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APPLICATION OF AHP MODEL FOR EVALUATING EXISTING FORMS OF SELECTIVE TOURISM IN CROATIA

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Abstract

In recent years there is a rise of novel forms of selective tourism such as adventure tourism, health tourism, excursion tourism etc. All these different kinds of touristic offers have different impacts on development of this most important branch of Croatian economy. The paper investigates different kinds of selective tourism forms available in Croatia and defines criteria for their ranking in respect to tourism development. The paper demonstrates application of multicriteria decision making technique, Analytical Hierarchy Process (AHP) in ranking importance of different sorts of selective tourism in respect to development of tourist offer in Croatia. AHP utilizes a multi-level hierarchical structure consisting of objective, criteria, sub criteria, and alternatives, is applied in selection of an appropriate sort of many selective tourism forms available. The input from the experts has been used in pairwise comparison matrix in order to rank the selective tourism forms. The data collected by AHP-structured pairwise comparisons were constructed into a computer-based program called Expert Choice. The paper shows that AHP is a viable tool for rank ordering of selective tourism forms following various weighting schemes.

Keywords: *tourism development, selective forms of tourism, Analytical Hierarchy Process (AHP)*

1. INTRODUCTION

The development of the tourist market caused the dispersion of supply and the creation of new selective types of tourism. The development of the Croatian tourist offer is quite dynamic, and destinations opt for various kinds of tourism. Some of the types of tourism do not bind to the location but on other factors such as time of the year, such as Advent time and other important dates.

The purpose of this paper is to define criteria for the definition of a particular type of selective tourism and to design a decision making model that can be used to rank forms of selective tourism in the development of a tourist offer of a particular destination. The main goal of the paper can be divided in two main objectives. First aim is to define a fixed set of criteria that

should be the basis for evaluating decisions about pursuing specific selective tourist type. The second objective is the creation of a computer model, based on the mathematical methods of the Analytical Hierarchy Process, which represents a platform for the development of any particular decision-making problem.

The application of the analytical hierarchy process to the principal problem of choice has been executed through four basic steps (Saaty, 1980). First step was to identify the theoretical underpinnings of criteria selection and preparation of the basic elements for implementing the analytical hierarchy process. Second step was the simulation of the decision-making process in respect to expert in the fields tourism, both from practice and academia. After the first two steps there was a series of workshops in order to determine the basic criteria and their hierarchy which represents the third step of the study. Several basic criteria were identified in the analytical hierarchy process as well as the possible values or ranges of values of these criteria (for continuous variables). Finally, in the fourth step the model of decision making was defined.

2. MASS TOURISM VIS-A-VIS SELECTIVE TOURISM FORMS

Phenomena of tourism is a result of three basic conditions for its occurrence: hard work and the need for a break, the creation of financial surpluses in the family, and the introduction of time to rest (Hara, 2008). Tourism has become part of the economy, national, world, but also local. Its phenomenon has proven to be economically quite important for many countries Croatia being one of them (Ivanović, Bogdan, Bareša, 2018). Tourism revenues come from hospitality enterprises which are based on the stay of foreign tourists, revenues from other forms of tourist accommodation, income from food, drinks and similar services of other types of catering, revenues from the transport of foreign tourists using domestic transport capacities, revenues from transit traffic, revenues of special tourist activities related to the residence or requirements of foreign tourists, revenues of specific commercial enterprises in the service of tourism, as well as revenues of state bodies realized in connection with foreign tourism. Therefore, tourism is much more than a single part of national economic matrix but rather a significant nod in it and as such demands significant institutional as well as research attention.

Tourism as defined by Krapf and Hunziker (1942, p. 6) stands for: "the totality of the relationship and phenomenon arising from the travel and stay of strangers, provided that the stay does not imply the establishment of a permanent residence and is not connected with a remunerative activities". If we are talking about types of tourism it is interesting that we will find other definitions in the research opus of tourism, but we will not find the definition of mass tourism, but only a critique and a review of the negative effects of mass tourism. As a antipunkt to the mass tourism Jadrešić (1991) introduced the term "selective tourism". Although the concept experienced a burning critique at the time of its introduction it eventually became generally accepted as the term "selective tourist forms"(Luković, 2008).

Tourism is a set of different, but related activities, which are linked together in a person of a tourist with his or her needs. From the market perspective the tourist supply is hence driven by a tourist demand. This demand was in first primarily recognized as global, general and massive, but by the 1970s it was understood that it is necessary to place the tourist as an individual in the center of attention and research. This marked a change in tourism research and the development of selective tourism forms.

The term "selective tourist forms" appears as an antonym of the term "mass tourism", with the desire to explain the new way of doing business in tourism, where the tourist is personally recognizable, and in the focus of all business activities. Furthermore, selective tourism types, in the research of tourism, arise as a result of a dynamic relationship between tourism demand and supply, where it is known that demand is elastic and the offer is inelastic. As a result of the marketing business orientation there is an increasing intensification of the supply and demand that

are being developed together, with increasingly prominent elements of the self-learning system (Luković, 2008). The supply and demand system, which is increasingly marketing oriented, is the result of the development of management in tourism. If we look at Croatia from that perspective, we can say that the development of tourism offer is gradually improving, despite its existing and justified criticism.

As a result of demand, as well as the supply, customized by the demand, both mass and selective tourism types have distinct underpinnings. Selective tourism, or selective tourist forms are, as a rule, a response to the saturation of the consumption market and the reaction of a particular consumer group. Selective tourist forms are created as a response to the special forms of tourist demand. However, before analyzing tourist selectivity, it should be emphasized that tourist selectivity must be observed with two basic aspects: (1) the development of tourism and tourist subspecies - marketing aspect, (2) management process at micro and macro level - managerial aspect.

The basic model for the development of selective tourism forms is presented in the Exhibit 1 as adapted from the Luković and Strasburger work (2008).

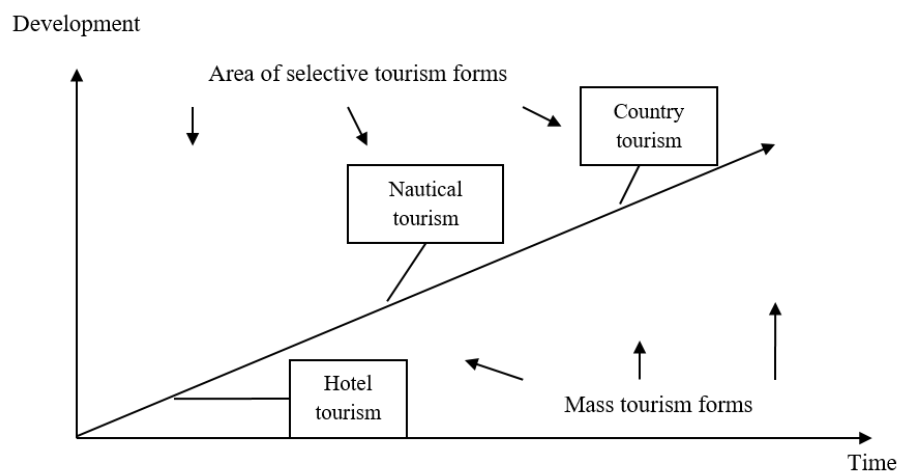
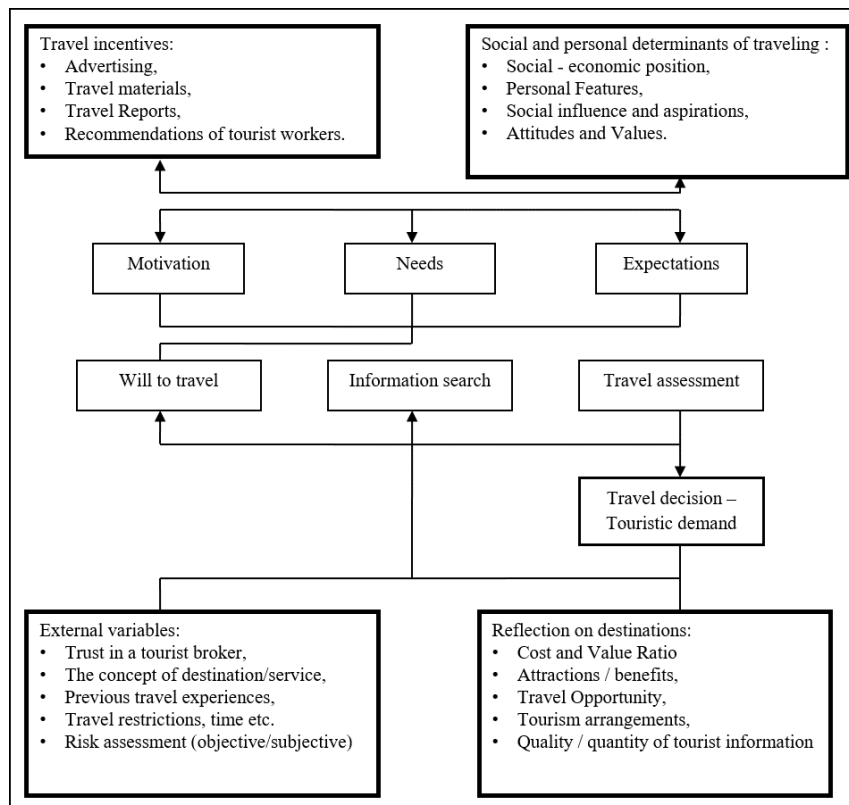


Exhibit 1 Development of selective tourism forms

From the presented model, it is evident that selective tourist types are formed by designing and by relative isolation from the general trend of tourism as a phenomenon, under the condition of market recognition.

If we start from classical learning that motive is the main factor in tourism, the question arises, for example, whether hotel tourism can be a selective tourist type. Given his mass character, he obviously cannot. Therefore, it is clear that individual tourist recognition is one of the important characteristics of tourist selectivity, but it is not enough. The basic characteristic of tourism, "organized mass travel" is lost, and a "journey to meet certain needs of tourists" is introduced. Therefore, the problem of understanding selective tourist forms in the research opens new problems to be clarified, i.e. the problem of selectivity is a much more complicated procedure than it can be concluded at a first glance. In addition, the motive as the basic and until recently the only factor for the decision for a tourist journey, in selective tourism forms, is gradually being lost, as is noted by Mountinho (2004). With his research he proves that the motive cannot longer be considered to be the only, or even the basic factor of tourism. Mountinho analyzes the decision-making system for a tourist trip and finds that the reasons for traveling are really multiple (Exhibit 2).



Source: Moutinho, 2004, p. 89.

Exhibit 2 Tourist decision making model

The reasons for traveling are different, and the decision-making system about appropriate destination is quite complex. For instance, staying in a certain hotel can be a dominant motive for tourists, although rarely (the example of this is a hotel made of ice in Finland or a hotel located twenty meters below the sea as in Dubai). If that happens we can say that it is a selective tourism form (Luković, 2008). Therefore, from this aspect, "hotel tourism" can, with certain conditions and changes of supply, be considered as a selective tourist type. However, this requires additional explanations, as well as the setting of clear criteria that would give a clear answer regarding the selectivity of a new tourist type. This question is of significance for tourism practice and research, because studying and developing of selective tourism vis-à-vis mass tourism gives us better understanding of motivation for travel and thus opens opportunities for increasing quality of service.

3. THE CRITERIA FOR RANKING SELECTIVE TOURISM FORMS IN RESPECT TO DEVELOPMENT OF TOURIST OFFER IN CROATIA

The paper argues that selective tourism forms can be distinguished on the basis of their potential impact to the overall tourist offer.

Ranking of different sorts of selective tourism in respect to development of tourist offer in Croatia begins with development of multi-level hierarchical structure consisting of objective, criteria, sub criteria, and alternatives.

The principal criterion of the selection problem is the overall perspective of selective tourist offer. This criterion is called the winning selective tourism form. The decision about which selective tourist form should be promoted in a systematic manner is derived from the four sub-criteria which can be observed on three distinct levels (Luković, Gržetić, 2007, Luković, 2008). The levels are

national, regional and local level and the main sub-criteria are (1) multiplicative effect of demand on supply, (2) level of recognition of potential tourist interest, (3) significant impact on tourist spending and (4) adequate scale of impact.

First sub criterion is the multiplicative effect of demand on supply which amplifies the need that the tourist demand will drive additional tourist supply hence enabling scaling of this tourist form. The decision making model defined three ranks for this criteria: there is high possibility that the significant multiplicative effect will emerge, there is average possibility that the multiplicative effect will emerge and there is low possibility that the multiplicative effect will emerge.

The second sub-criterion considers wide recognition of potential tourist interest. If the selective tourist forms globally recognizable offers more potential for fast and successful development. Therefore, this criterion in the decision making model has four ranks, the tourist form recognition can be: locally recognizable (parts of the country), domestically recognizable (on country level), multinational recognizable (several countries) or globally recognizable.

The third sub-criterion, significant impact on tourist spending, denotes the fact of average impact of selective tourist form on total tourist spending. In order to rank selective tourism forms on the basis of their potential contribution to overall tourism development this criterion can be assigned with two options: either the total spending is more (rank: high) or less than 50% (rank: low) of per diem tourist spending.

Finally, the last sub-criteria used to define the key criterion is adequately large scale impact. This criterion is different than the criteria of wide recognition of potential tourist interest because it does not consider attractiveness of the offer but the cost – benefit perspective of investment in tourist form in terms of potential demands. For instance, certain selective tourist form can be attractive on the national level but it does not mean that the pool of potential visitors is such that development of this tourist form can easily be advised. The values that this criterion may obtain in the decision making model includes: adequate impact, marginal impact, low impact.

In order to illustrate the proposed hierarchical decision making scheme we will rank two selective tourism forms: nautical tourism and diaspora tourism.

3.1. Ranking of Croatian nautical tourism as a selective tourist form

In Table 1 we have evaluated current state of affairs of Croatian nautical tourism in respect to the criteria that form decision making model.

Table 1 Evaluation of nautical tourism as a selective tourist form in Croatia

Criteria	National level	Regional level	Local level
Multiplicative effect of demand on supply	Low	High	High
Level of recognition of potential tourist interest	Global	Global	Global
Significant impact on tourist spending	High	High	High
Adequate scale of impact	Marginal	High	High

The current progress of nautical tourism in Croatia clearly indicates that nautical tourism is a tourist phenomenon that develops very dynamically. Its expansion has been recognized and appreciated on the European and global markets, which further stimulates its advancement. However, for the time being, this is happening only in the Croatian part of the Adriatic, which, however, does not satisfy the national level of tourist selectivity in view of the criteria.

The level of development of all types of nautical tourism, in terms of its per diem consumption, has reached the level at which the daily cost structure of tourists is dominant on the side of nautical tourism consumption. Also, its massiveness is of national importance and there are specialized research and teaching institutes that primarily deal with nautical tourism research.

As a conclusion of the ranking of a selective form of nautical tourism we can say that it is almost a brand of national tourism. As a selective tourist form, nautical tourism ranks high on all part of the model besides on the level of national impact. To make nautical tourism fully representative at the national level, new capacities should be realized. For example, if Zagreb invested in the formation of a river port and joined with the port of Vukovar, river cruising would significantly develop. Croatia is one of the most receptive countries in nautical tourism, highly respected by the emission market of Europe and the world, and the possibilities of all sub-types of nautical tourism are still not sufficiently realized. Also the development of nautical tourism as a selective tourist type is presented by its development of its sub forms, like the ports of nautical tourism, charter and cruising. Within them, new selective sub-forms are developed that are of regional and local importance.

3.2. Criteria for ranking Croatian diaspora tourism as a selective tourist form

Besides nautical tourism we will also discuss another, in this case not so well known form of selective tourism - diaspora tourism. In the analysis of this touristic type, many issues are being raised that should be explored and clarified. Firstly, the diaspora as a tourist market, and the question whether the tourist from diaspora coming to Croatia meets the criterion of tourists, or whether he is staying for 24 hours at the destination, that is, whether he sleeps commercially or with his other home in Croatia. This problem needs to be discussed and harmonized, because, according to the definition of tourists, as a tourist, the term tourist refers to a person who spent the night at a commercial lodging. So, it remains an open question whether an accommodation outside commercial options can be considered a part of tourism. If we disregard this problem the evaluation of diaspora selective tourism form looks as follows (Table 2).

Table 2 Evaluation of diaspora tourism as a selective tourist form in Croatia

Criteria	National level	Regional level	Local level
Multiplicative effect of demand on supply	Low	Low	Average
Level of recognition of potential tourist interest	Multinational	Multinational	Multinational
Significant impact on tourist spending	Low	Low	No data
Adequate scale of impact	Marginal	Low	Low

Given the elaborated criteria, the question of scale of impact can be raised. This criterion must be observed from two aspects, the aspect of space and the aspect of financial significance as a measurable size. From the perspective of space, selectivity will refer to the locality, or the entire territory of Croatia or some region. If, however, the criterion of sufficient mass is satisfied, then it remains to investigate investment profitability, that is, an analysis of whether the demand expressed by diaspora tourists triggers the development of that adequate supply. In addition, it is important to determine whether diaspora tourism is globally recognizable, that is to say to understand its extent in the global market. In the end, it remains to analyze whether the costs of a tourist are related to a specific offer or not. Since there are significant issues in understanding crucial parts of the proposed evaluation model, it is not advisable to talk about diaspora tourism as a new selective tourist type in Croatia.

As the table shows it is not certain that the diaspora tourism is indeed a new selective tourist type. However, given the information and data of some other countries, such as Ireland or South Korea, as well as level of consumption of diaspora tourists, this phenomenon is worth investigating in the future.

4. APPLICATION OF THE ANALYTICAL HIERARCHY PROCESS (AHP) IN RANKING OF SELECTIVE TOURISM FORMS

Besides mentioned selective tourism forms of nautical and diaspora tourism there are many others forms that already exist and many more that are likely to appear in the future. Since it is of paramount importance to make reasonable distinction in respect to potential of each selective tourist form, choosing the appropriate decision making technique in order to rank should be the first step in this discussion.

Before multicriteria analysis was matured, the dilemma of selection and ranking of different decisions was usually boiled down to a single criterion optimization tasks. The criterion is defined as a measure by which we estimate of a certain decision with respect to the same perspective.

AHP (Analytical Hierarchy Process) is one of the most common scientific way of scenario analysis and decision making with immutable evaluation of hierarchy whose elements are comprised of purpose, criteria, sub criteria and alternatives (Darko et al 2018, Çakiroğlu, Şener, Balin 2018, Peko, Gjeldum, Bilić 2018). Analytical Hierarchy Process is a group of methods used for soft optimization. Essentially it is a tool for presenting and analyzing decision-making hierarchy. AHP essentially facilitates an interactive creation of a hierarchy of problems as a provision of scenarios, and then a pairwise comparison of hierarchy elements (aims, criteria, alternatives) in the top-down direction.

Eventually it creates an integration of all the assessment, and, in a rigorous mathematical model, it determines weight coefficients of all the segments in the hierarchy. The sum of the elements' weights coefficients at separate level is always 1, thereby enabling the decision makers to rank all the elements in the horizontal and vertical order. AHP enables a correlative sensitivity analysis of the evaluation procedure on the final ranks of hierarchy elements.

The analytical hierarchy process is adaptable because it permits users to find a relatively simple relationship between the influencing factors in a complicated problem with many criteria and alternatives. Also the technique is helpful in recognizing of their explicit or proportionate effect and significance in realistic circumstance and determine the higher importance of one factor in comparison to the other. This method predicts the fact that even the most complex problem can be broken down into a hierarchy, which than allows further analysis of quantitative and qualitative aspects of these problem segments. AHP holds all the parts of the hierarchy in a relationship, so that a change in one factor influences the other factors.

Important decision making problem, especially in the public domain, is the issue of changing criteria. That is the situation in which new criteria were often put in the decision making process, which a function to correct the problems resulting from an incomplete „rules of the game“. Such an approach of „trials and errors“ needs to change and this study suggests a continuous set of criteria that should be the backbone of every selection problem.

Application of the analytical hierarchy model of decision making allows it to systematically analyze and manage the steps and sub-decisions that the decision making process consists of. As the number of criteria increases, the incapacity to proper re-analyzing the decision exponentially increases. In order to give AHP method its rightful due it is important to do the calculations in a proper way. In order to assure that it is recommendable to use one of many available AHP decision making support computer programs such as Expert Choice.

Creating of an analytical hierarchical model by using Expert Choice application begins by defining the goal of the decision making process. In this case the goal is evaluation of any selective tourism form. In the next step predefined criteria are inserted into the software. As previously stated, the selection problem is based on four main criteria: (1) multiplicative effect of demand on supply, (2) level of recognition of potential tourist interest, (3) significant impact on tourist spending and (4) adequate scale of impact. The criteria vary with respect to the input. The model for one part of the criteria allows direct input, which, by a set of logical-arithmetical rules, compares the value of an option with other options (direct). For the second group of criteria values are entered in the form of ordinal scale (ratings).

The method of analytical hierarchy process is especially convenient for the underlying selection problem because it permits the comparison of the crucial criteria prior to making a decision, in other words already in defining the conditions for comparing in respect to goals that the decision making process aim achieving (i.e. optimising tourist turnover, investments options, public finance decisions etc.). This option improves the quality of the ranking and provides a higher level of transparency in decision making. In the successive steps of the implementation of the analytical hierarchy process there is an iterative process of comparing of alternatives in groups of two, with respect to a certain criterion. This procedure is done until all the combinations of alternatives are contrasted and the entire process is repeated with each of the criteria. Upon completion of entry of the value of criteria software gives the final result and the analysis of options by certain criteria. Also the Expert Choice, as any other software of this kind, provides a large number of charts to facilitate the comparison of options.

5. CONCLUSION

The term "mass tourism" is often refuted as a wrong way to think about strategy of Croatian touristic offers. Selective tourism, as an antonym of mass tourism has many forms; some of them are well known and prosperous while the others are yet developing. Important question here is which of many forms of selective tourism should we develop; either from the position of institutional support or from the position of investment awareness as well from the perspective of research attention. The paper argues that selective tourism forms can be distinguished on the basis of their potential impact to the overall tourist offer.

Ranking of different sorts of selective tourism in respect to development of tourist offer in Croatia is described by a multi-level hierarchical structure consisting of objective, criteria, sub criteria, and alternatives. The principal criterion of the selection problem is the overall perspective of selective tourist offer. This criterion is called the winning selective tourism form. The decision about which selective tourist form should be promoted in a systematic manner is derived from the four sub-criteria which can be observed on three distinct levels. The levels are national, regional and local level and the main sub-criteria are (1) multiplicative effect of demand on supply, (2) wide recognition of potential tourist interest, (3) significant impact on tourist spending and (4) adequately large scale impact. Besides developing hierarchical structure of criteria for decision making and values for each input criteria we discuss two selective tourist forms, namely nautical tourism and diaspora tourism.

This paper presents the model of decision making technique for evaluation of a different type of tourism forms based on the author's opinion while the following research will consist of testing the model and finally implementing it by surveying opinions of the experts.

On the basis of the proposed evaluation model, ranking of all or several forms of selective tourism can be conducted in a methodologically sound way that will allow decision makers to have informed discussions about different selective tourism forms. Transparent measuring and adequate comparing of the selective forms of tourism is impossible to achieve if the criteria for the comparison are not defined as well as the values that can be offered by a certain criterion.

Transparency and the possibility of comparison of the results in respect to development of a certain form of selective tourism will enable basis for discussions between proponents for the institutional development of a certain kind of selective tourism. The evaluation process of different forms of selective tourism is a complex process during which it is desirable to define the weighting coefficients that certain criteria will have in the bids evaluation process, which gives additional explication of the selection problem - using mathematical method of the analytical hierarchy process.

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