

REVIEW

of the official reviewer on the dissertation work of Sapiyeva Akmaral Zhenisbayevna on the topic “Assessment of the Multiplier Effect of Tourist and Recreational Activities in National Parks of Kazakhstan for the Sustainable Development of Tourism” submitted for the degree of Doctor of Philosophy (PhD) in the specialty “6D090200 – Tourism”

№	Criteria	Eligibility (one of the options must be checked)	Justification of the position of the official reviewer
1.	The topic of the dissertation (as of the date of its approval) corresponds to the directions of scientific development and/or state programs.	1.1 Compliance with Priority Areas of Scientific Development or State Programs:	The dissertation submitted for the degree of Doctor of Philosophy (PhD) in the educational program “6D090200 – Tourism” aligns with the address of the President of the Republic of Kazakhstan, Kassym-Jomart Tokayev, regarding the development of ecotourism and the preservation of natural heritage. In his address, the President emphasized the importance of promoting sustainable tourism as one of the priority areas for the country's economic growth and environmental responsibility (Address to the People of Kazakhstan, 2020, September 1, 2024).
		1) The dissertation was carried out within the framework of a project or targeted program funded by the state budget (indicate the name and number of the project or program).	The dissertation topic aligns with several state policy documents, including: “The Economic Course of a Just Kazakhstan”, “New Kazakhstan: The Path of Renewal and Modernization”, “The Concept for the Development of Rural Areas of the Republic of Kazakhstan for 2023–2027”, “The Concept for the Development of the Tourism Industry of the Republic of Kazakhstan for 2023–2029”, “The State Program for Regional Development for 2020–2025”, and others. The dissertation was carried out within the framework of the grant project No. AP08855888, titled “Ensuring the Sustainable Development of Kazakhstan's National Parks through the Territorial Organization of Ecotourism” (2020–2022), funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan from the state budget.
		2) The dissertation was carried out within the framework of another state program (indicate the name of the program).	
		3) The dissertation corresponds to the priority direction of scientific development approved by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan (indicate the specific direction).	
2.	Importance for Science	The work <u>makes</u> /does not make a significant contribution to science, and its importance is <u>well demonstrated</u> / not demonstrated.	The work makes a significant contribution to science, and its importance is well demonstrated. The dissertation focuses on a crucial issue—assessing the multiplicative effect of tourist and recreational activities, as well as the ecological, economic, and social consequences of increasing tourism activity.

			<p>The chapter dedicated to the interaction between governmental structures, the private sector, and local communities deserves special attention. The study is distinguished by its scientific depth and comprehensive approach in analyzing the sustainable development of tourism in Kazakhstan's national parks.</p> <p>Notably, the dissertation highlights recommendations for the implementation of sustainable technologies and the improvement of environmental monitoring systems. The work presents practical proposals that contribute to enhancing the socio-economic efficiency of tourism while preserving natural heritage.</p>
3.	Principle of Independence	Self-reliance level:	The dissertation is aimed at achieving the set goals and objectives and was carried out independently by the applicant. Within the framework of the doctoral dissertation, the author has published 10 scientific papers in Kazakhstani and international scientific journals and international scientific-practical conferences. These include: 3 articles indexed in Web of Science and Scopus databases, 3 articles published in journals recommended by the Committee for Quality Assurance in the Field of Science and Higher Education of the Ministry of Science and Higher Education of the Republic of Kazakhstan, 5 publications presented at international and national scientific-practical conferences, including events held in Almaty, Astana (Kazakhstan), and Bucharest (Romania).
		1) High;	
		2) Medium;	
		3) Low;	
		4) No independence.	
4.	The principle of inner unity	4.1 Justification of the relevance of the dissertation:	<p>Assessing the multiplicative effect of tourist and recreational activities in Kazakhstan's national parks is crucial for determining their contribution to sustainable development. National parks, with their unique natural and cultural resources, stimulate the development of related industries, create jobs, and strengthen regional economies. Given the global focus on sustainability and environmental responsibility, this study contributes to optimizing resource management, improving tourism quality, and balancing economic, social, and environmental interests.</p> <p>Within the framework of the State Program for Tourism Development until 2025 and Kazakhstan's Sustainable Development Strategy, evaluating the multiplicative effect of tourist and recreational activities has gained particular importance.</p>
		1) Justified;	
		2) Partially justified;	
		3) Not justified.	

			<p>This effect accounts not only for the direct economic impact of tourism (revenues from visitors, infrastructure development) but also for indirect outcomes, such as increased employment for local populations, higher tax revenues, improved social capital in regions, and the growth of small and medium-sized businesses. Furthermore, induced effects must be considered, as they manifest in enhanced quality of life for local communities and increased environmental awareness among the population.</p> <p>Currently, comprehensive studies on the quantitative and qualitative assessment of tourism's multiplicative effects in Kazakhstan's national parks are lacking. Existing approaches are often fragmented and fail to simultaneously address the environmental, economic, and social dimensions of sustainable development. Therefore, developing a methodology for assessing the multiplicative effect of tourist and recreational activities is a relevant scientific challenge that responds to the demands of modern economic and environmental sustainability.</p> <p>Thus, the dissertation research not only addresses contemporary challenges but also provides scientifically grounded recommendations for utilizing the multiplicative effect of tourist and recreational activities as a tool for sustainable tourism development in Kazakhstan's national parks. The study's findings will be in high demand among government bodies, national park management structures, representatives of the tourism industry, and the expert community for developing effective management decisions and sustainable tourism development strategies.</p>
		<p>4.2 The content of the dissertation reflects the topic of the dissertation:</p>	<p>According to paragraph 5-1, subparagraph 2) of the document "On the Approval of the Rules for Awarding Degrees" (Order of the Minister of Education and Science of the Republic of Kazakhstan dated 31.03.2011 No. 127; registered with the Ministry of Justice of the Republic of Kazakhstan on 13.03.2011 No. 6951; with amendments as of 06.01.2025), the dissertation is presented in the form of a series of three articles published in journals included in the first and/or second quartile by impact factor, according to Journal Citation Reports by Clarivate Analytics, in one of the scientific fields relevant to the content of</p>
		<p>1) <u>Reflects;</u></p>	
		<p>2) Partially reflects;</p>	
		<p>3) Does not reflect.</p>	

			<p>the dissertation. In one of the articles, the doctoral candidate is the first author or the corresponding author.</p> <p>The content of the dissertation directly reflects its topic, as all three studies are interconnected through a comprehensive analysis of the sustainable development of ecotourism in the national parks of Kazakhstan.</p> <p>The first article examines the economic aspect, assessing the multiplicative effect of tourism in the “Buiratau” State National Nature Park (SNNP) and its impact on regional development.</p> <p>The second article addresses the ecological aspect, exploring the carrying capacity of the "Katon-Karagai" SNNP and the balance between tourism load and the preservation of natural ecosystems.</p> <p>The third article focuses on the social dimension, analyzing the perception of the local population towards the development of ecotourism in the "Altyn-Emel" SNNP.</p> <p>As a result, the dissertation covers the key elements of sustainable tourism—economic, ecological, and social—confirming the relevance of the research and its alignment with the stated topic.</p>
		<p>4.3. The purpose and objectives correspond to the topic of the dissertation:</p>	<p>The purpose and objectives of the dissertation correspond to its topic. The research systematically achieves its objectives, fully aligning with the concept of the topic. The purpose of the dissertation is to assess the multiplicative effect of tourist and recreational activities in Kazakhstan's national parks and determine their contribution to sustainable tourism development. To achieve this goal, the following objectives were completed: Analyzing theoretical approaches to assessing the multiplicative effect of tourist and recreational activities; Studying the current state of tourism and recreational activities in Kazakhstan’s national parks; Identifying the key economic, social, and environmental impacts of tourism development in national parks; Determining the main factors influencing the sustainable development of tourism in Kazakhstan’s national parks; Developing recommendations to enhance the effectiveness of</p>
		<p>1) <u>Correspond;</u></p>	
		<p>2) Partially correspond;</p>	
		<p>3) Do not correspond.</p>	

			tourist and recreational activities, considering sustainable development principles.
		4.4. All sections and provisions of the dissertation are logically interconnected.	All sections and provisions of the dissertation are logically interconnected and have a scientifically grounded consistency. The structure of the dissertation complies with modern academic requirements and has been published in accordance with all standards in a Q2-ranked journal indexed in Web of Science and Scopus.
		1) <u>completely interconnected;</u>	
		2) the interconnection is partial;	
		3) there is no interconnection.	
		4.5 The new solutions (principles, methods) proposed by the author are justified and evaluated in comparison with existing solutions:	The new solutions (principles, methods) proposed by the author are justified and evaluated in comparison with existing solutions, and a critical analysis is present. The researcher has critically analyzed the works of both international and Kazakhstani scholars, particularly in assessing the multiplicative effect of tourist and recreational activities in national parks and their contribution to sustainable tourism development. The study compares and evaluates existing methods and principles based on modern approaches and technologies. Key references include: Bovarnick A., Galindo H., Fernández-Baca J., Negret H., Keynes J., Fletcher J.E., Archer B.H. – methods for assessing the multiplicative effect of tourist and recreational activities; Dong X., Gao S., Xu A., Luo Z. – evaluation of tourist and recreational impacts; Artemyev A.M., Asipova Zh.M., Aktymbaeva A.S. – assessment of recreational load on local environments; Akbar I., Yang Z., Pachikin K.M., Nasyrov R.M., Sokolov A.A. – studies on the increase in local employment due to tourism. Through comparative analysis, the dissertation integrates modern methodologies and technological approaches, ensuring a comprehensive and scientifically grounded evaluation.
		1) <u>there is a critical analysis;</u>	
		2) partial analysis;	
		3) the analysis does not represent one's own opinions, but quotes from other authors	
		4) no analysis.	
5.	Principle of Scientific Novelty	5.1 Are the scientific results and provisions new?	The scientific results and findings are entirely novel. The novelty of the research is demonstrated through modern methods of monitoring the sustainable development of ecotourism in the “Buiratau”, “Altyn-Emel”, and “Katon-Karagay” state national parks based on local community perceptions, assessing the multiplicative effect in national parks, and maintaining a balance between nature conservation and visitor flow to support sustainable development.
		1) <u>completely new;</u>	
		2) partially new (25-75% are new);	
		3) not new (less than 25% are new).	

		5.2 Are the dissertation findings new?	The conclusions of the dissertation are entirely novel. Through the analysis of foreign and domestic scientific studies and the application of their methodologies, the researcher has assessed the multiplicative effect of tourist and recreational activities in national parks and determined their contribution to sustainable development.	
		1) completely new;		
		2) partially new (25-75% are new);		
		3) not new (less than 25% are new).		
		5.3 Technical, technological, economic or management decisions are new and reasonable:		
		1) completely new;		
		2) partially new (25-75% are new);	The technical, technological, economic, or management solutions presented in the dissertation are entirely novel and well-founded. The research employs scientifically innovative and substantiated methods for data analysis and processing, including mathematical analysis, calculation of recreational load, and key algorithms for creating new job opportunities.	
		3) not new (less than 25% are new).		
6.	Justification of the Main Conclusions	All main conclusions are / are not based on scientifically significant evidence or are sufficiently well justified (for qualitative research and fields of study in arts and humanities).		All main conclusions are based on scientifically significant evidence and are supported by: a substantial volume of primary data, the purposeful and accurate use of official statistical data related to the research problem, mathematical calculations, cartographic materials, and the results of surveys of potential consumers and interviews with stakeholders. The data is reliable, and the conclusions are not subject to doubt.
7.	The main provisions for the defense	It is necessary to answer the following questions for each provision separately:		The researcher has proposed three key findings in the dissertation: 1. The tourism expenditures and crises in the "Buratau" National Park have a significant multiplicative effect on stimulating the local economy through direct, indirect, and induced impacts, which is demonstrated using input-output models and social accounting methods. 2. The successful development of ecotourism in the Altyn Emel National Park is possible with the active participation of the local community in tourism initiatives and the development of strategies that ensure a balance between ecological integrity, social benefits, and economic stability. 3. Evaluating and implementing the standards of permitted recreational load, as seen in the Katon-Karagai National Park,
		7.1 Is the provision proven?		
		1) proven;		
		2) Rather proven;		
		3) Rather not proven;		
		4) Not proven;		
		5) In its current wording, it is impossible to verify the proof of the statement.		
		7.2 Is it trivial?		
		1) yes;		
		2) no;		
		3) In its current wording, it is impossible to verify the triviality of the statement.		
		7.3 Is it new?		

		<p>1) yes;</p> <p>2) no;</p> <p>3) In its current wording, it is impossible to verify the novelty of the statement.</p> <p>7.4 Level of application:</p> <p>1) Narrow;</p> <p>2) Medium;</p> <p>3) Wide;</p> <p>4) In its current wording, it is impossible to verify the level of application of the statement.</p> <p>7.5 Is it proven in the article?</p> <p>1) yes;</p> <p>2) no;</p> <p>3) In its current wording, it is impossible to verify the proof of the statement in the article.</p>	<p>enables minimizing the negative impact on the park's ecosystems while ensuring high visitor levels and harmonious tourism development.</p>
8.	<p>Principle of Reliability</p> <p>Reliability of Sources and Provided Information</p>	<p>8.1 Choice of methodology - is justified or the methodology is described in sufficient detail</p> <p>1) yes;</p> <p>2) no.</p>	<p>The choice of methodology is justified and clearly described. The methodologies used in the dissertation research were selected according to the characteristics of the studied objects and their role in sustainable tourism development. The first article examines the methodology for determining the tourism capacity of Katon-Karagay National Park. The second article applies an economic model of the multiplicative effect to analyze the impact of tourism in Buiratau National Park. The methodology includes the use of input-output (I-O) models, which analyze direct, indirect, and induced economic effects. The third article focuses on the sustainable development of ecotourism in Altyn-Emel National Park. The methodology includes functional zoning, surveys of local residents, spatial analysis, and the use of GIS technologies.</p> <p>Thus, in each article, the choice of methodology is based on the specific characteristics of the research object and the tasks aimed at ensuring the sustainable development of Kazakhstan's national parks, making these methods well-founded and adapted to real conditions.</p>

		<p>8.2 The results of the dissertation work were obtained using modern scientific research methods and data processing and interpretation techniques with the application of computer technologies:</p> <p>1) yes; 2) no.</p>	<p>The results of the dissertation work have been obtained using modern scientific research methods and data processing technologies, as evidenced by the approaches presented in the articles.</p> <p>1 Use of Geographic Information Systems (GIS) and Spatial Analysis: GIS methods were applied in the study of Katon-Karagay National Park to analyze tourist flows and their impact on the environment. This approach allowed for the visualization of visitor distribution, monitoring, and the development of adaptive management strategies for sustainable tourism. Such a method enhances the accuracy of analysis and supports well-founded decision-making.</p> <p>2 Analysis of the Multiplicative Effect through Economic Models: To evaluate the economic contribution of tourism in Buiratau National Park, input-output (I-O) analysis models were used, covering direct, indirect, and induced effects. This method, based on primary data from local entrepreneurs and national statistics, not only determines the economic impact of tourism but also its role in regional development.</p> <p>3 Surveys and Statistical Analysis: Research on the sustainable development of ecotourism in Altyn-Emel National Park involved surveys and focus groups to study the opinions of local residents. Data collected using the Likert scale was representative and allowed for an assessment of the impact of ecotourism on local communities. Statistical methods were used to interpret this data.</p> <p>4 Functional Zoning: The functional zoning method was applied to analyze tourist activities in national parks, enabling the proper distribution of recreational load and the reduction of anthropogenic impact. This method requires the use of computer technologies for detailed mapping and modeling of natural features and infrastructure.</p> <p>Thus, the application of modern technologies and methods, including GIS, economic modeling, surveys, and functional zoning, has made it possible to obtain reliable and practically significant research results, fully aligning with the requirements of contemporary scientific research.</p>
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		<p>8.5 Used literature sources are sufficient/not sufficient for a literature review.</p>	<p>The list of references is sufficient for the literature review. The total number of references, including three articles, is 139. The sources used are adequate for the literature review because they encompass a wide range of scientific approaches, methodologies, and concepts necessary to substantiate the research objectives. Additionally, all three studies reference international works that include examples of sustainable tourism in parks across Europe, Africa, and North America, which support comparative analysis and validate the scientific grounding of the approaches. The literature covers ecological, economic, social, and cultural aspects, which are integrated to form a comprehensive view of tourism management. All of this demonstrates that the literature review is sufficient to achieve the research objectives and provides a basis for developing scientific evidence and recommendations.</p>
9	Practical value principle	<p>9.1 The thesis has theoretical value:</p>	<p>The dissertation holds theoretical significance as the discussed articles demonstrate the contribution of theoretical approaches in the fields of sustainable tourism development and national park management. In the study of Katon-Karagay National Park, a recreational load calculation method is proposed, where tourist capacity and psychocomfort theories are applied, establishing the balance between the conservation of nature and the socio-economic aspects of tourism.</p> <p>In the work on ecotourism development in Altyn-Emel National Park, the functional zoning and GIS technologies are utilized, highlighting the importance of theoretical knowledge in developing sustainable tourism routes and reducing anthropogenic impact.</p>
		<p>1) yes; 2) no.</p>	

			<p>The analysis of the multiplicative effect of tourism in Buiratau National Park through the application of economic theories, such as the input-output (I-O) model, demonstrates the assessment of tourism's impact on regional economies, contributing to the theoretical understanding of economic stability through tourism.</p> <p>Thus, the dissertation not only organizes existing theoretical approaches but also offers new analytical tools for managing protected areas, further confirming its theoretical significance in the development of sustainable tourism and nature conservation management.</p>
		<p>9.2 The dissertation has practical significance, and there is a high likelihood of applying the obtained results in practice: 1) yes; 2) no.</p>	<p>The dissertation has high practical significance, as the results obtained during the research can be directly applied in the development and implementation of effective strategies for sustainable tourism in Kazakhstan's national parks. For example, the research conducted in Katon-Karagay National Park demonstrated the possibility of determining the recreational capacity of the area through GIS and spatial analysis, which helps to reduce environmental impacts while meeting visitors' needs.</p> <p>The studies in Buiratau National Park identified the economic effectiveness of tourism through the multiplicative effect, proving that it contributes to increasing local business profits, creating job opportunities, and strengthening the regional economy.</p> <p>The functional zoning approach applied in Altyn-Emel was successful in monitoring tourist flows, preserving natural and cultural heritage, and creating conditions for the development of local communities.</p> <p>These approaches, which integrate economic, ecological, and social aspects, are universal and can be applied to other protected natural areas.</p>
		<p>9.3 The proposals for practice are new: 1) Completely new; 2) Partially new (25-75% new); 3) Not new (less than 25% new).</p>	<p>The practical recommendations presented in the articles are new, as they are based on unique approaches adapted to the context of Kazakhstan's national parks. In the study of Katon-Karagay National Park, new methods were introduced for calculating recreational loads, including the use of GIS technologies and</p>

			<p>psychological comfort analysis to regulate tourism flow, which were approaches previously not applied in the region. In the study of Buiratau National Park, economic recommendations were based on the multiplicative effect calculated using modern input-output models, representing a new approach for Kazakhstan's national parks. For Altyn-Emel, the use of functional zoning and multi-criteria analysis methods to reduce anthropogenic impact, along with the integration of social aspects through surveys of local residents, highlights the innovative nature of these practical solutions.</p> <p>Thus, the proposed measures are based on new methodological and practical approaches that were not previously applied in the management of tourism in Kazakhstan's national parks.</p>
10.	The quality of writing and design	<p>Academic writing quality:</p> <p>1) high; 2) average; 3) below average; 4) low.</p>	<p>The quality of academic writing is high, and the work is independently completed. The dissertation addresses specific scientific issues, and its logical structure is clear. The researcher has adhered to the scientific style during the writing process and used terminology appropriately. References to the literature sources are correctly cited. The content and structure of the dissertation comply with the standards for the presentation of a dissertation for the degree of Doctor of Philosophy (PhD) in the relevant field.</p>
11.	Comments on the dissertation	<u>no objections</u>	
12.	The scientific level of the doctoral candidate's articles on the research topic (in the case of defending the dissertation in the form of a series of articles, official reviewers comment on the scientific level of each article of the doctoral candidate on the research topic).	<p>The scientific level of the doctoral candidate's articles demonstrates a high degree of originality and scientific significance, fully complying with the requirements for defending the dissertation in the form of a series of articles.</p> <p>In the first article, which evaluates the tourist capacity of Katon-Karagay National Park, the integration of quantitative and qualitative methods, including ecological, social, and psychological aspects, is shown, proving that the methodology is carefully developed and the results are significant for sustainable tourism. The second article, which studies the multiplicative effect of tourism in Buiratau National Park, provides a deep economic analysis of tourism's contribution to regional development based on the use of the input-output model, demonstrating the applied nature of the study and its relevance to the economy of Kazakhstan. The third article, focused on ecotourism development in Altyn-Emel National Park, ensures a comprehensive approach to solving the sustainable management of natural areas by combining functional zoning, surveys of local residents, and GIS analysis methods.</p> <p>Thus, the articles cover a wide range of scientific issues, contribute to the development of sustainable tourism theory and practice, and fully align with the requirements of doctoral research.</p>	

13.	Decision of the official reviewer (according to paragraph 28 of the current Standard Regulation).	I recommend awarding the degree of Doctor of Philosophy (PhD) in the educational program “ <u>6D090200-Tourism</u> ” to <u>Sapiyeva Akmaral Zhenisbayevna.</u>
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In the reviews, official reviewers indicate one of the following decisions:

1. Award the degree of Doctor of Philosophy (PhD) or Doctor in the profile;
2. Send the dissertation for revision (except in cases of defending the dissertation in the form of a series of articles);
3. Refuse to award the degree of Doctor of Philosophy (PhD) or Doctor in the profile.

Copies of the official reviewers' reviews are provided to the doctoral candidate no later than **5 (five) working days** before the dissertation defense.

**Reviewer,
Head of the Tourism Department
of the L.N. Gumilyov Eurasian National University
Candidate of Economic sciences, Professor**

Lyailya Mutaliyeva

