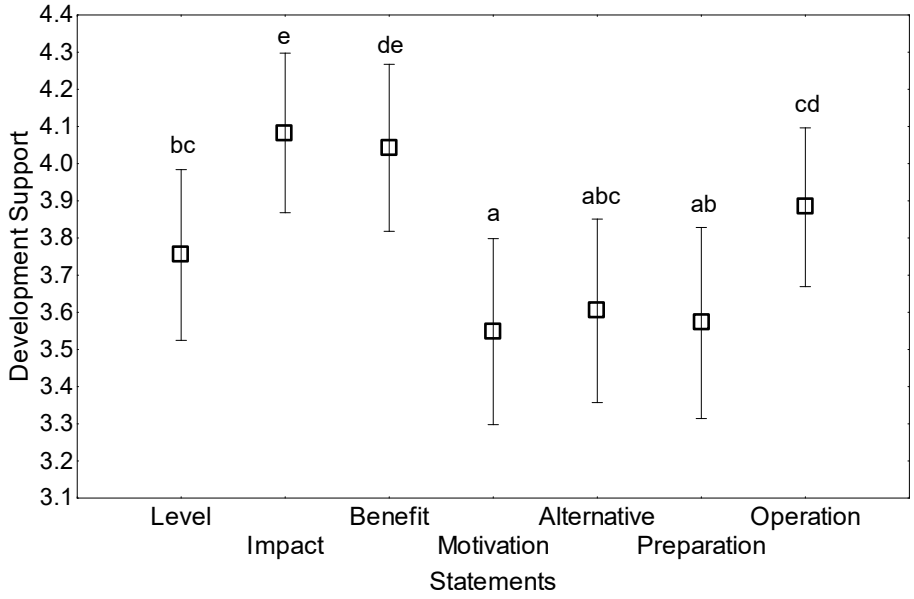
Table 6 ANOVA result for the perception of the degree of support for the development of public transport in destinations

Effect	Repeated Measures Analysis of Variance; Sigma-restricted parameterization Effective hypothesis decomposition				
	SS	Degr. of Freedom	MS	F	p
Intercept	5883.102	1	5883.102	2307.073	< .001
Cluster Membership	36.341	2	18.170	7.126	< .01
Country	20.230	5	4.046	1.587	n.s.
Cluster Membership*Country	69.829	10	6.983	2.738	< .01
Error	262.653	103	2.550		
Means of transport	17.611	6	2.935	5.519	< .001
Means of transport *Cluster Membership	5.720	12	0.477	0.896	n.s.
Means of transport *Country	52.647	30	1.755	3.300	< .001
Means of transport *Cluster Membership*Country	47.956	60	0.799	1.503	< .05
Error	328.669	618	0.532		

Source: own inquiry

The main result can be seen from the repeated measurement analysis of the seven statements that the experts evaluated (see Fig. 9). The experts mainly agreed with the statements that "Public transport is beneficial for the local population" and "A quality transport system has an impact on the development of the given area and on tourism". That confirms the general importance of transport in and also public transport for the development of tourism in the destination. The statements "The development of public transport and service of the region is being prepared in the given area" and "The public administration motivates the use of public transport" were rated the worst. The average of the answers is above the expected average answer (i.e., above 3.5), so the experts expect further development of transport, but they are not completely satisfied with the current state of development preparations.

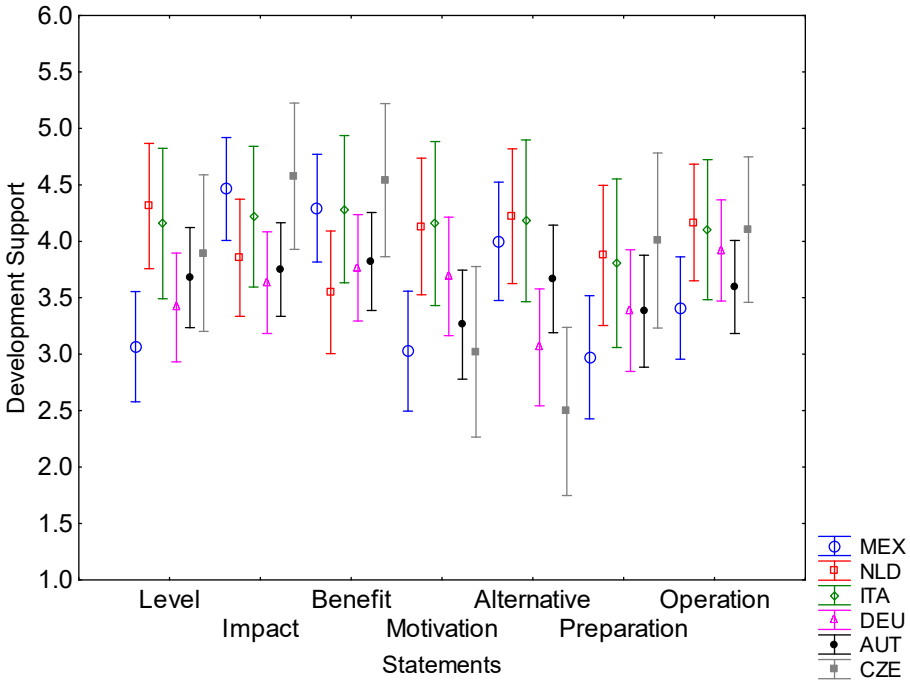
Figure 9 Evaluation of statements related to transport development support



Source: own inquiry
Notes: Means and 95% confidence intervals are shown; means marked with the same letter do not differ based on Tukey's post-hoc test at the p = .05 level of significance

Differences in the perception of transport development were not found between types of destinations, but between countries (Fig. 10). The level of public transport in the Czech Republic is perceived well, even better than in Germany and Austria. the worst rated is in Mexico, but the experts there are most aware of its influence on the development of tourism and the benefit to the local population. Conversely, in the Netherlands and Italy, the level of public transport is evaluated positively. In these countries, the public administration is also the most motivating to use public transport, while in the Czech Republic and Mexico this statement has the lowest value. The Netherlands, Italy and Mexico are open to the inclusion of shared means of transport in the public transport system. On the contrary, the Czech Republic is more sceptical of these alternative means of transport. In all countries, the development of public transport is being prepared, and the local administration is involved in its operation.

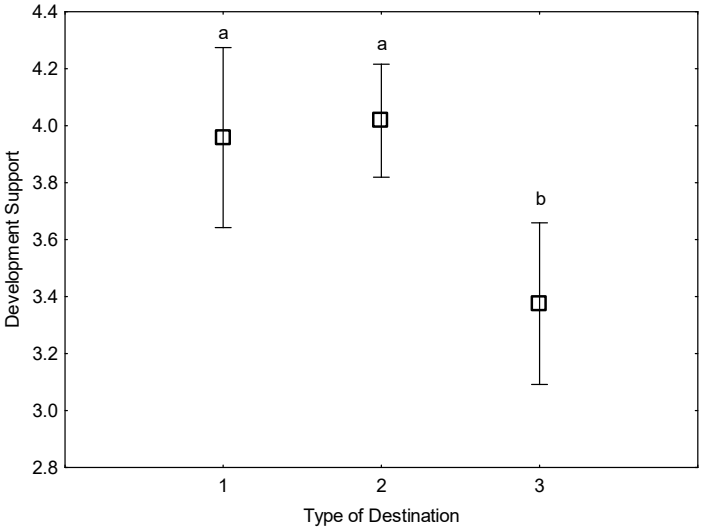
Figure 10 Evaluation of statements related to the support of transport development in individual countries



Source: own inquiry

The overall level of perception of support for transport development in destinations does not differ between individual countries, but between types of destinations. Low support is in destination type 3, which is significantly different from the equally high perception rate in destinations 1 and 2 (see Fig. 11).

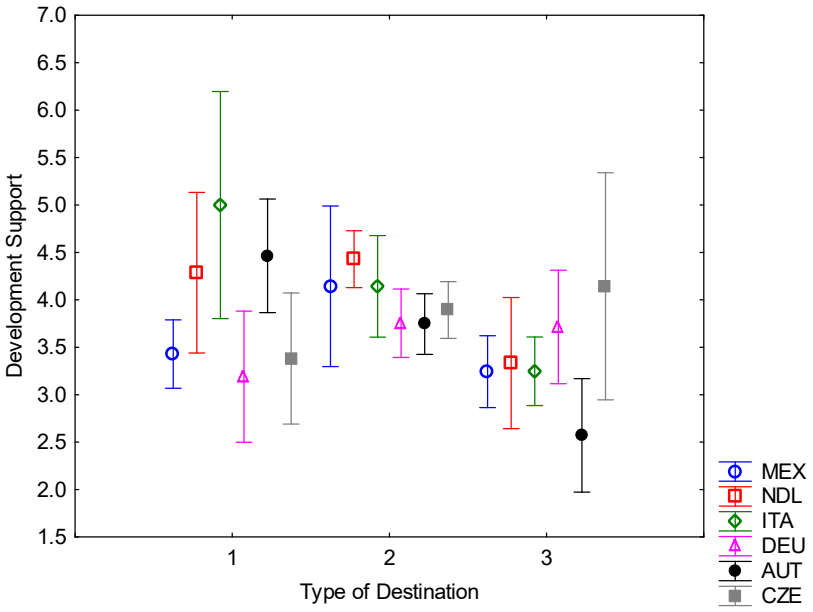
Figure 11 Support for the development of transport in individual types of destinations



Source: own inquiry
Notes: Means and 95% confidence intervals are shown; means marked with the same letter do not differ based on Tukey's post-hoc test at the p = .05 level of significance

It was found that the level of perceived support also differs between types of destinations in different countries (see Fig. 12). The result in the Czech Republic and Germany is particularly interesting, where the perception is the lowest in destinations type 1.

Figure 12 Support for the development of transport in individual types of destinations in different countries



Source: own inquiry

DISCUSSION

The research was based on the data of expert estimates of stakeholders, i.e. on what the managers who make decisions and formulate policies think. It was therefore not a real state, because it is not about exact measured values. By testing hypothesis H1 (**Different means of transport in the destination have different meanings, which is influenced by the cultural milieu and the type of destination.**) it was possible to identify differences in the perception of the importance of transport for the development of destinations. We have found that different perception is influenced by the respondent's country of origin and the type of destination. After conducting statistical tests, hypothesis H1 can be accepted. According to the results obtained, it can be said that at the 5% level of significance, all means of transport are significantly different from each other, only Uber and the car rental company are not different. Regardless of the country, public transport is considered the most important development element, followed by taxis and the least important are Uber and car rental companies. Adamec et al. (2005), Le-Klähn, Hall and Gerike (2014), or Mrníková, Poliak, Šimurková and Reuter (2018) also mention the great contribution of public transport to tourism. According to the results, Uber has the lowest importance for destination

development, although this type of shared transport is more flexible than public transport (Enoch, Potter, Parkhurst, & Smith, 2004; Brake, Nelson, & Wright, 2004; Logan, 2007).

The meaning of individual means of transport differs fundamentally between individual countries. In the case of Mexico, public transport's importance is suppressed and taxis' importance is strengthened (they have almost identical average values). This may be due to the poorer quality of Mexico's public transport, in which according to Doder (2013), the traditional management of public transport, the so-called "man-and-his-bus", still prevails, public transport is therefore provided by a large number of small private companies and unregulated bus operators who fight for customers, therefore, it is poorly managed, and its level is lower. Another part of public transport is then offered by legally constituted transport companies. Ortiz Mantilla (2005) and Lobo et al. (2006) mention that the capital city of Mexico City consists of several different entities and thus transport providers face different rules and capacities. This results in city traffic being interconnected without metropolitan planning and road transport lacking coherent standards and traffic regulations. The opposite is the case in the Czech Republic, because here the significance of other means of transport than public transport is minor. In the Czech Republic, the Uber service is rated the worst, despite the fact that the government of the Czech Republic concluded a cooperation agreement with the company Uber and the capital city of Prague, the so-called memorandum of understanding on the provision of transport services in the territory of the Czech Republic (Memorandum, 2018). All four monitored means of transport in Italy are of almost equal importance, but public transport again dominates a bit. In the Netherlands, the importance of public transport is rated best. In this case, a significant factor can be the long-term efforts of the public administration and municipalities to reduce the fragmentation of the mass transport system, joint tendering procedures of individual municipalities for transport providers, the creation of a nationwide unified card system (Veeneman & van de Velde, 2014), which functions either as a payment card based on a pre-deposited amount or as a medium for uploading a specific travel document. It is a collaborative initiative of the five largest public transport providers in the Netherlands, which other public transport providers have gradually joined.

The importance of different means of transport for local development is perceived differently, even between individual types of destinations. The differences are mainly between group 1, in which experts assess the potential of all sub-types of tourism in their region as above average – here transport is perceived as more beneficial for development, and group 3, in which these assessments of sub-types of tourism are below average – here the contribution of individual means of transport is also rated worse. Group 2 is located between them. In

destinations with well-developed tourism, the development of transport services is also needed because they allow tourists to move around the destination and thus have a great contribution to local development. Ho and Mulley (2013) state that if there are multiple tourist places of interest in one destination, tourists choose public transport. However, in many natural attractions that are further from the centers, it is difficult to provide public transport due to the seasonal nature, distance and thus the area's economic aspect and environmental demands.

The second hypothesis is related to this because it is important to focus on the ecological aspect of transport, and thus its impact on the environment - **H2: Different means of transport in the destination are perceived differently from the point of view of impact on the environment, and the cultural milieu and the type of destination influences this perception.** The same means of transport were evaluated without the rental car, i.e., public transport, Uber and taxi. After performing the ANOVA, differences were again identified between individual countries and for types of destinations, so hypothesis H2 can be accepted. It was found that public transport is generally considered by stakeholders to be the most environmentally friendly. This statement is also supported by the authors Le-Klähn, Hall and Gerike (2014), who mention the importance of public transport in the development of sustainable mobility and urban tourism. Passengers transport by public transport reduces the negative impacts of passenger cars (Adamec et al. 2005).

The worst rated environmental considerations among all means of transport is in the Czech Republic and Mexico. The condition of the vehicle fleet can also cause this, e.g., the average age of buses in the Czech Republic is 14.6 years, which is more than the average in the EU, which was 12.8 years in 2020 (ACEA, 2022). Experts in the Netherlands and Italy have the opposite view. They rate the environmental friendliness of transport in the given country better. The view of individual means of transport differs between countries. A general pattern applies to all countries except Mexico. In Mexico, there is no perceived difference between means of transport, i.e., the impact of individual means of transport on the environment is perceived equally. Differences were also found between destinations, where destination type 1 again evaluates the impact on the environment less negatively than destination type 3. Destination type 2 is in between. This may be due to the fact that in destinations where tourism is above average developed (i.e., there is a significant influx of tourists in all types of tourism), more investment is made in the development of transport and thus also in its sustainability, i.e., reducing the impact on the environment. As reported by Jackson et al. (2009), greater investment in tourism will support long-term tourism revenue, innovation and

sustainable growth in the industry. Modern transport and tourism investments have directly positive effects on the environment (USAID, 2015). There are also indirect benefits from improved infrastructure, for example transport investments lead to reduced fuel consumption and CO_2 emissions (Khadaroo & Seetanahah, 2008). In a study on the development of sustainable tourism, Bakan and Bosnic (2012) claim that the slow pace of tourism development is due to the low volume of investment in tourism infrastructure. It is therefore a kind of spiral, when investments in transport have positive effects on the environment, this will cause a greater rate of growth in the development of tourism, which supports income from tourism and creates the possibility for further investment.

The third hypothesis was related to the development of public transport in destinations – **H3: Support for the development of individual means of transport is perceived differently and is influenced by the cultural milieu and the type of destination.** The perception of the level of support was measured by seven statements, their ratings differ significantly. The analysis also showed that the support is differentiated between countries and types of destinations, so hypothesis H3 can be accepted. When evaluating seven statements, the experts mainly agreed with the statements that "Public transport is beneficial for the local population" and "A quality transport system has an impact on the development of the given area and on tourism". This confirms the importance of transport in general and the importance of public transport for the development of tourism in the destination. The tourism experts expect further development of transport, but they are not completely satisfied with the current state of development preparations, as the statements "The development of public transport and service of the region is being prepared in the given area" and "The public administration motivates the use of public transport" were rated the worst. Average claim ratings vary from country to country.

The level of public transport is the worst rated in Mexico, which is also consistent with the conclusions of research on the quality of public transport (e.g., Hidalgo & Huizenga, 2013; Uribe, Ávalos, Rodríguez, & Villa, 2022). However, local experts are most aware of its influence on the development of tourism and the benefit for the local population. Conversely, in the Netherlands and Italy, the level of public transport is evaluated positively. In these countries, the public administration motivates the use of public transport the most, while in Mexico and the Czech Republic this support is perceived to be comparatively lower. In the Netherlands, Italy and Mexico, the integration of shared means of transport (e.g., shared bicycles, scooters or Uber) into the public transport system is open, on the contrary, the Czech Republic is more sceptical of these alternative means of transport. As Pichrt, Boháč and

Morávek (2017) mention, the operation of shared services such as Uber is not explicitly regulated by law in the Czech Republic, which is why protests and negative opinions about this type of transport still persist. There were massive protests by taxi drivers and companies after the arrival of Uber across Europe, as Uber did not have to comply with taxi regulations and therefore engaged in "unfair competition". For this reason, in some EU states (e.g. also in Germany) the operation of Uber was strictly limited or completely banned by court (Geradin, 2015). The author further mentions that public authorities are considering changes to the regulatory framework to accommodate companies like Uber. As Valdez (2023) states, despite rapid growth in different locations, Uber has been forced to provide different services, adapt to different rules and negotiate different regulatory frameworks. The lower level of regulation in the sector initially allowed for a smoother entry and greater expansion of the market for Uber. Providing services increases its infrastructural strength, which it can then use to achieve more favorable regulations. Contentious compliance is a push-pull process between the government and Uber, which has been adjusting to existing rules to expand while still trying to achieve gradual deregulation. Problems of a social and legal nature concern not only shared personal transport, but the entire shared economy in general, so these companies sometimes operate in a "grey zone". In all countries, the development of public transport is being prepared and the local administration is involved in its operation.

The overall level of perception of support for transport development in tourism destinations also differs between types of destinations. Support is perceived as low in destination type 3 (that is, in destinations where the development potential of individual types of tourism is perceived as below average), which differs significantly from the equally high level of perception in destinations 1 and 2. It was found that the level of perception of support it also varies between destination types in different countries. The result in Germany and the Czech Republic is particularly interesting because experts in type 1 destinations in Germany and the Czech Republic perceive public transport support as weaker compared to the perception of experts in destination type 1 in the other surveyed countries.

CONCLUSION

The aim of the contribution was to evaluate how the stakeholders involved in the development and management of tourism destinations perceive the importance of public transport and other transport services. A partial goal is to find out how this importance differs between countries and between different types of destinations and what effect public transport has on the

development of a given tourism area. The paper studied the views of tourism experts on the importance of public transport in tourism. Transport is an integral part of tourism, and its quality contributes to the destination's competitiveness. It can be said that transport is one of the most important development elements in tourism, and there is an effort to have the most efficient and ecological transport in the destination, therefore, it is necessary to deal with this topic.

The results showed that regardless of the country, public transport was considered the most important development element of tourism. Uber has the lowest importance for the development of the destination, although this type of shared transport is more flexible compared to public transport. The meaning of individual means of transport differs between individual countries and between types of destinations, therefore, hypothesis H1 - "Different means of transport in the destination have different meanings, which is influenced by the cultural milieu and the type of destination" – was confirmed. In the case of Mexico, the importance of public transport is suppressed, which may be due to the poorer quality of Mexican public transport.

The second hypothesis (H2) – "Different means of transport in the destination are perceived differently from the point of view of impact on the environment, and the cultural milieu and the type of destination influences this perception" was also confirmed. Using statistical tests, differences were again identified between individual countries and for types of destinations. It was found that public transport is generally considered to be the most environmentally friendly. As stated by many authors, the transportation of passengers by public transport reduces the negative effects of passenger cars. The worst rated environmental considerations among all means of transport is in the Czech Republic and Mexico, which may be due to the condition of the vehicle fleet, which is relatively old. On the contrary, experts in the Netherlands and Italy rate their transport as ecological. In destinations where tourism is above average (there is, therefore, a significant influx of tourists in all types of tourism), the impact of transport on the environment is assessed less negatively. A kind of spiral can occur here, where investments in transport have positive effects on the environment. This will cause a greater growth rate of tourism development, thereby supporting income from tourism and creating an opportunity for further investment.

The third hypothesis was related to the development of public transport in destinations – H3: Support for the development of individual means of transport is perceived differently and is influenced by the cultural milieu and the type of destination. The analysis showed that the support is differentiated between countries and types of destinations, so hypothesis H3 was

accepted. The experts mainly agreed with the statements that "Public transport is beneficial for the local population" and "A quality transport system has an impact on the development of the given area and on tourism". This confirms the importance of transport in general and the importance of public transport for the development of tourism in the destination. Experts anticipate further development of transport, but they are not completely satisfied with the current state of development preparations. The level of public transport in the Czech Republic is perceived well, even better than in Germany, Austria, or Mexico (where it is rated the worst, which is also in line with the conclusions of research on the quality of public transport in the long term). Conversely, in the Netherlands and Italy, the level of public transport is evaluated more positively. In these countries, it is public administration that most motivates the use of public transport, while in the Czech Republic and Mexico this support is perceived relatively less. The Czech Republic is more sceptical about shared means of transport (e.g. shared bicycles, scooters or Uber), on the contrary, in the Netherlands, Italy and Mexico they are open to the integration of these alternative means of transport into the public transport system.

Further research could deal with the possibilities of making public transport more attractive and the motivation of passengers to use it. Researchers should also focus on the negative impacts of traffic on tourism destinations. Here it is also possible to deal with the question of whether public transport is really more ecological. Another topic suitable for future investigation is the possibility of better involvement of alternative means of transport. As has been said, the Czech Republic is sceptical of alternative means of transport, so it would be advisable to find out the reasons for this negative attitude and suggest possibilities for their better acceptance.

REFERENCES

Abreha, D. A. (2007). *Analysing Public Transport Performance Using Efficiency Measures and Spatial Analysis: The Case of Addis Ababa, Ethiopia*. Thesis Report, International Institute for Geoinformation Science and Earth Observation, Enschede, the Netherlands.

ACEA (2022). *Average age of the EU vehicle fleet, by country*. Retrieved from https://www.acea.auto/figure/average-age-of-eu-vehicle-fleet-by-country/.

Adamec, V., Dostál, I., Dufek, J., Dvořáková, P., Huzlík, J., Cholava, R., …Šucmanová, M. (2005). *Elektronický průvodce udržitelnou dopravou* [online], Brno, Center for Transport Research. Retrieved from https://www.yumpu.com/xx/document/read/16300867/elektronicky-pruvodce-udrzitelnou-dopravou-centrum-dopravniho.

APTA. (2020). *Economic Impact of Public Transportation Investment*. American Public Transportation Association. Report Prepared by: Economic Development Research

Group, an EBP Company, pp. 40. Retrieved from https://www.apta.com/wp-content/uploads/APTA-Economic-Impact-Public-Transit-2020.pdf.

Bakan, R., & Bosnic, I. (2012). Public-private partnership: A model for sustainable tourism development in Regional park Mura-Drava–the possibilty of tourist valorisation of abandoned army barracks. *Economy of Eastern Croatia Yesterday, Today, Tommorow*, 1, pp. 201-206.

Barr, S., & Prillwitz, J. (2012). Green travellers? Exploring the spatial context of sustainable mobility styles. *Applied Geography*, 32(2), pp. 798–809.

Bok, J., & Kwon, Y. (2016). Comparable Measures of Accessibility to Public Transport Using the General Transit Feed Specification. *Sustainability*. 8(3), pp. 224-236.

Brake, J., Nelson, J.D., & Wright, S. (2004). Demand responsive transport: towards the emergence of a new market segment. *J. Transp. Geogr.* 12, pp. 323–337.

Crouch, G. I., & Ritchie, J. R. (1999). Tourism, Competitiveness, and Societal Prosperity. *Journal of Business Research,* 44, pp. 137-152.

Currie, G., & Stanley, J. (2008). Investigating Links between Social Capital and Public Transport, *Transport Reviews*, 28:4, pp. 529-547.

Dodero, A. L. (2013). *Planning Public Transport Improvements in Mexico: Analysis of the Influence of Private Bus Operators in the Planning Process*.

Duval, D. T. (2007). *Tourism and Transport: Modes, Networks and Flows.* Clevedon: Chanel View Publications, p. 344.

Elias, W., Shiftan, Y. (2012). The influence of individual's risk perception and attitudes on travel behavior. *Transportation Research Part A: Policy and Practice*. 46(8), pp. 1241–1251.

Enoch M., Potter, S., Parkhurst, G., & Smith, M. (2004). *Intermode: Innovations in Demand Responsive Transport, Department for Transport and Greater Manchester Passenger Transport Executive, Loughborough.*

Farag, S., & Lyons, G. (2012). To use or not to use? An empirical study of pre-trip public transport information for business and leisure trips and comparison with car travel. *Transport Policy*, 20, pp. 82–92.

García Sánchez, M. A., Crespo Stupková, L., & Coria Téllez, A. V. (2021). *IDENTIFICACIÓN Y POSIBIBLE APROVECHAMIENTO DEL PATRIMONIO INDUSTRIAL EN LA CUENCA DEL RÍO DUERO*, capítulo de libro El Patrimonio Como Eje para el Desarrollo, Museo Arqueológico "Gonzalo Rincón Gutiérrez"/ ULA, Ediciones Dabánatà, El Colegio de Michoacán, pp. 197-234, ISBN: 978-980-18-2291-2.

Gao, J., Kovats, S., Vardoulakis, S., Wilkinson, P., Woodward, A., Li, J., ... & Liu, Q. (2018). Public health co-benefits of greenhouse gas emissions reduction: a systematic review. *Science of the Total Environment*, 627, pp. 388-402.

Geradin, D. (2015). Should Uber be allowed to compete in Europe? And if so how? *Competition Policy International*, pp. 15-29.

Givoni, M., & Banister, D. (2010). *Integrated Transport: From Policy to Practice*. Abingdon: Routledge. ISBN 0-203-85088-2.

Gössling, S. (2010). *Carbon management in tourism: Mitigating the impacts on climate change*. London: Routledge.

Grigolon, A. B., Kemperman, A., & Timmermans, H. J. P. (2012). The influence of low-fare airlines on vacation choices of students: Results of a stated portfolio choice experiment. *Tourism Management*, 33(5), pp. 1174–1184.

Gronau, W., & Kagermeier, A. (2007). Key factors for successful leisure and tourism public transport provision [online]. ScienceDirect. *Journal of Transport Geography 15*, pp. 127-135. Retrieved from

https://geography.upol.cz/soubory/lide/hercik/SEDOP/Key%20factors%20for%20successful%20leisure%20and%20tourism%20public%20transport%20provision.pdf.

Hagman, O. (2003). Mobilizing Meanings of Mobility: Car 'Users' Constructions of the Goods and Bads of Car Use. Transportation Research Part D: *Transport and Environment* 8, pp. 1–9.

Hall, C. M. (1996). *Introduction to Tourism in Australia: Impacts, Planning and Development*, Addison, Wesley and Longman, Melbourne, Australia.

Hall, D. R. (1999). Conceptualising tourism transport: inequality and externality issues. *Journal of Transport Geogra*phy 7, pp. 181-188.

Hidalgo, D., & Huizenga, C. (2013). Implementation of sustainable urban transport in Latin America. *Research in transportation economics*, *40*(1), pp. 66-77.

Ho, C. Q., & Mulley, C. (2013). Multiple purposes at single destination: A key to a better understanding of the relationship between tour complexity and mode choice. *Transportation Research Part A: Policy and Practice*, 49, pp. 206–219.

Hoenninger, P. (2003). *MobiHarz project: Integrated mobility management and services for visitors*. In: ECOMM Managing Transport Demand to Attain Sustainable Transport Demand and Economic Effectiveness – Why and How? Karlstad, pp. 21-23.

Cheng, Y. H., Chen, S. Y. (2015). Perceived accessibility, mobility, and connectivity of public transportation systems. *Transportation Research Part A: Policy and Practice*. 77, pp. 386–403.

Jackson, M., Brown, C., Hywood, G., Collins, K., Jacobs, K., Eslake, S., …Lambert, J. (2009). *The Jackson Report on behalf of the Steering Committee: Informing the National Long-Term Tourism Strategy*. Canberra: Commonwealth of Australia, p. 38.

Janic, M. (2001). Integrated transport systems in the European Union: An overview of some recent developments. *Transport Reviews*, 21(4), pp. 469–497.

Kalousová, J., & Jarábková, J. (2015). *Cestovní ruch II. část*: *Studijní opora určená pro studenty*. Praha, VŠRR, p. 92.

Khadaroo, J., & Seetanah, B. (2008). The role of transport infrastructure in international tourism development: Agravity model approach. *Tourism Management*, 29, pp. 831–840.

Le-Klähn, D-T., Hall, C.M., & Gerike, R. (2014). Analysis of 'visitors' satisfaction with public transport in Munich, Germany, *Journal of Public Transportation*, 17(3), pp. 68-85.

Lobo, A., Montes, S.H., Villegas, A., Hernández, J., Uniman Cruz, D., Tello de Meneses, R.R., & Vesga Rodríguez, A.M. (2011). *10 Estrategias de Movilidad para un Estado de México Competitivo, Seguro y Sustentable: Hacia una Red Integrada de Transporte en la Zona Metropolitana del Valle de México*, in: A.M. Vesga (Ed.), CTS Mexico and ITDP Mexico, Mexico City.

Logan, P. (2007). Best practice demand-responsive transport (DRT) policy. *Road Transp. Res*. 16 (2), pp. 3–12.

Lumsdon, L. M., & Page, S. J. (2007). *Tourism and Transport, Issues and Agenda for the New Millennium*. Routledge.

Mandeno, T. G. (2011). *Is tourism a driver for public transport investment? (Master of Planning)*. University of Otago, Dunedin, New Zealand.

Manniche, J., Larsen, K. T., Broegaard, R. B. & Holland, E. (2018). *Destination: A circular tourism economy*. Centre for Regional & Tourism Research and the authors. Retrieved from: https://circulareconomy.europa.eu/platform/sites/default/files/cirtoinno-handbook_eng-rev.-4.pdf.

Masiero, L., & Zoltan, J. (2013). Tourists intra-destination visits and transport mode: A bivariate probit model. *Annals of Tourism Research*, 43, pp. 529–546.

Mazal, M. (2020). *Jaký je skutečný vliv veřejné dopravy na život ve městech? Jen o nižších emisích to není.* Retrieved from https://www.auto.cz/jaky-je-skutecny-vliv-verejne-dopravy-na-zivot-ve-mestech-jen-o-nizsich-emisich-to-neni-134449.

McFadden, D. (1981). """*Econometric models of probabilistic choice*""," in Structural Analysis of Discrete Choice Data with Econometric Applications, eds C. Manski and D. McFadden (Cambridge: The MIT Press), pp. 198–272.

Memorandum (2018). *Memorandum of understanding on the provision of transport services in the territory of the Czech Republic.* Government of the Czech Republic [online]. Retrieved from https://www.vlada.cz/cz/media-centrum/aktualne/vlada-uzavrela-memorandum-se-spolecnosti-uber-165182/.

Mrníková, M., Poliak, M., Šimurková, P., & Reuter, N. (2018). *Why is important establishment of the organizer in integrated transport system in Slovak republic?* XI International Science-Technical Conference Automotive Safety.

Navrátil J., Švec R., Pícha K., Doležalová H. (2012). The location of tourist accommodation facilities: A case study of the Šumava Mts. and South Bohemia tourist regions (Czech Republic). *Moravian Geographical Reports*, 20(3): pp. 50–63.

Navrátil J., Pícha K., Martinát S., Knotek J., Kučera T., Balounová Z., White Baravalle Gilliam V.L., Švec R., Rajchard J. (2013). A model for the identification of areas favourable for the development of tourism: A case study of the Šumava Mts. and South Bohemia tourist regions (Czech Republic). *Moravian Geographical Reports*, 21(1): pp. 25–39.

Navrátil J., Krejčí T., Martinát S., Pasqualetti M.J., Klusáček P., Frantál B., Tocháčková K. (2018). Brownfields do not "only live twice": The possibilities for heritage preservation and the enlargement of leisure time activities in Brno, the Czech Republic. *Cities*, 74: pp. 52–63.

Nelson, V. (2013). *An Introduction to the Geography of Tourism*. Rowman & Littlefield Publishers, p. 332.

Nilsson, M., & Küller R. (2000). Travel Behaviour and Environmental Concern. Transportation Research Part D: *Transport and Environment* 5(3): 211–234.

Orieška, J. (2010). *Služby v cestovním ruchu.* Praha: Idea servis, p. 405. ISBN 978-80-85970-68-5.

Ortiz Mantilla, B. J. (2005). *Regional planning and operations architectures as means to foster transportation integration in the Mexico City Metropolitan Area* (Doctoral dissertation, Massachusetts Institute of Technology).

Pásková, M., & Zelenka, J. (2012). *Cestovní ruch*. Explanatory Dictionary. Praha: Linde. ISBN 978-80-7201-880-2.

Pícha, K., Navrátil, J. (2019). The factors of Lifestyle of Health and Sustainability influencing pro-environmental buying behaviour. *Journal of Cleaner Production*, 234: pp. 233–241.

Pichrt, J., Boháč, R., & Morávek, J. (2017). *Sdílená ekonomika – sdílený právní problém?* Praha: Wolters Kluwer, p. 336. ISBN 978-80-7552-874-2.

Pourová, M. (2010) *Marketing a management venkovského cestovního ruchu*. Praha: University of Tourism and Territorial Studies in Prague. Educational text, p. 92.

Prideaux, B. (2000). The role of the transport system in destination development. *Tourism Management* 21, pp. 53-63.

Rodrigue, J-P. (2020). *The Geography of Transport Systems* [online]. 5fth edition. New York: Routledge, p. 456. ISBN: 978-0-367-36463-2. Retrieved from https://transportgeography.org/?page_id=9622.

Saghapour, T., Moridpour, S., Thompson, R. G. (2016). Public transport accessibility in metropolitan areas: A new approach incorporating population density. *Journal of Transport Geography*. 54, pp. 273–285.

Schakenbos, R., La Paix, L., Nijenstein, S., & Geurs K. T. (2016). Valuation of a transfer in a multimodal public transport trip. *Transport Policy* 46, pp. 72–81.

Schödlbauer, J. (2009). *Marketing a komunikace strategických záměrů v Pražské integrované dopravě.* Pardubice. Diploma thesis. University of Pardubice, Jan Perner Faculty of Transport.

Simon, G. (2012). Walking and the underground train: Study of intra-urban movement of tourists under the prism of the """adherence""". Entre marche et métro, les mouvements intra-urbains des touristes sous le prisme de l'«adhérence» à Paris et en Île-de-France, 28(1), pp. 25–32.

Su, M. M., & Wall, G. (2009). The Qinghai-Tibet railway and Tibetan tourism: 'Travelers' perspectives. *Tourism Management*, 30(5), pp. 650–657.

Šejvlová, J., Zemánek, L., Kupka, P., Svobodová, L., Hostáková, L. Harčařík, J., Prášil, P., Ženíšek, J., & Baladová, Z. (2011). *Územní plán Deštné v Orlických horách* [online]. Hradec králové: Regio, project studio. Retrieved from http://www.obec-destne.cz/e_download.php?file=data/uredni_deska/obsah99_2.pdf&original=%C3%9Azemn%C3%AD+pl%C3%A1n+De%C5%A1tn%C3%A9_v_O_h.pdf.

Thompson, K., & Schofield, P. (2007). An investigation of the relationship between public transport performance and destination satisfaction. *Journal of Transport Geography*, 15(2), pp. 136–144.

Uribe, A. C. R., Ávalos, E. A. G., Rodríguez, P. L. G., & Villa, J. M. Q. (2022). Challenges for Older Tourists on Public Transportation in Mexico City. *Events and Tourism Review*, *5*(2), pp. 39-51.

USAID. (2015). *Biodiversity and Development Handbook*. Washington D.C., USA: USAID.

Valdez, J. (2023), The politics of Uber: Infrastructural power in the United States and Europe. *Regulation & Governance*, 17: pp. 177-194.

Veeneman, W., & van de Velde, D. (2014). Developments in public transport governance in the Netherlands: A brief history and recent developments. *Research in Transportation Economics*, *48*, pp. 41-47.

Virkar, A.R., & Mallya, D.P. (2018). A Review of Dimensions of Tourism Transport Affecting Tourist Satisfaction. *Indian Journal of Commerce and Management Studies*, *9*(1), 72–80. Retrieved from https://www.ijcms.in/index.php/ijcms/article/view/157.

Vystoupil, K., Šauer, M., Holešinská, A., Kunc, J., Seidenglanz, D., & Tonev P. (2011) *Geografie cestovního ruchu České republiky*. Plzeň: Aleš Čeněk.

Yang, Y. (2010). *Analysis of public transport for urban tourism in China (Master of Arts in Transport Policy and Planning).* The University of Hong Kong, Hong Kong.

Xiao, S., Jia, L., & Jiang, L. (2012). Forest recreation opportunity spectrum in the suburban mountainous region of Beijing. *Journal of Urban Planning and Development*, 138(4), pp. 335–341.

Yatskiv, I., Budilovich, E., Gromule, V. (2017). Accessibility to Riga Public Transport Services for Transit Passengers. *Procedia Engineering*. 187, pp. 82–88.