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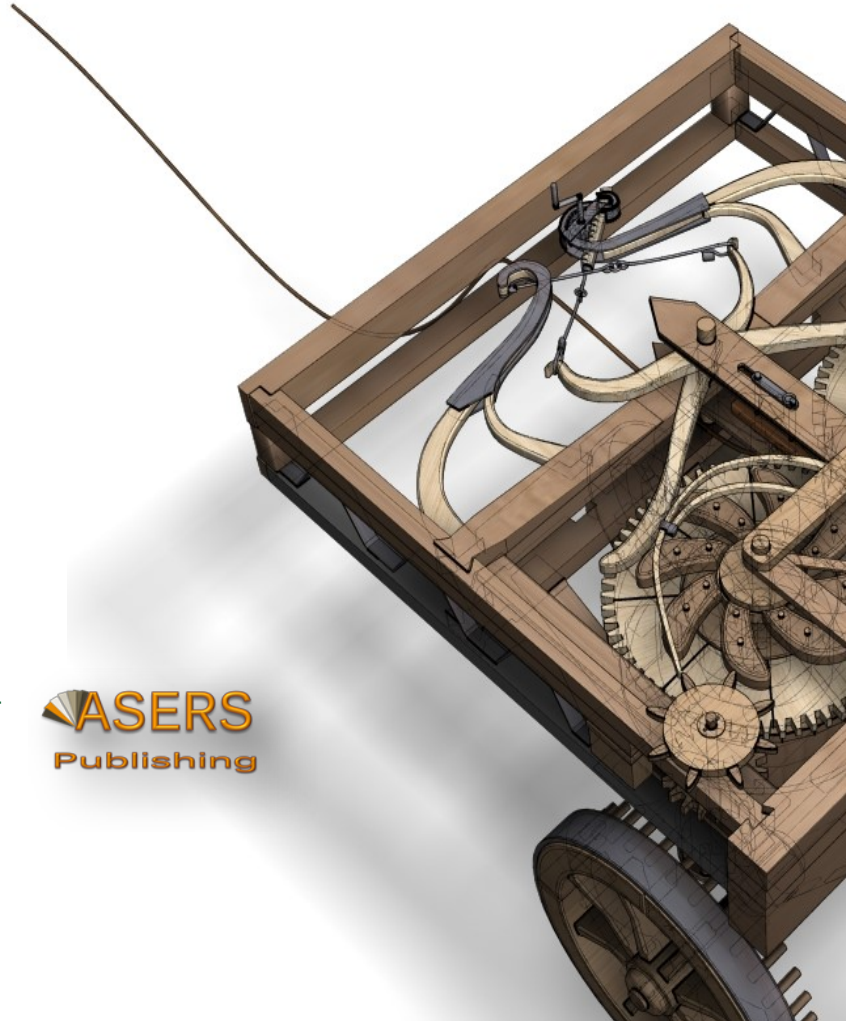
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# Call for Papers

## Winter Issues 2023

### Journal of Environmental Management and Tourism

**Journal of Environmental Management and Tourism** is an open access, peer-reviewed interdisciplinary research journal, aimed to publish articles and original research papers that contribute to the development of both experimental and theoretical nature in the field of Environmental Management and Tourism Sciences. The Journal publishes original research and seeks to cover a wide range of topics regarding environmental management and engineering, environmental management and health, environmental chemistry, environmental protection technologies (water, air, soil), pollution reduction at source and waste minimization, energy and environment, modelling, simulation and optimization for environmental protection; environmental biotechnology, environmental education and sustainable development, environmental strategies and policies.

Authors are encouraged to submit high quality, original works that discuss the latest developments in environmental management research and application with the certain scope to share experiences and research findings and to stimulate more ideas and useful insights regarding current best-practices and future directions in Environmental Management.

Also, this journal is committed to a broad range of topics regarding Tourism and Travel Management, leisure and recreation studies and the emerging field of event management. It contains both theoretical and applied research papers and encourages obtaining results through collaboration between researchers and those working in the tourism industry.

The journal takes an interdisciplinary approach and includes planning and policy aspects of international, national and regional tourism as well as specific management studies. Case studies are welcomed when the authors indicate the wider applications of their insights or techniques, emphasizing the global perspective of the problem they address.

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## Tourism and Educational Cluster in Tourism Industry

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**Abstract:** The development of a tourist and educational cluster can play a significant role in ensuring the sustainability of universities. By collaborating with tourism industry partners to undertake research projects that address sustainability, tourism trends, and emerging educational needs, both parts will gain in terms of competitiveness. There is a close relationship between education and tourism, due to the common goals. This article shows the reasons for the interaction between education and tourism and the results of their clustering. A methodological approach to the definition of the concept of 'tourist-educational cluster' is proposed. The contribution of the tourism industry to the development of theories and methods of active learning is noted. The potential of using pedagogical technologies in promoting tourism products is shown.

**Keywords:** tourism; education; cluster; sustainability.

**JEL Classification:** Z32; I23.

### Introduction

The sustainable development of tourism determines the need to search for new mechanisms and approaches to the provision of educational tourism services, which will increase the demand for higher education services and stimulate the higher education market. The growing importance of educational tourism in achieving high rates of development of the national economy determines the need for improvement and state support in the form of providing academic freedom to educational institutions, as well as changing the content of educational programs in the context of increasing international competition in the field of higher education.

The importance and place of educational tourism as a system of continuous human education in the development of sustainable tourism attracts special attention. In many studies, the tourism and education cluster are considered in the context of the search for new technologies, methods and innovative forms of education that provide democracy, social openness, integrity, continuity, flexibility, variability and educational integrity. Educational tourism as an interdisciplinary phenomenon stands out as having an important pedagogical potential and acting as an effective tool to help people acquire knowledge, skills and abilities throughout their lives.



Many sources reveal the possibilities of using the tourist-educational cluster for the successful formation of competencies defined in the educational standards for advanced training in individual disciplines.

Along with the influence of tourism on education, there is also a reverse process, when education stimulates the development of tourism. This influence is manifested, on the one hand, in the fact that a person's desire to improve the level of education and, accordingly, the quality of life creates a demand for new tourism products with educational content (educational tours) and at the same time their offer, and on the other hand, it manifests itself in the promotion of tourism products in the use of pedagogical technologies.

Thus, the tourist-educational cluster (synergy of education and tourism) will ultimately allow the system of continuous education to more fully meet the needs of various age and social groups of the population, more effectively reveal and develop the cognitive and creative potential of people.

The importance of the tourism industry in the development of the economy cannot be overestimated, since it creates jobs at a much lower cost than other industries. Accordingly, the need for highly qualified personnel for the tourism industry is growing rapidly. One of the main problems of tourism development is the lack of personnel. To attract business representatives, it is necessary to create associations consisting of representatives of tourism industry professionals, organizers of training programs and experts from universities who train specialists. An important point is also the creation of educational clusters based on the development of tourist and recreational special economic zones.

The development and scientific substantiation of a conceptual approach and a set of recommendations aimed at improving the sustainability of educational tourism have become the goals of this article.

## 1. Literature Review

The study of cluster organization in relation to tourism as one of the tools to improve its efficiency is of paramount importance for Kazakhstan and requires deep theoretical research, comprehensive analysis and development of sound recommendations based on them. Various aspects of the cluster organization of the economy, including tourism, have been considered in the works of many scientists.

Integration in the field of higher education leads to the interaction of educational organizations with the labor market in order to prepare highly qualified human capital. The state policy is to address youth employment issues and problems, and the related needs of companies in the professional and labor competencies of graduates. It is the tourism industry as a type of entrepreneurship that is becoming an integral part of the solution for incorporating tourism entrepreneurial competencies into university curricula (Santos-Jaén *et al.* 2022) This decision should help graduates enter the labor market by improving their employability skills, as well as instilling in them an entrepreneurial inclination towards self-employment as a worthy career path (Khelifi 2023) and has the potential to strengthen business education, innovation and the economy (Carpenter and Wilson 2021, Albers and Rundshagen 2023).

Therefore, the cluster of tourism and education in the sustainable development of the tourism industry will make a significant contribution to economic development through economic benefits to people in the form of increased income. At the same time, tourism companies, relying on higher education institutions in terms of skilled labor, also benefit (Arena *et al.* 2023). Considerable attention has been paid to the opportunities for increasing labor productivity due to the influence of the tourism business sector on higher education.

The interdependence between universities and the tourism industry creates a mutually beneficial relationship that leads to increased financial gains for educational institutions offering services to the tourism sector. This collaboration not only boosts the revenue of universities but also opens up avenues for these institutions to enhance faculty salaries, thus incentivizing educators to engage with the tourism business (Drach 2021 and Altynbasov 2021).

The development of educational tourism as a separate segment of the tourism industry actually became possible due to a significant increase in the tourist flow within certain categories of the population, primarily children and youth. Studying the impact of education on the quality of tourism products by developing more effective quality improvement strategies as a key element of tourism development, assessing tourism products and resources, researching cultural and historical heritage is reflected in the work of Tahiri *et al.* (2021).

Saepudin *et al.* (2019) explores how to enhance educational tourism in the Cibodas Village of by examining its potential, challenges, and offers valuable recommendations for fostering educational tourism while ensuring its positive impact on both the community and the environment.

World economic processes entail the reform of education in the teaching of tourism and service. A highly skilled workforce capable of coping with a rapidly changing work environment is a priority for organizations'

economic goals. Kazakhstan business is interested in reforming education and needs specialists in the field of tourism, as well as financial support in their preparation (Rakhimberdinova 2022, Omarova 2021)

The main directions of improving the quality of training of professional tourism personnel, the study of the main personnel problems affecting the quality of services in the field of tourism, the professional qualities necessary for successful employment in the field of tourism are studied in the works of Brel and Zaytseva (2019), Komandysenko and Semenova (2018).

Thus, the issues of improving the system of regulation of educational tourism are largely due to the specific features of project activities as the main form of implementation of educational tours. Here, the advantages of the participation of educational institutions in project activities in the educational tourism market are obvious, which requires the development of scientific and methodological tools for regulating the implementation of economic activities and the introduction of innovative technologies in the design and implementation of new tourism products. At the moment, the issues of developing scientific ideas about clustering are relevant, which manifests itself in the sectors of the sphere of educational services, in particular, in tourism. Purposeful clustering of the tourist and educational sector requires scientific developments, principles and methods for managing this process. Methodological issues of cluster formation are still insufficiently developed, especially those emerging in the tourism sector.

The concept of greening the education system against the backdrop of growing environmental consciousness and the need to improve the environmental awareness of modern society is a key approach to formulating the environmental sustainability of the education system and an indicator of the effectiveness of the entire process of providing educational services in modern conditions. Increasing the degree of greening the education system is the inclusion of environmental issues, the rational use of natural resources, environmental protection in curricula and the training of teachers capable of implementing the concept of continuous environmental and economic education (Kharchenko 2020).

Thus, understanding the theoretical foundations of the impact of sustainable development and social responsibility on the quality of university education, when education affects people and nations, universities must take on the task of responsible learning (Chumaceiro 2022).

The impact of new technologies and growing demand on the workforce requires the development of online education in various forms, providing students with support, responsibility, flexibility and choice professions, including those in the tourism industry (Yasnoy 2019).

## 2. Tourism and Educational Cluster

Researching and evaluating the factors of sustainable tourism development based on the formation of tourist and educational clusters requires a systematic and comprehensive research methodology. Here's a proposed outline for such a methodology:

- to study of the theoretical foundations of the conceptual apparatus in the field of organizing tourist clusters, expanding ideas about clustering as a system of interconnected groups of tourist enterprises and educational institutions;
- to systematization of indicators of the internal and external environment for the development of educational tourism based on analysis;
- to develop a conceptual approach to ensuring the sustainability of tourism based on the formation of tourist and educational clusters.

Changes in the global economic situation actualize for Kazakhstan the problem of sustainable economic growth of the regions in order to preserve national sovereignty. The emphasis on sustainable regional growth will create a basis for the development of economic entities in its territory and form a common national dynamic. The study of the problem of regions shows the use of economic integration mechanisms in the form of clusters, which leads to the need for the formation of such cluster management systems that contribute to the economic development of territories. The main industry capable of providing national as well as regional growth is tourism. Thus, the gross value added of tourism in 2022 amounted to 670.5 billion tenge and its share in Kazakhstan's GDP was 1.2%, returning approximately to the pre-pandemic state. In this regard, the development of recommendations for the development of an integrated education management system in the tourism sector, taking into account territorial features, is relevant.

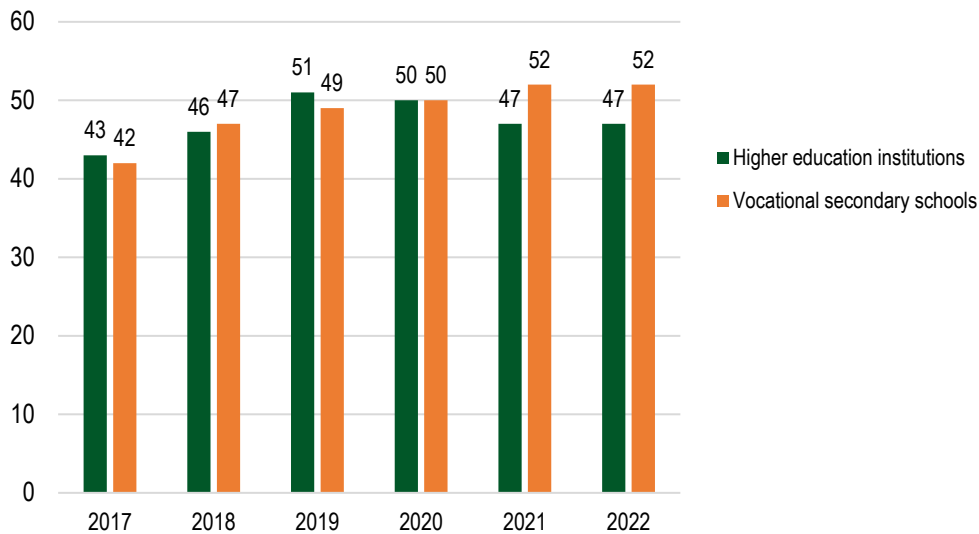
The tourism and educational cluster can be defined as the integration of educational institutions located in geographic proximity with interacting tourism companies in order to produce qualified specialists for this area and focused on the production of an innovative product (service) of tourism, recreation and culture. The multiplier effect of the development of the regional economy, as well as the tourism industry, is possible if conditions are

created for advanced training and continuous training of local specialists in popular specialties and professions, which can be provided through the creation of an industry educational cluster.

The need to create an educational cluster is also due to the presence of a personnel problem as a barrier to regional development, since problems with the qualifications of personnel exist in almost all areas of the economy, including those related to tourism.

The deficiency of adequately skilled professionals in the realm of tourism stands as a formidable obstacle hindering the sustainable and efficient progression of the tourism industry. Within this context, Kazakhstan finds itself positioned at the 71<sup>st</sup> spot among 136 nations with regard to the accessibility of proficient workforce within the tourism sector. Presently, Kazakhstan has 47 universities actively engaged in offering educational training focused on the domain of tourism.

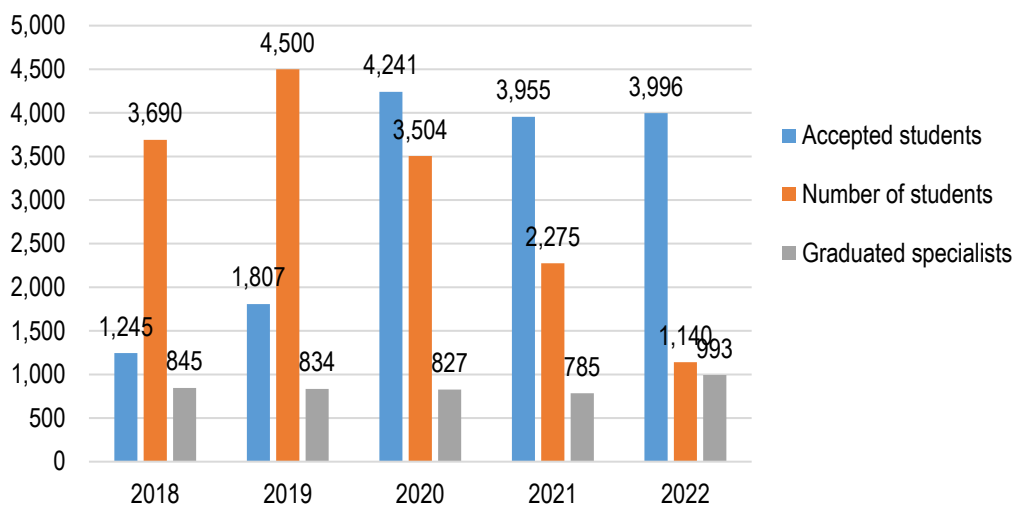
Figure 2. Number of educational institutions involved in the training of specialists for the tourism sector, units



Source: compiled by authors

The data in Figure 2 show that in 2022, out of 122 higher education institutions, the share of universities involved in the training of specialists for the tourism sector was 38.5%. At the same time, 11 universities or 23.4% of the total number of educational institutions are state-owned, 36 universities (76.6%) are privately owned.

Figure 3. Training of specialists with higher education for the tourism sector, people



Source: compiled by authors

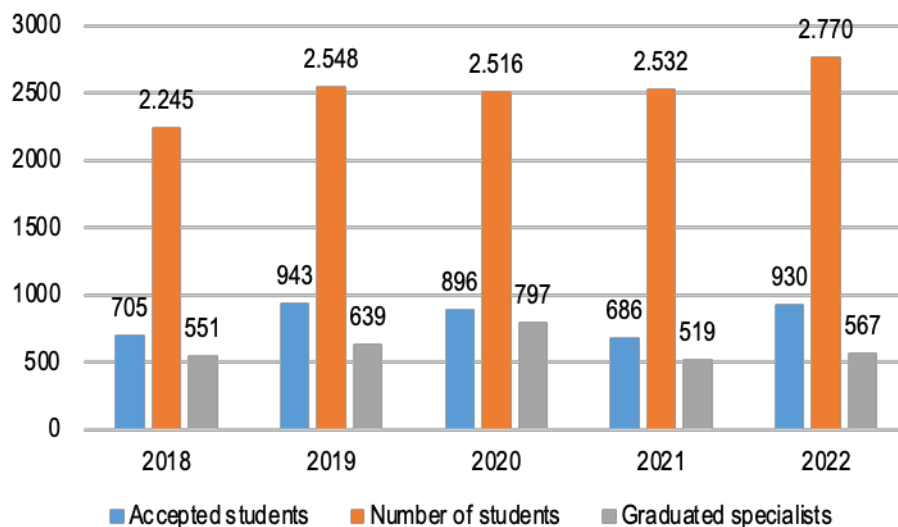
Despite the fact that there are a number of tourism training programs in Kazakhstan, the need for practical training and vocational training for certain categories of tourism professionals, such as tour guides, guides and entertainment program animators, remains high. The lack of guides and tour guides in the regions significantly



increases the cost of the tour package due to the involvement of guides from the cities of Astana and Almaty. The main issues are the non-compliance of curricula with international standards, the wear and tear of the technical materials used, the lack of teaching staff, especially foreign professors with international experience and practitioners. To date, 3,996 students have entered the tourism sector in 2022, while 993 students (24.8%) have graduated. State universities accepted 365 students and graduated 126 specialists (Figure 3).

The training of human resources in the Kazakh education system, taking into account more industrial practices, is carried out at the level of technical and vocational education in the following specializations tourism (by industry): 'tourism instructor', 'tour guide', 'travel agent', 'manager'; translator (by industry): 'translator', 'guide-interpreter'. The remaining specialties are related, including specialties in the provision of services (restaurant business, waiters, etc.). The number of specialists with secondary vocational education in the field of tourism in 2022 was 567 students, in 2018 - 551 people, in 2019 - 639 people, in 2020 - 797 people and in 2021 - 519 people (Figure 4).

Figure 4. Training of specialists with secondary vocational education for the tourism sector, people



Source: compiled by authors

Thus, in the current situation for the educational sphere, it is characteristic that the existing educational institutions do not provide training in accordance with the industry needs, both quantitatively and qualitatively, training programs do not have a practical focus.

### 3. Empirical Approach for Increasing the Economic Sustainability of Universities Based on Tourist and Educational Cluster

The uneven growth rate of the network of educational institutions, the training of personnel does not correspond to the list of popular specialties, in this regard, it is necessary to form an educational cluster to ensure the advanced formation of human capital and requires the solution of the following tasks:

- integration of educational institutions in the field of tourism, as well as related industries;
- create conditions for increasing the economic independence of educational institutions and the effectiveness of their activities.

That is, the main goal of creating an educational cluster in the field of tourism is to unite vocational education institutions and social partners to meet the needs of regional labor markets in the field of tourism and services, which will help improve the quality of the workforce, create educational programs for vocational training and retraining of personnel, as well as and achieving a balance between future demand and supply for certain specialties in the labor market.

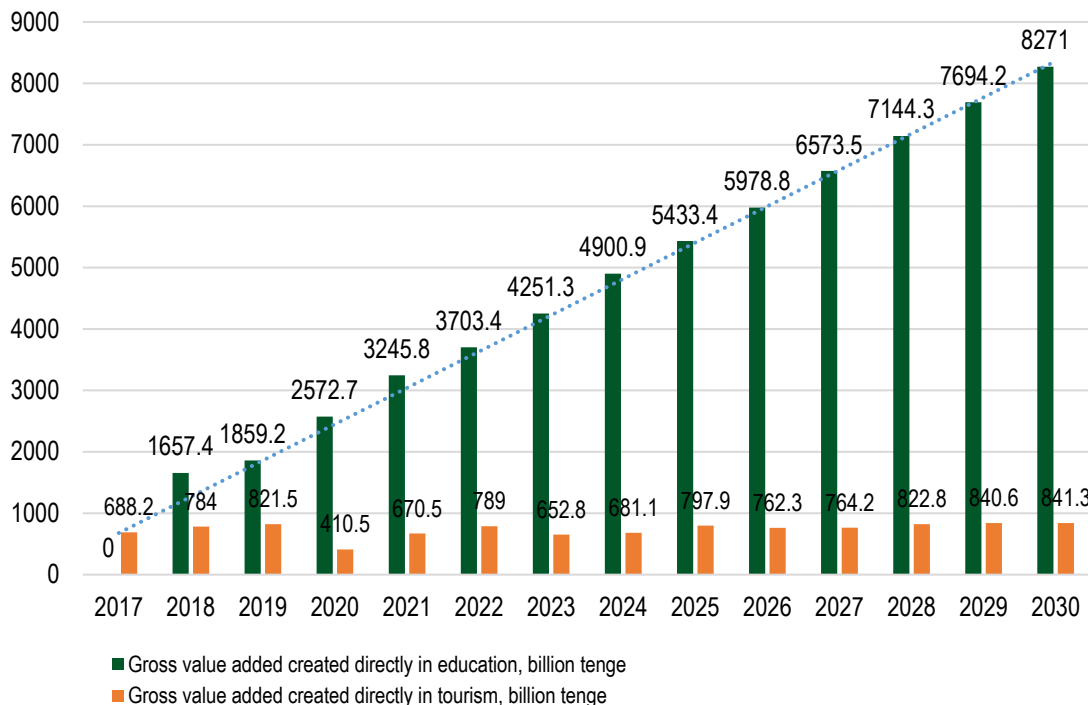
To determine the closeness of the relationship between the factor and the result, we calculate the coefficient of determination ( $R^2$ ). By assessing the significance of the presented equation, we examine the coefficient of determination:  $R^2$ , since it is equal to 0.99, the regression equation is statistically reliable. As a result of the calculations, a multiple regression equation was obtained.

Table 1. Forecast indicators of the creation of an educational cluster in the field of tourism, billion tenge

Years	Gross value added created directly in education	Gross value added created directly in tourism
2017	1.528,9	688,2
2018	1.657,4	784,0
2019	1.859,2	821,5
2020	2.572,7	410,5
2021	3.245,8	670,5
2022	3.703,4	789,0
Forecast 2023	4.251,3	652,8
2024	4.900,9	681,1
2025	5.433,4	797,9
2026	5.978,8	762,3
2027	6.573,5	764,2
2028	7.144,3	822,8
2029	7.694,2	840,6
2030	8.271,0	841,3

Source: compiled and calculated by authors

Figure 5. Indicators of the educational cluster in the field of tourism



Source: compiled and calculated by authors

The data in Figure 5 show that between these indicators there is a rather strong dependence with a correlation coefficient, a dependence with a correlation coefficient of  $r = 0.99$ , which indicates a significant influence of these factors in the development of the educational cluster in the field of tourism. That is, when

creating this cluster, the gross value added created directly in education in 2030 will amount to 8271 billion tenge and tourism 841.3 billion tenge. Leading universities of the country, having educational and methodological bases, experience in training specialists in the field of tourism and service, should become the center of the educational cluster. In determining the prospects for the development of the market for higher education services, we use scenario forecasting, which allows us to take into account not only the impact of the main factors and conditions of the forecast environment, but also the impact of managerial decisions aimed at minimizing the impact of possible crisis situations and increasing the efficiency of implementing the chosen economic scenario.

To design scenario forecasts for the development of the higher education market, the tools of the prognostic model of Brown (2023), related to adaptive models, were chosen. In the resulting model, with a probability of 86%, it can be argued that the forecast is likely to be realized in the medium term, while the standard deviation of the model error from the forecast model was 0.14% (Table 2).

Table 2. Forecast data for determining the volume of the market for higher education services, including for the tourism sector, for the period up to 2035 using the Brown model

Years	Volume of services rendered, thousand tenge	Exponential Model 1			
		k=0,8	Accuracy	85,89%	Number of students, pers.
		Forecast $\hat{Y} =$	Model error	Standard deviation	
2023	640.755.338	501.865.755	138.889.583	0,08	586.057,6
2024	808.966.036,5	612.977.421	195.988.615	0,10	572.310,28
2025	1.049.027.428	769.768.313	279.259.114	0,13	577.806,124
2026	1.386.167.823	993.175.605	392.992.218	0,16	577.856,0592
2027	1.861.500.025	1.307.569.379	553.930.646	0,18	576.839,8054
2028	2.533.636.086	1.750.713.896	782.922.190	0,20	574.307,0307
2029	3.482.216.823	2.377.051.648	1.105.165.175	0,22	576.732,0147
2030	4.820.670.460	3.261.183.788	1.559.486.672	0,23	574.999,0326
2031	6.710.392.280	4.508.773.126	2.201.619.154	0,24	574.400,2354
2032	9.378.022.907	6.270.068.449	3.107.954.458	0,25	574.199,4823
2033	13.143.373.228	8.756.432.015	4.386.941.213	0,25	574.163,4963
2034	18.458.550.007	12.265.984.985	6.192.565.021	0,25	573.117,8762
2035	25.961.516.929	17.220.037.002	8.741.479.927	0,26	57.2976,309
			av. value av. standard deviation =	0,14	

Source: compiled by authors

An effective adaptive forecasting method based on exponential smoothing is Brown's method (Brown's linear growth model). Brown's Linear Growth Model typically refers to a type of forecasting model introduced by James Durbin and Geoffrey Watson Brown in the context of time series analysis. This model is sometimes also called the 'linear exponential smoothing model with growth.' The model is an extension of simple exponential smoothing those accounts for both a level component and a linear trend component, making it more suitable for time series data with a consistent linear growth or decline. The predictive model of the method looks like this:

$$\hat{y}_{t+d} = \alpha y_t + (1 - \alpha) \hat{y}_t, \hat{y}_0 = y_0, \alpha \in (0,1)$$

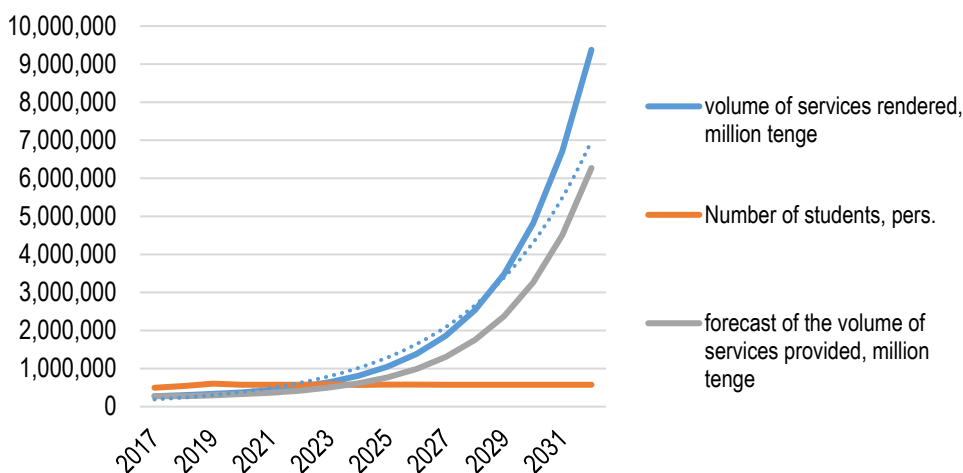
where: forecast  $\hat{y}$  (the volume of higher education services provided for the tourism sector) is a forecast made for d - steps forward at the t - m adaptation step; t - time interval lag;  $\alpha$  - smoothing parameter, or weighting factor;  $y_t$  is the actual value of the training sets.

This model considers the forecast 1<sup>st</sup> step ahead, then  $(y_t - \hat{y}_t)$  the error of this forecast, and the new forecast  $\hat{y}_t$ , as a result of adjusting the previous forecast, taking into account its error (the essence of adaptation). Forecasting reflects new changes faster and removes random fluctuations, which increases the proportion of recent observations:

$$\alpha \rightarrow 1, \hat{y}_{t+d} \rightarrow y_t.$$

The model of actual and predicted indicators of the development of the higher education market is shown in Figure 6.

Figure 6. Forecasting the development of the market for higher education services based on the Brown model



Source: compiled by authors

The predictive model shows that by 2035 the market for educational services will outrun the volume of the service market, and in this case, higher education organizations need to adjust the market supply in the medium term.

Table 3. Ensuring the competitiveness of the market for higher education services, including for the tourism sector, in Kazakhstan to ensure the sustainability of tourism

Directions	Suggestions
Educational	<ul style="list-style-type: none"> <li>▪ Availability and continuity of quality education, control of the conditions for the implementation and results of educational programs, the growth of academic and economic independence of universities.</li> <li>▪ Employment of graduates. Increase in public funding (revenue per student). Degree of PPP. Growth of wages of teaching staff. Attracting foreign teachers, domestic scientists and practitioners. Development of distance learning forms, unification of digital educational products.</li> <li>▪ Increase in educational grants for specialties in the field of tourism, determine the leading university in training personnel in the field of tourism, update curricula in accordance with international standards.</li> <li>▪ Personnel training: mid-level personnel in the hospitality industry, local historians, guides, instructors, guides, guides and guides with knowledge of various foreign languages.</li> </ul>
Research	<ul style="list-style-type: none"> <li>▪ Universities with a high share of income from RandD, growth in RandD, the effectiveness of scientific research. Availability of modern technological, measuring and testing equipment, a high proportion of highly qualified scientists. Dynamics of the Hirsch Index.</li> </ul>

Source: compiled by authors

**Conclusion**

The cluster of tourism and education should be considered as the most optimal option for combining educational and tourism activities as an industry that provides not only regional and national growth, but also, considering current trends, allows achieving a balance in the national economy, reducing its dependence on raw material exports. This integration will provide employment opportunities for graduates, which is a vital aspect for both higher education institutions and for the graduates themselves and the sustainable development of the tourism industry. To do this, it is necessary to create a personnel service that has a single information system with tourism enterprises, monitors the needs of the labor market, attracts young professionals and coordinates the recruitment of promising specialists in the field of tourism.

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**Chingiz Makenov:** Development of the concept of scientific research: formulating ideas, formulating the main goals and objectives. Writing an introduction, posing problems that have not been solved in previous studies. The formulation of the goals and objectives of the study, the relevance of the topic and its significance in the modern

and current context. Criticism of the literature, generalization of the main points of view, review and evaluation of existing research on the topic. Preparation and release of publications on data visualization/image.

**Aina Narynbayeva:** Determination of the goals and objectives of the study, the relevance of the topic and its significance in the current and modern context. Critical review of the literature, generalization of the main provisions, review and evaluation of existing research on the topic. Explanation of the sequence of the study and justification for the choice of methods used to obtain reliable and evidence-based results. Final revision of the published article. A brief analysis of the obtained results and presentation of a reasoned conclusion.

**Nina Petrichsheva:** Compilation and systematization of statistical data in the form of tables and figures. Analysis of patterns and trends in the development of the research process and evaluation of the data obtained during the study, based on the scientific position of the scientist and empirical work. Responsibility for all aspects of the study, integrity and finalization of all parts of the manuscript.

**Meruyert Umirzakova:** Checking, analyzing and summarizing data. Analysis of patterns and trends in the development of the process under study; evaluation of the data obtained in the course of the study. Application of statistical and mathematical methods for the analysis and generalization of research data.

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