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## The development applied aspects of Ukraine's tourist industry in the globalization conditions

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**Purpose** – to assess the tourism industry development and its impact on Ukraine's economy, to identify a set of problems hindering the significant development of the tourism industry, and to justify ways to increase competitiveness in the world market.

**Design/Method/Approach of the research.** System approach, synthesis, analysis and comparison to assess the tourism development dynamics in Ukraine, correlation and regression analysis to determine the impact level of increasing the number of hotels and tourist-recreational enterprises on GDP growth in Ukraine, logical generalization to identify a set of problems holding back the significant development of local tourism and ways justification of increasing its competitiveness on the world market.

**Findings.** This article presents the results of assessing the tourism dynamics, particularly the tourist flows, the number of resorts, the number of tourists served by tour operators and travel agents. The authors substantiated the ways of increasing the local tourism sector's competitiveness.

**Practical implications.** The work results can make the basis for the development of fundamental and scientific-applied provisions contributing to the significant system formation of increasing the competitiveness of Ukraine's tourism industry by state and local authorities, establishing cooperation among market participants and forming optimal logistics flows, developing business models to optimize the flows of health and recreational facilities.

**Originality/Value.** The research value is that its applied scientific provisions can be implemented in the strategy of economic development of local tourism in analytical and mathematical justifications of the relationship between economic growth and tourism development, which ultimately increases Ukraine regions' competitiveness for sustainable development of the country's economy.

**Research limitations/Future research.** Future research should focus on identifying mechanisms to improve the procedure for increasing tourism enterprises' competitiveness and improving provided service quality.

**Paper type** – empirical.

**Keywords:** tourism industry; tourism; tourist flow; tourist service; competitiveness; infrastructural provision of sanatorium-and-health-resort tourism.

**Paper type** – theoretical.

**Keywords:** project management; project team; remote project team; collocated project team; virtual project team; remote project team.

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## Прикладні аспекти розвитку туристичної галузі України в умовах глобалізації

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**Мета роботи** – оцінити розвиток туристичної галузі та її вплив на економіку України, виокремити комплекс проблем, які перешкоджають ефективному розвитку туристичної індустрії та обґрунтувати напрямки підвищення конкурентоспроможності на світовому ринку.

**Дизайн/Метод/План дослідження.** Системний підхід, синтез, аналіз та порівняння для оцінки динаміки розвитку туризму в Україні, кореляційно-регресійний аналіз для визначення рівня впливу збільшення кількості підприємств готельного та туристично-рекреаційного типу на нарощення ВВП України, логічне узагальнення для виокремлення комплексу проблем, які унеможливають ефективний розвиток вітчизняного туризму та обґрунтування напрямків підвищення його конкурентоспроможності на світовому ринку.

**Результати дослідження.** У цій статті представлені результати оцінки динаміки розвитку туристичної сфери, зокрема обсягу туристичних потоків, кількості санаторно-курортних закладів, кількості туристів, що обслуговуватися туроператорами та турагентами. Автори обґрунтували напрями підвищення конкурентоспроможності вітчизняної туристичної сфери.

**Оригінальність/Цінність/Наукова новизна дослідження.** Цінність дослідження полягає в тому, що його прикладні наукові положення можуть бути використані при реалізації стратегії економічного розвитку вітчизняного туризму в контексті аналітичного обґрунтування та математичного обґрунтування взаємозв'язку між економічним зростанням та розвитком туризму, що у підсумку сприятиме нарощенню конкурентоспроможності регіонів України для забезпечення сталого розвитку економіки країни.

**Практичне значення дослідження.** Результати цієї роботи можуть стати основою для розробки фундаментальних та науково-прикладних положень, які сприятимуть формуванню ефективної системи нарощення конкурентоспроможності туристичної галузі України органами державної та місцевої влади й територіальних громад, налагодження взаємодії між учасниками ринку та формування оптимальних логістичних потоків, розробки бізнес-моделі оптимізації потоків в санаторно-рекреаційних установах.

**Обмеження дослідження/Перспективи подальших досліджень.** Подальші дослідження доцільно направити на визначення механізмів удосконалення процедури нарощення конкурентоспроможності підприємств туристичної галузі та підвищення рівня якості надаваних послуг у даній сфері.

**Тип статті** – емпіричний.

**Ключові слова:** туристична галузь; туризм; туристичний потік; туристична послуга; конкурентоспроможність; інфраструктурне забезпечення санаторно-курортного туризму

## Прикладные аспекты развития туристической отрасли Украины в условиях глобализации

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**Цель работы** – оценить развитие туристической отрасли и ее влияния на экономику Украины, выделить комплекс проблем, которые делают невозможным ее эффективное развитие и обосновать направления повышения конкурентоспособности на мировом рынке.

**Дизайн/Метод/План исследования.** Системный подход, синтез, анализ и сравнение для оценки динамики развития туризма в Украине, корреляционно-регрессионный анализ для определения степени влияния увеличения количества предприятий гостиничного и туристско-рекреационного типа на наращивание ВВП Украины, логическое обобщение для определения комплекса проблем, которые делают невозможным эффективное развитие отечественного туризма и обоснование направлений повышения его конкурентоспособности на мировом рынке.

**Результаты исследования.** В этой статье представлены результаты оценки динамики развития туристической сферы, в частности объема туристических потоков, количества санаторно-курортных учреждений, количества туристов, обслуживаемых туроператорами и турагентами. Авторы обосновали направления повышения конкурентоспособности отечественной туристической сферы.

**Оригинальность/Ценность/Научная новизна исследования.** Ценность исследования заключается в том, что его прикладные научные положения могут быть использованы при реализации стратегии экономического развития отечественного туризма в контексте аналитического обоснования и математического обоснования взаимосвязи между экономическим ростом и развитием туризма, в итоге будет способствовать наращиванию конкурентоспособности регионов Украины для обеспечения устойчивого развития экономики страны.

**Практическое значение.** Результаты этой работы могут стать основой для разработки фундаментальных и научно-прикладных положений, способствующих формированию эффективной системы наращивания конкурентоспособности туристической отрасли Украины органами государственной и местной власти и территориальных общин, налаживание взаимодействия между участниками рынка и формирования оптимальных логистических потоков, разработки бизнес-модели оптимизации потоков в санаторно-рекреационных учреждениях.

**Ограничение исследования/Перспективы дальнейших исследований.** Дальнейшие исследования целесообразно направить на определение механизмов совершенствования процедуры наращивания конкурентоспособности предприятий туристической отрасли и повышение уровня качества предоставляемых услуг в данной сфере.

**Тип статьи** – эмпирический.

**Ключевые слова:** туристическая отрасль; туризм туристический поток; туристическая услуга; конкурентоспособность; инфраструктурное обеспечение санаторно-курортного туризма.

### 1. Introduction

The tourism industry development is an essential tool for increasing our country's competitiveness in the world market. The provided services' quality, availability, speed, logistic problems solution is considered one of the necessary conditions for this sphere development, which determines the pace of economic growth in general, the efficiency of recreational resources, foreign trade success, and its national prestige. However, the vast majority of manufacturers still apply management models traditional for post-Soviet enterprises. Therefore, today there is an urgent scientific and applied task to create scientific, methodological, and applied support for tourism development, which provides a constant impact on the conditions of production and services, the formation of reverse logistics management at the enterprise level that improves communication between consumers and service providers.

Many national and international scientists contributed to developing theoretical and applied principles for ensuring the tourism industry's improvement. The most significant authors' works of Liubitseva, Mykhaliuk, Mykhailenko and Kochetkova (2017), Zayachkovs'ka (2015), Pobochenko (2008), which laid the tourism foundations and the formation of modern market tourist services in globalization transformations M. Kry`voberecz` (2017), A. Krayevs'ka, O. Moroz and B. Grabovecz'ky' j (2013), S. Mel'ny'chenko (2014) focused on improving the quality of tourist services and recreational resources of sanatoriums. Works of Mazaraki, Mel'ny'chenko (2015), and Cherchy`k, Yerko, Kolenda and Mishhenko (2014) analyzed Ukraine's tourism and recreation regions. Those authors revealed the management principles of the tourist and recreational complex; highlighted theoretical aspects of forming a recreational potential management system; considered the factors that significantly influence the tourist product and service creation. A significant contribution to the improvement of the applied provision for the tourism development in different countries and its structural elements were made by such international scientists as Bob Mckercher (1996), who substantiated the features of recreational tourism; Tim Bentley (2001), who analyzed the risks in the tourism industry, including injuries; D.Meyer (2009), who built a system of relationship between tourist flows and destinations; X.Font (2002), who substantiated the requests for environmental certification of tourism market regulation, P.Pearce (2005), who identified the features of the consumer sentiment formation, T.Mihalic (2000), who identified the modern global tourism trends as an element of competitiveness, and W.Zukow, R.Muszkietą, E.Prystupa, V.Karaskova and M.Napierala (2010) that investigated the

relationship of the modern type of tourism and impact on the global tourism industry formation.

Despite the research efforts intensification, we should note that the issues of applied aspects of the Ukraine's tourism industry development in globalization require a comprehensive scientific analysis.

### 2. Problem statement

The research purpose is to assess the tourism sector development from its impact on Ukraine's economic growth and provide favorable conditions for the effective functioning of economic entities in the globalization of world economic relations.

### 3. Methods and data sources of research

The authors used a systematic approach that includes the dynamic and functional relationship between the state of the general (Ukraine's tourism industry) and the development and balance of its constituent elements (sanatoriums, tourist infrastructure), where a set of methods ensure its implementation, namely:

- synthesis, analysis, and comparison - to assess Ukraine's tourism dynamics;
- correlation-regression analysis - to determine the impact level of increasing the number of enterprises of the hotel and tourist-recreational type on Ukraine's GDP growth;
- logical generalization - for a set of problems that hold back significant development of local tourism and justify ways to increase its competitiveness in the world market.

The authors used several international and Ukrainian official resources for statistical data panels, including the World Data Atlas and the State Statistics Service of Ukraine.

### 4. Research results

In current conditions, Ukraine's tourism industry has significant potential in the country's financial results formation and the competitive tourism product implementation. The industry's main element is tourist flows that determine the aggregate demand in the middle of the country for tourist resources and income of tour operators and tour agents from Ukrainians who went abroad (Fig. 1).

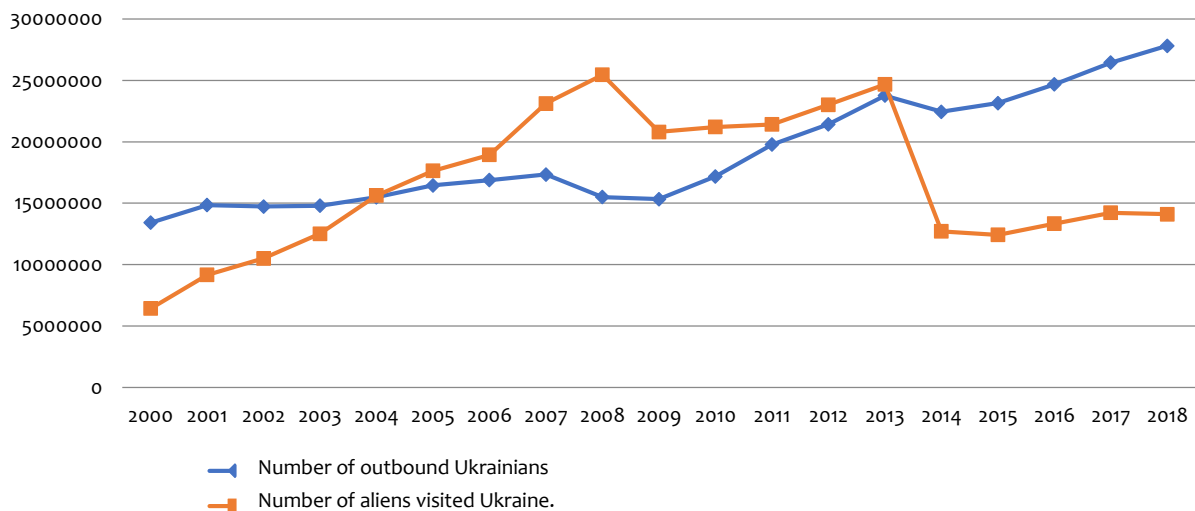


Fig. 1. Inbound and outbound tourist flows of Ukraine in 2000-2018\*

\*Source: built by the authors on the basis of DSSU (2020).

Fig. 1 depicts that the number of Ukrainians traveling abroad is continuously growing and in 2018 reached 27 million people, only in 2009 and 2014, there was a slight reduction in tourist flow. As for foreigners who visited Ukraine, in relevant years, their decline was quite significant; in particular, in 2013, there were 24 million, and in 2014 there were only 12 million people. It is worth noting that the reasons for such fluctuations were the 2008 economic crisis, both the annexation of Crimea and the Russian Federation's military aggression in the east of Ukraine, which significantly affected the security component of the tourism industry and its competitiveness. The industry and enterprises' international competitiveness, in particular, are formed on the basis of competitive advantages and including potential opportunities for their implementation in both national and international markets. Factors in forming a competitive environment correlate with the competitiveness of economic entities and the relevant industry specifics. As a result, tourism enterprises determine their competitive advantages based on natural resource factors, infrastructure, and institutional regulation.

Natural resource factors are formed on the basis of available competitive advantages, which are determined by the natural and climatic features of a specific area on the acquired opportunities for their use. Tourist resource, which aims to recover and recreate, rehabilitation, and prevent, allows tourism enterprises to create competitive tourism services. Rehabilitation treatment itself is the medical aspect of rehabilitation, which is to provide emotional and psychophysical "reliability", "stability," and "balance" of a human being (Pegushy'na, 2012). The main sanatorium treatment methods are balneotherapy (mineral baths, mineral water intake), mud therapy, climatotherapy, therapeutic exercise, and therapeutic nutrition. The climatotherapy includes aerotherapy (air treatment), heliotherapy (sun treatment), thalassotherapy (sea climate treatment, and sea swimming) (Savicz'ka, Novostavs'ka, Savicz'ka, 2015).

Theoretical principles of defining the competitiveness essence and features of its role in the entrepreneurial activity development in tourism focus on the understanding that this phenomenon in the practical sense is a set of financial results, social actions, which availability provides grounds for sufficient satisfaction of market needs, receiving competitive income from the sale of the service. The "competitiveness" concept is closely related to the "competition" concept, and in practical terms, this relationship corresponds to the essence of the market as a struggling system of opposites. Competition is an incentive for the formation and development of enterprise competitiveness in the market and the entrepreneur's wish to profit. The "competitiveness of sanatorium tourism enterprises" concept is much more complex and interpreted quite ambiguously. In general, the competitiveness of tourism enterprises can be defined as its comparative advantage over other enterprises in this industry nationally and internationally. In the case of active enterprises' economic objects represented on the market, competitiveness is a performance category, but at a higher level. Entrepreneurial activity runs in market conditions in an environment that provides competition for markets, goods, and resources for their efficient production. Businesses-enterprises, including those in tourism, interact in a market economic system for profit. The enterprises' economic relations are based on the competition principles, i.e., the struggle for resources and markets, and the ensuring factor in the effectiveness of such struggle is competitiveness. A key element in the tourism industry development and its impact on Ukraine's economic growth is the infrastructure, which is based on sanatorium tourism enterprises.

The tourism industry competition peculiarity is that the product offered to customers is a set of various services that must meet the demanding customers' expectations. It follows that the competitiveness concept of sanatorium and resort enterprises acquires a different meaning. In modern literature, competitiveness in such an industry is defined as the level of

service value offered by recreational facilities to consumers (Petrova, Shherby'na, 2008).

The sanatorium and resort tourism is based on the interconnected phenomenon and process – sanatorium and resort service and sanatorium and resort treatment. Consideration of the sanatorium and resort service as a product produced and provided to the consumer by the sanatorium and resort facility suggests that such a service is "a special product with a huge number of medical, consumer and industrial services" (Lyutak, Romanchuk, 2013). Many foreign scholars (Brady, Michael, Robertson, Christopher, 2001) form the concept of international competitiveness based on the object, subject, purpose, methodological research scheme, and research methods and results. Based on those, it is noteworthy that the tourism industry, including the sanatorium and resort sector, applies system-structural and praxeological approaches in building for the result the international economic activity system and the enterprise interaction and the international market.

Continuing the infrastructure analysis of sanatorium tourism, we should emphasize the mandatory availability of material and technical base. In recent years, Ukraine's tourism business keeps on running on the material base made in the Soviet era, ruthlessly exploiting infrastructure without its restoration.

Researching several sanatorium and resort and health facilities, we observe a sharp decrease in the number of sanatoriums and boarding houses with treatment, sanatoriums, rest homes and boarding houses, bases and other recreation facilities, children's health and recreation facilities, and their beds. The changes in the sanatoriums number in 2013-2017, which are featured by the beginning of the Russian Federation's aggression and the annexation of the Crimea, became extraordinarily rapid. In our opinion, the main reasons are the management system transformation of such facilities, i.e., the privatization and change of purpose of the property of ex-trade unions and former state (Fig. 2).

The study shows that currently, sanatoriums are in a stagnation state as part of the tourist infrastructure. The vast majority of started projects were preserved due to lack of investment funds and credit resources inaccessibility, a significant number of institutions ceased running.

The need to support the balanced development of sanatoriums in Ukraine as a tourism development component is evident. Funds for investment projects in modernization and restoration of medical and recreational enterprises' image can be both international and national investment partners and state and local budgets. The privileged categories of vacationers at the expense of the state budget make a separate area.

The vacationers' dynamics analysis in sanatoriums in 2011-2018 depicts a significant overall reduction of 27.0% in 2014 and a gradual increase before 2018 (Fig. 3).

It is characteristic that the decrease rate in the number of vacationers who rested and treated in Ukraine is diverse for different institutions. Boarding houses with treatment where the fall was insignificant look the most stable. In 2012 holiday resorts, there was an increase in demand by 11.5%, and in boarding houses with treatment for 2010 to 2016, the decrease for those who rested and treated was 18.3% compared to other institutions is insignificant. A substantial problem is the lack of a transparent system for the sale of tourist services to foreign tourists; in particular, the number of foreigners who received services from tour operators and tour agents over the past ten years has decreased by 4.9 times (Table 1).

Simultaneously, the number of foreigners in collective accommodation by region in 2018 (Table 2) significantly exceeds the number of tourists of tour operators, i.e., we can say that the predominant amateur tourism in this category of tourists in Ukraine.

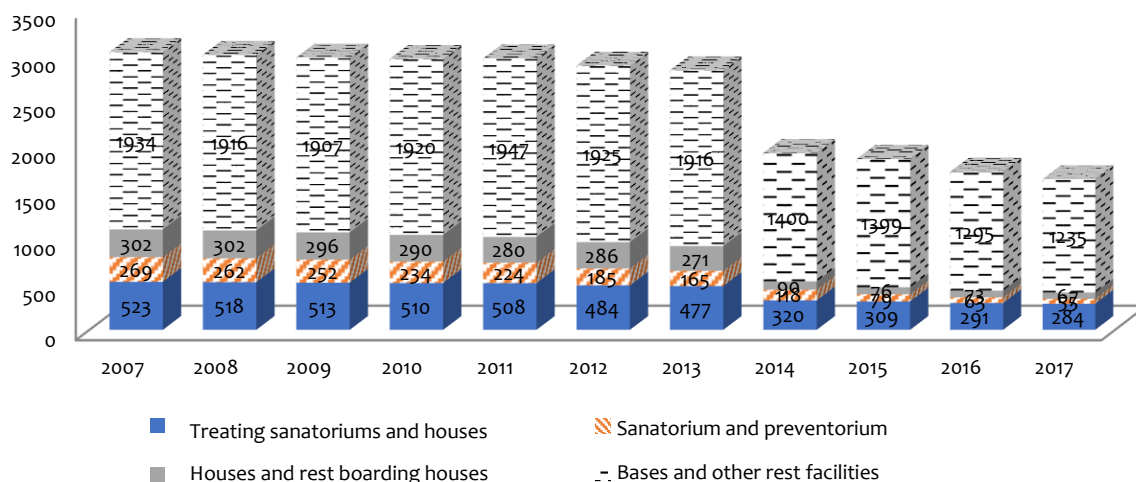


Fig. 2. Dynamics of the sanatoriums number in 2007-2017, units\*

\* Source: built by the authors on the basis of DSSU (2020).

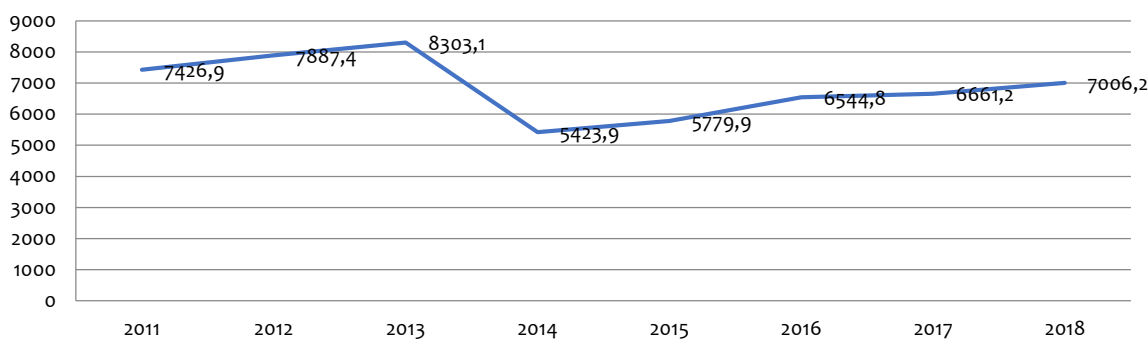


Fig. 3. Number of people in collective accommodation in 2011-2018, thousands\*

\* Source: built by the authors on the basis of DSSU (2020).

Table 1

Number of tourists served by tour operators and travel agents, by tourism type\*

Year	Number of tourists served by tour operators and travel agents, total	Including		
		inbound (foreign) tourists	outbound tourists	local tourists
2007	2863820	372455	336049	2155316
2008	3041655	372752	1282023	1386880
2009	2290097	282287	913640	1094170
2010	2280757	335835	1295623	649299
2011	2199977	234271	1250068	715638
2012	3000696	270064	1956662	773970
2013	3454316	232311	2519390	702615
2014	2425089	17070	2085273	322746
2015	2019576	15159	1647390	357027
2016	2549606	35071	2060974	453561
2017	2806426	39605	2289854	476967
2018	4557447	75945	4024703	456799

\* Source: built by the authors on the basis of DSSU (2020).

Table 2

## The number of foreigners in collective accommodation by region in 2018

Region	Total	Including in	
		готелях та аналогічних засобах розміщування	інших засобах розміщування
Ukraine	798881	782880	16001
Vinnitsia region	2500	2481	19
Volyn region	2350	2317	33
Dnipropetrovsk region	11410	11291	119
Donetsk region	1343	1339	4
Zhytomyr region	1760	1760	–
Zakarpattia region	10021	8170	1851
Zaporozhye region	3979	3867	112
Ivano-Frankivsk region	17511	17328	183
Kiev region	49414	49408	6
Kirovograd region	782	782	–
Luhansk region	758	758	–
Lviv region	129531	128726	805
Mykolaiv region	7674	3786	3888
Odessa region	47826	41641	6185
Poltava	6441	6441	–
Rivne region	3885	3885	–
Sumy region	2487	2487	–
Ternopil region	6144	6058	86
Kharkiv region	36037	34613	1424
Kherson region	1867	1675	192
Khmelnysky region	12973	12973	–
Cherkasy region	3127	3123	4
Chernivtsi region	5463	5463	–
Chernihiv region	4007	3877	130
Kyiv city	42959	428631	960

\* Source: built by the authors on the basis of DSSU (2020).

Commenting on Table 2, it is worth mentioning that the bulk of foreigners in hotels and similar facilities (97%) and only 3% in other facilities. The leaders in the attracted tourist flow are such regions as Dnipropetrovsk, Zakarpattia, Ivano-Frankivsk, Kyiv, Lviv, Odessa, Kharkiv, and Khmelnytsky. They possess the main number of sanatoriums and resorts and natural facilities for health and recreation.

Ukraine's tourist enterprises have a low financial resources level. However, the tourism enterprises' operation does not require significant investment, unlike the maintenance of tourism infrastructure. In Ukraine, there observed a rapid increase in private investment in the construction, reconstruction, and modernization of hotels, but due to the global economic crisis, this process has slowed down significantly.

The labor resources level of Ukraine's tourist enterprises is relatively sufficient. The employees' average number of Ukraine's tourist enterprises in 2005 was 10.6 thousand people (Zayachkovs'ka, 2015). According to the statistics, it increased: in 2013 it peaked and amounted to 13,531 people; due to the military aggression of the Russian Federation, the tour flow was reduced, leading to a reduction in the number of employees in this field (2015 - 9588 people); Currently, there is a gradual recovery and, accordingly, an increase in the number of employees in this area (10,291 in 2017).

L.Pobochoenko pointed out that the share of employees directly in tourism in 2008 was 0.05% of the employees' average annual number in Ukraine's economy (Pobochoenko, 2008), and in 2018 the

total tourism employment was 4.9%, and direct 1,3% (World Data Atlas, 2020).

Determining the tourism impact on macroeconomic indicators of any country development can be considered from the standpoint of GDP growth and the resultant direct factor - the number of hotels and tourist-recreational type enterprises. Independent variable or factor (X) and "GDP, million UAH" - dependent variable or indicator (U), U calculated - is the calculated amount of GDP in a million UAH using equation (1), which describes the resulting factor relationship with the independent variable.

Table 3 presents a detailed analysis and description of the economic and mathematical modeling in 2000–2018.

Let us define the equation type that describes the statistical data Microsoft Excel.

Consider exponential, linear, logarithmic, polynomial of the 2nd degree, power, and linear filtering of the trend line.

The criterion for choosing the function type, i.e., the dependence form, is the determination ( $R^2$ ) coefficient value. The closer this indicator value to 1, the better the given function describes the statistical data.

The analysis showed that Fig. 4– Polynomial trend line of the 2nd degree represents the most optimal dependence form since the approximation reliability value acquires the most outstanding value from the considered dependencies variants ( $R^2 = 0,94834$ ).

Table 3

Empirical data for constructing a correlation model \*

Year	Number of the hotel and tourist-recreational enterprises	GDP, million UAH	U calculated	Elasticity coefficient
2000	1308,0	176100,00	346668,88	1,08
2001	1258,0	211200,00	345265,21	-0,84
2002	1254,0	234100,00	346266,60	-0,98
2003	1218,0	277400,00	362703,59	-2,16
2004	1192,0	357500,00	382886,10	-2,83
2005	1232,0	457300,00	354723,40	-1,73
2006	1269,0	565000,00	343362,13	-0,43
2007	1420,0	751100,00	443362,10	4,61
2008	1595,0	990800,00	853401,34	6,07
2009	1684,0	947000,00	1183079,08	5,93
2010	1731,0	1120600,00	1390135,20	5,79
2011	1668,6	1349200,00	1120262,60	5,96
2012	1717,0	1459100,00	1326117,81	5,83
2013	1765,4	1522700,00	1556120,05	5,68
2014	1813,8	1586900,00	1810269,33	5,51
2015	1862,2	1988500,00	2088565,64	5,35
2016	1910,6	2383200,00	2391008,97	5,19
2017	1959,0	2983882,00	2717599,34	5,04
2018	2007,4	3558706,0	3068336,73	4,90
In Total	29864,9	22920288,0	22430134,1	58,0

\*Source: built and calculated by the authors on the basis of DSSU (2020).

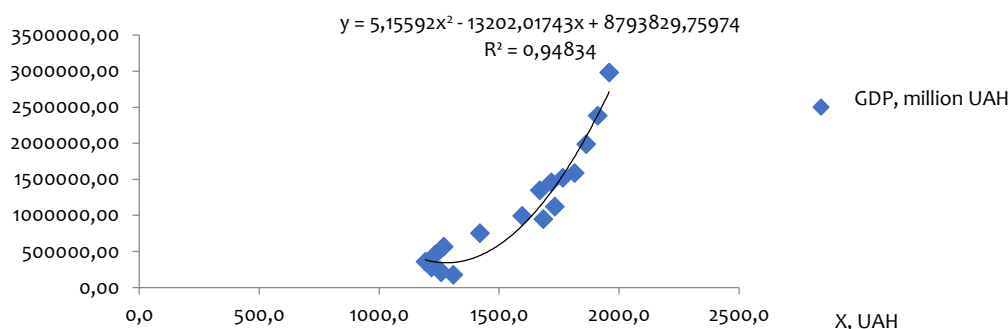


Fig. 4. Polynomial trend line of the 2nd degree

Thus, the GDP dependence model on the number of enterprises of the hotel and tourist-recreational type, based on the collected statistical data, takes the form of a polynomial trend line of the 2nd degree:

$$y = 5,15592x^2 - 13202,01743x + 8793829,75974 \quad (1)$$

Substituting the independent variable value in equation (1), we compute the indicator calculated value. According to table 3, the sums of statistical and calculated values of the indicator are almost the same (22920288.0 and 22430134.1 million UAH), and their dynamics coincide that confirms the reliability and correctness of the selected equation, which describes the dependence. In particular, we analyzed the compliance of the constructed model and checked its adequacy to statistical data, using Fisher's criterion. To do this, we computed the calculated value of the criterion by the equation:

$$F_{calc} = \frac{R^2}{1 - R^2} * \frac{n - m - 1}{m} \quad (2)$$

$$F_{calc} = \frac{(0,94834)}{1 - (0,94834)} * \frac{18 - 1 - 1}{1} = 275,36$$

The Fisher criterion's tabular value is calculated with a given probability p (p=0,95) and the number of equality degrees k1=m and k2=n-m-1. For the collected statistics, the observations number n=17, therefore the number of freedom degrees k1=1 and k2=15. Tabular value of Fisher's criterion: Ftab.= 4,54.

Because inequality holds Fcalc.>Ftab. (275,36>4,54), With probability p=0,95, we claim that the constructed model is adequate for statistical data and is suitable for further analysis and forecasting.

Let us estimate the closeness and direction of the relationship between X and Y, using the correlation coefficient, the formula of which has the form:

$$C_{corel}[X, Y] = \frac{\sum_{i=1}^n (X_i - \bar{X}) * (Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^n (X_i - \bar{X})^2 * \sum_{i=1}^n (Y_i - \bar{Y})^2}} \quad (3)$$

The Microsoft Excel program calculates the correlation coefficient. To do this, we used the CORREL category function.

We obtained the coefficient and correlations as follows r [x;y]=0,9135.

From the obtained value, we conclude: as  $r[x; y] > 0$ , then the connection between X and Y is direct, i.e., with the increase of hotel and tourist-recreational facilities, Ukraine's GDP also increases; as  $0,7 < |r[x; y]| < 1$ , then the connection between X and Y is strong.

Evaluate the factor X variation effect on the index B variation, using the coefficient determination  $R^2=0,94834$ , i.e., the indicator variation on 94,83 % is due to factor variation.

The elasticity coefficient lets us investigate how the indicator U (GDP, million UAH) changes when the factor X (number of hotels and tourist-recreational type enterprises) changes by 1 %.

The general equation for determining the elasticity coefficient has the form:

$$Gelast.coef. = \frac{Uvf.^1 * X}{Uvf.} \quad (4)$$

As  $y = 5,15592x^2 - 13202,01743x + 8793829,75974$ , then derivative

$Y' = 10,31184 * x - 13202,017$  and we obtain the elasticity coefficient equation:

$$Celast. = \frac{(10,3118 * x - 13202,017) * x}{Uvf.} \quad (5)$$

For both factor values, we calculate the corresponding value of the elasticity coefficient by Microsoft Excel.

We also calculate the elasticity coefficient for the average value of the factor and indicator using Microsoft Excel:

C elast.aver. = 3,87.

Thus, an increase in the number of hotels and tourist-recreational enterprises by 1% leads to 3,87% GDP.

Thus, the study shows the impact importance of enterprises of the hotel and tourist-recreational type on the national economy and availability of unique features of this area that need modernization, especially in the context of globalization of world economic processes.

## 5. Conclusions

Despite the growth of services and the number of employees serving the tourism industry, we can point to a rather negative trend due to inefficient management systems, a low level of significant demand, and a lack of comprehensive development programs.

The tourism industry needs to develop and improve recreational infrastructure, provide quality tourism products, create and develop products in the regional aspect, including preserving the environment and natural potential, improving the quality and competitiveness of regional tourism products and offers in the global tourism market. In general, the tourism impact on macroeconomic indicators is relatively high and involves the infrastructure development intensification in terms of its potential in the tourist flow.

Thus, Ukraine's tourism industry has every opportunity to become competitive in the global market of tourism services. However, it requires implementing effective management methods based on available competitive advantages and government support of sectors with weak competitive positions.

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## 7. The competing interests

The authors declare that they have no competing interests.

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