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TOURISM INDUSTRY DEVELOPMENT: DIGITALIZATION AND IMPLEMENTATION ASPECTS

Tourism industry is one of the popular areas of economic development. Kazakhstan is a unique region in the world because of its history, geographical position, and size. According of this and the world trends of globalization the digitalization grows up very intensively. These factors have resulted in the country's particular spaces where internet and mobile signals are either absent or digital technology usage is controlled. In addition, by employing critical discourse analysis of over 450 media texts produced between 2009 and 2017, the study reported the conceptual understanding of digital tourism, the ways the media representation has changed over time and explored the broad social context and debates in which the concept is embedded. This article examines the impact of digital development on the tourism industry. It also considers the advantages of information technology in the promotion of e-tourism. The development of e-tourism is connected with the fact that today's world community cannot be imagined without a variety of portable technical means.

Key words: digitalization, new technologies, know-how, mobile government, 3D visualization, Informational Kazakhstan.

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Туризм индустриясын дамыту: цифрландыру және іске асыру аспектілері

Туризм индустриясы экономикалық дамудың ең танымал бағыттарының бірі болып табылады. Қазақстан өзінің тарихына, географиялық орналасуына және ауқымына байланысты әлемдегі ерекше аймақ болып табылады. Жаһанданудың осы және әлемдік трендтеріне сәйкес, цифрландыру қарқынды дамып келеді. Бұл факторлар еліміздің кейбір аймақтарында ғаламтор мен ұялы байланыстың жоқтығы немесе цифрлық технологияларды пайдалануды бақылануынан пайда болды. Бұдан басқа, 2009 және 2017 жылдарда жарияланған 450-ден астам медиа-мәтіндерді сыни дискурс талдауын қолдану арқылы цифрлы туризмді, медиа қабылдаудың уақыт өткен сайын қалай өзгергенін, бұл тұжырымдамада кең әлеуметтік контекст пен пікірталастар туралы зерттеулерде тұжырымдамалық түсіну айтылды. Мақалада цифрлық дамудың туризм индустриясына ықпалы қарастырылады. Сондай-ақ, электрондық туризмді дамытуда ақпараттық технологияның артықшылықтары қарастырылады. Электрондық туризмді дамыту қазіргі заманғы жаһандық қауымдастықтың әр түрлі портативті техникалық құралдарсыз елестету мүмкін емес екендігіне байланысты болып табылады.

Түйін сөздер: цифрландыру, жаңа технологиялар, ноу-хау, мобильдік үкімет, 3D визуализация, Ақпараттық Қазақстан.

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Развитие индустрии туризма: цифровизация и аспекты реализации

Индустрия туризма является одним из популярных направлений экономического развития. Казахстан является уникальным регионом в мире благодаря своей истории, географическому положению и размеру. В соответствии с этим и мировыми тенденциями глобализации цифровизация растет очень интенсивно. Эти факторы привели к тому, что в стране нет мест, где интернет или мобильные сигналы либо отсутствуют, либо контролируется использование цифровых технологий. Кроме того, используя критический дискурс-анализ более 450 медийных текстов, подготовленных в период с 2009 по 2017 год, в исследовании сообщалось о концептуальном понимании цифрового туризма, о путях изменения представительства СМИ с течением времени и изучении широкого социального контекста и дискуссий, в которых эта концепция встроена. В этой статье рассматривается влияние цифрового развития на индустрию туризма. Также рассматриваются преимущества информационных технологий в продвижении электронного туризма. Развитие электронного туризма связано с тем, что современное мировое сообщество невозможно представить без разнообразных портативных технических средств.

Ключевые слова: цифровизация, новые технологии, ноу-хау, мобильное правительство, 3D визуализация, информационный Казахстан.

Introduction

The tourism industry is one of the fundamental industries in the Republic of Kazakhstan; the gradual development involves changes in both the external sector and the internal sector. The development of the tourism industry involves a more affordable service using digital technologies, as well as the expansion of recreation areas to attract foreign tourists.

Kazakhstan in the modern world position themselves as an independent state, which has not only a large territory, with the richest natural resources, but also its unique history, cultural heritage and customs. Information about the country, its achievements is expanding thanks to the unlimited possibilities of information exchange, showing historical, religious, cultural traditions, features of the economy and politics. A positive image increases the investment attractiveness of the state, region, industry, contributes to the development of tourism in the country. Tourism is not only a type of economic activity, but also a factor of economic growth, quality of life of the population, the main driver of economic development. At the same time, it should be noted that increasing the competitiveness of the economy and the tourism sector, in particular, can't do without a corresponding development of information technologies. The transition to the digital transformation of the economy of Kazakhstan and its industries contributes to the formation of an information society, technological modernization, growth of the availability of information infrastruc-

ture for all citizens of the country, new opportunities for doing business, and serious economic and social benefits. The effect of digitalization in the sphere of tourism will contribute to the growth of labor productivity, the growth of jobs in the basic and allied industries, the obtaining of complete, reliable and timely information, and the quality of management. According to UNWTO, the contribution of the tourism industry in global GDP by 2020 will increase to approximately 10% (9.2 trillion dollars), more than 21 million jobs will be created directly in the industry, 325 million people will work in the tourist area, which is 10 percent of total world employment (Radulov, 2014). Tourism industry according of these facts, intensively grows up. In the present era, that is, at present, even if the term does not have a clear definition, it plays an active role in the social and production relations of countries striving for civilization throughout the world. Tourism is a part of the region's economy. Depending on the region, special qualities of tourism can be the main source of income. Tourism has organized many jobs, improved regional infrastructure and the popularity of the region. Foreign tourists attract the most interest, because they use the maximum infrastructure facilities and act as an external resource (Ziyadin, 2016). Usually a small group is more mobile, visits more sights and has more positive impressions. On the other hand, the success of the trip depends on the coincidence of the interests of the participants. A small group can use group discounts, but mobility reduces this advantage and increases the total

cost. In addition, the group leader (guides, information, etc.) should be organized by groups of leaders or each tourist individually. Individual tourism is a form of freedom itself. A tourist can dynamically organize a trip program, depending on the current situation, weather or mood. An individual trip is usually a little more expensive, but a tourist can use personal services, such as a private car or apartment rental. Support during the trip is the responsibility of the tourist. Information is available only in public sources and is often not prepared for this trip (Ziyadin, 2016).

Material and methods

Currently, in many countries, digitalization is a strategic development priority. According to the forecasts of the world's leading experts, by 2020. 25% of the world economy will be digital, and the introduction of digitalization technologies for the economy, allowing the state, business and society to interact effectively, is becoming an increasingly large-scale and dynamic process. Today, the life of society cannot be imagined without modern technologies and public opinion, the formation and modification of the latter, in one way or another, the activities of the events and socio-cultural management are directed. Methodological base should demonstrate the wide possibilities for its use in investment design, especially in conditions of uncertainty and increased risk. There are different methods which can describe the situation in our country according for tourism sector. One of it is using digital technologies is the multiplication indicator. According of this we can see the multiplier should demonstrate how the incomes of local residents will change as a result of expenditure by foreign tourists in the country of their temporary stay. This method is convenient for practical application in that it successfully correlates with other economic-statistical methods, as well as with game theory. In addition, it gives more optimistic estimates in comparison with other methods.

Kazakhstan has the best position to cooperate different cultures, traditions in one place so it is the most of attractive places for tourists. The description of the whole theoretical aspects in tourism industry will generate the all mechanisms in the development of the whole economy of the Republic of Kazakhstan. So if the digital divide is overcome, many developing countries would be able to distribute their products, increase their client base and form trade partnerships. E-tourism would allow interested parties in the field of tourism worldwide to access in-

formation. This can increase sales and revenues in local economies. The imbalance between competing destinations in global markets can also fall within the framework of tourism. The foundation for the digital transformation of the economy of Kazakhstan, became the state program «Information Kazakhstan-2020», approved in 2013. It contributed to the development of the transition to the information society, the improvement of public administration, the creation of institutions of «open and mobile government», the growth of accessibility of the information infrastructure not only for corporate structures, but also for citizens of the country. According to the results of three years of implementation of the State Program, 40% has already been achieved. The President of RK in his Address, noted that the development of the digital industry will provide impetus to all other sectors. In this regard, the President set the task of developing new industries that are created using digital technologies.

The main goal is the progressive development of the digital ecosystem to achieve sustainable economic growth, increase the competitiveness of the economy and the nation, and improve the quality of life of the population.

The state program is being implemented in four key areas: In the key global ICT development rating, calculated under the aegis of the UN – ICT Development Index, – Kazakhstan in 2016 occupied the 52nd line out of 175, having not changed its position since 2015. As a result of the implementation of the Program and other strategic areas, the country will rise in the ranking to 30th place by 2022, 25th place by 2025 and to 15th place by 2050.

Literature Review

The study of the theory and practice of digitalization of tourism is based on the works of Radulov, K., & Shymanskyi, O., Troshkov, A., & Kulakov, K., Timonin, A., Kalinin, A., Borodin, A., & Kulakov, K., Benckendorff, P.J., Sheldon, P.J., & Fesenmaier, D.R., Gretzel, U., Sigala, M., Xiang, Z., & Koo, C., Gretzel, U., Hunter, W.C., & Chung, N., Law, R., Buhalis, D., & Cobanoglu, C., Stone, P.R., Hartmann, R., Seaton, A.V., Sharpley, R., & White, L., Van der Wagen, L., & White, L., Getz, D., Heung, V.C., & Kucukusta, D., Watkins, M., Battour, M., & Ismail M.N., Mohsin, A., Ramli, N., & Alkhulayfi, B.A., Riley, R., Baker, D., & Van Doren, C.S., Ziyadin S., Koryagina E., Grigoryan T., Nataliya Tovma, Ismail G. Radulov, K., & Shymanskyi in their work described traveling abroad for business purposes and engaged in business

activities, based on ties to a foreign country. Issues of socio-economic effectiveness of diversification in tourism industry are highlighted in the works of G. Shivakoti, M. Thanh, T. Vien, S. Leisz, K. Noone, U.R. Sumaila, R. Diaz, M. Nikolova, B. Faulkner, E. Fredlin, P. Sherwood, there were specific aspects in the article of researchers Ziyadin, S., Dauliyeva Galiya., Kalymbekova Zhanna, Turlybekova Asel, & Zharaskyzy, G. They researched the digital aspects, how it influences on the economy of Kazakhstan, especially on tourism industry. R.K. Sagiyeva & Zhuparova, Sabden, O., & Turginbayeva discusses the need for the development of local content in terms of innovative development of the national economy of Kazakhstan according for digitalization aspects. Milena Nikolova gives the following definition: «*Behavioral Economics for Tourism* applies behavioral perspectives to business and policy challenges in the tourism industry».

Results and discussion

According to the results of the report of the International Telecommunication Union in the Information and Communication Development

Index of 2017, Kazakhstan ranks 52nd among 176 countries of the world. In the CIS region, Kazakhstan is among the top three, occupying the 3rd place after Belarus (32nd place) and Russia (45th place). More than 15 countries of the world implement national digitalization programs: Denmark, Norway, Great Britain, Canada, Germany, Saudi Arabia, India, Russia, China, South Korea, Malaysia, Singapore, Australia, New Zealand and Kazakhstan. China, in its Internet Plus program, integrates digital industries with traditional ones. Singapore forms the «Smart Economy», Canada creates an ICT hub in Toronto, the driver of which is ICT. South Korea in the program «Creative Economy» focuses on the development of human capital, entrepreneurship and the dissemination of ICT achievements, while Denmark focuses on the digitalization of the public sector. Comparing Kazakhstan with some countries has led the world in terms of attractive tourism shares to GDP tourism services, tourist contribution for the competitive year and other main criteria can be seen from tourism services that see a big growth in the tourism sector and can of course have good growth potential. (Table 1).

Table 1 – Attractive tourism shares to GDP tourism services in different countries

Country	Square, squares km	Tourism share in GDP, %	Tourists in the year, hundreds of people	Turnover in the tourism sector in Kazakhstan for the year, mln \$	The number of architectural and infrastructure natural sites of visitors to UNESCO
Russia	17075200	5.7	29848	11759	16 10
Kazakhstan	2717300	5.3	4560	1467	3 2
Georgia	69700	23.5	2229	1787	3 0
USA	9826630	8.2	75022	191325	11 13
Uzbekistan	447400	3.2	975	121	4 1
France	547030	9.1	83701	58150	39 4
Switzerland	449964	9.6	10522	12856	14 2
South Korea	98480	5.1	14202	17836	11 1
Japan	377835	7.9	13413	18853	16 4

Note – compiled by authors based on data from <http://statur.ru/statistics.php>)

New trends in consumer behavior have led to a shift towards consuming processes; the new tourist is more educated and sophisticated and requires greater autonomy and individuality than mass tourism can offer. Tourists will seek

out authentic experiences, interacting with the local community and culture while protecting the environment. But still there are important factors contributing to the decline in tourism in the country (Figure 1).

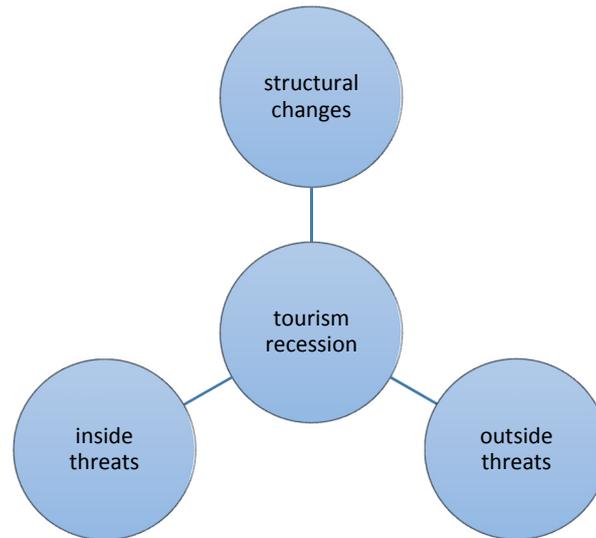


Figure 1 – The relationship between the causes of the decline in tourism
Source: Gale, 2007

To understand the conditions in which diversification was chosen as a strategy, it is important to examine the structural changes that have taken place in the tourism industry. Digitalization is far ahead of the existing system of production requirements for the composition of occupations engaged in the labor market. The digital economy requires that people have digital skills to enjoy their fruits. At the same time, the current level of computer (digital) literacy of the population is 76.2%, and its growth is needed in the coming years. Speaking quite simply, digitalization is nothing more than a transition from analog to digital. This process implies not only the replacement of production tools, but also the introduction of analytical systems that make it possible to make production as profitable as possible. Currently, the tourism industry is one of the competitive branches of international activities and the development of international relations. The importance of its expansion and development is enhanced by the advantage over other export sectors of the economy. Innovative approaches in this industry are closely related to the development of the country's economy as a whole. Modern tourism is an area that does not know the global economic crisis. This conclusion is primarily due to the fact that the sale of raw materials reduces the country's energy sources, and tourism production works with unlimited resources. According to the calculations of foreign economists, 100 thousand tourists in two hours in the city spend an average of 350 thousand dollars or 17.5 dollars per hour per person. Thus, if

trade in raw materials is an economic dead end, then the development of tourism is a long-term, cost-effective future (Radulov, 2014). As the President of the Republic of Kazakhstan N.A. Nazarbayev in his message to the people of October 5, 2018 in the tourism business there is a rapid turnover of capital. This is noted in the words: «First of all, promising industries need to be developed in terms of opportunities and competitiveness» (Nazarbayev Address to the citizens, 2018). Among the features of manufacturers of tourism services can be called their complementarities. This relationship is visible especially in the long term: the profitability of transport companies depends on the quality and capacity of the funds placed, and they, in turn, depend on the scenic spots and their attractiveness for tourists. The relevance of the topic of studying this industry is significant. In the conditions of a new stage of development of the modern economy, the processes of digital reality intensified. In the program documents of the Republic of Kazakhstan (hereinafter RK): Plan of the Nation – Path to the Kazakh Dream «,» Concept of development of the tourism industry in the Republic of Kazakhstan until 2023 «, the State program» Digital Kazakhstan «, as well as in the Address of the President of the Republic of Kazakhstan N.A. Nazarbayev to the people of Kazakhstan dated October 5, 2018 «Growth of the welfare of Kazakhstanis: increase of incomes and quality of life» indicated that the country should carry out accelerated technological modernization based on the cultivation and introduction of new

industries, the development of industrial and tourist infrastructure. (Nazarbayev Address to the citizens, 2018)

The work was driven by three aims: to build a conceptual understanding of Digital Tourism as presented in the media; to review the ways the media representation has changed over time by noting any shifts in prominent concepts and themes; and to inquire into the broad social context where digital tourism emerges and the relevant media discourses are produced. In the process and social analyses, which served the second and third aims of the study, it was found that media discourses presented some overarching social and cultural phenomenon to construct the circumstances for a trend towards digital tourism. Certainly, in the texts analyzed by the researchers, greater importance has been attached over time to how to live well with technologies, and prevent social isolation induced by digital connection. The rhetoric has changed from one that mainly focused on surrendering electronic devices to one that now contains a number of messages to build various elements of tourism experience. All importantly, abandoning technology usage does not mean discouraging technology adoption in tourism industry. It may initially appear paradoxical, but further studies are required as how to make use of advanced technologies to assist the development and management of digital tourism. According of this digitalization in tourism industry will improve this industry in the whole.

Tourism is a part of the region's economy. Depending on the region, special qualities of tourism can be the main source of income. Tourism has organized many jobs, improved regional infrastructure and the popularity of the region (Troshkov et al., 2014). Like any branch of economic activity, the tourist industry requires constant development. Moreover, development is impossible without research. International tourism is an extremely dynamically growing phenomenon in modern practice. Active movements of people within the framework of tourist flows have differences in terms of their direction and impact on the receiving regions. The economic system is inherently cyclical, where the flow of expenditure and income are regularly repeated.

The initial increase in the amount of expenditure by the tourist causes a chain reaction, which, passing to each subsequent cycle, ultimately fades out, but as a result stimulates a multiple change in income. The proposed multiplier of international tourism shows the degree of increase in the incomes of

local residents with an increase in the expenditure of foreign tourists per unit. If the digital divide is overcome, many developing countries would be able to distribute their products, increase their client base and form trade partnerships. E-tourism would allow interested parties in the field of tourism worldwide to access information. This can increase sales and revenues in local economies. The imbalance between competing destinations in global markets can also fall within the framework of tourism. Developing countries should be more aggressive in understanding the implications of ICT development in the tourism industry. Policy makers should participate in this process so that planning and implementation become more effective and strategic in nature. It is believed that, at present, development strategies should be an integral part of all policy planning, which also includes policy planning related to the tourism industry.

In September 2018, the authors conducted a survey, in which 100 respondents from different age groups took part. The purpose of the study was to assess the opportunities for planning events to attract tourists to the territory of the Republic of Kazakhstan. (Fig. 2) The technology for conducting the survey is as follows: the authors developed the structure of the questionnaire, which covered the following issues:

- What type of tourism is most interesting for you?
- Do you participate in events in your city, district (festivals, sports competitions, fairs, etc.)?
- What are the main criteria that are most important when choosing a place of travel?
- What types of events are you most interested in?
- How will you find out about events, festivals, cultural events, etc.?

It should be noted that this search study and most of the questions were of an open nature, which made it difficult to process the information collected.

Processing the results of the survey and compiling a report.

This survey shows us that there are a lot of tastes about tourism aspects. It told us that different types of tourism will influence on our life and how many aspects there were not, there were new technologies, which will digitalize and make our life easier. The majority of respondents are interested in the following types of tourism: sports tourism (mountain, water, ski, bicycle) – 19%, beach rest – 21%, cultural tourism 18% and recreational tourism (recovery and treatment) – 12%. (Ziyadin et al., 2017).

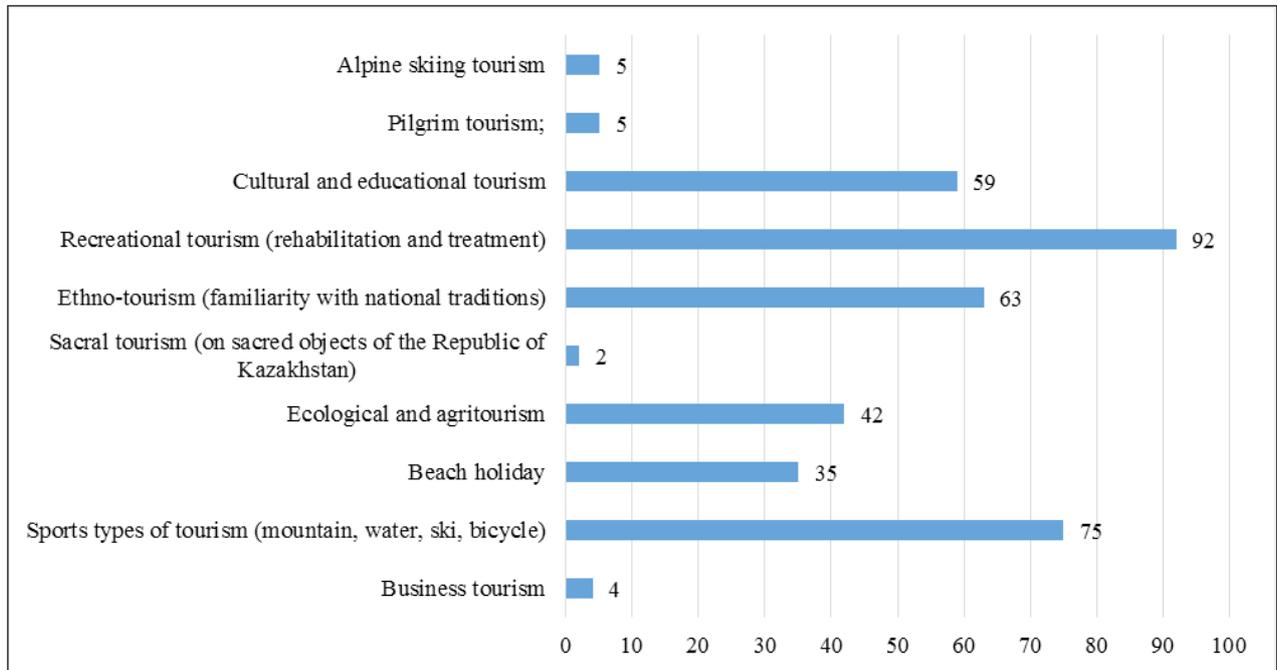


Figure 2 – Degree of attractiveness various types of tourism
Source: Ziyadin et al., 2017

Digitalization and diversification in tourism industry will contribute the new direction of social and economic development in the country (Riley, Baker, & Van, 1998).

According for the tastes there is the statistic base where there will show multiplication effect of it (Table 2).

Table 2 – Statistic base of income in RK during 2016-2017 years according for foreign tourists coming

Indicators	2016	2017	The change (Δ)
Income in the state budget of the Republic of Kazakhstan (KZT million)	9308485,2	11567692	2259206,3
Import (USD million)	22566,6	27566,6	5000
Import (KZT million)	7221312	8986712	1765399,6

Note – compiled by authors based on data of RK Agency for Statistics

The international tourism multiplier is intended to show a measure of the increasing incomes of local residents with an increase in the expenditures of foreign tourists per unit:

$$\text{Multiplier of international tourism} = \frac{\text{increase in incomes of local residents}}{\text{initial expenses of foreign tourists}}$$

E – initial expenses of foreign tourists in the country of temporary stay (expenses);

In – income of domestic economic entities (internal income);

P_n – propensity to purchase domestic products (propensity to national products);

P_{im} – propensity to import products (propensity to imports);

n – number of cycles of multiplicative expansion;

k – multiplier of international tourism (International tourism multiplier, Multiplier of international tourism).

If all the costs of foreign tourists incurred in the tourist centers, which are directed to the purchase of domestic products, then the amount of expenses

will fully constitute the increase in income of local residents:

$$E = \Delta I_n \quad (1)$$

In the second cycle, the amount of incomes of local residents will be reduced by the amount of imports in accordance with the propensity of consumers to purchase imported products: $P_n E$.

In the third cycle, the balance of funds circulating within the national economy will decrease in the same way and amount to: $2 P_n E$; in the fourth – $3 P_n E$, etc.

The total increase in the income of local residents as a result of expenditures made by foreign tourists will give the anticipated income.

$$\Delta I_n = E + \frac{E}{P_n} + \frac{E}{P_n^2} + \frac{E}{P_n^3} + \dots + \frac{E}{P_n^n} \quad (2)$$

The above expression is an infinitely decreasing geometric progression; therefore, equation (2) has the form:

$$\Delta I_n = \frac{E(1-P_n^n)}{1-P_n} \quad (3)$$

Substituting the resulting expression (3) into formula (1), we obtain:

$$k = \frac{\Delta I_n}{E} = \frac{E(1-P_n^n)}{(1-P_n)E} = \frac{1-P_n^n}{1-P_n} \quad (4)$$

For an infinitely decreasing geometric progression, the quantity $P^n \rightarrow 0$, therefore, it can be neglected. As a result, the multiplier of international tourism takes the form:

$$k = \frac{1}{1-P_n} = \frac{1}{P_{im}} \quad (5)$$

The multiplier of international tourism is inversely proportional to the propensity to purchase imported products (Watkins et al., 2018).

First, the basic statistical indicators of the Republic of Kazakhstan should be determined (Table 2). As indicated in Table 2, import in KZT:

$$\begin{aligned} 22566,6 \cdot 320 &= 7221312 \text{ KZT million (2016);} \\ 22566,6 \cdot 326 &= 8987612 \text{ KZT million (2017).} \end{aligned}$$

To determine the multiplier of international tourism, P_{im} should be found:

$$P_{im} = \frac{\Delta M}{\Delta Y} \quad (6)$$

where P_{im} is the ultimate propensity to import, ΔM is the change in the volume of imports, and ΔY is the change in the volume of national income in the previous period. The multiplier of international tourism is thus:

$$k = \frac{1}{\frac{1765599,6}{2259206,8}} = 1,28 \quad (7)$$

Some authors define this indicator as a multiplier of costs or revenues when the economic variable is the aggregate regional product or income, which is determined by the gross expenditure of travelers on the acquisition of goods and services (Watkins et al., 2018).

Conclusion

The economic contribution of tourism makes it a desirable worldwide activity, often a vicious necessity, especially in the context of rural areas that grow and become dependent on tourism. On the other hand, the large growing structure of the tourism industry does not allow wild natural places to remain unaffected affects it. In the new millennium, there were several areas trying to minimize the cost of mass tourism and accordingly respond to changes in social structures, technological innovations and growing environmental awareness. Tourist activity has always been and in the modern world remains an active participant in the market of innovative technologies. Modern achievements in the field of telecommunications and e-marketing provide new opportunities for tourism business and radically change its models. Thus, on the one hand, it – information technologies (in particular, online services) have become available to all interested parties (such as demand stimulation, diversification of offers from travel agencies; this expansion of opportunities for independent travel planning and purchase of services by the consumer), so that it and digital technologies have become an effective tool for creating and promoting a tourism product. On the other hand, the opposition of information and digital technologies to traditional forms of tourism activities of enterprises not fully included in this sphere, has created conditions for a tough struggle for the client with the further displacement of small firms from the tourism market.

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