

Štefko, Robert; Džuka, Jozef; Litavcová, Eva; Ňakatova, Darina; Lačný, Martin

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Psychological Characteristics of a Tourist as Predictors of Expenditures: An Analytical Review and Proposal of the Predictive Model

Róbert Štefko¹, Jozef Džuka², Eva Litavcová¹, Darina Ňakatová¹, and Martin Lačný²

ABSTRACT

Tourism plays an important role in the economies of countries, which is evidenced by macroeconomic studies. However, analyses highlighted the need to do research on tourist expenditure and to identify factors at the microeconomic level. The article presents an overview of the extensively investigated and validated predictors of tourist expenditure and microeconomic modeling procedures used in their analysis. While two large sets of factors, i.e. economic and sociodemographic variables, have often been the subject of microeconomic modeling of tourist expenditures, variables which are related to the subject of expenditure have been taken into account insufficiently. The overview reveals the incompleteness of the tested models and in the literature the repeated recommendations to take into account the psychological variables which are missing in the models. The study describes the current state of defining and measuring psychological variables in tourism. Terms „psychographic variables“ and „psychological characteristics of a tourist“ are used for psychological variables in tourism research however, these were generally understood as respondents' current views on travel aspects, subjective evaluation of travel satisfaction, or as reasons for travel. As psychological variables in this study were considered the complex and relatively stable psychological characteristics of the person – personal values, personality and motivational system of the person as defined and measured in psychological science. Based on this, a conceptual model is developed which integrates economic, sociodemographic and psychological variables of expenditure and recommends procedures of its testing.

KEY WORDS:

Tourist expenditures, economic model, psychological factors, conceptual models

JEL Classification: Z32.

¹University of Prešov, Slovakia, Faculty of Management

²University of Prešov, Slovakia, Faculty of Arts

1. Introduction

The aim of this work is to propose a model which considers, apart from factors examined so far, psychological variables and which formulates recommendations on how to test them, considering the frequently used modelling procedures for testing tourist expenditures. First, we briefly review the literature on frequently investigated factors that are related to tourist expenditures. This is followed by a review of commonly used modelling procedures for identifying the effect of the

tourist expenditures factor. Then we review the psychological characteristics of tourists as expenditures factors. The final section outlines the proposal of two microeconomic models; the first model presents direct effect of economic, sociodemographic and psychological variables on expenditures, the second model presents a mediating effect of psychological variables which mediate the effect of economic variables on tourist expenditures.

2. Factors Affecting Tourist Expenditures

Wang and Davidson (2010) analysed 27 studies on tourist expenditures and made the following conclusions: (1) Previous analyses were conducted

Correspondence concerning this article should be addressed to: **Martin Lačný**, University of Prešov, Ul. 17. Novembra 1, 08001 Prešov, Slovakia. E-mail: martin.lacny@unipo.sky

primarily at a macro-level, which aggregates travel and expenditures data. However, people differ from one another as to their consumer behaviour, which can be better explained by micro-level analysis. 2) Existing studies at the level of microanalysis indicate that income, sociodemographic characteristics and characteristics related to type of travel are the most frequently investigated factors of tourist expenditures. 3) Psychological and destination-related factors may also affect the level of expenditures, though the effort to investigate the role of these variables remains a potential area of interest for future research. 4) Applying a wide range of factors can improve the explanatory power of predictive model, and future research should include also other modelling techniques.

Mayer and Vogt (2016) have analysed 50 studies in the WOS database and identified three groups of variables frequently related to tourist expenditures: 1) Tourist-based variables, i.e. socioeconomic variables (age, gender, marital status, income) and geographic variables expressing the spatial and economic structure of the region of tourists' origin. 2) Expenditures associated with the type of journey or trip (travel-based variables), mainly the size of the group of tourists, the length of stay and the type of tourist (holiday or day-trippers). 3) Destination-based variables – destination distance, how destination is perceived in terms of prices, destination type from the aspect of the territory (city, countryside), satisfaction with the holiday or with stay and travel period (summer, winter ...). In analysed studies, the strongest determinant of expenditures was (in line with microeconomic theories) income regardless of how it was operationalized, and the age of people. The authors concluded that economic factors are crucial but a large part of the factors remained unexplained; also, predictions were improved if travel type variables were included in which the size of the group of travellers, the length of stay and the type of traveller proved to be strong predictors. Regarding the type of destination, the authors concluded that further research is needed because the findings were ambiguous. None of the 50 studies analysed by Mayer and Vogt (2016) was related to the psychological characteristics of tourists and their effect on tourist expenditures.

Psychological variables are reported in Brida and Scuderi's (2013) meta-analysis in which 86 studies

published between 1977-2012 were analysed, where more than 50 factors were identified; these were categorized into four groups: economic constraints, sociodemographic variables, trip types, and psychographic variables. 1) Economic constraints represent the economic limits of a person. This type of predictors consists of 6 subcategories: property size, financial difficulty, limits of duty-free import, various licenses and loyalty cards, income levels and income sources. Economic limits also include health restrictions that may affect a person's wealth. 2) Sociodemographic predictors (10 in total): age, education, gender, household size, marital status, nationality, type of residence, occupation, ethnicity and family background. 3) Expenditures related to the type of travel (17 categories), most typically: the length of stay, size of the group of travellers and its composition, travel experience, purpose of travel, accommodation; less common categories: travel type, activities in the destination, destination itself, etc. 4) Psychographic variables include 3 groups of variables; since this type of variables has a specific position in our proposal of expenditures model, we give a description of three groups of predictors which the authors assigned to these variables. a) General views and attitudes. These were simple opinions of respondents about various aspects of journey. For example, whether it is possible to have fun, to experience something in nature, whether nature is unspoiled, whether there is any offer of cultural events, etc. b) Views of a specific type of trip. These views were related to the subjective assessment of satisfaction with the general and specific aspects of the journey, such as services and facilities, hospitality, value for money, the quality of nightlife and entertainment. c) Motivations (in the sense of reasons) for the trip. This type of variable was examined in 8 of the 86 research articles analysed. For example, Mehmetoglu (2007) states 6 themes for individual trips that have an impact on tourists' daily spending: nature, physical activity, novelty/knowledge, ordinariness of everyday life, social contact and own ego/ego status. Similarly, Saayman and Saayman (2009) found 6 motivations for travellers to visit a national park: nature, activities, family, escape, sights and photographs. Motivation is a relatively well-defined construct in psychology but in the approaches analysed it does not correspond adequately or not at all with its definitions.

While Brida and Scuderi (2013) isolated a separate category of economic variables (economic constraints) and sociodemographic variables, Mudarra-Fernández, Carrillo-Hidalgo, and Pulido-Fernández (2018) published a systematic review of factors influencing tourist expenditures classifying them into categories and by type of tourism, in which they combined both categories into the so-called socioeconomic variables. In particular, they found 275 articles registered in the Elsevier's Scopus database published between 1996-2017, of which they further analysed 67 articles and divided the variables that influence tourist expenditures into four categories: a) socioeconomic variables, b) variables related to the characteristics of the trip, c) variables related to the destination, and (d) psychological variables of the tourist.

As to the socioeconomic variables, in the analysed sources the following 9 variables were identified: gender, age, educational level, occupation, nationality, type of family (referring to the number of members), mother tongue, life cycle and income. In the terminology of Brida and Scuderi (2013), eight of them would be sociodemographic variables and one economic variable. The authors state that these variables are directly related to tourist expenditures. In addition, variables of quantitative nature have a direct and positive relationship.

As to the other two categories, while Brida and Scuderi (2013) did not differentiate between variables which are related to destination and variables related to the characteristics of the trip, Mudarra-Fernandez, Carrillo-Hidalgo and Pulido-Fernández (2018) took this distinction into consideration. In the category of variables which were related to the travel characteristics they found the following 10 variables: duration of stay, loyalty to destination; package tour, number of persons in the group, places visited, relationship between the group and traveling companions; season when the trip is taken, trip planning (factors involved in the planning), facilities, means of payment and the use of technology. These variables are directly related to tourist expenditures and except of the duration of stay, trip planning and number of persons in the group, they have a direct and positive relationship. In a separate category of variables associated with the destination, the following five categories with direct and positive relationship with tourist expenditures

were included: proportion of visitors from the same region, distance to the destination, places with award, image and activities offered in the destination. Into the category of psychological variables the following four categories were included: personality, reason for the trip, satisfaction and values of the tourist.

A review study by Mudarra-Fernández et al. (2018), in addition to the grouping of tourist expenditures into four categories, analyses the identified categories also in terms of their occurrence on research in different types of tourism, namely: cultural tourism, sports tourism, sun and sea tourism, cruise tourism, nature tourism, rural tourism, gastronomic tourism and meeting, incentive, conferencing and exhibition (MICE) tourism. The authors also list the ninth category, i.e. "other tourism categories" including such types of tourism as health and beauty tourism, nautical tourism, golf tourism and language-learning tourism. In their tables it is easy to find out that the psychological characteristics were studied rarely: two of four psychological variables, viz. personality and values of the tourists, were considered in two publications which were concerned with a different type of tourism – sports tourism (Karvonen & Komppula, 2013) and nature tourism (Woosnam, Dudensing & Walker, 2015). Personality and values of tourists are not described further in the publication, nor the other variable "satisfaction" is defined, however, the analysis revealed that the expenditures factor was examined in 6 papers. The most frequently used psychological variable were the reasons for the trip; with the exception of 4 publications, the remaining 26 from this group included this variable in the research of tourist expenditures.

Summary. We believe that the older statement by Brida and Scuderi (2013, p. 27) is currently relevant for research on tourist expenditures: "The most striking fact remains the rare use of psychological variables, as is demonstrated in Wang and Davidson's (2010) review. Official surveys rarely directly detect consumers' psychological characteristics, which may be one of the reasons for their limited use." Two other conclusions can be added to this assessment: 1) "Psychographic" variables, along with the alternatively used name psychological variables, were neither defined nor measured in the research at the current level of psychological research. 2) In the analyses

carried out it was not possible to find an attempt to investigate the complex effect of psychological variables in the context of the other variables that are often investigated. Veisten, Lindberg, K., Grue, B. and Haukeland (2014, p. 302) comment on the existing state as follows: "Within economics, the 'why' behind market choices – the underlying preferences, attitudes or beliefs – have frequently been discussed but until relatively recently have remained in the 'black box'.

3. Estimation Techniques in Modelling Tourist Expenditures Factors

Scientific methods used to determine the effect of tourist expenditures factors are related to econometric modelling. An extensive analysis of modelling expenditures procedures in a specific area of tourism was conducted by Jin, Moscardo and Murphy (2017) who analysed studies published between 2000-2015 registered in the four major databases – Science Direct, Sage Journals, Taylor & Francis Online and Emerald Insight. The dependent variable in their analysis was the expenditures level, and although they did not express explicitly their stance towards the nature of the analysed dependent variable, they presented the statistical procedures used in the analysed papers in a spreadsheet. As a result of their analysis, mainly analysis of variance, multiple regression analysis, logistic regression, hierarchical regression analysis, binomial logistic regression and structural equation modelling were used to examine the associations between independent and dependent variables. We state that several tools are missing, esp. quantile regression (if the dependent variable is expressed by the median value or other quantile).

When it comes to the properties of the dependent variable, in the current econometric models it is addressed in two ways: as an analysis of expenditures in their natural setting (so-called lin-lin modelling) or as analysis of expenditures after logarithmic transformation of values (log-lin model). Thrane (2014) found certain differences between the two ways; with respect to the results and based on their own comparisons, a natural logarithm of expenditures is recommended. It is one of the ways to consider the fact that the dependent variable is not a straight-line but slightly curved. Sometimes, however, this transformation is not sufficient and double logarithmic

regression must be used: each metric independent variable must be transformed into a natural logarithm (log-log model).

Specific examples of methods can be documented in several works. Laesser and Crouch (2006) used a log-linear model, which is in fact a multi-way frequency analysis based on a multi-way cross-table where pairs of nominal variables are compared without considering triple and multiple relationships. Hsieh, O'Leary, and Morrison (1993), Oh, Cheng, Lehto and O'Leary (2004) and Mehmetoglu (2007) used a logistic regression in which dichotomous (binary) expenditures are the dependent variable. Saayman and Saayman (2009) combined two types of regression methods: stepwise least squares regression (within the first step, all variables and finding the most appropriate one is included) and then the stepwise-forwards method. Selection of the variables for the second step was done on the basis of p-values of the predictors identified in the first step.

As to the choice of independent variables (predictors) and the suitability of estimation techniques, Marcussen's study (2011) is considered to be a breakthrough in the field of microeconomic modelling of expenditures in tourism. The author analysed 50 papers published between 1995-2009. On the basis of this analysis Thrane (2014) published practical recommendations which represent a higher standard of microeconomic modelling of tourist expenditures. According to him 10 key factors should be integrated into every research: income (per household or individual), length of stay (usually number of nights), size of group of travellers, type of accommodation, type of destination (if applicable), activities in the destination (if relevant), mode of transport, distance, age of persons and whether the trip was purchased as a package (if relevant).

If we compare Thrane's (2014) recommendation about the 10 key factors with the findings of Brida and Scuderi (2013) and Mudarra-Fernández et al. (2018) then, with the exception of whether the trip was purchased as a package, the remaining 9 factors could be identified in both analyses. According to the current studies, if the microeconomic models included 10 of these variables or most of them, the OLS regression explained, as a rule, 40 percent or more of spending variance. Therefore, if a model is to be

more effective as to its predictiveness, new variables should explain the incremental rise of the variance to the existing predictors. And since none of the 10 recommended predictors was related to the psychological characteristics of tourists, incremental increase could be explained by these psychological variables.

4. Psychological Characteristics of Tourist as Expenditures Factors

4.1. Selected Results of Previous Research of Psychological Variables in Terms of their Impact on Tourist Expenditures

In this first subchapter we want to present the research findings and methods of measuring psychological variables in previously published works. Marrocu, Paci, and Zara (2015) have used linear and quantile regression models and investigated the effect on spending of 25 variables divided into four groups: economic constraint, socio-economic characteristics, trip related characteristics and psychographic characteristics, to which they included two – previous holiday in Sardinia and holiday motivations (the quality of Sardinia' environmental resources, the island is also preferred for its notoriety, for visiting relatives or friends, and because the respondent owns a house in the region). The authors found out based on the analysis of 1,445 valid questionnaires, that two variables, income and foreign nationality, play a prominent role in spending. However, the observed effect was differentiated: "Higher positive effects were found for heavy spenders in the case of foreign nationality, previous visits and notoriety-motivated holidays, while party size and the number of visited sites contribute to reducing the level of expenditure for light-spending tourists." (p. 13).

Chen and Chang (2012) have examined the effect of travel agents on their customers' total travel expenditures. By the means of OLS and quantile regression methods they have analysed Taiwan's tourism data of 3,458 visitors who travelled strictly for pleasure. The result was a finding that travel agents contribute to lower total travel expenditures.

Serra, Correia and Rodrigues (2015) examined, how expenses of international tourists in the Algarve are effected by motivational, behavioural and

socio-demographic factors. On a sample of 15,542 of the total tourists surveyed over the four years they have tested, among other things, the assumption (their hypothesis 6), that tourist motivations positively affect tourist spending. Specifically, these were 10 motivations: cleanliness, cultural and historical resources, information available, closeness to home, accommodation, gastronomy, price, hospitality, sightseeing and excursions, golf facilities. The authors stated that the effect of only some of the motivations is statistically significant (especially accommodation and cleanliness) and further that in the case of golf, gastronomy, sightseeing and accommodation, tourists are willing to pay more.

Cárdenas-García, Pulido-Fernández and Pulido-Fernández (2015) examined whether the level of satisfaction of tourists (using a scale consisting of 10 levels of response, in which 10 indicates "very satisfied" with the factor they are questioned about, and 1 "very dissatisfied") – visitors to places in Andalusia, Spain as cultural destinations with their cultural resources and attractions affects the amount of spending. Analysed data came from 2,967 respondents surveyed. Using a linear regression model (the dependent variable was a continuous variable), they tested 20 predictors representing tourist satisfaction with 19 different aspects of the destination, with the last (20th) predictor being the overall assessment of the experience on this trip. The results showed that overall satisfaction is not a significant predictor of tourist spending, but satisfaction with some specific aspects yes: accommodation and care provided at the destination, roads and communications, entertainment and quality of natural parks, cleanliness and tourist information/signposting.

Disegna and Osti (2016), like the authors of the previous study, examined the relationship of satisfaction and tourist expenditures and focused on 1,030 foreign visitors who visited three provinces in northern Italy. These were visitors who arrived for the purpose of holiday and leisure and the survey concerns the overall level of satisfaction with the destination and with the following aspects of the trip: hospitality and friendliness of the local inhabitants; cities and works of art; landscape and natural environment; hotels and other accommo-

ation; food and beverages; price and cost of living; quality and variety of products offered in stores; information and tourist services; safety of tourists. A 10-point Likert scale was used, with (1) indicating 'Very unsatisfied' and (10) 'Very satisfied'. Also in this case the authors stated: "...overall satisfaction with the destination exerts only a negative effect on the amount of money spent on transportation (very likely the more tourists are satisfied with the destination, the less they will travel around in search of new or different places), satisfaction with the different aspects of the destination exerts an influence on both the willingness to pay and the amount of money spent in the different expenditure categories" (p. 22-23). We do not analyse in detail the various particular aspects of satisfaction here.

Smolčić and Soldić (2017) tested 523 valid questionnaires (74% response rate), the profiles and expenditure patterns of tourists who spent at least one night in Rijeka or the Opatija Riviera (Croatia) by the means of linear regression. The questionnaire consisted of four parts: attitudes towards 22 elements of the tourism offering, socio-economic information, characteristics of stay and expenditure. Attitudes were analysed by PCA, which identified 4 factors of satisfaction with the tourism offering: quality and hospitality, diversity of facilities, information and destination preservation. A statistically significant predictor of expenditure was only satisfaction with diversity of facilities. The authors conclude that finding by stating that psychological determinants (more precisely, satisfaction with the diversity of facilities) should be used to improve the explanations of tourist spending behaviour at a destination.

Borges, Rodrigues and Matias (2016) researched two different types of tourists' expenditure behaviour at a musical festival: the expenditure per day in the city of the event and expenses in the enclosure during the event. The authors confirmed by means of regression analysis (only beta coefficients) a significant positive effect of overall satisfaction as well as four distinct satisfaction factors identified by the factor analysis on the amount of expenditures.

According to the authors, Karvonen and Kompula's (2013) research was about personality and its relationship to spending. However, here must

be corrected, in fact, they dealt with the examination of the motivations of visitors' attending rowing race, not with personality. The notion of personality represents a different, specifically defined content in psychological research, and similarly, the concept of motive represents a different construct in psychology than that of motivation. The authors investigated expenditure variables not as the criteria predicted by microeconomic modelling but as a variable whose height was detected in the five segments of visitors identified by cluster analysis.

The study by Woosnam et al. (2015) concerned a specific group of nature tourists' (primarily of Anglo descent) perceived emotional solidarity with destination residents (predominantly of Latino descent) as a predictor of tourist expenditures within a destination. Considering this research variable has brought about interesting and, from the tourist expenditures research point of view, specific findings which point out that emotional solidarity can have a specific effect on the level of spending in terms of solidarity with another country. It may be noted that emotional solidarity corresponds to Schwartz's System of Values (1992) in which benevolence is a similarly defined value. The motivating objective of a person with a preference for benevolence value is an emphasis on the protection and well-being of others with whom one is in frequent personal contact ('in-group').

From the current studies we would like to mention the following three. Correia, Kozak and Concalves (2018) examined the impact of social, demographic and trip characteristics on spending at the destinations. Although they did not explicitly use the term psychological characteristics, the last of the nine hypotheses tested concerned the subjective destination preference: "...the level of expenditure is determined by the place of origin and by push and pull motivations" (p. 464). The data were selected from an existing study, being the data that were collected at the departure lounge of the international airports of several cities in Portugal. There were a total of 8,305 valid questionnaires. Hypotheses were tested using logistic regression (binary logistic) and the results showed that motivational preference of Lisbon is positively correlated to the amount of expenditure compared with the cities of

Algarve and Madeira: the odds of Lisbon tourists to spend above the upper quartile are 4.447 times the corresponding odds for tourists travelling to Azores (reference category).

Castañeda, Vena-Oya, Rodríguez-Molina, and Martínez-Suárez (2019) have verified, among other research questions the assumption, that the motive for the visit to the destination is a variable that affects how much a person spends. The sample consisted of 145 persons – Spanish domestic tourists who were visiting Granada and who were located at the primary cultural attractions in the city at the time of the survey. Motivation has been investigated using the following procedure: participants were asked to allocate ten points to the different elements, according to their level of relative personal importance. This variable was covered by a range of -10 to 10, the result being calculated by taking the sum of the scores for the primary/cultural elements (monuments, historic heritage and non-monumental cultural offer) and deducting the scores for the secondary/non-cultural elements (hotel offer, eating out and transport/accessibility). They have used latent class regression to identify four segments of cultural tourists, which were divergent in terms of level of expenditure and the relative importance of the factors that influence the amount of expenditure.

Mitra, Wilson, Managi, Kler, Prayaga and Khanal (2019) have analysed by means of linear and quantile regression a total of 666 completed surveys obtained from tour operators who distributed questionnaires among non-resident whale watching tourists. The authors found that the amount of expenditure besides income is influenced by socio-economic, trip-related and psychographic characteristics. Under psychographic characteristics they have understood trip reason, whale watching main purpose, first-time/repeating visitor, watched whales in other locations, two of them were significant influencing factors on the spending of tourists – reason for the trip (family holidays) and first-time visitor.

Summary. Without claiming completeness, the analysed works with one exception (Woosnam et al., 2015) generally understood psychological characteristics as current views of respondents to

various aspects of the travel, subjective evaluation of the satisfaction with the travel or as reasons for the travel, which are activated situationally. When comparing the terms used in these works with those that give in their review article above Brida and Scuderi (2013) or Mudarra-Fernández et al. (2018), two terms dominate: psychographic and psychological variables.

4.2. Psychological Characteristics as Stable Characteristics of Tourist

As psychological variables that were object of interest in this study, unlike previously examined (compare e.g. Brida & Scuderi, 2013 and Mudarra-Fernandez et al., 2018), were considered relatively stable psychological characteristics, as defined and measured in psychological science (e.g. extraversion, neuroticism and the like). The following procedure has been chosen: Firstly, an extensive search was done by linking the two keywords “tourist expenditures” and “psychological” in 3 databases (Science Direct, WOS, Scopus). In total, 105 publications were found and 22 abstracts were analysed covering the period 1996-2018. The result of this analysis was the finding that the understanding of the term “psychological” was diffuse and further differentiation was needed. Therefore, instead of “psychological”, more specific keywords were used and the search was done only in the WOS (Topic) database. Combination of the words “personal value” and “tourism”, “motivation” and “tourism”, “motive and tourism”, “personality and tourism” were chosen. The result of the search were 406 publications containing the keyword “personal values”, of which 23 abstracts were analysed; on this basis, it was decided to study 9 studies in detail. Similarly, the keyword “motivation” appeared in 239 papers; 5 abstracts were analysed and 2 studies were examined in detail. The word “motive” was used in 137 articles, 5 abstracts were analysed and 3 studies were examined in detail. The keyword “personality” appeared in 398 papers, 32 abstracts were analysed, and 22 papers were analysed in detail. From the total of 36 studies we present examples of common approaches to three psychological characteristics, their definition and measurement, viz. personal values, motivation or motives and personality.

4.2.1. Research considering tourists' personal values

Li and Cai (2012) investigated travel behaviour and travellers' values. As to the definition and measurement of values, the authors did not proceed from psychological theories of values, they wanted to explore the effect of cultural values on travel motivation and behavioural intention. They used the List of Values (LOV) (Kahle, 1983) which identifies six intrinsic values (warm relationships with others, sense of accomplishment, excitement, self-respect, being well respected and sense of self-fulfillment) and three extrinsic values (security, sense of belonging, fun and enjoyment). From the model which was concerned with the relationship between two types of values, five types of travel motivations and behavioural intention it was deduced that intrinsic values directly affect respondents' motivations for novelty and knowledge and for self-development and that people with this orientation tend not to rely on external agents for the fulfilment of values, and are generally more active in terms of travel purchases.

Hindley and Font (2015) investigated the ways how, due to the threat to further existence of a given area because of the threat of climate change, the last opportunities to visit that area are perceived. They also used the same List of Values (Kahle, 2003) and administered it in a modified version as a projective technique in qualitative research for a small group of people ($N = 12$). The described results cannot be directly related to tourist expenditures because they concerned the specific area, the relationship of internal/personal values and the protection of the environment.

To investigate the values, Lin and Fu (2016) used the modified Rokeach's RVS in which they eliminated and administered 24 consumption-relevant values (Munson & McQuarrie 1988) of the original 36 items. The data obtained were analysed using value network (hierarchical value maps). Their results are also not related to tourist expenditures, and they conclude that the future research could use a different value system such as LOV from Kahle (1983) or the Schwartz value scale (Schwartz, 1992).

Schwartz's (1992) questionnaire was used by Coppola, Verneau, Caracciolo and Panico (2017)

and, although their publication is not related to research into tourist expenditures, we present it here for three reasons. First, it deals with personal values and expenditures in a specific area (the purchase of fair trade products). Second, in their research into personal values the authors used one of the most influential definitions by Schwartz (1992) who defined ten basic values that can be described by their motivational goals: self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, universalism and benevolence. And third, they found out that the value system has a direct effect on spending – the more values such as universalism, benevolence and self-direction characterize people's motivational orientation and the more they are open to change, the higher the expenditures are. However, the value system also has an indirect effect on spending: the economic context in which people live interacts with personal values.

An expanded and improved Schwartz's model of personal values (Schwartz, Cieciuch, Vecchi-one, Davidov, Fischer, Beierlein, Ramos, Verkasalo, Lönnqvist, Demirutku, Dirilen-Gumus and Konty, 2012) was used by Ballantyne, Hughes, Lee, Packer and Sneddon (2018) who applied its values to the visitors of zoo and aquaria. To detect the values of visitors' values they used Lee et al.'s (in press) refined values best-worst instrument. This instrument measures 20 refined values, which can be examined separately or combined to reflect the 10 basic values following the process outlined by Schwartz et al. (2012). Although not expenditures but environmental behaviour was the dependent variable in their research, we present this study because it is based on a psychological approach to defining and measuring personal values in the field of tourism research.

Summary. Although in tourism research tourists' personal values are rarely studied, psychological approach to personal values appears in publications and Schwartz's model of values is used to interpret them. Schwartz's Theory of Basic Human Values recognizes ten universal values which can be organized in four higher-order groups. Each of the ten universal values has a central goal which is the underlying motivator. The consideration of personal values as a predictor of tourist expenditures

in a complex model of expenditures has been inadequate so far, hence, due to its theoretical justification and the existence of a suitable tool Schwartz's approach seems to be a suitable alternative.

4.2.2. Research considering tourists' personal values

Publications in this area frequently use the term "motive" or "motivation" in the sense of reason for the trip. For example, Heung, Qu and Chu (2001) and De Menezes and Moniz (2011) understood the motives as a reason for the travel which were identified as opinions of respondents about trip or visiting attributes (leisure; visiting friends or relatives; business...). Psychological research on motivation understands concepts of motivation and motive differently, which has been pointed out by Li and Cai (2012), who have examined values and their relationship to motivation, respectively to motivational states which can trigger these values. They pointed out that there are many psychological conceptualizations of motives and refer to Murray's earlier work (1964), according to which "...a motive is an internal factor that arouses, directs, and integrates a person's behaviour" (Murray, 1964, p. 7). At the same time, they explain that motivation is a product of interaction between a person and a situation. This concept is also in accordance with the current approach in psychology to the distinguishing between motives and motivation which Baumeister (2016) characterizes using the analogy of the disposition concept, i.e. tendency of a person to respond to it in the usual way, and motivational state, i.e. transient state which arises when a relevant motive is activated. In their analysis, the authors did not study the motives themselves but tested a model in which the internal and external values have an effect on the emergence of five types of motivation (in terms of motivational states), and at the same time have a direct and mediated relationship to behavioural intention.

Lichy and McLeay (2018) published results of their research on the motivation to travel among the so-called "bleisure travellers." It is a rarely researched type of tourism in which travellers combine business with leisure. The authors critically examined the state of understanding of motivation and motives in tourism literature in the sense that

understanding tourist motivations is problematic due to the complexity and ambiguity of psychological factors, difficulties in measuring unobservable parameters and the lack of well-developed theory for travel motivation. As an example of the frequently used theoretical frameworks that underpin many studies of leisure tourism motivation they include the frequently-cited push-pull framework. Push motivations are related with the internal desires such as self-actualization, rest, leisure or social interaction, pull motivations are related with external and cognitive factors such as landscape, climate, and facilities. The authors themselves describe their own approach to identifying "generic motivations and types of bleisure travellers", which is, however, in no way related to existing approaches to research on tourism motivation nor to the psychological theory of motivation. In fact, it is not about detection of motivation nor motives within the framework of a psychological understanding of these constructs but about motivation/motives in the sense of reasons to travel.

Summary. While in case of personal values there is a suitable basis for their definition and measurement in tourism research, in case of motives the situation is less favourable. Integration of motives as psychological variables by tourists based on the existing approaches to tourism research appears to be inadequately theoretically and methodologically prepared.

4.2.3. Research considering tourist personality

In the research literature on tourism, a progressive orientation to the currently dominating approach of psychology to the definition of personality and to the determination of its stable features can be identified. Almost 20 years ago, Frew and Shaw (1999) conducted their research on the relation between personality and tourist behaviour and defined personality in accordance with Holland's (1985) theory of personality types, which presents a typology of six different personal orientations to life: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). These six different personality types differ from each other as to characteristic activities, interests and competencies. The study found that there were significant asso-

ciations between the respondents as to Holland's personality types and their tourist behaviour, for some attractions and some measures of behaviour. Nowadays it can be concluded that this approach, similar to the four types of personality orientations examined by other authors (Gountas & Gountas, 2007), viz. the thinking or logical, the feeling or emotional, the material or physical, and the intuitive or imaginative, did not find any response in the ensuing research.

Alexander's (2012) research on volunteer tourism used personality framework – IPIP-NEO personality inventory, the most frequently used framework in psychological literature over the past few years. Other authors, such as Cohen, Prayag, and Moital (2014) recommend the use of the approach claiming that in tourism, personality is a determining factor of tourist motivations, perceptions and behaviour and conclude that, as to the measurement of personality, it mostly focuses on specific traits such as extraversion and neuroticism rather than on the full use of well-established scales, such as the International Personality Item Pool. Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger and Gough (2006) further specified that IPIP measures of constructs are commonly used in two forms: as the 50-item IPIP inventory targeted at Goldberg's (1992) set of 100-adjective markers of the lexical Big-Five factor structure and the 50-item IPIP inventory targeted at the five domain constructs included in the commercial NEO-PI-R. It should be noted, however, that IPIP is also so popular because its scales were designed to provide public-domain alternatives to commercial products and that it is freely available, which, however, brings about some risks.

There are publications that dealt with the relationship of personality to different aspects of tourism and did not use IPIP but another instrument which measures five personality factors. Using the Big-Five structure, Tan and Tang (2013) examined how personality influences tourism information search behaviour. They state that there is agreement in the field of trait approach that the Big Five personality traits adequately provide a full picture of an individual's personality. They used the 44-item BFI (Big Five Inventory) instrument (John &

Srivastava, 1999). Ten items measured openness to experience, nine items for conscientiousness, eight items for extraversion, nine items for agreeableness and eight items for neuroticism. Items are rated on a five-point Likert scale.

Chen, Yu, Chang and Hsieh (2014) did their research on backpacking which, as they see it, has become an important trend of modern tourism, and personality as a factor which is related to backpackers' learning travels. To measure the five personality traits, they used 26 items of the Big Five proposed by Costa and McCrae (1992). The results of their study demonstrate that personality traits significantly influence wellness lifestyles and learning travels. Jani (2014) used 22 BFF (Big Five Factors) items to research personality and travel-related activities and interpreted the results in the sense that there are significant differences between the travel-related activities of a person based on the BFF. Although the same tool was used in all three instances of research, each of the authors chose a different title and, most importantly, in each study a different number of items were used to form individual factors, which makes the comparability of research findings difficult.

Passafaro, Cini, Boi, D'Angelo, Heering, Luchetti, Mancini, Martemucci, Pacella, Patrizi, Sassu and Triolo (2015) explored the relationship of all five personality dimensions in the specific field of sustainable tourism, namely, the relationship between holiday preferences and the Big Five personality traits. The version of the tool was in this case quite different from the above alternatives: Personality traits were measured using a list of 50 adjectives. The adjective list included 10 markers for each of the five dimensions (extraversion, agreeableness, conscientiousness, emotional stability, openness). Their conclusions suggest that personality factors cannot be considered as strong predictors of holiday preferences because they explained less than 10% of the total variation in preferences.

At the end we present two topical studies. Kim, Bonn, Lee and Hahn (2018) examined the effect of personality traits on visitors attending an exposition and, under the acronym OCEAN, they present five personality characteristics: Openness, Conscientiousness, Extraversion, Agreeableness and Neu-

roticism. The 25 items used for measuring OCEAN traits were adapted from previous research conducted by Jani and Han (2015), Kvasova (2015), Yoo and Gretzel (2011). Five mutually exclusive items for each of the individual scales involving openness, conscientiousness, extraversion, agreeableness, and neuroticism were used to assess the five traits. Using structural modelling, they pointed out to the complex relationships between anxiety attachment, visitor personality traits and expo attachment.

Tsiakali (2018) confirmed the relationship of personality and travel decision-making phases. She also used five factors of OCEAN traits, each factor was represented by five items (a total of 25 items) which were measured by a tool adopted from the IPIP.

To sum up, first, terms “psychographic variables” and “psychological characteristics of a tourist” are used for psychological variables in tourism research, the latter corresponds to the terminology of psychology and the approaches of psychology to personality. Second, none of the analysed tourism research which considered psychological variables, has not verified their effect in relation to tourist expenditures. Third, with the exception of motivation system, personal values and personality were in the analysed works partly or sufficiently compatible with the approach of psychology science to these variables. On the basis of these three conclusions it can be stated that the proposal of a model of tourist expenditures which considers, in addition to economic and socio-demographic variables, also psychological characteristics of a person who spends money, can rely, with the exception of the approach to motivation, on currently available terminological apparatus of psychology and approaches to the measurement of psychological variables.

5. Results of the Theoretical Analysis and Proposed Models of the Empirical Research

5.1. Basic Conceptual Model of Tourist Expenditures with a Direct Effect of Economic, Sociodemographic and Psychological Characteristics

Although the need for a proposal of a tourist expenditures model is clear from the above-mentioned text

because psychological variables as expenditures predictors are absent in the frequently used models, we can complement the statements of the authors of two papers regarding the state of modelling in this area. “An attempt to apply new econometric models is really needed because otherwise they would indicate a ‘methodological stagnation’ in publications which would be perceived as empirical exercises rather than as tools to make it possible to deduce consumers’ behaviour” (Brida & Scuderi, 2013, p. 26). One of the proposals to modelling presented by Thrane (2014) concerns the choice of predictors and modelling procedures for the validation of the proposed models: “... we can no longer use independent variables without a proper instruction from theory and/or from the previous research.” In another place he states: “... the choice of function should no longer be a matter of personal taste but rather it should be derived from theory and/or from the studies of best practices in terms of econometric modelling” (Thrane, 2014, p. 58).

The proposal of a basic conceptual expenditures model contains three components:

- a) independent variables,
- b) possibilities of methods of the dependent variable quantification, and
- c) the proposal of the estimation technique to the analysis of relations among variables in the model.

a) Brida and Scuderi (2013) present four sets of expenditures factors, Thrane (2014) formulates ten key spending factors and Mudarra-Fernández et al. (2018) four groups of tourist expenditures. Economic and sociodemographic variables were identified in all three papers, although Mudarra-Fernández et al. (2018) integrated sociodemographic variables into the group of socioeconomic factors. The psychological variables are absent in Thrane (2014), in the remaining two papers they are mentioned under two different names, viz. psychographic and psychological. Variables related to travel are assumed in all three works.

In Table 1 there is our proposal of the predictors of tourist expenditures with their statistical description. The theoretical rationale for the inclusion of psychological factors is based on the fact that the current models which do not account for them provided predictions at 40% level of variance of the explained expenditures. The addition of psychological factors in the model can be implemented from the viewpoint of

Table 1. Economic, Sociodemographic and Psychological Variables as Predictors of Tourist Expenditures and their Statistical Description

Predictors	Description of variables
Economic	
A Person's Income	Continual variable
<i>Sociodemographic</i>	
Gender	Categorical variable (Female, Male)
Age, in years	Continual variable
Marital status	Categorical variable (Never married, Married)
<i>Psychological characteristics</i>	
Personal values	Continual variables (i. e. Hedonism, Achievement, Power-dominance)
Personality	Continual variables (i. e. Extraversion, Open-Mindedness)
Motives	Continual variables (i. e. Need for autonomy, Need for competence)
Trip related variables as covariate	
	Continual (Duration of stay, Travel party size, Travel distance)
	Categorical (Type of accommodation, Mode of transportation)

their expected incremental contribution to the clarified expenditures variance or from the viewpoint of their indirect effect in which the influence of economic variables is mediated by psychological variables.

Figure 1 presents selected expenditures factors in such a way that they represent potential spending predictors identified in previous studies and their inclusion in the model, particularly with regard to psychological factors, could be theoretically substantiated.

b) Selecting the method of the dependent variable quantification. The dependent variable is tourist expenditure which at micro level can be quantified from different perspectives. As an example we may quote four quantification methods presented by Kozak, Gokovali and Bahar (2008): expenditures per capita and

night, per group and night, per person and type of journey/stay and per travel group and type of journey/stay. If apart from the overall travel expenditures the three major components of the trip, viz. transport, accommodation and other expenses are considered, the number of models tested may be as many as four times higher ($4*4$) because the sum of the three main components permits a fourth variable, i.e. overall travel expenditures. Regarding the sum of expenditures itself, the logarithmic transformation of the dependent variable (e.g., Thrane, 2014) is preferred.

c) The choice of estimation technique. If a dependent variable is of quantitative nature, such as expenditures in euro, the most frequently used linear regression analysis can be applied. Multiple linear regression

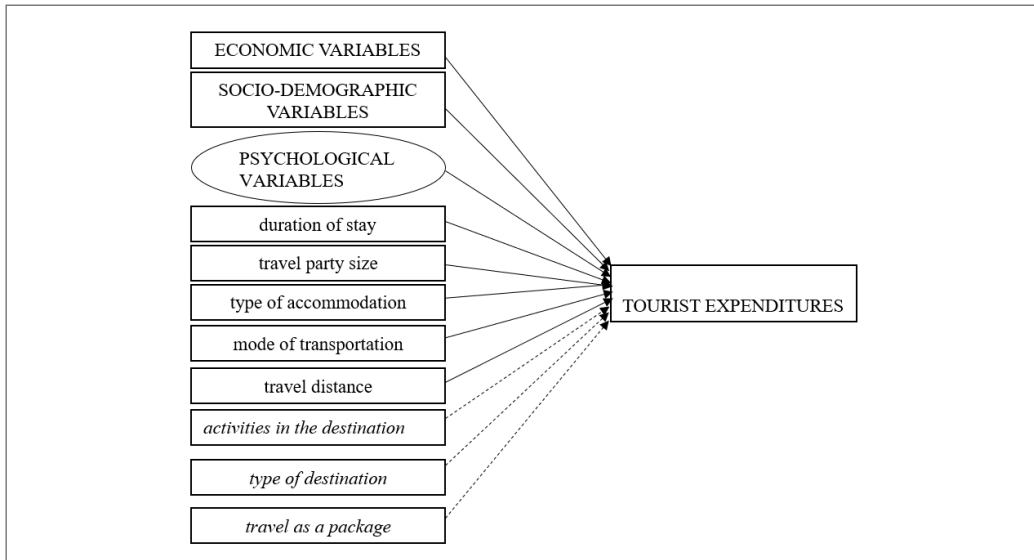


Figure 1. Basic conceptual model of tourist expenditures with the direct effect of economic, sociodemographic and psychological variables.

Note: Unlike in other variables in the model that represent observable characteristics (square boxes), the use of multi-measure items for latent variables (construct) to overcome measurement errors associated with single items is assumed (Churchill 1979) (rounded box). Variables related to destination are italicized: their inclusion in the model can be considered conditional and alternative.

allows to identify the incremental share of psychological variables in the prediction of tourist expenditures. As Marcussen (2011) states, one of the great advantages of multiple regression analysis is its ability to hold “all other things the same” but only when these things are included in the analysis. The second strong feature of multiple regression analysis is that it allows for simultaneous testing of the relationship of dummy variables and metric variables (Alegre & Cladera, 2010). The use of stepwise method in hierarchical regression offers another option: “These multiple regressions are hierarchical in terms of blocks and statistical (stepwise) within blocks” (Tabachnick & Fidell, 2014, p. 153). This procedure makes it possible to determine which variables explain the variance independently of one another, and allows for estimating the incremental effect of psychological variables (in percentage terms) in relation to the amount of the effects of other variables tested. An alternative may be multiple quantitative regression or generalized linear modelling (Agresti, 2015).

5.2. A Mediation Model of Tourist Expenditures with Psychological Characteristics of a Person as a Mediator of the Effect of Economic Variables

Testing direct relationships of predictor allows for getting an idea of the amount of psychological characteristics effect on the prediction of travel expenses. It is likely that considering personal values, motives and personality traits of a person who carries out expenditures may be associated with a direct effect on expenditures but also with an indirect effect. In particular, the economic variable of income can have a direct effect on the amount of tourist expenditures but also an effect mediated by person’s value system, their motivation system or their stable personality characteristics. Figure 2 presents a proposal of one of several possible alternatives of a mediation model in which the mediator of income effect are the stable characteristics of a person.

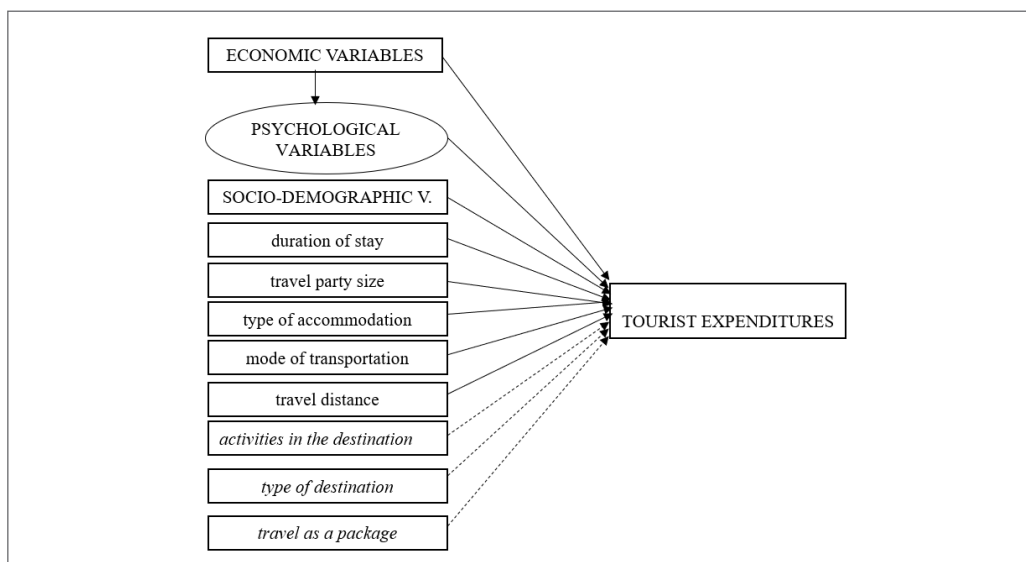


Figure 2. A mediational model of tourist expenditures with psychological characteristics of a person as a mediator of the effect of economic variables (The description of the variables in the model in Figure 1 also applies to this model).

6. Conclusions

The conclusions of this study can be summed up as follows: First, there is a significant body of scientific literature on tourist expenditures and the variables which influence that expenditures, but there is little research linking to psychological factors and expenditures in tourism. Second, this study analyses the psychological factors related to the tourists' person, three relatively stable psychological characteristics as defined and measured in psychological science – personal values, personality and motivational system of a person that, so far, have not been addressed in the existent literature. Thirdly, the tourists' expenditures predicted through a complex model that, in addition to the frequently examined economic and sociodemographic variables integrates travellers' psychological characteristics, have not been sufficiently analysed so far. The present study offers a proposal of two complex models which predict the direct effects and mediating effects

of the psychological characteristics of tourists. Last, the study focuses on the incremental effect of three specific psychological variables – stable characteristics of persons.

Future research. The proposed models may be tested in the selected types of tourism, in Slovakia e.g. in the field of nature tourism (for example, Tatra Mountains, Bratislava, the Liptov region), in health and beauty tourism (Slovak spas) or in cultural tourism (cultural and natural sights). The results obtained may be of potential interest in tourism management in order to get to know how different types of visitors, depending on their psychological characteristics, decide to allocate their travel budget. Managing this information is relevant for policy makers and marketing experts in order to improve the tourist supply and to implement specific marketing campaigns.

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