

# Comparative approach and sociological survey method for evaluation of ecological tourism role and effectiveness development in Baikal region

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**Abstract**—This article discusses the comparative approach and the method of sociological survey to evaluate the role and effectiveness of ecological tourism as the most prospective way of tourism development in the Baikal region. The implementation of which should be an important step contributing to both the economic development of Russia and the preservation of its natural and cultural values. The concept of a comparative approach, the method of sociological survey and a model for evaluation of the role and effectiveness of ecological tourism in the Baikal region are presented.

**Keywords**—ecological tourism, sustainable development, Baikal region, evaluation of effectiveness

## I. INTRODUCTION

The innovative development of the Russian economy, when the country experiences EC and USA sanctions, requires a profound study of the foreign and domestic tourism experience. [10]. After studying numerous modern local, national, and international sources on tourism [11,12,13,14,15, 16, 17, 18, 19], we have concluded that it is the ecological tourism, which is to be an important component to facilitate economic development of Baikal region and to preserve its natural and cultural values.

Ecological tourism is a relatively new concept in Russia and in the Baikal region in particular. A distinctive feature of ecological tourism, if compared with regular tourism, is that mass tourism involves simply traveling a distance from home, while ecotourism is defined as "responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education" [21]. This is the most modern and relevant definition in addition to many others already discussed by authors in recent publication on development of ecological tourism in Baikal region [3, 4, 5, 6, 7, 8, 9].

## II. THE COMPARATIVE APPROACH

The comparative approach to ecological tourism assumes visits to various places of interest, both in the Baikal region and beyond. [1, 2] This is necessary for the analysis of the role and effectiveness of ecological tourism in the Baikal region, as well as for identification of relevant and popular destinations and further ways for its development to achieve the goals

of economic and social development of the region through tourism development, considering the modern environmental requirements. Actually, it was revealed, with the help of the comparative approach to ecological tourism, that the recreational, geographical and price advantages of the Baikal region are significantly attractive for tourists. At the same time, it is necessary to implement new innovative eco-oriented projects based on the experience of Switzerland and other countries in the Alps [1].

The need for the comparative approach, taking into account all institutional factors to address the problems of ecological tourism in nature rich regions, is specified by existing terms and conditions and circumstances of the formation of the competitive tourist environment and of the ecotourism itself as the priority direction of development. It is important to train professional personnel and perform educational programs, including mutual ones, both for the local population and for tourists visiting ecological attractions, which will allow to achieve positive results and gain impressive achievements in the field of ecological tourism. The specificity of ecotourism is that it not only stimulates and satisfies the desire to communicate with nature, but at the same time, it prevents or at least minimizes the negative impact on the environment and culture, encourages tour operators and tourists to promote nature protection and socio-economic development.

## III. METHODS FOR EVALUATION OF ECOLOGICAL TOURISM ROLE AND EFFECTIVENESS

In addition to discussed in recent author's papers mentioned above, Comparative approach and method of system analysis for assessing the state of natural, historical and cultural attractions in the region, logical methods of research, the method of abstract modeling and forecasting, methods of economic, statistical and institutional analysis of the problems of development of ecological tourism, institutional structure, determining the advantages and disadvantages of natural, historical and cultural attractions [1], this article discusses the method of sociological survey and regression analysis. The main methods of the comparative approach are SWOT analysis and cross-sectional regression analysis.

The comparative approach and methods of sociological survey and regression analysis to assess

the state of natural, historical and cultural attractions and evaluate the effectiveness of ecological tourism in Baikal region, involves visiting places of natural and cultural heritage and is used along with the methods presented earlier. The scientific novelty of the proposed comparative approach consists in the development of methods of analysis and evaluation of natural, historical and cultural attractions and of ecological tourism as a factor of sustainable socio-economic development of the Baikal region on the basis of a questionnaire survey of experts in the field of tourism.

The questionnaire "Ecological tourism" for the survey of experts conducted in the Baikal region includes the questions presented in Table 1. The issues and the indicators presented in the table are proposed to be evaluated on a 10-degree scale (from 0 to 10), which is required for the further processing, using the methods of cross-sectional regression analysis.

The model for assessing the role of ecological tourism in the sustainable development of the Baikal region is presented as follows:

$$ET = f(GDPt, GovEff, Qst, Pat, Iet, linft), \quad (1)$$

where indicator ( $ET$ ) is a generalized assessment of the progress of ecotourism development in the Baikal region as a whole (it is an expert assessment of the volume and quality of the institutional structure of ecotourism). As potential factors affecting the  $ET$  indicator, the following estimated characteristics of development are selected:  $GDP$ : gross domestic product in 2014 prices, representing the share of income from tourism,  $GovEff$ : efficiency of government and administrations, including such institutional aspects as regulatory and legislative support and its implementation and quality of infrastructure,  $Qst$ : quality of service,  $Pat$ : popularity of attractions,  $Iet$ : educational programs and information and analytical support,  $Iinft$ : informal institutions (traditions and customs) and other factors determining the attractiveness of the destination.

The following regression model is proposed to evaluate the effectiveness of eco-tourism:

$$Ef = f(An, Ac, Ah, E), \quad (2)$$

where ( $Ef$ ) is a generalized indicator that evaluates the effectiveness of the development of eco-tourism. The explanatory variables of the model (1.2) are the estimated characteristics of the use of certain types of attractions in the Baikal region, namely,  $An$ : natural attractions,  $Ac$ : cultural attractions,  $Ah$ : historical attractions,  $E$ : compliance of attractions with expectations.

TABLE I. QUESTIONNAIRE "ECOLOGICAL TOURISM IN THE BAIKAL REGION" FOR EXPERTS

# #	QUESTION
<i>I</i>	<i>Please select which applies to you (check the appropriate)</i>
1.	I am a resident of a specially protected natural area (SPNA)

2.	I am a part of a small tourism business
3.	I am a representative of a large tourism company
4.	I work for administration or authorities
5.	I am science and research employee
6.	I am an experienced tourist
7.	I am another expert in the field of tourism (please explain)
<b>II</b>	<b>Please rate using 10-degree scale</b>
1.	How competent are you in the field of tourism and eco-tourism?
2.	How attractive are the sights of the Baikal region?
<b>1)</b>	<b>• Natural attractions</b>
	Including the following:
	Protected areas (SPNAs such as reserves, national parks, reserves) (please name)
	lake Baikal and other lakes (name)
	Rivers, streams, mouths, sources, springs (name)
	Mountains, ridges, passes, rocks, hills (name)
	Waterfalls (name)
	Caves (name)
	Taiga and forest (name)
	City parks, squares, embankments (name)
	Other natural attractions (name)
<b>2)</b>	<b>• Cultural and historical attractions</b>
	Museums, galleries, planetariums (name)
	Objects of cultural heritage (name)
	Monuments, sculptures, memorials (name)
	Paleontological and archaeological finds, excavations and monuments (name)
<b>3)</b>	<b>• Anomalous zones and abandoned places (name)</b>
<b>4)</b>	<b>• Industrial and man-made objects (name)</b>
<b>5)</b>	<b>• Other attractions (name)</b>
3.	How important are the following factors affecting the sustainable development of eco-tourism?
	• Legal and regulatory framework (laws, regulations, orders)
	• Role of the government and local administrations
	• Popularity of attractions
	• Quality of tourist services
	• Educational programs and information-analytical support
	• The role of local people in the development of eco-tourism
	• Informal institutions (traditions, customs and other)
4.	In case if you do not participate in eco-tourism programmes, to what extent do you feel the need to participate?
5.	What impedes the most the development of eco-tourism in the Baikal region in your expert opinion:
	The lack of ecological tours?
	The lack of demand for eco-tours?
	The lack of marketing of eco-tourism?
	Lack of environmental attractions?
	Lack of interest in the implementation of eco-tourism projects?
	Lack of state support for eco-tourism programs?
	Lack of funding for the development and implementation of eco-tourism programs?
	Other (please explain)?
6.	What is influenced the most by the implementation of eco-tourism programs in the Baikal region in your expert opinion?
	The economic development of the Baikal region
	The social development of the Baikal region
7.	To what extent do eco-tourism programs in the region influence the following in your expert opinion:
	Investment activity (growth of innovative tourism activity causes growth of investment attractiveness)?
	Financial activity and competitiveness (growth of innovative tourism activity strengthens financial stability and competitiveness)?
8.	How strongly do you assess the need for closer scientific cooperation in the form of conferences, seminars, symposia, round tables?
9.	How do you evaluate the need for the State participation in innovative environmental tourism

	projects?
	The need for the influence by regional and municipal authorities on the tourist activity of enterprises?
	The need to raise interest and stimulate by regional and municipal authorities in eco-tourism programs?
	The need for regional and municipal authorities to provide the support (financial, benefits)?
10.	To what extent, do you think, the development of eco-tourism has an impact on reduction of unemployment and increase of local citizens' incomes?
11.	How perfect is the current tourist legislation?
12.	The main problem of ecological tourism development in the Baikal region is:
	(a) high prices in the domestic tourism market
	(b) poor roads and non-accessibility of environmental attractions
	(c) poor tourist infrastructure
	(d) lack of modern competitive service and professional staff
	(e) low popularity of existing ecological attractions
	(e) lack of modern programmes for the development and marketing of eco-tourism
	(g) imperfection of the legal and regulatory framework in the field of tourism
	(h) other (please explain)
13.	What are the major advantages of eco-tourism in the Baikal region:
	(a) advantageous geographical location
	(b) competitive prices for ecological tours
	(c) lack of developed tourist infrastructure
	(d) availability of popular environmental attractions
	(e) other (please explain)
14.	What is the probability that domestic inbound ecotourism will become more popular than outbound tourism to foreign countries?
15.	What is the situation with the provision of professional staff in the tourism industry?
16.	How the flow of tourists in the Baikal region has increased in recent years? 0: the flow of tourists has significantly decreased; 1-2: the flow of tourists has decreased rather than increased; 3-4: the flow of tourists remained at the same level; 5-6: the flow of tourists has increased rather than decreased; 7-9: the flow of tourists has increased significantly; 10: the flow of tourists has increased dramatically (many times)
17.	How comfortable and safe is a visit to ecological attractions for ecological tourists? 0: tourists are constantly experiencing discomfort and insecurity, the places of stay of tourists look unattended and unprotected; 1-3: it is often unsafe and uncomfortable; 4-6: quite safe and comfortable, but the places of stay for ecological tourists are perceived as poorly equipped and poorly protected; 7-9: good organization of stay and protection in places of visiting environmental attractions; 10: excellent organization of stay and protection in places of environmental attractions
18.	How effective is the development of eco-tourism in the Baikal region from an economic point of view? (evaluate 0 to 10, where 1 is the least effective, and 10 is the most effective)

#### IV. RESULTS AND CONCLUSIONS

These models meet the requirements and can be used to explain (analyze) the effect of ecological tourism on the sustainable development of tourism in Baikal region as a whole. It allows to evaluate: 1) how effectively the programs of ecological tourism are implemented in the region; 2) assess the role of attractions; 3) determine the importance of natural, cultural and historical attractions in the development of tourism. The regression correlations between these factors will be obtained based on the tabular data (see Table 1).

These models show the total impact of attractions due to variations of the values obtained on the basis of expert estimates. According to this model, and based on preliminary estimates of experts, it is clear that for the sustainable development of tourism in the Baikal region, the special attention should be paid to the provision of access to attractions.

The use of the method of sociological survey and of the regression analysis to identify problems and directions of the further development of ecological tourism, as well as evaluation of its role and effectiveness in the Baikal region, is a reasonable econometric tool, when the obtained qualitative indicators are interpreted into quantitative, which is necessary for the interpretation of the results.

Ecotourism should become an important component of sustainable development of natural areas in the Baikal and other regions of Russia. All the definitions of ecotourism presented are based on the goals of sustainability and on the means to achieve this goal, namely "minimization of negative impacts on the natural and cultural environment", "strengthening of economic paybacks for the benefit of nature protection" and environmental education.

The further work assumes and involves a sociological survey of experts in the field of ecological tourism and analysis of the data obtained during the survey. Such an analysis should include: obtaining qualitative expert estimates, converting them into quantitative indicators using the presented econometric cross-sectional regression models, and further interpretation of the data obtained. It is also important to compare the number of specially protected natural areas with the total area of the region and with its recreational and tourist opportunities, as well as the class of its innovative activity according to the NAIRIT list [20]. The further development of ecotourism in the regions of Russia should be closely related to the formation of the system of specially protected natural areas.

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