

Research in Social Change

ADDRESSING ECONOMIC FRAGMENTATION: MODELLING REGIONAL GAMBLING TOURISM IN THE CONTEXT OF SOCIAL FIELDS THEORY

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Abstract

The trend in development is going from slow withdrawal from mass tourism to a growing demand for small-scale local, customer-tailored travel experiences. The main question is balancing two main tourism development models: mass tourism connected to gambling, on the one hand, and customer-oriented local experience on the other. How should policymakers proceed in shaping the development of policies supporting both models? We discuss case studies proposed to build a qualitative multi-criteria decision model to evaluate the appropriateness of the development of new models encompassing the two mentioned. Therefore, the multi-criteria decision method DEX and the DEXi software tool are practical options for decision support in gambling tourism management. This study quickly analyses basic concepts of the DEX method and possible applications on actual life decisions and valuation problems.

Keywords

gambling tourism • tourism development • fragmentation • multi-attribute hierarchical model • DEXi software

1. Introduction

Tourism is an economic activity developed en masse after the Second World War, with increased transport flows and accessible transport means. In recent debates, it has become evident the tourist is starting to demand more personal and individualised travel experience than in the past (Evans, 2012). A similar trend is noticeable in gambling. With the liberalisation and proliferation of gambling, the activity became more accessible to the middle class (Reith, 2007). And with increased accessibility of travel, gambling tourism has become a popular option for several countries (e.g., Las Vegas in the US). Nowadays, the primary locations in gambling tourism have shifted to Far East countries such as China (Macau), Singapore, and Japan (Besednjak Valič, 2014). With such vital shifts in consumer orientation, we propose a question on the most appropriate model for the EU. Namely, the EU allows each member state to shape its gambling policies (see more in Egerer et al. 2018); therefore, we have a plethora of policies not consistently supporting the idea of tourism gambling. But among all of these, we are interested in those that are optimal for all involved actors.

The sociological-theoretical point of departure in conceptualising the model of tourism gambling development for policymakers lies in the theory of social fields. Fligstein and McAdam (2012) conceptualise the state as a social field of higher order containing multiple other social fields. When illustrating their idea, they use the symbol of the matryoshka (a Russian wooden doll, each one containing a smaller doll inside). Nonstate actors can also create social fields, but the state social field generates stability through proposed legislation. Following that, within the relationship of the state and nonstate social fields, it is true that the presence of state fields creates predictability and security of the environment that allows nonstate actors to develop new social fields without fear or threats for their property (Fligstein and McAdam 2012; Besednjak Valič 2014). They rely on social fields to take care of already established and valid legal norms to be appreciated. Still, the relationship between state and nonstate fields is not always positive, as distrust and hostility (Fligstein and McAdam 2012, 71) may occur between the fields because they always compete with one another for resources. The state is understood as

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its market with the dynamics of all social forces and actions between actors, both individual and collective. Gambling tourism, as such, is in the present article recognised as a service business competing in a market that is largely shaped through the rules of the individual state. Defining gambling tourism as a service business operating in its social field, where the state determines the laws of operation, enables us to proceed with further analysis and modelling. The modelling is helpful for policymakers who shape the legislation and aim to develop additional documents that shape the landscape of the field, where collective and individual actors engage and operate.

Steering a tourism gambling development is a complex process. Its success is highly dependent on establishing cooperation among several spheres, including physical (what types of land-based casinos are going to be implemented in the country) and social (gambling can be seen as an inappropriate activity by the local population due to health issues in terms of potential addiction generation (Reith 2007)). Ignoring even one of these spheres may lead to a significant time delay or even failure to develop a helpful tourism gambling policy contributing to further development.

In this paper, we propose a model of a tourism gambling development policy that includes elements that support the decision-makers in elaborating such policy. The model allows evaluation of the current level of tourism gambling development in various countries in the EU and contributes to clarification and finding weak adverts for improvement of tourism gambling development policy. Henceforth, the results from the evaluation of tourism gambling development suggest to the decision-makers which properties and which particular attributes need to be improved to develop or obtain a better tourism gambling policy. The model could perhaps help institutions, organisations, companies, and the public sector understand the weaknesses or better advantages of the current system for which solutions may or may not be required (Criado Pacheco et al. 2017).

We collected the data and built our model based on mixed-methods approaches, using the unique strengths and limitations of qualitative and quantitative methods. In this approach, quantitative data are collected and analysed first, and the results are used to inform the subsequent qualitative phase. Frequently the qualitative research helps to understand unexpected consequences that arise in the initial quantitative phase. Indifference, the sequential exploratory strategy, emphasises an initial qualitative phase that we used to gain insight into an understudied phenomenon. Together the two methods provide a better understanding than each alone; the quantitative phase provides generalisability, and the qualitative phase gives context to the findings (Li and Bohanec 2010; Džajić-Uršič 2020).

Consequently, we chose a DEX methodology and its implementation into the DEXi computer program. The main characteristic of the DEX method is its capability to deal with qualitative variables. DEXi is a stand-alone computer program for multi-attribute decision-making. It facilitates interactive development of qualitative multi-attribute and hierarchical decision models and evaluating options (Jereb et al. 2003a; DEXi User Manual 2020). As Mileva-Boshkoska (2017, 3) describes it, 'DEXi has been used in many real-life decision problems in areas such as selection and evaluation of computer hardware and software, evaluation of firms and business partners, individual management, project evaluation, land-use planning, risk assessment in medicine and health-care'.

The structure of this paper is as follows: In Section 2, we describe the materials and modelling approach for the development of a decision support model for the evaluation of tourism gambling development policy. We outline the key benefits of a new model and support our statements with ten of the most famous examples of the EU's best practices. The obtained model and evaluation are elaborated in Section 3. A comprehensive picture of the attributes is provided in Appendix A, while in Appendix B, we give the utility functions of the aggregated attributes. Finally, in Section 4, we offer our conclusions.

2. Modelling Tourism Gambling Development through the Prism of Social Fields

The theory of social fields was used on several occasions to understand the dynamics of different social settings, most extensively in the regional innovation systems by Rončević (Rončević and Modic 2012; Modic and Rončević 2018; Cepoi and Golob 2017) but also by other authors when researching market dynamics (Beckert 2010; Fligstein and McAdam 2012). In the context of tourism gambling, it was used in a PhD thesis by Besednjak Valič (Besednjak Valič, 2014) and the present article builds upon that work. Considering that the social fields are nested in one another, following the example symbolised by the Russian matryoshka doll (Fligstein and McAdam 2012), they also consist of three main social forces shaping the field's topography (Beckert 2010). These are a) institutions, b) networks, and c) cognitive frames (ibid). Institutions and environments formed by institutions are understood as formal environments within which the state imposes measures and policies. Within the institutional environment, the state sets so-called internal governance units (Fligstein and McAdam 2012, 77), social entities ensuring the policies are respected.

For the successful functioning of the social field, in the present study of tourism gambling, another aspect is essential. These

are the cognitive frames of persons participating in the social area. Following Fligstein and McAdam (2012), individuals experience the field through social skills. In the present article, we understand a social skill as a skill that enables individual active participation in the social area (Besednjak Valič 2014). Networks present the interrelatedness of all actors and are formed each time actors make any action in the field. Within the interplay of social skills of individual actors and rules set by internal governance units, the main question concerns the impacts of tourism gambling. Tourism gambling is an economic activity surrounded by the precise nature of gambling. Namely, even if gambling as such is as old as humanity (Schwartz 2006), it remains heavily criticised for its 'unproductive, sometimes sinful and even degenerative' (Reith 2007,34) nature that undermines the Protestant work ethic (*ibid.*).

The social field of tourism gambling is also characterised by the impacts of tourism gambling, namely the relation between social costs and economic benefits of gambling (Besednjak Valič 2014).

3. Operationalisation of the Conceptual Model

In the context of the institutional environment of the social field, we analysed the existing gambling tourism field. The area is characterised by economic actors, as indicated by different types of land-based casino facilities. According to the typology provided by Eadington and Collins (2009), we distinguish the following typology of land-based tourism gambling business models: gambling resort, limited destination resort, urban casino, gambling hall, and convenient gambling locations. All differ in gambling and non-gambling offers, with gambling resorts having the most gambling and non-gambling offers with each of the business models decreasing the non-gambling offer (gambling hall, for example, having only one source of the non-gambling offer or none). Eadington and Collins (2009) elaborated that with a dropping degree of non-gambling offers, the location becomes riskier for social costs (e.g., addiction generation). Following this elaboration, in terms of social cost versus economic benefits, the most secure investment is in resorts and limited destination resorts due to the inflow of tourists contributing to economic benefits. In these two cases, the social costs get dispersed among tourists. Gambling halls and convenience locations represent the other extreme, as they target local inhabitants with solely gambling offers and obtain lower economic benefits while raising social costs, contributing to heavy local gambling engagement (*ibid.*).

In operationalisation of internal governance units, we took into account three predominant policy measures to shape gambling: ownership possibilities (state-owned, partial state monopoly, complete state monopoly, private ownership), taxation (high versus low tax, threshold calibrated to be set

at 15 percent¹), and the existence of prevention and care treatment for persons experiencing issues with excessive gambling (state coordination or financing of such policy).

The engagement of individuals in gambling activity is understood through the concept of social skill. We measured social skills through presenting gambling habits (frequency and scope of employment in gambling) and relation towards risk-taking (statistical data).

Additionally, the economic environment is characterised by economic benefits (GGI per person) and social costs (measured by the percentage of problem gamblers). To determine the impact of gambling, we calculated the ratio of economic benefits and social costs.

To better demonstrate the operationalisation of existing gambling tourism, we construct the conceptual model in Figure 1.

4. Materials and Methods

Data were collected from various national sources: individual countries in the period 2012–2014. For each selected country, the case study approach was applied, analysing each country individually according to the chosen criteria, elaborated in the conceptual model. The data gathered and used for analysis were secondary, coming from literature reviews, empirical data, government reports, and research reports. The data used was quantitative and standardised (linked from European values survey) and, in parts, qualitative, descriptive (e.g., legislation of countries, concerning the taxation, ownership characteristics, permitted size of land-based casinos, etc.). The quantitative approach of a multi-attribute decision-making program can 'translate strategy into action'. The decision here is to hire (or to appoint) such an entity; this requires clear identification of the criteria (attributes) that distinguish successful from unsuccessful performance and requires using only predictive measures of success that are valid and reliable.

Country reports and country statistics were also taken into account (e.g., reports on gross gambling income, other financial reports about the state of the art of the sector). The authors of the paper reviewed the data and, based on a mutual decision, assigned the data values to have it presented and suitable for DEXi software. Rigorous consultations between the authors were implemented with constant dialogue concerning the theoretical implications. Without a systematic approach that examines validity and reliability, no development can be demonstrated between

¹ The threshold of 15 percent as distinction between low and high taxation was calibrated with respect with the data on taxation from all countries included in the research.

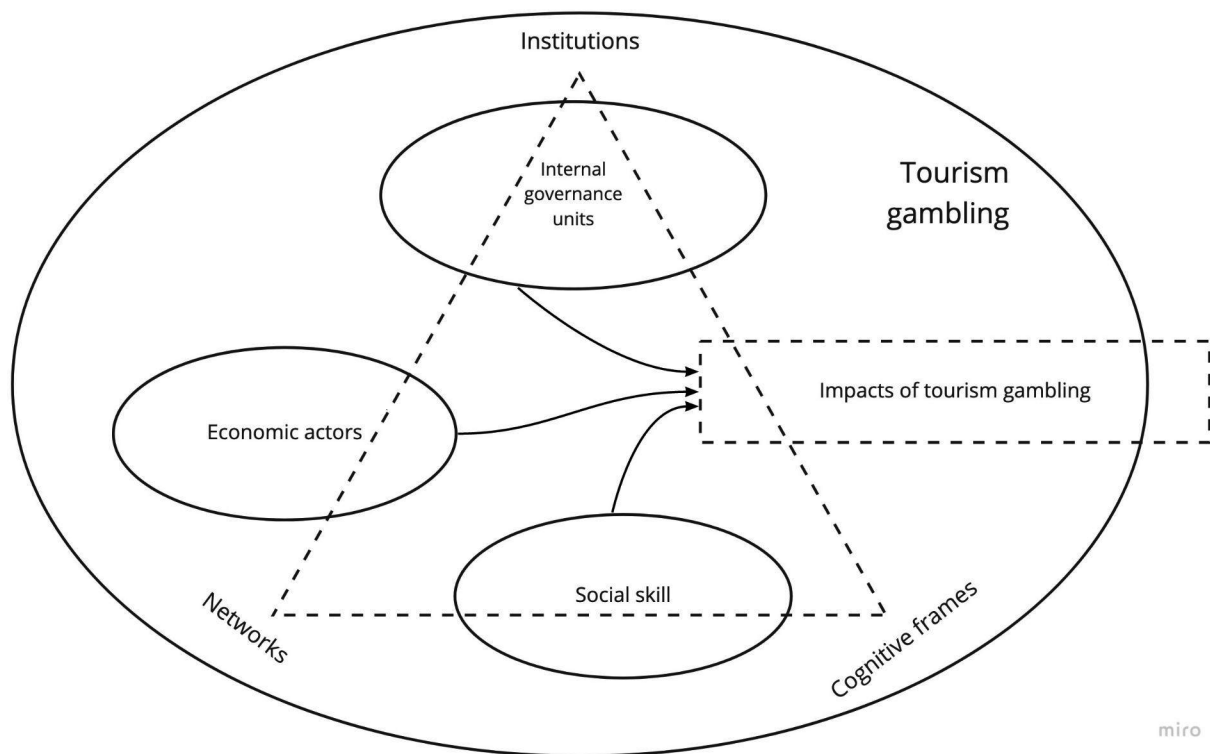


Figure 1. Conceptual model of tourism gambling development through social fields theory (Source: authors' work, 2020).

selection criteria and selection predictors. Decisions thus remain subjective, of dubious value and open to challenge. In contrast, the stronger the relationship between predictors and criteria, the more accurate the employment decision. Selection procedures must be objective, nondiscriminatory, and result in selecting the best option.

To build the tourism gambling development model, we relied on the findings of Besednjak Valič (2014). Her PhD thesis explored the factors influencing the favourable relation between costs and benefits of gambling in various regions. For the present research, we selected only the countries of the EU, a total of 10 of them, as follows in Chapter 3: Great Britain, Germany, Finland, Sweden, Slovenia, France, Italy, the Netherlands, Spain, and Norway. Data for each country was gathered, and each county was evaluated according to selected parameters that are elaborated above. Following this, the DEX method was applied to calculate the most appropriate decisions by policymakers when implementing tourism gambling in the region.

4.1. DEX Method

The DEX method (Bohanec et al. 2000) is based on discrete values of attributes and utility functions in the form of 'if... then' decision rules. Bohanec, Zupan, and Rajković (2000) demonstrate that 'some methods in particular such as DEX

and DEXi programme tool, facilitate the design of qualitative (symbolic) decision models'. In contrast to conventional quantitative (numeric) models, qualitative models use symbolic variables. These seem to be well-suited for dealing with 'soft' decision problems, that is, less-structured and less-formalised problems that involve a great deal of expert judgment, where qualitative scales can be more informative than quantitative scores (Bohanec and Rajković 1990; Bohanec et al. 2000). The DEX method has already been successfully used in numerous real-life decision and assessment problems, such as for the estimation of hotel service quality (Rozman et al. 2009).

The modelling proceeded in consecutive sub-stages using the computer program DEXi:

1. Given is a set of options (or alternatives), which represents ten countries according to the goal.
2. The result was an ordered list of all 10 (6 + 4) attributes.
3. A model is developed that evaluates options, giving an estimate of their worthiness (utility) for the decision-maker, and uses this estimate to select and rank choices. According to their position in the hierarchy, the attributes are either *essential* (leaves or terminal nodes) or *aggregate* (internal nodes, including the root[s] of the hierarchy). The result of this stage is the tree of attributes given in Table 1.

Table 1. DEX model tree; attributes, scales and a short description of attributes.

Attribute	Scale	Description
Tourism gambling development	insufficiently developed; mostly developed; fully developed	Current tourism gambling development
└ Positive impacts of tourism gambling	low; medium; high	Outcomes of economic activity showing more economic benefits than social costs
└ Economic impacts	low; medium; high	Gross Gambling Income per capita in the country
└ Level of social costs	low; medium; high	Percentage of problem gamblers
└ Existence of tourism gambling	weak; partial; strong	Existence of venues where gambling tourism is possible.
└ Internal governance units	low; moderate; strong	Mechanisms of legal organisation of gambling in country
└ Legislation (taxation and monopolies) and prevention and care	low; moderate; strong	Legislation in the form of high taxation and state monopolies. Organisation of prevention and care system for gambling problems.
└ Social factors	low; moderate; strong	Social skills to participate in gambling activity and cognitive frames
└ Social skills	low; moderate; strong	Participation in gambling activity by people
└ Cognitive frames	low; moderate; strong	Beliefs and habits people use to operate in everyday situations

Note: The green coloured word means higher value in evaluating cases, red colour stands for lower, and the black colour is medium evaluation attribute.

Source: authors' work, 2020.

- The corresponding utility function defines a mapping from its immediate descendants in the hierarchy to that attribute for each aggregate attribute. Thus, utility functions serve to aggregate partial sub-problems into the overall evaluation or classification of options.
- The DEX method is a qualitative one and usually represents attributes whose values are represented by words, such as 'good', or 'bad', or other (see Table 1, column 2).
- The utility function of every aggregate attribute is presented in a table where rows can be read as logical 'if... then' expressions.
- The overall evaluation (utility) of an option is finally obtained as the value of one or more root attributes. Consequently, the options are compared and ranked so that the best one can be ultimately identified and chosen by the decision-maker in the case (Bohanec 2003; DEXi User Manual 2020; Džajić-Uršič, 2020).
- The final step, modelling results, represents the evaluations of the options (see Table 2).

The hierarchical structure in DEX resembles a tree. In the tree (see Table 1), attributes are structured so that there is only one path from each aggregate attribute to the tree's root. 'The path contains the dependencies among attributes such that the higher-level attributes depend on their immediate descendants in the tree' (Damij et al., 2016). This dependency is defined by a utility function represented in a tabular format such as the one presented in Figure 2. 'Utility function is the component of a multi-attribute model that defines the aggregation aspect of option evaluation' (Mileva-Boshkoska 201, 5).

In Figure 2, the utility function gives the aggregation rules for the attribute: *Positive impacts of tourism gambling* based on

the values of the input attributes *Economic impacts* and *level of social costs*. For example, one may read from the utility function in Figure 2 that if the Economic attribute *impacts* are (less or lower) medium regardless of the high *level of social costs* (row number 3), then the *Impacts of tourism gambling* that would be in line with the requirements for development in the region are high. Also, suppose the *level of social costs* is none or unknown (regarded as '*' in row number 1). In that case, regardless of the value of the attribute *Economic impacts*, the possibility of the development of a suitable *Impact of tourism gambling* is low (DEXi 2020). To have higher *Positive impacts of tourism gambling*, the actual *Economic impacts* should be evaluated as □ medium, and the *level of social costs* should be assessed as high or at least *.

The rows in the utility function are presented as 'if... then' decision rules. An example of such a decision rule, given in the first row in Figure 2, is:

IF the attribute *Economic impacts* is high, AND the attribute *Level of social costs* is '*', THEN the attribute *Positive impacts of tourism gambling* is high.

The developed 'tourism gambling' model contains six basic and four aggregated attributes. Each decision alternative is first assessed concerning each attribute, and these individual assessments are then aggregated into an overall evaluation of the alternative (DEXi 2020; Mileva-Boshkoska et al. 2017). The green-higher values in the evaluation of cases are favoured. It keeps on saying that decision alternatives are hierarchical, and the best one is chosen in a clear and

Table 2. DEX model and evaluation of ten cases

Attribute	Great Britain	Germany	Finland	Sweden	Slovenia	France	Italy	Nederland	Spain	Norway
Tourism gambling development	insufficiently developed	insufficiently developed	fully developed	fully developed	fully developed	insufficiently developed	mostly developed	insufficiently developed	fully developed	fully developed
└Positive impacts of tourism gambling	low	low	high	high	high	low	high	low	high	high
└└Economic impacts	low	low	medium	medium	medium	low	high	low	high	high
└└└Level of social costs	low	low	high	high	high	medium	high	low	low	low
└Existence of tourism gambling	partial	weak	weak	weak	strong	partial	weak	partial	partial	weak
└Internal governance units	strong	strong	strong	strong	strong	strong	low	strong	strong	strong
└└Legislation (taxation and monopolies) and prevention and care	strong	strong	strong	strong	strong	strong	low	strong	strong	strong
└Social factors	strong	moderate	moderate	strong	low	low	moderate	strong	strong	strong
└Social skills	strong	moderate	strong	strong	low	low	moderate	strong	strong	strong
└Cognitive frames	moderate	low	low	moderate	moderate	moderate	*	moderate	strong	strong

Note: The green coloured word means higher value in evaluating cases, red colour stands for lower, and the black colour is medium evaluate attribute.

Source: authors' calculation 2020.

Economic impacts	Level of social costs	Positive impacts of tourism gambling
86%	14%	
1 low	*	low
2 medium	<=medium	medium
3 >=medium	high	high
4 high	*	high

Figure 2. Utility functions of the attribute *Positive impacts of tourism gambling* (Source: authors' calculation 2020).

admissible way. The decision model's attributes include Impacts of tourism gambling, internal governance units, and social factors. In this paper, the last one represents the primary connection to the DEX model. The social forces in tourism gambling have not been sufficiently tackled before in the literature.

The detailed descriptions of the attributes are given in Appendix A. You may see all aggregated attributes and their utility functions in Appendix B. In Table 1, the scale values are colour coded, where the green colour means the most preferred value, and the red colour represents the least select value. The model evaluates the degree of compliance of the fundamentals in the development of gambling tourism. Those essential elements are intended to help decision-makers in determining the facilitating mechanisms. These barriers should be avoided, and provide suggestions to be undertaken for the development of new networks.

5. Case Studies

The DEX model tree and the results from evaluating the ten real cases of tourism gambling development are presented in Table 2 and using graphical presentations of the evaluation of the alternatives given from Figures 3 to Figure 12.

5.1. Case 1

GB has a strong engagement of residents in gambling, has very loose legislation but very intensely elaborated prevention and care system, does not have tourism gambling, has a low level of problem gambling and low levels of economic benefits. Table 1 shows that one of the ten cases is evaluated with the highest qualitative measure as 'fully developed', four cases are evaluated as 'mostly developed'. In contrast, four of the cases are reviewed as 'insufficiently developed'. Such evaluation is in line with the information from the considered

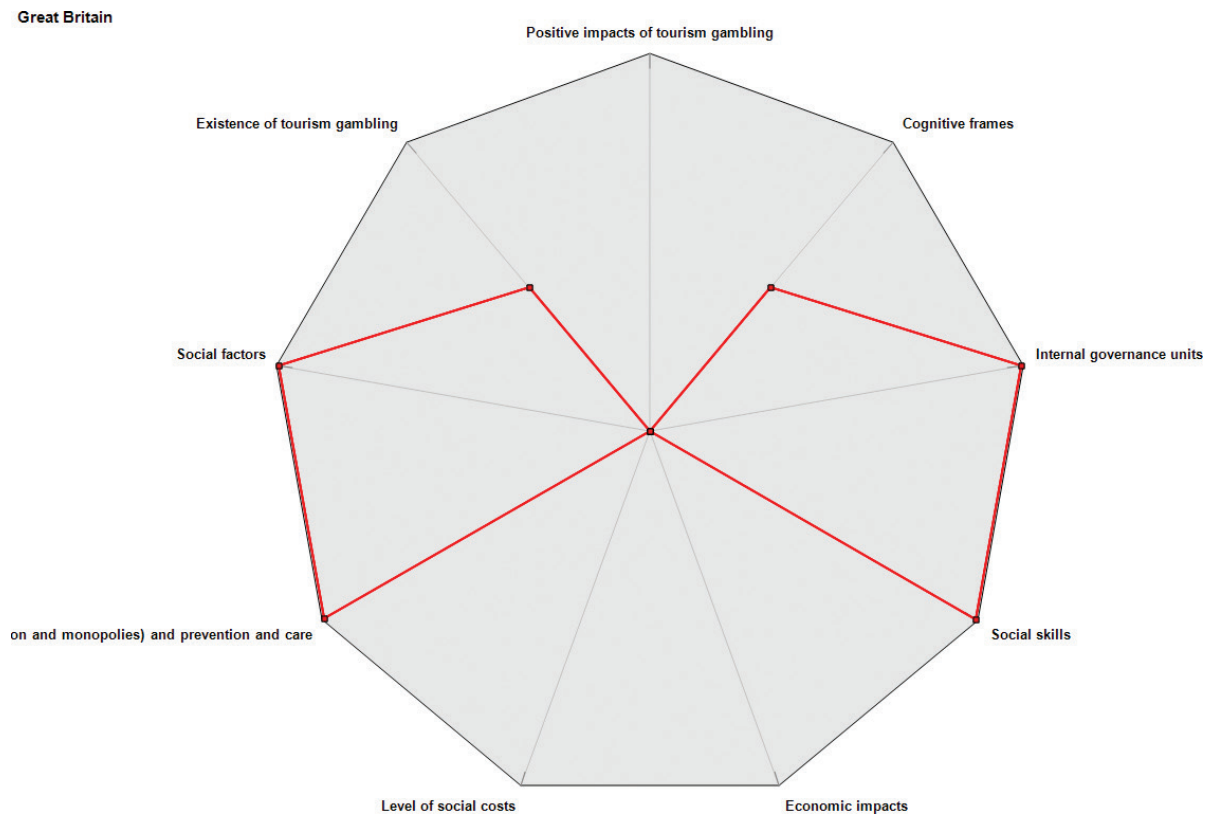


Figure 3. Graphical presentation of the selected attributes for gambling tourism development in Great Britain (Source: authors calculation 2020).

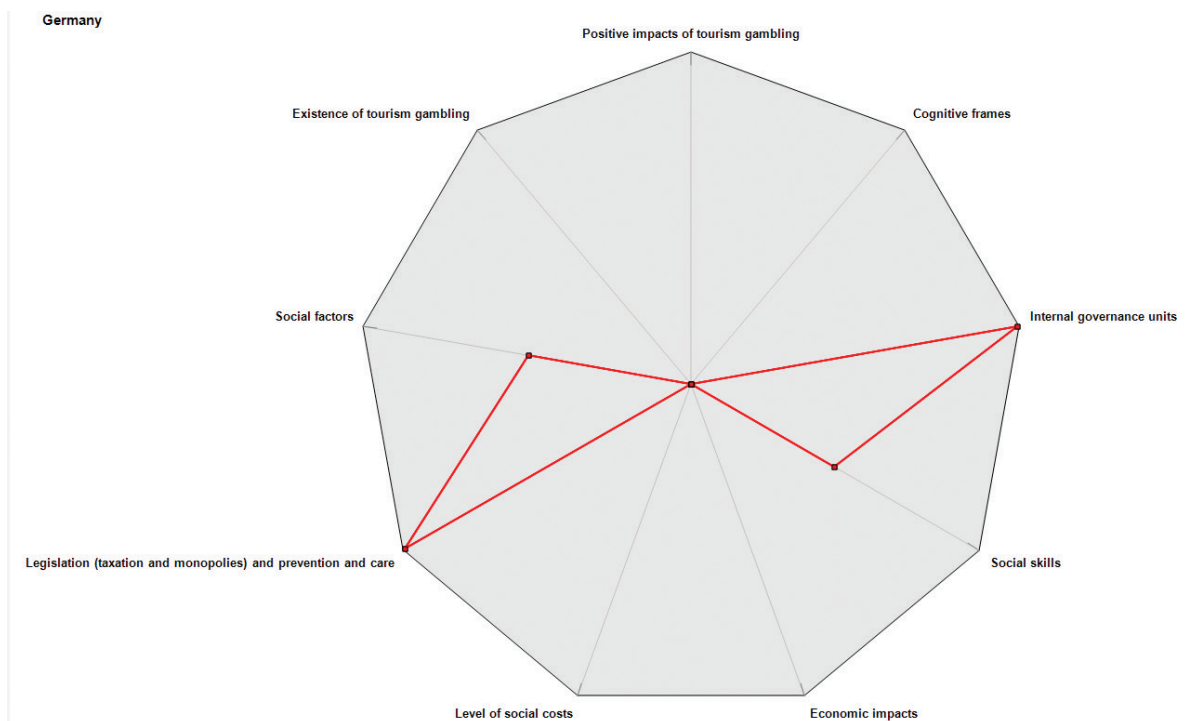


Figure 4. Graphical presentation of the selected attributes for gambling tourism development in Germany (Source: authors calculation 2020).

Finland

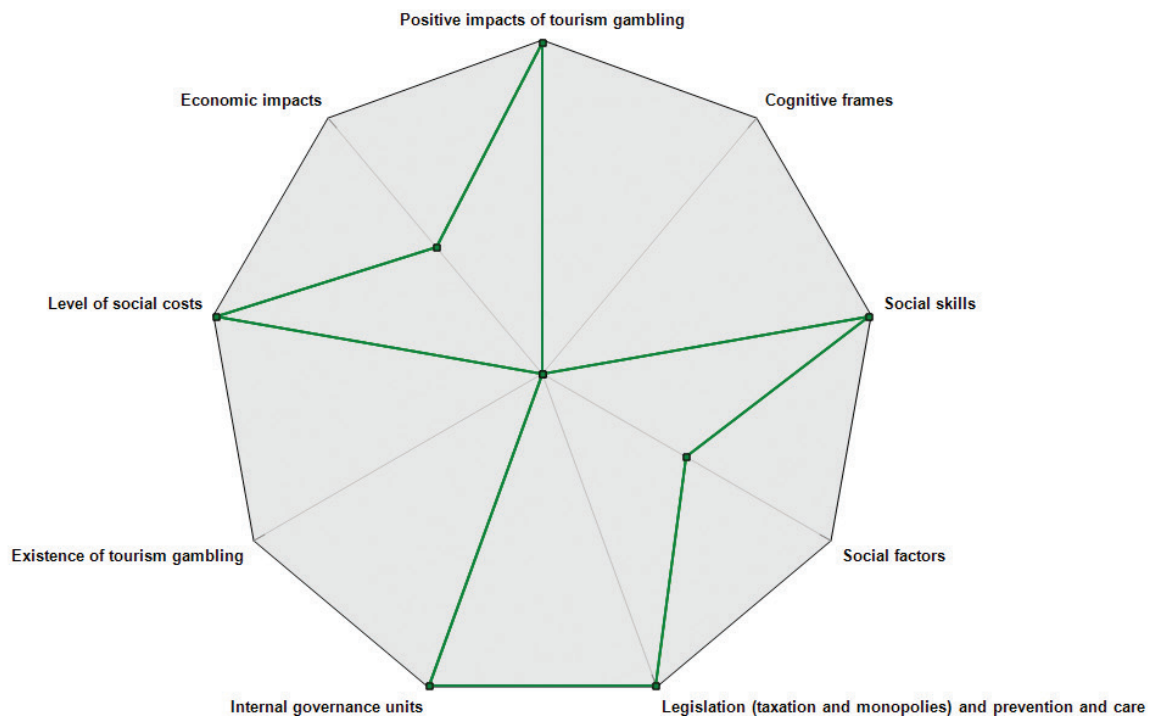


Figure 5. Graphical presentation of the selected attributes for gambling tourism development in Finland (Source: authors calculation 2020).

Sweden

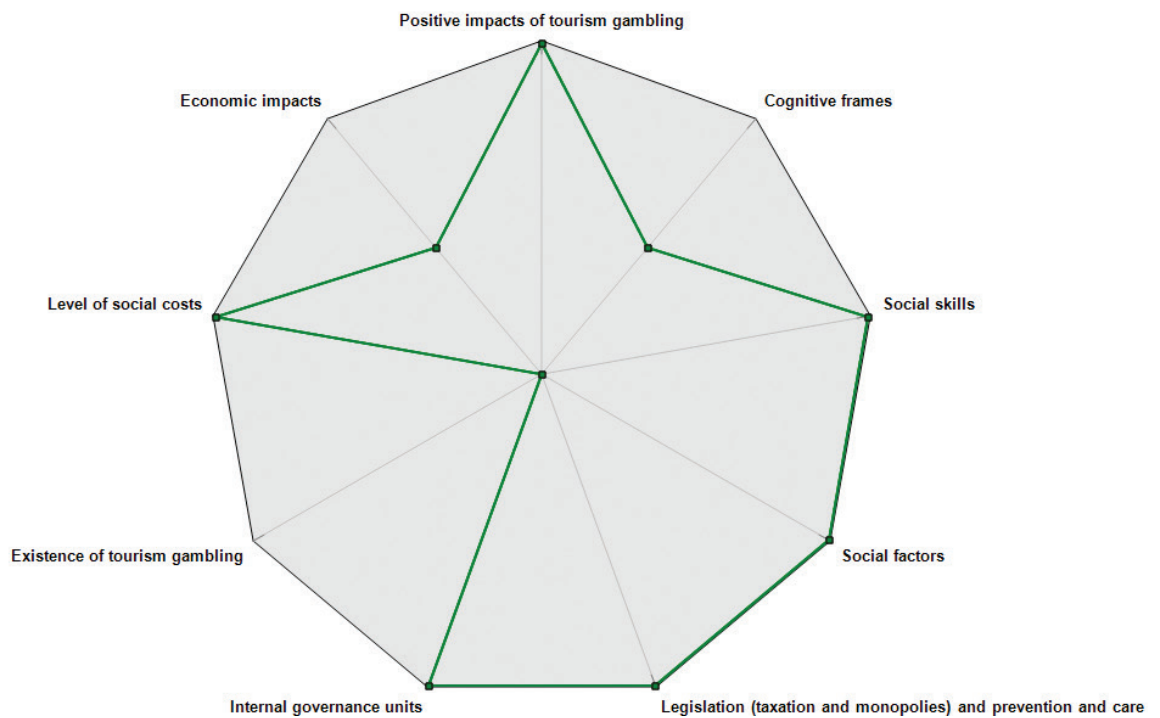


Figure 6. Graphical presentation of the selected attributes for gambling tourism development in Sweden (Source: authors calculation 2020).

Slovenia

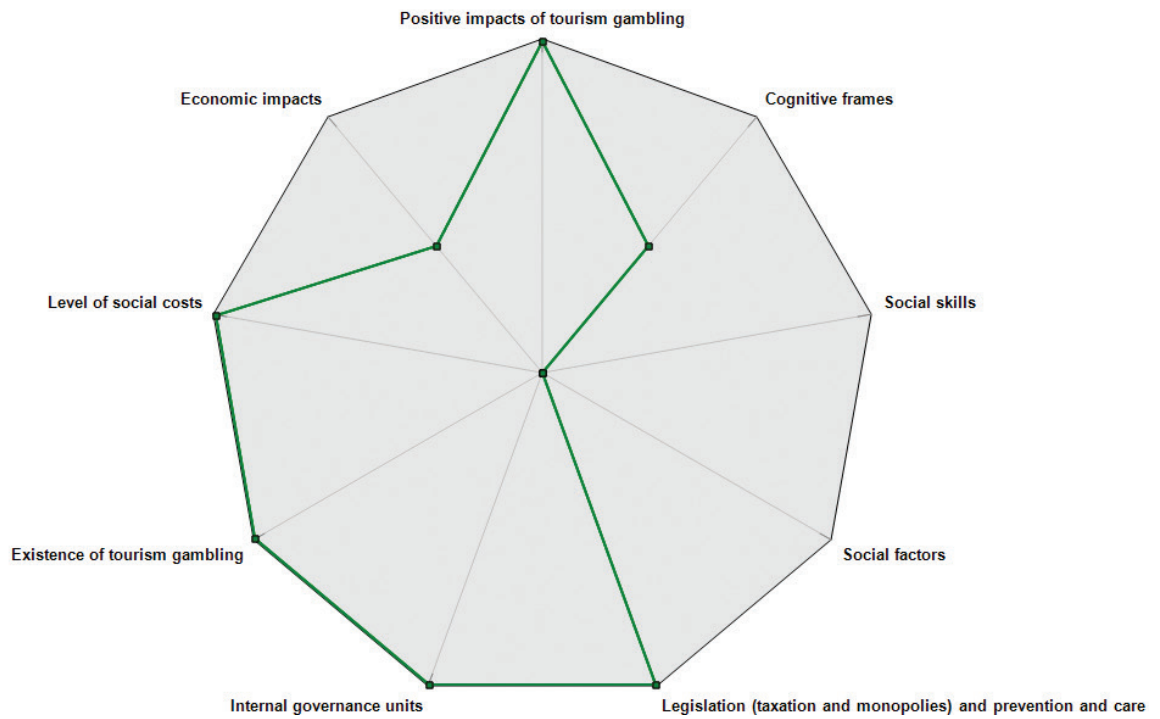


Figure 7. Graphical presentation of the selected attributes for gambling tourism development in Slovenia (Source: authors calculation 2020).

France

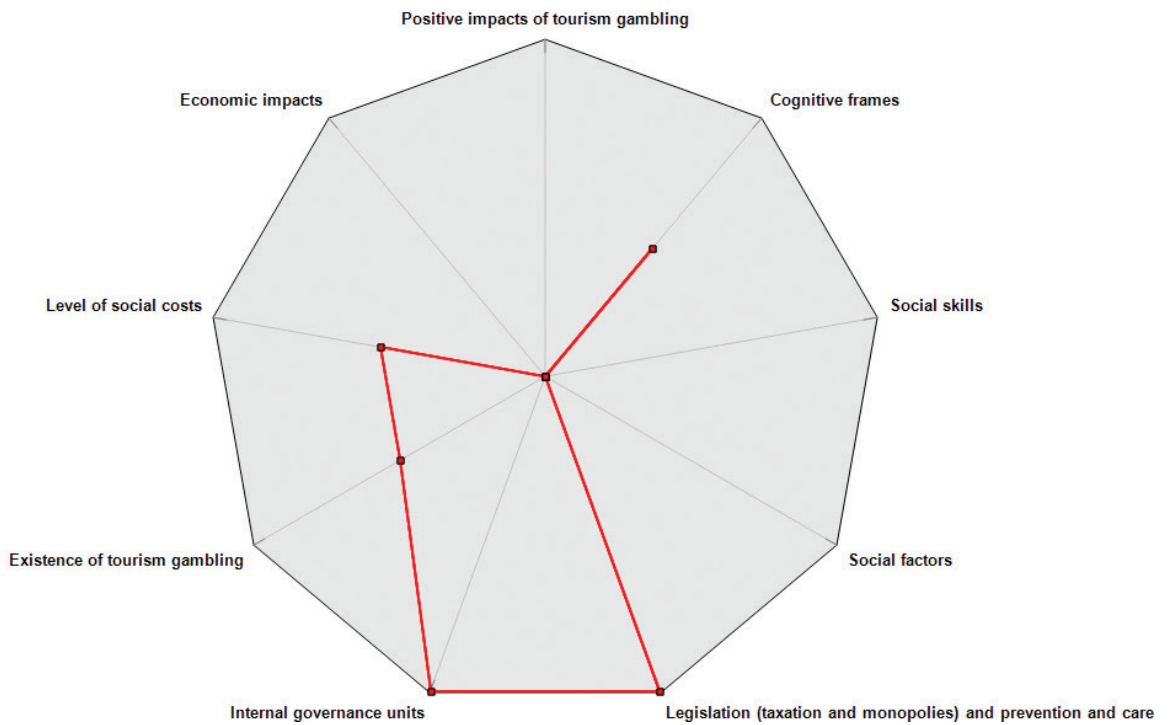


Figure 8. Graphical presentation of the selected attributes for gambling tourism development in France (Source: authors calculation 2020).

Italy

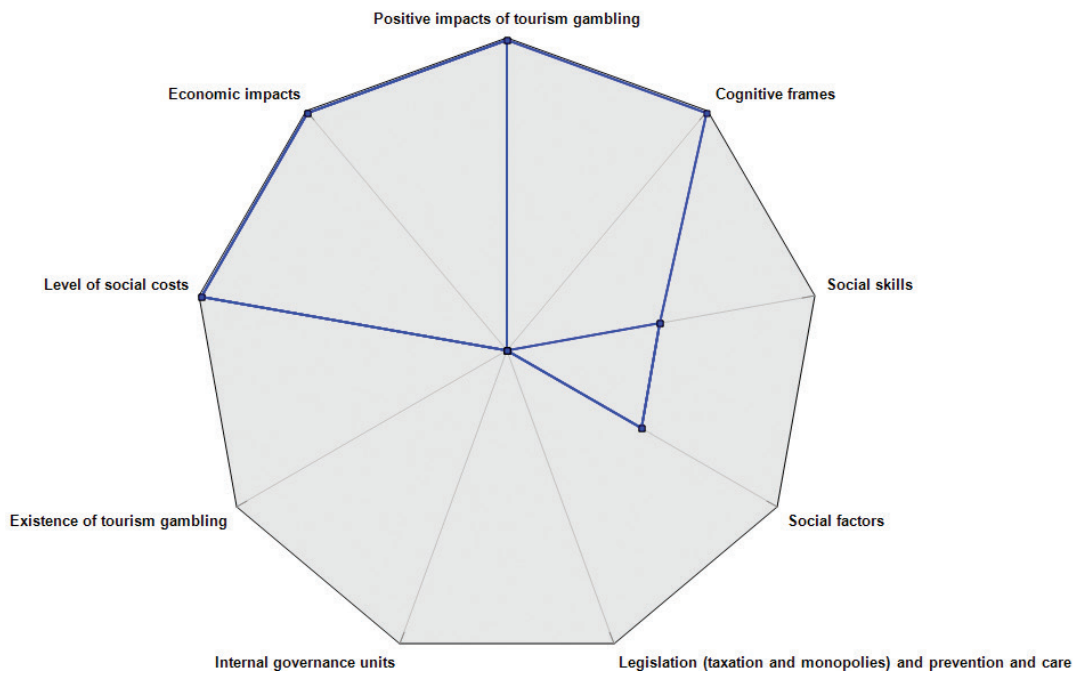


Figure 9. Graphical presentation of the selected attributes for gambling tourism development in Italy (Source: authors calculation 2020).

Netherlands



Figure 10. Graphical presentation of the selected attributes for gambling tourism development in Nederland (Source: authors calculation 2020).

Spain

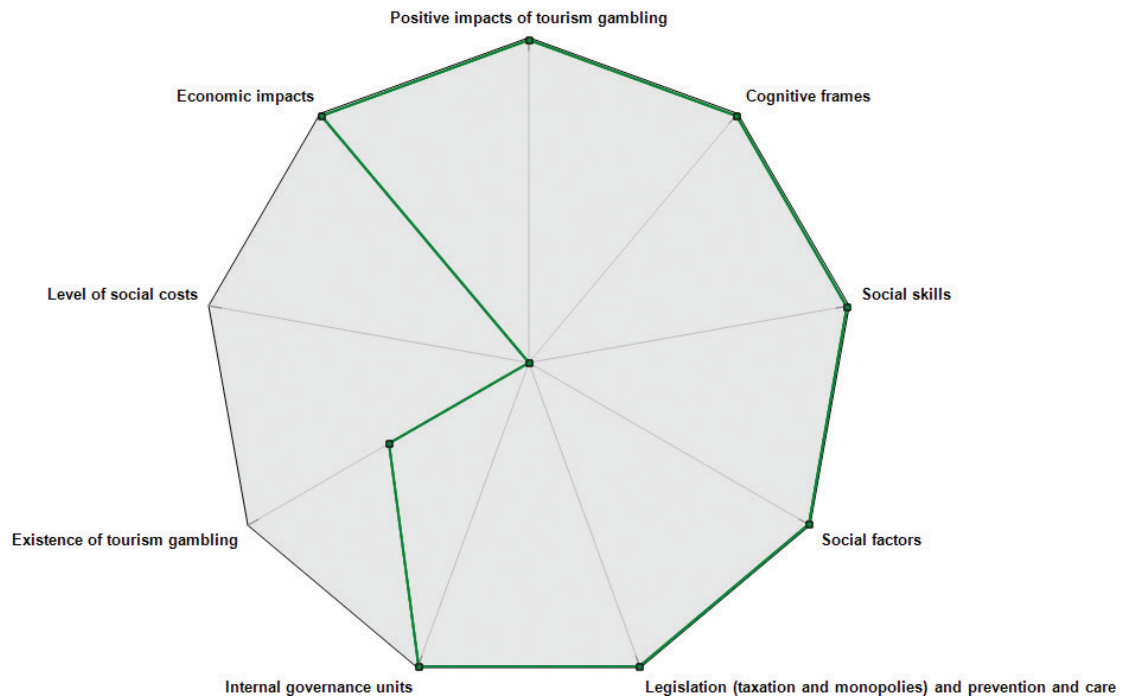


Figure 11. Graphical presentation of the selected attributes for gambling tourism development in Spain (Source: authors' calculation 2020).

Norway

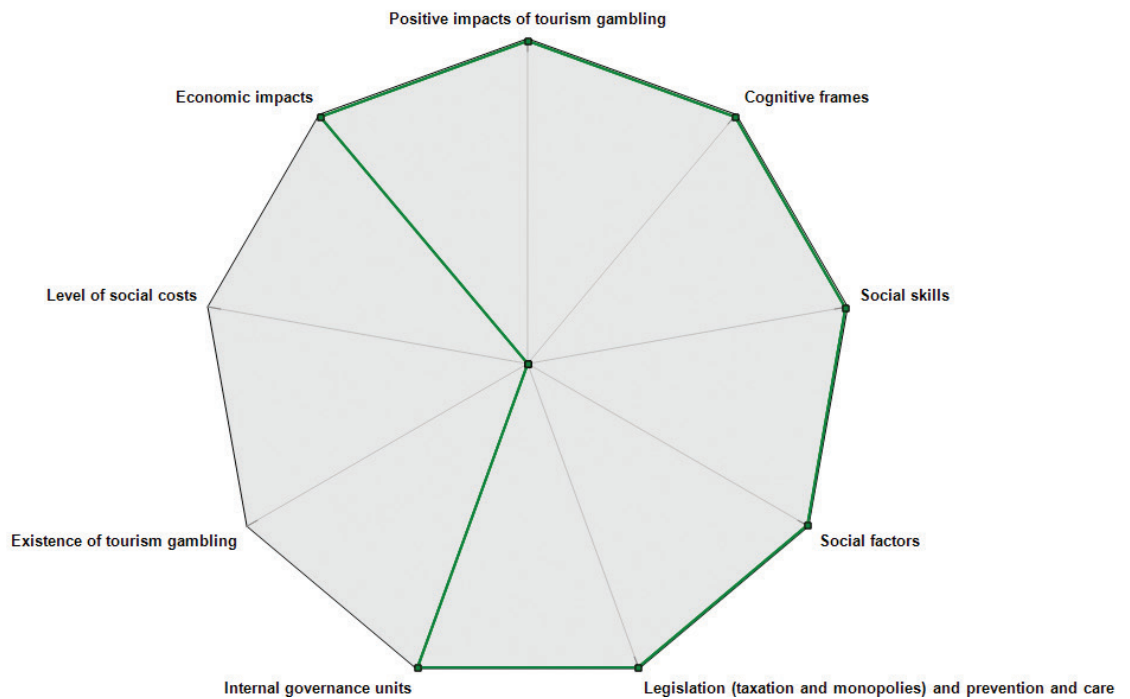


Figure 12. Graphical presentation of the selected attributes for gambling tourism development in Norway (Source: authors calculation 2020).

literature and sources. The green coloured word means higher value in the evaluation of cases, red colour stands for lower, and the black colour is medium evaluate attribute.

5.2. Case 2

Germany has a moderate engagement of residents in gambling, has some strict legislation and no prevention and care system, does not have tourism gambling, low social costs and low economic benefits.

5.3. Case 3

Finland has moderate engagement in gambling activity, state monopoly over gambling, limited prevention of care, no tourism gambling, high social costs of gambling and medium economic benefits.

5.4. Case 4

Sweden exhibits solid social skills of residents, legislation with state monopoly and high taxation, good prevention and care system, no gambling tourism, increased social costs, and medium economic benefits.

5.5. Case 5

Slovenia has low residents' social skills, legislation enabling state monopolies, high taxation, and no prevention and care system. Slovenia has tourism gambling, a medium level of social costs, and a high level of economic benefits.

5.6. Case 6

France exhibits low social skills of residents. It enables state monopolies, no prevention and care system, a medium level of social costs, and low economic benefits.

5.7. Case 7

Italy has a moderate engagement of residents with gambling, enables the intense proliferation of gambling (VLTs), no prevention and care, and has high social costs and increased economic benefits.

5.8. Case 8

The Netherlands has a strong engagement of residents in gambling, state monopolies with high taxation, no prevention and care system, somehow partially developed gambling tourism, low level of social costs and low level of economic benefits.

5.9. Case 9

Spain has a strong engagement of residents in gambling, state monopolies over gambling with high taxation, no prevention and care system. There is partially developed gambling tourism, low social costs and increased economic benefits.

5.10. Case 10

Norway exhibits solid social skills of residents, state monopoly over gambling, no prevention and care system, no tourism gambling, low level of social costs and high economic benefits.

6. Discussion and Conclusions

At this stage, a qualitative multi-criteria model for evaluating regional tourism gambling development policy was established. From the EU cases, we have extracted the most relevant and most general attributes and defined the relations among attributes in terms of easily understandable 'if... then' rules. The hierarchy of the model was established through the brainstorming of two researchers involved in model development.

Based on extensive analysis of each case, taking into account all parameters for each of the cases, the main results are the following: the most appropriate and elaborated is the tourism gambling model of Slovenia. Here the primary notion is that Slovenian gambling has a significant focus on tourism-oriented gambling policy. Slovenia is, in its legislation, not very different from other EU countries. This is why the parameter has almost the same value through all selected cases. However, it has the most vital tourism-oriented policy in allowing special land-based gambling facilities to operate.

There are also other countries that the model proposes as exemplary models of gambling tourism, but the main concern remains that they are not fully developed as tourism gambling destinations. Therefore, one can assume they are oriented towards domestic tourism. This, however, is not the case for Slovenia, whose tourism gambling model is oriented towards foreign tourists. These other countries presented as cases of possible good practice are Sweden, Finland, Spain and Norway. Those countries have high values in the 'social skill' parameter, letting us know that many residents get engaged in gambling. All the outlined countries have established a state-supported prevention and care system to treat problems arising from excessive gambling for the local population. However, in Slovenia, residents' level of engagement in gambling is reasonably low (see Besednjak Valič and Macur, 2018), supporting the claim that foreign-based tourists are predominantly engaged in land-based casinos.

To construct the model, we used ten real examples, where the evaluation of the cases was based on the developed model, and we consulted literature that resulted in the following conclusions. Forming a tourism gambling development policy is a complex process that requires extensive knowledge from social, organisational, and environmental spheres and a good understanding of the economy and technology. The developed model for evaluating a tourism gambling

development is designed through a set of indicators from each of the spheres and has a comparative and/or descriptive role in understanding the requirements of the development of tourism and gambling. Since the evaluation of tourism gambling development policy based on one qualitative indicator leads to high uncertainty in the assessments, we used an approach in which we developed several indicators for the input attributes in the model. Based on the number of indicators that the tourism gambling development fulfils for the given attribute, we have performed a more realistic evaluation of this development. Still, the evaluations could be changed by adopting new data. Concerning the suitability for decision-makers, the model that turned out as most optimal among the analysed results appears to be the model from Slovenia.

Author Contributions

Tamara Besednjak Valič and Erika Džajić Uršič equally participated in all stages of the preparation, establishment, and frame research of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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Appendix A. Description of Attributes

The topmost attribute, **Tourism gambling development**, is an aggregated attribute that depends on the values of the *Positive impacts of tourism gambling*, *Internal governance units* and *Social factors* attributes. The aggregated values of subject attributes are impacting the current tourism gambling development, and values are assigned by mutual agreement of both researchers as 'insufficiently developed', 'mostly developed', and 'fully developed'.

Positive impacts of tourism gambling is an attribute that is described by the outcomes of economic activity showing more economic benefits than costs. It is an aggregated attribute. It consists of economic benefits described as the Gross Gambling Income measured per person in an individual country. Secondly, the social costs of gambling are measured with the percentage of problem gamblers in the country. To determine the final value of the attribute, the ratio between social costs and economic benefits was calculated. The value of the attribute is set as 'high' if the evaluated tourism gambling development scored between 1.00 and 0.66, it has the value of 'moderate' if scored between 0.67 and 0.33, and if it scored between 0.34 and 0.00, then it has a 'low' value.

Economic impacts are one of the essential motives to evaluate the level of development. We have quantified the economic effects by measuring the Gross Gambling Income per capita per respective country. The attribute *Economic Impacts* got values of either 'low', or 'medium', or 'high' assigned by mutual agreement of both researchers.

The level of social costs is an attribute that describes the costs arising from gambling tourism. Considering the questions of social and psychological problems excessive gambling can induce, we quantified the attribute with statistical data available on the percentage of persons detected in the general population who show levels of gambling-related problems. The attribute *Level of Social Costs* got values of either 'low', or 'medium', or 'high' assigned by mutual agreement of both researchers.

The existence of tourism gambling is an attribute that follows the definition by Eadington and Collins (2009). There are six types of land-based gambling facilities that are, apart from their size, characterised by their level of tourism offerings. Among 'strong' tourism gambling types, there are resort casinos and limited destination casinos. Among 'partial' tourism gambling

types, there are urban casinos and gambling halls. Among 'weak' tourism gambling types, there are convenient gambling locations, characterised predominantly by gambling machines located in bars, shops, bus and train stations and similar. The attribute *economic impacts* got values of either 'weak', or 'partial', or 'strong' assigned by mutual agreement of both researchers.

Internal governance units are characterised by the policy specifics of each country and describe the mechanism of the legal organisation of gambling in the country—the basic characteristic.

The attribute *internal governance units* got values of either 'low', or 'moderate', or 'strong' assigned by mutual agreement of both researchers.

Legislation and prevention and care attributes describe the policy approach to gambling in individual countries. It is measured based on general characteristics like ownership possibilities (state-owned, partial privatisation, complete privatisation of gambling tourism) and taxation (low versus high tax, with a threshold set at 15 percent). Additionally, the *legislation and prevention and care* attribute is characterised by prevention and treatment of persons experiencing issues with excessive gambling and state coordination or financing of such policy. The values 'low', 'moderate', or 'strong' are assigned based on authors' evaluation and vary from case to case.

Social factors are described as the ability to participate in gambling activity and a mental tool kit to engage in gambling. Both are measured by the local population of individual case countries. The values assigned to attribute are 'low', 'moderate', or 'strong' and are based upon mutual agreement between both authors.

Social skills is an attribute defined by the statistical data on the percentage of the local population engaged in gambling activities. The values assigned to attribute are 'low', 'moderate', or 'strong' and are based upon mutual agreement between both authors.

The **Cognitive frames** attribute is defined by beliefs and habits of people used by people in everyday situations when dealing with risky situations. The values assigned to attribute are 'low', 'moderate' or 'strong' and are based upon mutual agreement between both authors. All evaluations that are non-comparable to quantitative indexes are evaluated by authors' assessments and defined then by utility functions in DEXi.

Appendix B. Utility Functions

All utility functions that are used in the DEX model are given in appendix B, Figures A1–A4. Figure A1 follows that the attribute *Positive impacts of tourism gambling* is evaluated as 'low' if *Economic impacts* is 'low' or the *Level of social cost* is 'none/unknown'. If the *Positive impacts of tourism gambling* are 'medium', the other two attributes are at most 'medium'. Otherwise, the *Positive impacts of tourism gambling* is evaluated as 'high'.

The evaluation of the attribute *Internal governance units* is given in Figure A2. The attribute *Internal governance units* is evaluated as 'low' in cases when *legislation* is 'low'. If the attribute *Internal governance units* is evaluated as 'moderate', the *legislation* is evaluated the same, and when the attribute *Internal governance units* is evaluated as 'strong', then *legislation* is 'strong'.

The evaluation of the *Social factors* attribute is given in Figure A3. The attribute is evaluated as 'low' if at least one of the attributes *Cognitive frames* is evaluated as most or equal

Economic impacts	Level of social costs	Positive impacts of tourism gambling
86%	14%	
1 low	*	low
2 medium	<=medium	medium
3 >=medium	high	high
4 high	*	high

Figure A1. The utility function of the aggregated attribute *Positive impacts of tourism gambling* (Source: authors' calculation 2020).

Legislation (taxation and monopolies) and prevention and care	Internal governance units
100%	
1 low	low
2 moderate	moderate
3 strong	strong

Figure A2. The utility function of the aggregated attribute *Internal governance units* (Source: authors calculation 2020).

Social skills	Cognitive frames	Social factors
67%	33%	
1 low	<=moderate	low
2 <=moderate	strong	moderate
3 moderate	*	moderate
4 >=moderate	low	moderate
5 strong	>=moderate	strong

Figure A3. The utility function of the aggregated attribute *Economy and economics* (Source: authors calculation 2020).

Positive impacts of tourism gambling	Existence of tourism gambling	Internal governance units	Social factors	Tourism gambling development
53%	24%	19%	4%	
1 low	*	*	*	insufficiently developed
2 <=medium	weak	<=moderate	*	insufficiently developed
3 <=medium	weak	*	low	insufficiently developed
4 <=medium	<=partial	low	low	insufficiently developed
5 medium	<=partial	strong	>=moderate	mostly developed
6 medium	partial	*	>=moderate	mostly developed
7 >=medium	partial	<=moderate	>=moderate	mostly developed
8 >=medium	>=partial	low	>=moderate	mostly developed
9 medium	partial	>=moderate	*	mostly developed
10 >=medium	partial	moderate	*	mostly developed
11 >=medium	strong	low	*	mostly developed
12 high	weak	*	low	mostly developed
13 high	<=partial	<=moderate	*	mostly developed
14 high	*	low	*	mostly developed
15 >=medium	strong	>=moderate	*	fully developed
16 high	*	strong	>=moderate	fully developed
17 high	>=partial	strong	*	fully developed

Figure A4. Utility function of the aggregated main attribute *Tourism gambling development* (Source: authors calculation 2020).

to 'moderate', while the other one, *Social skills*, is evaluated as 'low'. On the other hand, if at least one of the input attributes is evaluated as 'strong' and the other one at least 'moderate', then the attribute *Social factors* is evaluated with its most preferred value of 'strong'. In the three other cases, the *Social factors* attribute is evaluated as 'moderate'.

The evaluation of the attribute *Tourism gambling development* is given in Figure A4. Suppose the *Positive impacts of tourism gambling* is 'low'. In that case, the *existence of tourism gambling*, *Internal governance units* and *Social factors* are 'unknown', then the *Tourism gambling*

development is evaluated as 'insufficiently developed'. In case that the *Positive impacts of tourism gambling* is most/less or equal to 'medium' and the *existence of tourism gambling* is most/less or equal to 'partial', 'strong' or 'unknown', *Internal governance units* and *Social factors* are evaluated as more or equal to 'moderate' or 'low' then the *Tourism gambling development* is 'mostly developed'. In all other cases from row 15, the attribute *Tourism gambling development* is considered to be 'fully developed' when at least two of the other subsidiary attributes are valued 'strong' or 'high'.