Modelling the Factor Influence on the Satisfaction with Domestic Tourism at the Black Sea Resorts – Statistical Findings for Bulgaria

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Abstract

The article explores the factors influencing the satisfaction with the domestic tourism at the Black Sea national resorts in Bulgaria, focusing on the usage of the structural equation modelling (SEM) to assess both observable and latent variables affecting the tourists' satisfaction. The domestic tourism is crucial for Bulgaria's economy, contributing significantly to the regional development, employment, and local culture. The research focuses on the tourists' experiences at the Black Sea resorts, given their popularity over other forms of tourism such as the mountain, spa, and wine tourism. The study employs SEM to analyse how various factors, including the accommodation, tourist resources, general resort conditions, and the specific features like pollution and overbuilding, impact the tourists' overall satisfaction. Data from a nationally representative survey conducted in 2023 provides the basis for this analysis. The results show that the general conditions and the restaurants and entertainment establishments have the strongest positive influence on tourist satisfaction, while specific issues like water pollution and poor infrastructure negatively impact the experience. The research underscores the importance of improving the resort facilities, security, and service quality to enhance the tourist satisfaction.

Keywords: Domestic tourism, Black Sea resorts, Factor influence, Structural equation modelling, Statistics

JEL: C31, C38, C46, L83, Z32

1. Introduction

According to the Bulgarian Law on Tourism, trips within the country of persons who permanently reside in it form the so-called *domestic tourism*. The latter plays a key role for Bulgaria's economy, contributing to the development of the regions, increasing the employment, generating revenue in the budget, developing infrastructure and strengthening local culture and heritage. The in-depth study of the factors' impacts on this socio-economic phenomenon creates the necessary prerequisites for making adequate management decisions, both at the national

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level and in the private sector. A number of authors indicate that Bulgarian citizens prefer visiting the Black Sea resorts over all other forms of tourism (skiing, mountain, spa, wine, etc.). This is the reason for the present article to examine in depth the reasons that determine the most important measure of the result of the vacation (domestic vacation tourism) - the satisfaction. Since the latter, by its very nature, is a complex measure formed by the action of both directly acting (observable) factors and the influence of "hidden" (latent) factors, the application of the so-called latent structure analysis (a.k.a. structural equation modelling - SEM) is suitable for its study. In addition, the SEM provides opportunities for studying the interaction between the latent factors themselves.

For a better understanding of the specific features of the subject of research, the main concepts related to it are discussed in short here. According to the "Dictionary of words in the Bulgarian language" (available at http://rechnik.info), the term "tourism" should be understood as "...travel to other settlements or countries for recreational or educational purposes". In the "Dictionary of the Bulgarian Language" (available at https://ibl.bas.bg/rbe) of the Institute of the Bulgarian Language at the Bulgarian Academy of Sciences, a similar definition of the concept of *tourism* is provided, namely: "travel, usually on foot, in nature for recreation, entertainment or for educational purposes". Also, *tourism* can be considered as an economic branch that serves the tourists' activities (available at https://bulgariantourism.wordpress.com).

The concept of tourism is linked to a number of other important concepts such as: a tourist, a domestic tourism, a tourist destination, a tourist area and others. The latter are described in detail in the Law on Tourism (available at https://www.tourism.government.bg/bg/kategorii/zakoni/zakon-za-turizma), where the following basic concepts for the present study are clearly defined as follows:

- **Tourist** - a person who visits a destination outside his usual place of residence for a period of less than one year for the purpose of recreation, sports, medical procedures, business, pilgrimage, participation in a cultural, congress, conference event or other tourist purpose. The tourist can make the visit within the day without an overnight stay (one-day tourist) or with a stay usually longer than 24 hours, which includes at least one night in the visited destination (overnight tourist).
- **Domestic tourism** - tourist visits within the country by persons who are permanent residents of it.
- **Tourist region** - a natural-social system with a stable hierarchical spatial structure and boundaries, with a high degree of concentration of the resources and a material base, in which competitive, effective and efficient tourism policies are implemented. The tourist areas cover the entire territory of the country and are aligned with the municipal administrative boundaries, as the territory of one municipality cannot be divided between two areas and cannot belong to two different tourist areas at the same time. The tourist area is managed by a tourist area management organization.
- **National resort -** urbanized territory within the meaning of § 1, item 13 of the additional provisions of the Health Act, declared pursuant to Art. 76, para. 2 of the Health Act for a resort that may be located on the territory of one or more municipalities and for which a decision has been adopted

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under Art. 56a, par. 1. The national resorts are resorts of an importance for the sustainable development of tourism, in which the necessary tourist infrastructure of a national resort has been built and which are generally accessible and have natural, anthropogenic and cultural-historical resources to provide recreational, healing, restorative, educational, business, entertainment or other services and have the primary purpose of attracting tourists.

Here, special attention should be paid to the fact that domestic tourism includes all trips by the local citizens to places outside their permanent residence, regardless of the duration of their trip. That is, the following groups of *domestic tourists* are included in these trips (available at Eurostat website: https://ec.europa.eu/eurostat/cache/metadata/en/tour_dem_esms.htm):

- Group 1 - *Excursionists*, traveling within one day, without overnight stay, including:

  ◦ Group 1a – persons traveling independently (unorganized);
  ◦ Group 1b – persons traveling organized with travel agencies, tour operators or hired transport.

- Group 2 – *Tourists* who spend the night, including:

  ◦ Group 2a – tourists staying overnight for the purpose of: recreation, vacation, spa, health procedures, etc., included in the so-called holiday tourism;
  ◦ Group 2b - tourists who spend the night, but do not independently choose the places of accommodation, as they travel for a professional purpose (for work). They also include persons who participate in conferences, workshops, trainings and others;
  ◦ Group 2c – tourists who spend the night with relatives and friends.

Of the above-mentioned groups of persons carrying out domestic tourism, official statistical data are regularly collected, processed and disseminated only for those from Groups 2a and 2b. For the rest of the "local" tourists, at the time of conducting this research, only indirect approximation assessments can be made.

In addition, with a view to completeness in clarifying the conceptual apparatus used in the present study, it is necessary to define the following additional concepts, based on the methodological notes to each of the studies executed by the National Statistical Institute (available at):

- **Places of accommodation** - includes all categorized and functioning during the studied period accommodation places with 10 or more beds - hotels, campsites and other places for short-term accommodation (tourist and villa villages, chalets, private accommodation and apartments, rest stations, holiday bungalows, guesthouses and other short-term accommodation).
- **Tourist trip** - any personal or professional trip of people, outside the place where they live, for a period of not more than one year and whose main purpose is not to perform an activity for a fee. Tourist trips can be: *personal* - vacations, visits to cultural events, sports, treatment, training, religious events, visiting relatives and friends and others and *professional* - business trips, participation in conferences, congresses, concluding deals and others.
- **Visitor** - any traveller arriving in a place that is not his usual environment for no

more than one year and whose main purpose is not to perform an activity for a fee. People traveling daily or weekly for work, study, shopping, visiting a doctor, etc. are excluded from the definition of a visitor. A person's usual environment includes both the places located near his home and the places he often visits. The concept of "usual environment" has two dimensions - neighbourhood and frequency of visits. Places located close to a person's place of residence are part of their usual environment, even if they are rarely visited.

- **Holiday tourism -** includes all trips for the purpose of rest during vacation. In Bulgaria, it is mainly practiced in two forms - *summer holiday tourism* (at the sea or in the mountain) and *winter holiday tourism* (usually in the mountain - ski tourism).
- **Maritime district -** a municipality that borders the sea or more than 50% of its territory is within 10 km of the sea.

The Bulgarian Black Sea national resorts include only those designated by Decision No. 45 of the Council of Ministers of 25.I.2005 as sea resorts of national importance[1]. These include the resorts: Albena, Duni, Golden Sands, MMC - Primorsko, St. Constantine and Elena, Sunny Beach and Elenite.

2. Literature review

In their studies, the authors Marinov & Dogramadzhieva (2012) carry out an in-depth analysis of the internal and external trips of the Bulgarian citizens in the period 1988–2009, with a special focus on the impact of the outbound tourism on the country's internal tourism and the balance of payments. Based on various sources of information, a profile of the national tourist market was built and the impact of the 2008-2009 crisis on the travels of the Bulgarian citizens was discussed. An analysis was also made of the reasons why the Bulgarian tourists mainly show preferences for foreign destinations compared to the national ones. The authors present a large amount of evidence that, during the considered period, the research interest was mainly focused on the foreign visitors to Bulgaria, and not so much the local (domestic) tourists. For the purposes of the analysis, the studies used data in the form of time series mainly from the National Statistical Institute and the Bulgarian National Bank. From a statistical point of view, the analysis carried out is based mainly on the data interpretation and the explanation of basic descriptive statistics.

In the sub-section "Analyses in tourism", on the website of the Ministry of Tourism of Bulgaria (available at https://www.tourism.government.bg/bg/kategorii/prouchvaniya-i-analizi), there is a large amount of analytical information on the domestic tourism, concerning the period 2009-2019, but with mainly a historical-archival value. More specific analyses can be found here, which refer to the results of the conducted surveys of the opinion of the Bulgarian citizens regarding the demand for the tourist products and services in Bulgaria. The first study is related to: "...overall assessment of the winter holidays in Bulgaria by measuring the opinion of the Bulgarian tourists" and is based on a sample of 1553 adult Bulgarian citizens. The field work was carried out by the Ministry of Internal Affairs and Communications at the request of the then State Agency for Tourism and was carried out at the end of 2008 and the beginning of 2009 in the main winter resorts - Borovets, Pamporovo and Bansko

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[1] See the website of the National Statistical Institute – www.nsi.bg

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and the six largest Bulgarian cities (Sofia, Plovdiv, Varna, Stara Zagora, Pleven and Ruse). The basis for the analysis are one-dimensional frequency distributions and some basic descriptive statistics (mostly average values), which concern various characteristics of the visits of Bulgarian citizens to the winter resorts, such as: purposes of the trip, expenses for the trip, satisfaction with the stay, practiced winter sports and others. The second study is from 2009 and its purpose is to study "the motivation, attitudes, behaviour and satisfaction of the Bulgarians who travelled to Bulgaria outside of the active seasons for the purpose of excursion, rest and entertainment...". The study is based on a nationally representative study with over 4,000 individuals, carried out by a consortium of well-known Bulgarian companies in the field of sociological and marketing research. The analysis mainly uses the means of descriptive statistics and concerns main areas such as: reasons for choosing Bulgaria as a destination, types of practiced tourism, approaches to organizing vacations, satisfaction with the destination, etc. Over the next 2 years (2010-2011), several more similar studies were conducted, which aimed to study "the demand for the tourist products and services by the Bulgarian citizens vacationing in the country..." in the two main directions - in the active tourist seasons and outside the active tourist seasons. In the period from 2012 to 2015, results of short analyses can be found on the site, mainly related to the international tourism and the development of the so-called "Brand Bulgaria" (OP "Regional Development", 2013). For the period 2016-2019, brief analyses of the tourism activity in Bulgaria have been published, in which domestic tourism occupies an insignificant part.

It is appropriate to mention the fact that, on the initiative of the Ministry of Tourism, a large number of initiatives have been carried out to stimulate the domestic tourism in the country, some of which are: "The communication campaign to promote domestic tourism in the Republic of Bulgaria" under the Operational Program "Regional development" 2007-2013 (available at https://www.tourism.government.bg/bg/kategorii/opik-2014-2020), the platform "Rediscover Bulgaria" (available at https://preotkrii.bg), the regional portal for culture and tourism for the Central Northern Bulgaria "Come and experience!" and others, which by their nature are not analytical, but rather informative in nature.

One of the most broad-spectrum studies in the field of tourism, and of parts of the domestic tourism in Bulgaria, was organized in 2021 by the National Centre for Parliamentary Studies at the National Assembly of the Republic of Bulgaria. Based on a nationally representative survey among 1000 adult Bulgarian citizens, an analysis of basic statistical characteristics (relative frequencies) was carried out in the following main areas: public assessment of the importance of tourism for the Bulgarian economy, problems and advantages of the tourism sector in Bulgaria, state policy in the field of tourism, attitudes towards advertising of the Bulgarian tourism, etc. The most focused on domestic tourism are the analytical parts that concern: the consumption habits of the population, preferences in tourism, frequency of trips for the purpose of vacation, sources of information and planning of the next vacation. The main conclusions of the conducted research regarding domestic tourism are the following: only 17% of the respondents believe that the conditions for tourism in Bulgaria have improved in the last

five years (2017-2021); the main problem of the tourism sector is unreasonably high prices that do not correspond to the quality of service; the main advantage of Bulgaria is the diverse and beautiful nature (including the combination of sea and mountains); the tendency for Bulgarian tourists to receive worse service than the foreign tourists; a significant part of Bulgarians (46.4%) only go on vacation once a year, and as many as 31.6% do not go on vacation at all; the main reasons (77.7%) for not taking a vacation are mostly financial; 53.8% of respondents prefer to have a vacation only in Bulgaria; the main source of information when choosing a place to rest are the recommendations from friends, colleagues and relatives; 60.7% of the respondents believe that tourism in their locality would be best developed by the improving the conditions for the cultural and ecological tourism.

Although Bulgaria was not a member of the Organization for Economic Co-operation and Development (OECD) as of 2022, the report "OECD Tourism Trends and Policies 2022" (OECD, 2022) has designated "space" for a short analysis (5 pages) of tourism in Bulgaria and more specifically the domestic tourism. Emphasis is mainly placed on the impact of tourism on the country's economy and the development of sustainable tourism through the proactive activities of the so-called Organizations for the management of tourist areas.

In the book "Good practices and protection of the rights and security of the users in tourism" (Tsucekova et al., 2015) an analysis of the "behaviour" of Bulgarian tourists was carried out, summarizing the results of the previous studies. A brief analysis was made of: the types of trips of Bulgarian citizens; the profile of Bulgarian tourists; the factors affecting travel and destination choice; the expenses of Bulgarian tourists for trips in the country; the frequency of travel and the average length of stay; the preferred types of tourism and the main destinations in the country, as well as the attitudes and the assessments of the tourism business for the domestic tourism. The main conclusions from the study are: an increase in the number of Bulgarians traveling in the country for the considered period 2012-2014; formation of two types of trips - long for the purpose of rest (mainly in the summer) and short "weekend" type (mainly in the winter); formation of 2 main factors on the vacation decision - financial and the availability of free time, with the highest costs of the local tourists during the summer season. The authors come to the conclusion that the most preferred are the destinations related to sea tourism in Bulgaria.

A special emphasis on the practice of domestic tourism in the Black Sea resorts is discussed in Varadzhakova et al. (2023). The article examines the attractiveness, effectiveness and significance of the Bulgarian seaside resorts for the domestic tourism, as well as the development trend in the time series related to these resorts - number of visitors, bed capacity, length of stay, etc. The forecasts made indicate a positive development in the studied indicators, especially for the Bulgarian national resorts: Sunny Beach, Golden Sands and St. St. Constantine and Elena. On the other hand, in her research, Stoyanova-Bozhkova (2020) explores the perceptions of sustainability of various stakeholders and the extent to which the sustainability principles are implemented in the policies and practices on the Bulgarian Northern Black Sea coast.

The influence of different sources of information on the choice of destination in the

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practice of domestic tourism is discussed in detail in Naumov et al. (2024). Based on a nationally representative study, the authors conclude that the opinion of relatives and friends has the strongest influence on the choice of a destination and a specific place for practicing domestic tourism, regardless of the demographic and social characteristics of the respondents. Depending on the age group of the respondents, however, there is a significant difference in the use of online platforms and websites for the travel arrangements, with these approaches being mainly preferred by the younger and more highly educated respondents. In general, the print media, radio and television have lost their influence in making "tourist" decisions, except in the high age groups (over 55 years), where they still have some "authority".

Alexova et al. (2021) conducted an analysis of the main factors and prerequisites influencing the sustainable development of the national resorts in Bulgaria. The article discusses the positive and the negative influences of the political, environmental and socio-cultural factors, as well as the trends in the development of the tourism sector and the related consumer behaviour. The authors present a lot of evidence that the successful development of sustainable tourism in the national resorts should be based on conducting a systematic marketing research, effective planning in the field of tourism and regular monitoring.

The attitudes of the Bulgarian citizens regarding the domestic holiday tourism in a regional aspect are discussed in detail at the level of planning districts (NUTS2) in the article by Raykova et al. (2024). The analysis carried out by the authors shows the presence of significant differences between the individual regions in terms of the investigated

characteristics concerning the domestic tourism in the winter and the summer resorts - length of stay, satisfaction with the vacation and others.

Varadzhakova et al. (2024) is focused on the influence of the demographic factor "age" on the practice of the domestic holiday tourism and more precisely on the individual generations formed according to the Mark McCrindle classification (McCrindle, 2023). The authors confirm the assumption that there are statistically significant differences between the generations regarding the individual characteristics related to the implementation of domestic tourism - the possibility of visiting seaside and mountain resorts, the frequency of visit, the reasons preventing travel, the sources of information, the length of stay, etc.

The relationship between the Gross domestic product (GDP) and the total tourism attendance in Bulgaria is discussed in the article by Mihaylov et al. (2018). The latter establish a strong correlation between the number of visitors and the GDP of the countries whose citizens form the main tourist inflow into the country. In the same article, the average monthly salary of those employed in the tourism sector in Bulgaria was researched and forecasted, based on data for 14 years, using the Holt-Winters method with a multiplicative seasonality. The authors point out as a weakness of our tourism industry that it often relies primarily on the low-income tourists from abroad and those looking for low-budget solutions.

Based on an online survey with a limited volume of 84 respondents, Spasova and Baltova (2018) investigate the factors that influence the Bulgarian tourists when deciding to choose a specific vacation destination in their homeland. According

to the authors, the motives for choosing a destination are the key to the preparation of the tourist offers and the development of marketing strategies in the field of tourism. Based on Middleton's cognitive model, the authors evaluate the motivational factors by formulating 4 conditional types of tourists - "thrifty", "successful", "risky" and "sociable". In the course of the conducted research, the following 5 types of internal motivation (so-called "push-factors") for holidays among the Bulgarians were identified - relief, focus on oneself, time for family, adventures and prestige. To the specific characteristics that form the so-called pull-motives, the authors list: curiosity, security, nutrition, accessibility, entertainment, dynamism and impulsivity.

3. Data and methodology

Inevitably, in the study of complex phenomena from reality such as domestic tourism, a number of research problems arise. In this regard, in the present study we briefly examine the methodological foundations of statistical methods, with the help of which the research problems related to the analysis of the factor influence on the domestic tourism can be solved. From a research point of view, the present study covers one of the main directions of the statistical analysis: *diagnostic* (Saykova and Todorova, 1994).

Of essential importance for the complete and thorough study of the factor influences on domestic tourism is the study of the influence of indirectly observable factors (so-called latent factors), that is, the disclosure of those "hidden" reasons that "stand" behind what is obvious. In practice, the most commonly used method for studying such latent-acting causes is the so-called *explanatory factor analysis* (Goev et al., 2019). With the help of the latter, the possible influence of the hidden,

but objectively existing factors on those already measured through a representative study is revealed (Saykova et al., 2002). The factor analysis usually is used as a basis for conducting the more complex latent-structural analysis. Here, an answer to the question is sought: "What part of the variation of the observed variables was formed by the action of a smaller number, yet hidden causes?". The correct conduct of the study of the influence of hidden factor influences imposes some additional requirements, one of the main of which is the so-called *reliability of scales* of interrelated variables (Naidenov, 2015). In practice, most often the reliability of scales of variables used to construct higher-order indicators (i.e. latent variables) is measured using the so-called Cronbach's alpha coefficient (Bryman, 2008).

Further deepening of the analysis of the factor influences on the domestic tourism in Bulgaria, and more precisely the satisfaction of having vacation at the Black sea resorts, and more specifically the influence of factors that cannot be observed directly, cannot be carried out sufficiently adequately only with the help of the "classical" statistical methods, such as the factor analysis only. For this purpose, it is necessary to use an even more complex instrument, which, on the one hand, can incorporate information about the observed characteristics of the studied population, "measured" through a sample study, and, on the other hand, to quantify the "hidden" influence of the factors of more high level on the important indicators of the state of the domestic tourism, while taking into account the interrelationships between all the investigated phenomena at the same time. Such a complex study of interdependencies is possible with the so-called *latent structural analysis* (Petkov, 2007). The latter is a

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multidimensional statistical tool, with the help of which "hypothetical" dependencies can be investigated and which is based on the construction of the so-called *latent-structural models,* also known as *structural equation modelling or SEM* (Naydenov, 2015).

The structural equation modelling is a sophisticated statistical technique used to analyse complex relationships among variables. It combines elements of the factor analysis and the multiple regression analysis to examine both observed and latent (unobserved) variables (Hair et. al, 2021). SEM is particularly useful in fields like: social sciences, psychology, and business, where researchers aim to understand the causal relationships between variables. The technique involves creating a model that represents how different aspects of a phenomenon are thought to be causally connected. These connections are often depicted using diagrams with arrows indicating the direction of the influence. There are two main components in SEM: measurement model - deals with the relationships between the latent variables and their observed indicators and structural model - focuses on the relationships between the latent variables themselves (Saliya, 2022).

The structural equation modelling, by its very "nature", represent a system of linear equations describing relationships between exogenous (factor) and endogenous (resultant, dependent) variables, which in turn were studied through the sampling method during the direct observation of the units, that is, through the so-called "instrumental" variables (Suhr, 2006). The process of modelling the dependencies between the studied phenomena is essentially carried out by building the so-called chain diagram (model), which in turn represents a theoretical model of the hypothetical relationships

between these phenomena, and the estimation of the parameters of this model based on data from a representative sample. The assessment of the individual elements of the overall model is carried out through the integrated use of methods such as: covariance analysis, path analysis, confirmatory factor analysis, structural analysis, regression analysis and many others (Naydenov, 2015). The estimation of the parameters of the latent-structural models (a.k.a. structural equation models) themselves is carried out by the means of a complex optimization algorithm, which is essentially associated with minimizing the differences in the elements of two matrices: a covariance matrix compiled on the basis of the sample data and the matrix obtained on the basis of the compiled theoretical structural equation model of the interdependencies between the studied phenomena. This minimization can be carried out by various methods such as: the maximum likelihood method, generalized least squares method, Bayesian estimators, asymptotically distribution-free estimates and others (Bian, 2012). Since when studying the influence of various latent factors on the domestic tourism, variables measured mainly on the ordinal scales are used, the most suitable method for the parameters' estimation is the method of asymptotically distribution-free estimates. This method has "more liberal" requirements (Schumacker and Lomax, 2004) both on the size of the sample used and on the distribution of the observed variables used (no normal distribution required). How successful the "approximation" of the theoretical model of the investigated latent dependencies to the real-existing, observed ones was, can be checked with the help of the indicators for the "quality" of a latent-structural model (Naydenov, 2015). A huge

number of such measures are considered in the literature, but in practice the most useful ones have emerged (Byrne, 2010): the minimum chi-square criterion (CMIN), the root mean square error of approximation (RMSEA) and the goodness-of-fit index (GFI). The latter are used in the present study.

The availability of microdata for the domestic tourism in the Republic of Bulgaria is very limited. For this reason, as the main source of microdata in analysis executed in the present study, a nationally representative survey was used, organized by a research team under a project of the Bulgarian National Science Fund entitled: "Modelling and research of the public attitudes of the Bulgarian citizens regarding the image of the domestic holiday tourism – a situational analysis and a conceptual framework for overcoming the negatives". The nationally representative survey was conducted in the period 18 April – 23 May 2023 and is based on a two-stage clustered sample, stratified by regions (28) and by the type of settlement (district city, other city and village), that is, a total of 84 strata. The first stage clusters represent the electoral districts, and clusters of the second stage represent the households in Bulgaria. The clusters of the first stage, 100 in total, were stratified proportionally to the population in the individual strata and were randomly selected. The second stage clusters (households) are also randomly selected within the selected first-stage clusters. All adults in the sampled households (about 500 in total) were interviewed using a face-to-face tablet-assisted interview (TAPI). The field work was carried out by the company "ESTAT" with the help of 71 interviewers in 76 settlements scattered throughout the Bulgarian territory. As a result of the fieldwork of the interviewers, there are a total of 1003 successful interviews,

each of which had an average duration of about 24 minutes. The overall survey response rate is approximately 83%. The research tool is a structured questionnaire with a volume of 9.5 standard pages, which for the purposes of field work is programmed in the LimeSurvey online platform. In general, the questionnaire is structured in 6 sections as follows:

- Section 1 - "General information on practices for holiday tourism in Bulgaria";
- Section 2 - "Practices for winter vacation tourism in the Bulgarian ski resorts";
- Section 3 - "Practices for summer vacation tourism in the Bulgarian seaside resorts";
- Section 4 - "General information on the tourist practices of the Bulgarian tourists";
- Section 5 - "Practices for holiday tourism abroad";
- Section 6 - "Demographic characteristics of the respondents".

As a result of the conducted national representative survey and the subsequent activities of logical review and primary adjustment of the collected data, a microdata in SPSS format was obtained, which is composed of 151 variables and 1003 rows (cases). Due to the specifics of the domestic tourism in Bulgaria, namely – the prevailing seaside holiday tourism in the country, for the purposes of the analysis in the present study the data for the variables concerning the questions from section 3 of the questionnaire were used in their unweighted form.

4. Results

The overall satisfaction with the domestic holiday tourism at the Bulgarian Black Sea coast is an important indicator, with the help of which the final "result" of the joint influence of the complex conditions (factors) in the seaside resorts can be estimated, taking into

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account the interrelationship between the factors and the result, as well as between the factors themselves. As discussed in the methodology above, one of the most appropriate tools for exploring such complex interdependencies is the structural equation modelling analysis. The latter is based on the construction of a hypothetical (theoretical) model of the interrelationships between the studied phenomena and the estimation of the parameters of this model based on representative sample data.

Before the theoretical model of the relationships between the satisfaction with the carried-out sea vacation tourism is compiled, it is necessary to check the reliability of the scales that are part of the so-called batteries (groups of questions) of instrumental variables (sub-questions), and which were used to "directly" observe the otherwise hypothesized latent factor variables. A more detailed content of the set of the questions used in the national representative study, concerning the seaside holiday tourism, can be found in Table 1 below. The directly surveyed

Table 1. Description of the variables, questions and measurement scales used in the nationally representative survey, concerning the seaside holiday tourism (survey questionnaire extract)

Code	Question	Measurement scale
Q16	To what extent do you agree with the following statements regarding summer vacation tourism in Bulgaria (holidays on the Black Sea coast)?	Ordinal
Q18	To what extent do the following specific features relate to summer holiday tourism in Bulgaria (holidays on the Black Sea coast)?	Ordinal
Q19	How would you rate the following characteristics of accommodation in Bulgarian summer resorts?	Ordinal
Q20	How would you rate the tourist resources in the Bulgarian summer resorts in terms of the following characteristics?	Ordinal
Q21	How would you rate the following characteristics of the dining and entertainment establishments in the summer resorts in Bulgaria	Ordinal
Q22	To what extent are you satisfied with your holiday in the Bulgarian summer resorts in the last 5 years?	Ordinal

Source: Survey questionnaire

Table 2. Reliability test results

Group number	Subquestion (battery) group name	Number of items	Cronbach's alpha
1	General conditions in seaside resorts	5	0.805
2	Specific features seaside resorts	8	0.876
3	Conditions in accommodation in seaside resorts	4	0.857
4	Tourist resources in seaside resorts	6	0.864
5	Restaurants in seaside resorts	4	0.918

Source: Author's calculations

variables included in the individual batteries are measured on the ordinal scale.

Details regarding the names of the individual groups of the questions concerning the conditions in the Bulgarian seaside resorts, the number of sub-questions in each group and the magnitude of the reliability measure - Cronbach's alpha coefficient, are presented for a better overview in the following table (2):

From the tests above (Table 2), it was found that all the scales used in the separate groups of sub-questions in the research instrument (the questionnaire) possess the property of reliability to a large extent, as all the Cronbach's alpha coefficients are above the cut-off value of 0.8.

Next, before the chain diagram of the supposed dependencies between the studied phenomena is build up, usually in practice a check is made for the objective existence of "hidden" (latent) factor effects through the so-called explanatory factor analysis (EFA). The results of the latter are presented in the following table (Table 3):

The variation in individual groups of instrumental variables is assumed to be formed by the influence of "higher level" (latent) factors that do not have an overt expression, that is, they are not directly measurable. Thus, with the hidden "impact" of these conditions-factors, a certain "part" of the joint variation in the meanings of the individual sub-questions can be explained. It is clear from Table 3 that the largest part of the variation in the instrumental variables can be explained by the influence of the conditions in the restaurant and entertainment establishments (81.1%), followed by the conditions in the accommodation facilities (71.0%), in third place - the tourist resources (59.8%), in fourth place - the general conditions in the Black Sea resorts (58.9%) and in the last place - the specific features of these resorts (54.3%). The obtained results regarding the objective formation of the observable variables under the influence of constructs of a higher level (latent factors) provide a basis for estimating the parameters of a latent-structural model for studying the influence of the above-mentioned hidden factors on the overall satisfaction with the vacation at the Bulgarian Black Sea resorts in the following form (Figure 1):

Regarding the model presented in Figure 1, the following specific features can be noted:

- For each latent factor (visualized with an ellipse), a hypothetical relationship-effect (one-way arrow) is defined with a certain number of instrumental variables (rectangles), ranging from 4 to 8, whose behaviour is shaped by the influence of this factor.
- For each instrumental variable the hypothetical influence (visualized with a one-way arrow) of the so-called measurement errors (visualized with a circle/ellipse).
- It is hypothesized that the latent factors interact with each other (visualized with bidirectional arrows).
- The hypothesized impact of each latent factor on the outcome variable "satisfaction" is visualized with one-way arrows.

For the estimation of the parameters of the theoretical model presented in Fig. 1, the microdata from the representative sample, described in the methodology above, were used. The estimation procedure itself was carried out by the method of asymptotically distribution-free estimation[2], in order to

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[2] The estimation procedures are done by the usage of the IBM SPSS AMOS ver.29 software.

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Table 3. Results of an explanatory factor analysis for the influence of potential latent factors

Latent variable (factor)	Subquestion (battery)	% of variance explained
General conditions	Availability of favourable natural conditions for sea holiday tourism	58.9%
	Availability of possibilities to combine with balneology, spa and wellness tourism	
	Relatively well-developed tourist base - presence of high-class hotels	
	Availability of a good ratio between price and quality of the offered tourist goods and services	
	Availability of a high degree of security and safety	
Specific features	Overbuilding and overurbanization of coastal areas	54.3%
	Pollution of coastal marine waters	
	In many places the coastline is affected by landslides and erosion processes	
	Insufficient and not very well-maintained transport network, water supply and sewage infrastructure	
	Architectural uniformity of newly built accommodation	
	Not good enough tourist service	
	Medical service in the resorts is difficult	
	Relative neglect of Bulgarian tourists	
Accommodation conditions	Price	71.0%
	Quality of service	
	Cleanliness	
	Security	
Tourist resources	Presence of sand	59.8%
	Cleanliness of the sand	
	Provision of lifeguards	
	Availability of sufficient unit area per person on the beach	
	Prices of deckchairs and umbrellas	
	Availability of free zones	
Restaurants & entertainment	Price	81.1%
	Quality of service	
	Food quality	
	Cleanliness	

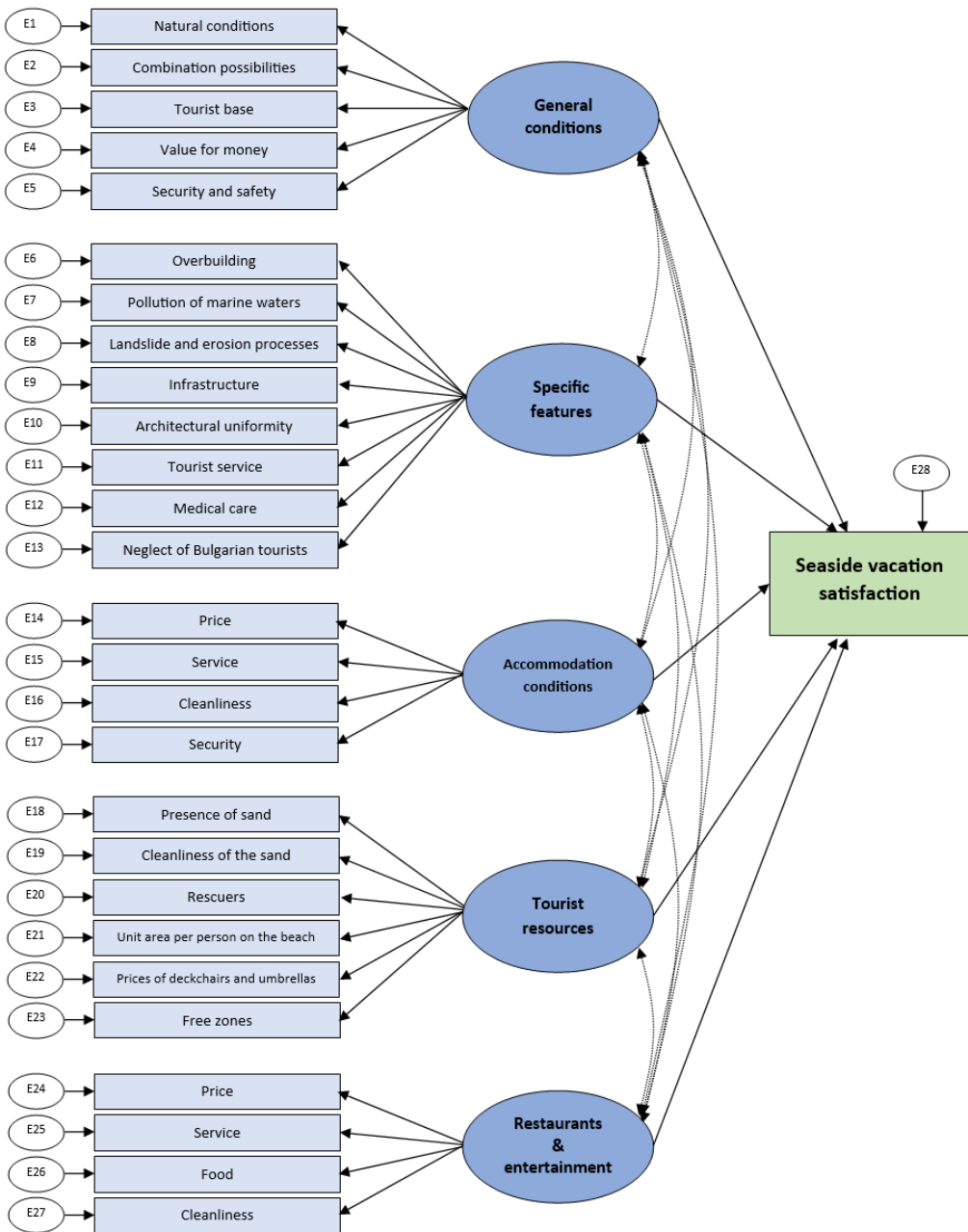**Source:** Author's calculations

Figure 1. Chain diagram (graphical model) of the influence of the latent factors on the seaside vacation satisfaction
Source: Author 's contribution

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take into account, the ordinal nature of the instrumental variables.

The results of the application of the assessment procedure are as follows[3]:

Table 4. Results of the estimation of the influence of the latent factor "General conditions of seaside resorts" on the individual observable variables

Latent factor	Regression weight estimate	Instrumental variable
General conditions	0.82	Value for money
	0.78	Security and safety
	0.59	Tourist base
	0.34	Combination possibilities
	0.29	Natural conditions

Source: Author's calculations

From Table 4 above it is clear that the general conditions in the Bulgarian seaside resorts have the strongest influence on the price-quality ratio of the services offered (0.82) and the security and safety in the resorts (0.78). Due to the positive nature of all studied influences, it can be concluded that better general conditions in the resorts would lead to a higher security and safety score, but also a higher value for the money rating.

Table 5. Results of the estimation of the influence of the latent factor "Specific features of seaside resorts" on the individual instrumental variables

Latent factor	Regression weight estimate	Instrumental variable
Specific features	0.84	Tourist service
	0.81	Pollution of marine waters
	0.80	Infrastructure
	0.80	Neglect of Bulgarian tourists
	0.79	Architectural uniformity
	0.77	Landslide and erosion processes
	0.61	Medical care
	0.57	Overbuilding

Source: Author's calculations

It is clear that the specific features of the Bulgarian seaside resorts (Table 5) had the most significant impact on the tourist service (0.84), the sea water pollution (0.81), the infrastructure (0.80) and the attitude of the service staff towards the Bulgarian tourists (0.80). The positive regression weights indicate that the improvement in the specific conditions in the Bulgarian seaside resorts would lead to better tourist services, to better infrastructure, but it also risks leading to a higher pollution of the sea waters and a greater neglect of native tourists.

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[3] Only the statistically significant standardized regression weights are presented in the following tables, at a 5% significance level.

Table 6. Results of the estimation of the influence of the latent factor
"Accommodation conditions in seaside resorts" on the individual instrumental variables

Latent factor	Regression weight estimate	Instrumental variable
Accommodation conditions	0.84	Service
	0.82	Price
	0.79	Cleanliness
	0.74	Security

Source: Author 's calculations

Accommodation conditions (Table 6) most strongly influence the quality of the tourist service (0.84) and the prices (0.82). The improvement of the conditions in the places of accommodation would also lead to a better service, higher hygiene, but also probably to higher prices of the services.

The following table (7) presents the results of the estimation of the impact of tourist resources on the directly observed variables as follows:

Table 7. Results of the estimation of the influence of the latent factor "Tourist resources in seaside resorts" on the individual instrumental variables

Latent factor	Regression weight estimate	Instrumental variable
Tourist resources	0.82	Free zones
	0.80	Prices of deckchairs and umbrellas
	0.79	Unit area per person on the beach
	0.71	Cleanliness of the sand
	0.51	Rescuers
	0.37	Presence of sand

Source: Author's calculations

Table 7 shows that the most significant influence of the tourism resources is on the availability of free areas on beaches (0.82), the prices of the sunbeds and umbrellas (0.80) and the size of the area that is laid on one vacationer (0.79). Making improvements to the available seaside tourism resources would lead to a significantly larger size of the free zones, more area for the individual beachgoer, cleaner sands, while increasing the value of the services offered.

Table 8. Results of the estimation of the influence of the latent factor "Restaurants and entertainment establishments in seaside resorts" on the individual instrumental variables

Latent factor	Regression weight estimate	Instrumental variable
Restaurants & entertainment	0.91	Price
	0.91	Service
	0.85	Food
	0.84	Cleanliness

Source: Author's calculations

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The highest rate of influence of the conditions in the restaurants and the places of entertainment (Table 8) on all directly measured variables are: the prices of goods and services (0.91), the quality of service (0.91), the quality of the offered food (0.85) and the hygiene in these establishments (0.84). Investing more the effort and resources in the restaurants and entertainment establishments would lead to improvements in both the food offered and the quality of service and cleanliness in the establishments. However, this will logically lead to a certain increase in the prices of the products and services offered.

In the next place (Table 9), it is appropriate to examine the interrelationships between the latent factors themselves:

Table 9. Results of the estimation of the correlation between the latent factors

Latent factor	Correlation estimate	Latent factor
Accommodation conditions	0.87	Restaurants & entertainment
Accommodation conditions	0.76	Tourist resources
Tourist resources	0.76	Restaurants & entertainment
General conditions	0.75	Accommodation conditions
General conditions	0.67	Tourist resources
General conditions	0.62	Restaurants & entertainment
Specific features	-0.22	Tourist resources
General conditions	-0.30	Specific features
Specific features	-0.33	Accommodation conditions
Specific features	-0.35	Restaurants & entertainment

Source: Author's calculations

It is clear from Table 9 above that the relationship between the conditions in the places of accommodation and the conditions in the restaurants and entertainment establishments (0.87) and between the first ones and the tourist resources (0.76) can be defined as strong and proportional (positive). Also, a relatively strong correlation is estimated between the tourist resources and the restaurants and entertainment (0.76), as well as between the accommodation and the general conditions in the Bulgarian seaside resorts (0.75). This can be interpreted in two ways, on the one hand, the improvement in the accommodation conditions would lead to improvements in the conditions of the food establishments and the tourism resources, but on the other hand, the improvements in the tourism resources of the Bulgarian seaside resorts would also lead to an increase in the quality in the offered hotel and restaurant services.

Although weaker, there are negative relationships between specific conditions in the Bulgarian resorts and the conditions in the restaurant and entertainment establishments (-0.35), as well as with the conditions in the accommodation (-0.33). Reducing the pollution of the sea waters, avoiding the over-building of the resorts and limiting the landslide processes, would also lead to the supply of a higher quality of the accommodation and the food establishments.

The summarized results for the influence of the latent factors on the respondents' satisfaction with their overall seaside holiday "experience" are presented in the following table (10):

Table 10. Results of evaluating the influence of latent factors on satisfaction with summer holiday tourism

Latent factor	Regression weight estimate	Outcome variable
General conditions	0.26	Seaside vacation satisfaction
Restaurants & entertainment	0.26	
Accommodation conditions	0.10	
Tourist resources	0.08	
Specific features	-0.09	

Source: Author's calculations

Although relatively moderate, the influence of the general conditions in the resorts (0.26) and the conditions in the restaurant and entertainment establishments (0.26) on the satisfaction of the Bulgarians who took advantage of their summer vacation at the Black Sea can be determined as statistically significant. Almost imperceptible in strength is the impact of accommodation conditions (0.10), the tourist resources (0.08) and the specific features of the Black sea coast (-0.09). In summary, it can be said that the extent to which the Bulgarian tourists will be satisfied with their Black sea vacation depends rather on the overall feeling of the conditions in the resorts - prices, safety, tourist base, natural conditions, as well as on how this tourist will be "welcomed" in the restaurant and entertainment venues.

Due to the insufficiently "convincing" influence of the considered factors, however, it becomes clear that there are probably other hidden conditions that probably contribute to a small or large extent to the degree of satisfaction with the seaside holiday tourism. This, in turn, can be interpreted as a stimulus for conducting additional research in this direction, but also leads to taking a "path" that leaves the limits of the present study.

5. Conclusions

Despite the essential importance of the domestic tourism for the economy of Bulgaria, the Bulgarian scientific literature lacks in-depth up-to-date analyses that cover both the state and the dynamics of the domestic tourism, as well as the factor impacts on this socio-economic phenomenon. In order to overcome this problem, based on empirical data of an official nationally representative origin and a high methodological quality, the methods of diagnostic statistical analysis were experimented.

The study provided valuable insights into the factors influencing the domestic tourism satisfaction with Bulgaria's Black Sea resorts. Through the usage of the structural equation modelling (SEM), we identified that the general resort conditions and the restaurant and entertainment establishments are the most influential factors in the shaping of the overall tourist satisfaction. However, the negative elements such as the water pollution, overbuilding, and the poor infrastructure

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remain significant challenges that adversely affect the tourist experience.

The findings highlight that improving the security, services, and resort conditions is critical to enhancing the overall satisfaction of the domestic tourists. While the accommodation and the tourist resources play a role, their influence is secondary compared to the broader environment and the specific features of the resorts. Notably, the study suggests that further research into other hidden (latent) factors could uncover additional elements affecting the tourist satisfaction, offering opportunities for continued improvement in Bulgaria's domestic tourism sector.

The policymakers and the tourism industry should focus on addressing environmental concerns and the infrastructure deficiencies to sustain and boost the tourist satisfaction. These improvements are essential for maintaining the competitiveness and the appeal of Bulgaria's Black Sea resorts, ensuring that they continue to attract both domestic and international visitors.

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