RETROSPECTIVE STATISTICAL STUDY OF DEPENDENCIES IN THE FORMATION OF TOURIST FLOWS

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Introduction. The activity of tourism establishments takes place in conditions of intense competition and changing dynamics of the tourism market influenced by various factors. The phenomenon of tourism lies in its complexity and high sensitivity to changes in the external environment. In order to determine the directions for the development of the tourism industry, it is necessary to understand the factors that influence the formation of tourist flows and forecast their changes in the defined perspective, which justifies the relevance of applying statistical research methods.

Aim and tasks. The aim of the study: based on statistical information and methods of statistical analysis, to identify the dynamics of changes in tourist flows during specific periods of the new reality and to refute or confirm the hypotheses put forward in the research. Main tasks are: to identify periods of new reality characterized by special conditions of tourist flows formation; to formulate research hypotheses; to identify features of major trends in tourist flows for confirmation or refutation of the proposed hypotheses.

Results. According to the developed methodology, periods were identified according to one leading feature that could form the trend of tourist activity in Ukraine for: the period of development of stabilization and economic growth (2000-2008); the period of coverage of the economic crisis and its relative overcoming (2009-2013); Anti-Terrorist Operation (ATO) period and subsequent stabilization of economic growth (2014-2019); period of the COVID-19 pandemic, economic downturn, isolation (2020-2021); martial law (since February 24, 2022). The periods identified in the study formed excellent conditions for tourism, which affected the volume of tourist flows, as a result of which the forecast indicators will not correspond to the actual ones. Domestic tourism flows are more influenced by GDP per person, while outbound tourism flows are more influenced by available income per person.

Conclusions. The applied methods of mathematical forecasting allowed for the verification of the hypotheses regarding the causes that influenced or did not influence tourist flows as the resulting indicator. The general outcome of the research is the confirmation of the hypotheses proposed, which position the tourism industry as particularly susceptible to the influences of various factors that can significantly impact tourism activity both in the context of tourist flow formation and the priorities of tourism enterprises' operations.

Keywords: tourist flows, statistical research, forecasting, dynamics of changes in tourist flows.

1. Introduction.

The last decades of the previous millennium and the global trends of the 21st century indicate rapid development in the service sector and tourism in particular. The main prerequisites for this development were the characteristic features of the tourism industry itself, as well as substantial government support, as tourism as an industry is a source of revenue for the state budget and a sector where cheap jobs are created. At the same time, tourists are consumers not only of hospitality services but also of services and goods from other types of activities, stimulating trade, transportation, communication, agriculture, and construction. Therefore, the impact of tourism on the economy is quite significant, just like the influence of the socio-economic situation in a particular country and time on the development of tourism and the characteristics of forming tourist flows. For effective planning at both the enterprise and territorial levels (society, region, and country), it is necessary to conduct an analysis of factors influencing the formation of tourist flows and forecast their changes from a certain perspective.

It should be noted that tourism businesses operate in conditions of stiff competition and are influenced by various factors affecting the dynamics of the tourism market, such as economic factors (state of the economy, real income levels of the population, development of transportation, social, and financial infrastructure), environmental factors (deterioration of natural and climatic conditions, increase in environmental disasters, degradation of environmental quality), and social factors (changes in population structure, shifts in preferences and tastes, health conditions, family composition). Tourism statistics do not always allow for relevant forecasts, as, in our opinion, the phenomenon of tourism lies in its complexity and high sensitivity to changes in the external environment of an economic, socio-cultural, and ecological nature (Kostetska et al., 2020).

The emergence of new trends has led to the development of fundamentally new directions, such as behavioral economics, experience economics, and inclusive economics, which better explain the latest trends in the tourism industry. Therefore, when applying statistical research methods, these trends should be taken into account.

2. Literature review.

Statistical methods for studying tourist flows are used quite often to identify trends in the development of the sphere, the dependence of development on various factors. Alekseeva and Slipchenko (2019) studied the main trends in tourism development, opportunities, and threats to the overall development of the tourism industry, as well as its individual directions.

Anhelko (2014) conducted a comprehensive analysis of the development of the tourism industry in Ukraine, identifying its features, issues, and prospects for growth as an important sector of the economy and social sphere. Barna and Myronov (2018) researched dynamics of tourist flows and their dependence on individual economic indicators based on econometric analysis;

Begun et al. (2021) reviewed the dynamics of key quantitative and cost indicators of the tourism industry in Volyn region for the period of 2015-2019. Manrique-de-Lara-Penate et al. (2022) estimated the economic impact of terrorism, corruption, and uncertainty on tourist flows using a combination of a gravity model and an input-output model.

Sichka (2016) analyzed the state of the tourism market development in Ukraine and the influence of the tourism sector on the country's economy, identified issues and outlined prospects for the development of the tourism market based on the analysis of tourist flows. Shafiullah et al. (2022) investigated the influence of environmental indicators of countries of origin and destination on international tourist flows through empirical analysis using a panel dataset of gravity data from 169 countries of origin and 157 countries of destination spanning from 2000 to 2015.

Shatska and Akulshin (2018) studied the state of the tourism industry in Ukraine for 2000–2017, identified factors that contribute to the development of domestic and foreign tourism and increase the tourism potential of Ukraine. Shamara and Azarova (2018) characterized the current state, problems and prospects for the development of the tourism services market by conducting a statistical analysis of the country's tourist flows. Xu et al (2022) analyzed the impact of World Heritage sites on the origin of inbound tourist flows in 167 countries/regions from 1997 to 2018.

The specified studies did not utilize forecasting methods. Weaknesses and strengths, opportunities and threats were determined based on retrospective analysis.

3. Methodology.

The statistical study of dependencies in the formation of tourist flows is carried out in the context of the new reality of each specific period. By using forecasting tools based on past periods, it is possible to verify them and identify the reasons that influenced or did not influence the resulting indicator – the volume of tourist flows.

The research methodology involves the following stages:

1) Identification of periods based on a single leading indicator that could shape the trend of tourist activity.

2) Formulation of research hypotheses.

3) Formation of a statistical sample.

4) Identification of trends.

5) Forecasting indicators within the next period.

6) Analysis of indicators for the next period and comparison with forecasted indicators.

7) Correlation-regression analysis of the dependencies of tourist flows formation based on: GDP per capita; disposable income per capita.

8) Confirmation or refutation of the formulated hypotheses.

The periods of the new reality are defined by the authors of the research taking into account the specific conditions and factors that are characteristic of a particular time period and have influenced the formation of tourist flows, namely:

1) 2000-2008 – a period of economic stabilization, development, and growth in Ukraine;

2) 2009-2013 – a period of economic crisis and its relative recovery;

3) 2014-2019 – a period of the Anti-Terrorist Operation (ATO), subsequent stabilization and economic growth;

4) 2020-2021 – a period of COVID-19 pandemic, economic downturn, and isolation;

5) Since February 24, 2022 – martial law.

Research hypotheses:

1) The periods identified in the study formed different conditions for tourism, which affected the volume of tourist flows. Therefore, the forecasted indicators may not correspond to actual results.

2) The tourism industry is one of the most sensitive to changes in the external environment, such as economic, social, and ecological factors. Therefore, not only economic factors influence the formation of tourist flows.

3) Domestic tourist flows are more influenced by the GDP per capita.

4) Outbound tourist flows are most influenced by the disposable income per capita.

5) The formation of a statistical sample was conducted for each period, and the sequence of research stages was preserved. To understand the internal dynamics of tourist flows, it was used quantitative indicators: the number of tourists served by tour operators and travel agents, in total; among them - the number of inbound (foreign) tourists, outbound and domestic tourists. To implement the further stages of the study, it was used cost indicators: GDP per capita; disposable income per capita.

4. Results.

To obtain research results for each of the defined periods, 3-8 stages of the research methodology are applied alternately.

4.1. The period of economic stabilization, development, and growth in Ukraine (2000-2008).

The source data for the statistical study are shown in Table 1.

Table 1. Source data for statistical research in Ukraine, 2000-2008.

Year	Number of tourists served by tour operators and travel agents, total	Inbound (foreign) tourists, per	Outbound tourists, per	Domestic tourists, per	Gross domestic product per capita		Disposable income per capita	
					UAH	USD	UAH	USD
2000	2013998	377871	285353	1350774	3582	647	1862	342
2001	2175090	416186	271281	1487623	4340	808	2489	464
2002	2265317	417729	302632	1544956	4855	911	2938	551
2003	2856983	590641	344332	1922010	5801	1088	3400	638
2004	1890370	436311	441798	1012261	7535	1419	4468	841
2005	1825649	326389	566942	932318	9709	1896	6332	1237
2006	2206498	299125	868228	1039145	12076	2391	7771	1539
2007	2863820	372455	336049	2155316	16150	3198	10126	2005
2008	3041655	372752	1282023	1386880	21419	4064	13716	2603

Source: based on State Statistics Service of Ukraine (n/d).

The number of tourists served by tour operators and travel agents increased from 2000 to 2004. The decrease in these indicators in 2004-2005 was due to changes in legislative and regulatory regulation of the hospitality industry in 2004 (Verkhovna Rada of Ukraine, 2004; National standard of Ukraine, 2003, 2004; International Organization for Standardization, 2003). However, the indicators increased again further and exceeded the 2003 level by 6.5%.

The number of inbound (foreign) tourists also increased from 2000 to 2003, decreased in subsequent years until 2006, and then increased again until 2008. However, the 2008 indicator was 37% lower than the maximum value in 2003 due to the global financial crisis.

The number of outbound tourists was increasing, with a slight decrease in 2001 (5%), a sharp reduction in 2007 (336,049 people compared to 868,228 people in 2006), which was caused by the global economic crisis. However, the indicator for 2008 was the highest in the period.

The dynamics of the number of domestic tourists served by tour operators and travel agents followed the overall trend of tourist numbers until 2007. However, in 2008, the crisis had an impact on the purchasing power of both consumers of tourist services and the efficiency of Ukrainian tourism establishments, resulting in a 36% decrease in the indicator for 2008. During this period, two disruptions in the trend of domestic tourist numbers were observed: firstly, a decrease in the indicators from 2004-2006, influenced by non-economic factors, and secondly, a decrease in tourist activity due to the devaluation of the Ukrainian hryvnia as a result of the global economic crisis.

In 2007, there was a presumed decrease in the number of outbound tourists, influenced by the consequences of the global economic crisis. Another highlight of this period was the positive balance in the number of outbound and domestic tourists.

In the structure of tourist flows, domestic tourists predominated, although the percentage varied significantly over the years: 75.3% in 2007, 67-68% in 2000-2003, and down to 45.6% in 2008. Overall, the proportion of foreign tourists was the smallest, with a minimum of 12.3% in 2008 and a maximum of 23.1% in 2004. The share of outbound tourists fluctuated: 12-14% in 2000-2003, 23-39% in 2004-2006, 11.7% in 2007, and 42.1% in 2008. In 2008, the proportion of domestic and outbound tourists was almost the same (Table 2).

Table 2. Structure of tourist flows for 2000-2008 in Ukraine, %.

Year	Share of tourists served by tour operators and travel agents, %	Inbound tourists, %	Outbound tourists, %	Domestic tourists, %
2000	100,0	18,7	14,2	67,1
2001	100,0	19,1	12,5	68,4
2002	100,0	18,4	13,4	68,2
2003	100,0	20,7	12,0	67,3
2004	100,0	23,1	23,4	53,5
2005	100,0	17,9	31,0	51,1
2006	100,0	13,6	39,3	47,1
2007	100,0	13,0	11,7	75,3
2008	100,0	12,3	42,1	45,6

Source: based on State Statistics Service of Ukraine (n/d).

The next stage of the research involves forecasting indicators within the next period, and as the indicators are known, comparing the forecasted data with the actual data (Figure 1). The forecast was made using the Forecast Sheet and exponential smoothing functions in MS Excel. The actual data for 2009-2013 fell within a 95% confidence interval, indicating a high accuracy of the forecast.

In the context of Hypothesis 1, it can be stated that the forecasted data for 2012 were higher, with almost complete alignment in 2012 and actual results surpassing the forecast in 2013. However, the mathematical interpretation of the forecasting results does not confirm Hypothesis 1, despite the almost complete alignment of actual and forecasted indicators only in 2012.
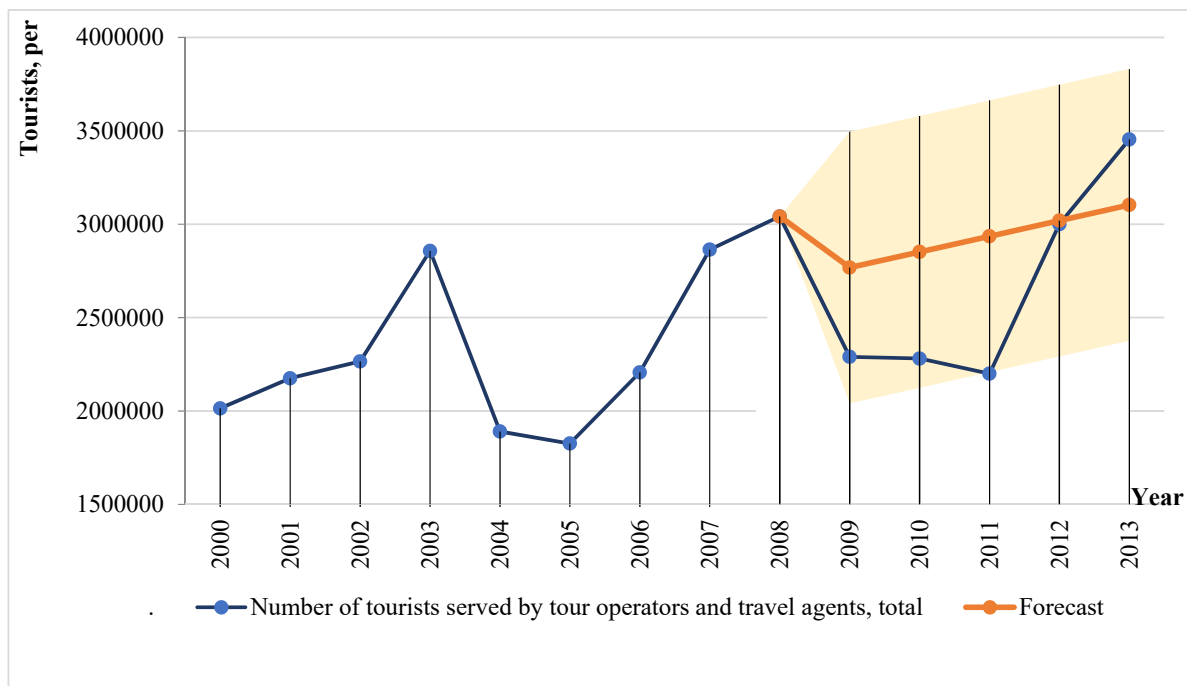
**Fig. 1. Dynamics of tourist flows for 2000-2008 and forecast-comparison to 2013.**

Putting forward Hypothesis 3, which posits that the volume of GDP per capita has the greatest influence on domestic tourism flows, we had in mind the direct and inverse relationship between the overall economic situation and the development of the tourism industry.

On the one hand, the tourism sector is complex-forming and contributes to the development of other spheres of economic activity; on the other hand, it depends on the level of development of various types of activities. In other words, if the economic situation in a country is positive, with stable albeit not necessarily high incomes for the population, active development of the service sector as a whole, including tourism firms and accommodation establishments, stable national currency, modern and developed transportation infrastructure, etc., this will promote domestic tourism.

Applied parabolic model of dependence of internal tourist flows on per capita GDP volumes for the years 2000-2008. As seen from Figure 2, Hypothesis 3 was not fully confirmed during the specified period, as there is no correlation, or it is not significant.
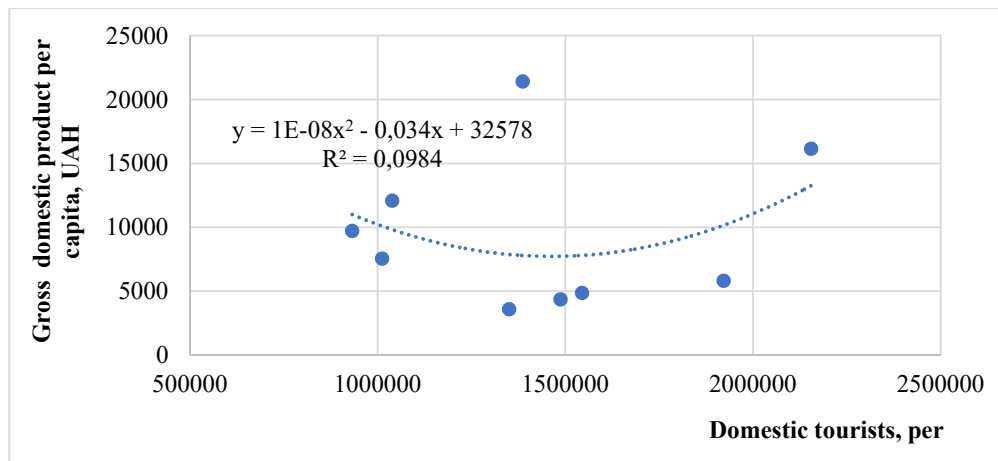
Fig. 2. Parabolic model of the relationship between domestic tourist flows and GDP per capita for 2000-2008.

Hypothesis 4 assumed that outbound tourist flows are most influenced by. In other words, if incomes consistently increase, the level of material well-being of the population also increases. Therefore, people can afford to spend money on health improvement, leisure, and travel with a higher level of service, including more expensive overseas tours.

The parabolic model of the dependency of outbound tourist flows on disposable income per capita was applied for the years 2000-2008, which demonstrated a moderate level of correlation between the indicators during this period, overall confirming the proposed Hypothesis 4 (Figure 3).
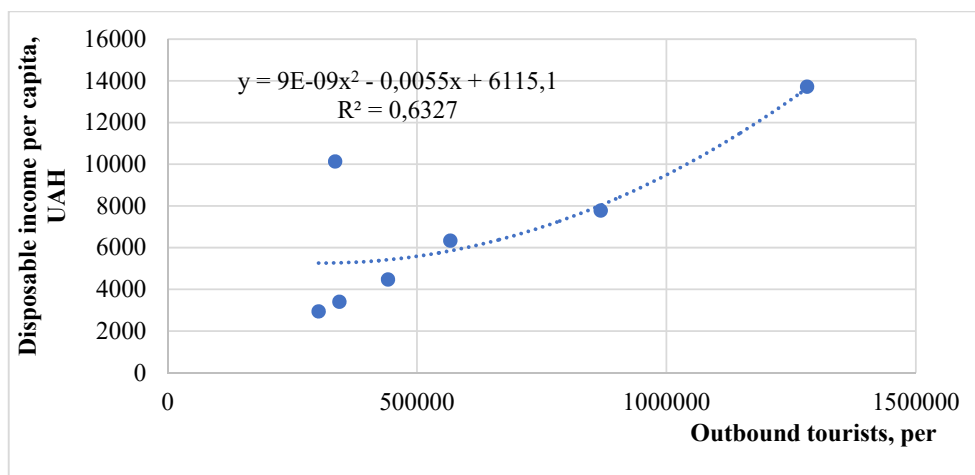
Fig. 3. Parabolic model of the dependence of outbound tourist flows on disposable income per capita for 2000-2008.

So, during this period, Hypothesis 2 is generally confirmed, which means that not only economic factors influence the formation of tourist flows.

4.2. The period of economic crisis and its relative recovery (2009-2013).

During this period, overall tourist activity was significantly lower compared to 2008. In 2009, there was a sharp reduction in all tourist flows: -751,558 tourists in total, -90,465 foreign tourists, -368,383 outbound tourists, -292,710 domestic tourists. This trend continued until 2012, except for the indicator of outbound tourists, whose flow increased significantly due to not only the stabilization of economic activity but also the increased opportunities for overseas travel, as the Agreement between Ukraine and the European Community on the simplification of visa procedures (Verkhovna Rada of Ukraine, 2008) came into effect (Table 3).

Table 3. Source data for statistical research, in Ukraine 2009-2013.

Year	Number of tourists served by tour operators and travel agents, total	Inbound tourists, per	Outbound tourists, per	Domestic tourists, per	Gross domestic product per capita		Disposable income per capita	
					UAH	USD	UAH	USD
2009	2290097	282287	913640	1094170	20564	2640	14373	1845
2010	2280757	335835	1295623	649299	24798	3123	18486	2328
2011	2199977	234271	1250068	715638	29980	3762	21638	2715
2012	3000696	270064	1956662	773970	32480	4065	25206	3155
2013	3454316	232311	2519390	702615	33965	4251	26719	3344

Source: based on State Statistics Service of Ukraine (n/d).

The number of tourists served by tour operators and travel agents decreased overall in 2009-2011, but increased in 2012-2013. The decrease in these indicators in 2009-2011 was due to financial and economic factors. However, after overcoming the crisis, the indicators started to grow again, and in 2013 they exceeded the 2008 level by 13.5%.

The overall number of foreign tourists decreased significantly, fluctuating year by year between increases and decreases, and did not reach the 2008 level. On the other hand, the number of outbound tourists has been rapidly increasing since 2010, especially in 2012-2013.

It should be noted that in 2012, as part of the preparations for Euro 2012, a large-scale renovation of the transportation infrastructure was carried out, airports in major cities were modernized, over 2,000 km of roads were constructed or repaired, and 10 Hyundai Rotem electric trains were acquired (Shatska & Akulshin, 2018). The influx of foreign visitors for this event allowed many to discover tourist destinations in Ukraine.

The trend in the number of domestic tourists served by tour operators and travel agents indicates a decrease in demand for domestic tourism services and a preference for foreign travel. Since 2010, outbound tourists have significantly dominated the structure of tourist flows, accounting for 56.8% in 2010-2011, 65.2% in 2012, and 72.9% in 2013.

This is associated with a growing trend in the operation of tourist enterprises, the majority of which are travel agencies focused on outbound tourism, as it is easier and more economically viable to organize tours for individual Ukrainians abroad than to cater to a larger number of domestic tourists. At the same time, the comparatively low popularity of the national tourism product is due to significantly lower quality indicators and unjustifiably high prices. As a result, an increasing portion of Ukraine's population prefers outbound tourism, which negatively impacts the overall economic development of the country's tourism industry, especially in regions that are oriented towards the tourism sector.

The share of foreign tourists was the smallest. Its minimum value of 6.7% was recorded in 2013, while the maximum of 14.7% was in 2010. The share of domestic tourists during this period decreased by half, from 40.8% in 2009 to 20.3% in 2013 (Table 4).

**Table 4. Structure of tourist flows for 2009-2013 in Ukraine, %.**

Year	Share of tourists served by tour operators and travel agents, %	Inbound tourists, %	Outbound tourists, %	Domestic tourists, %
2009	100,0	12,3	39,9	47,8
2010	100,0	14,7	56,8	28,5
2011	100,0	10,6	56,8	32,6
2012	100,0	9,0	65,2	25,8
2013	100,0	6,7	72,9	20,2

Source: based on State Statistics Service of Ukraine (n/d).

The characteristic feature of this period is a significant change in the structure of tourist flows. It differs radically from the structure of the previous period due to a stable growth in the share of outbound tourists, mainly driven by domestic tourists. The trend of decreasing share of foreign tourists has persisted. A sharp change in the dynamics of indicators is observed only once – after 2011 in the number of foreign tourists.

Forecasting of indicators within the years 2014-2019 and their comparison with actual data is reflected in Fig. 4. Only the actual data for 2018-2019 fell within the confidence interval.
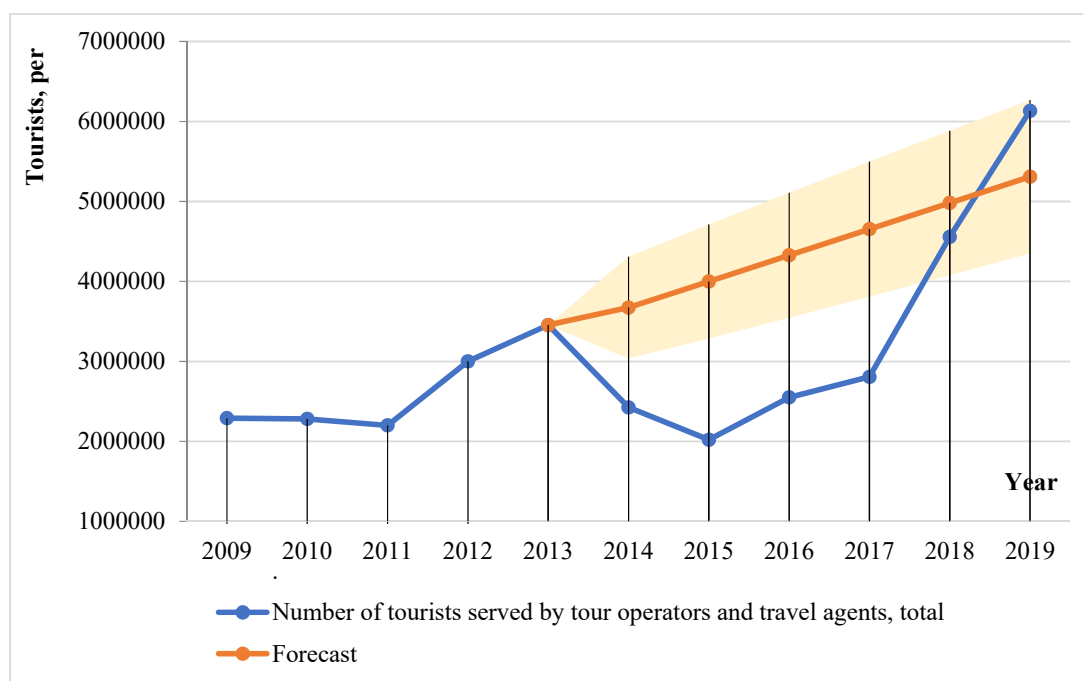
Fig. 4. Dynamics of tourist flows for the years 2009-2013 and forecast-comparison to 2019.

Two points should be noted:

1) Making forecasts based on a very short period (2009-2013) for a 5-year perspective is inappropriate, however, these were the conditions of the study.

2) The trend of the previous period was positive, and changes in the country (The Revolution of Dignity (Euromaidan Revolution), political instability, separatist processes, Anti-Terrorist Operation (ATO), and de facto war in the country) influenced the change in the number of tourists.

In other words, a forecast based on the trend of the previous period would not have been accurate. The mathematical interpretation of the forecasting results confirms Hypothesis 1 and Hypothesis 2.

The parabolic model of the dependency of internal tourist flows on GDP per capita for the years 2009-2013 demonstrates a high correlation between these indicators (Fig. 5). It should be noted that for complex processes and phenomena influenced by numerous factors in conditions of significant changes in the external environment, the use of nonlinear models is more appropriate. Therefore, we can consider Hypothesis 3 as confirmed.
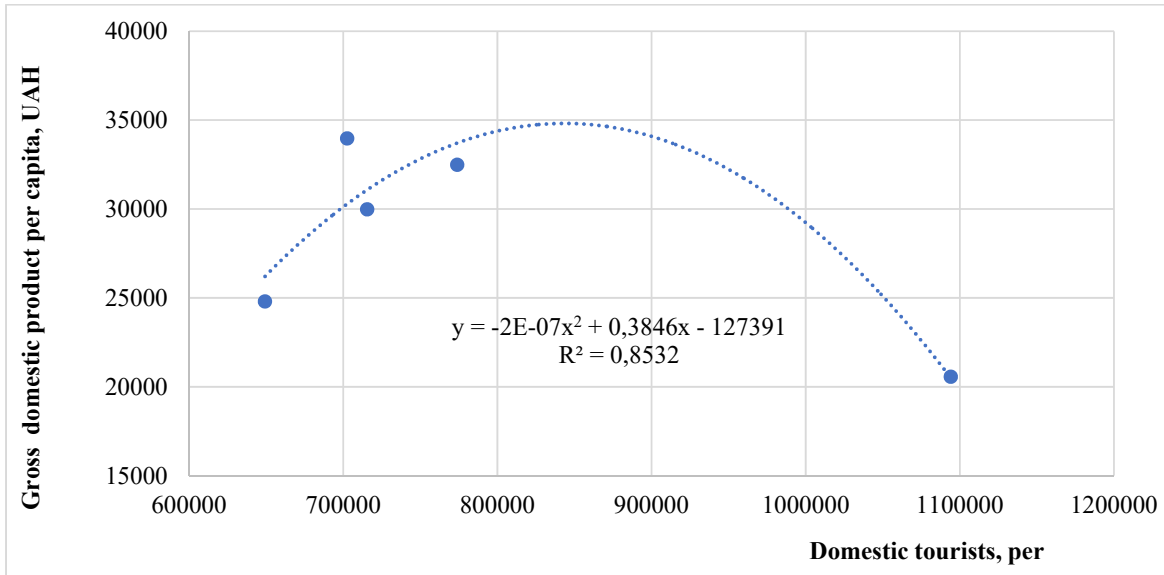
Fig. 5. Parabolic model of the relationship between domestic tourist flows and GDP per capita for 2009-2013.

The application of parabolic model for the dependence of outbound tourist flows on disposable income per capita for the years 2009-2013 demonstrated a strong correlation between the indicators, which overall confirms the proposed Hypothesis 4 (Figure 6).
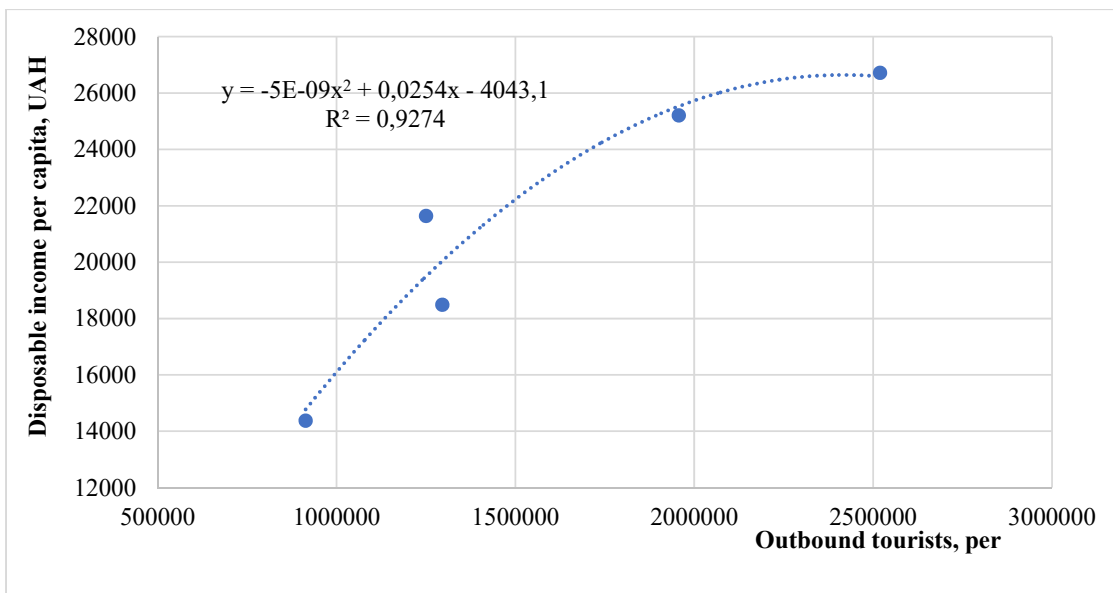
Fig. 6. Parabolic model of the dependence of outbound tourist flows on disposable income per capita for 2009-2013.

Therefore, during this period, Hypothesis 2 is not confirmed, as tourist flows were mainly influenced by economic factors.

4.3. The period of the ATO, subsequent stabilization and economic growth (2014-2019).

The period of 2014-2019 can be divided into sub-periods based on the following characteristics: 2014-2015 – a period of political instability and active phase of the ATO, 2016-2017 – a period of relative stabilization, and 2018-2019 – a period of economic growth.

In 2014, compared to 2013, there was a sharp decrease in all tourist flows: -1,029,227 people in total (29.8%), -215,241 people (-92.6%) – foreign tourists; -434,117 people (-17.2%) – outbound tourists; -379,869 people (-54.1%) – domestic tourists (Table 5, 6).

Table 5. Source data for statistical research in Ukraine, 2014-2019.

Year	Number of tourists served by tour operators and travel agents, total	Inbound tourists, per	Outbound tourists, per	Domestic tourists, per	Gross domestic product per capita		Disposable income per capita	
					UAH	USD	UAH	USD
2014	2425089	17070	2085273	322746	36904	3104	26782	2252
2015	2019576	15159	1647390	357027	46413	2125	3180	1456
2016	2549606	35071	2060974	453561	55899	2188	37080	1451
2017	2806426	39605	2289854	476967	70233	2640	47270	1777
2018	4557447	75945	4024703	456799	84235	3097	58442	2149
2019	6132097	86840	5524866	520391	94661	3281	69140	2675

Source: based on State Statistics Service of Ukraine (n/d).

Accordingly, during 2014-2015, when the annexation of Crimea and the formation of the so-called Luhansk and Donetsk republics took place, along with active military actions, the total number of tourists decreased (by 17%), foreign tourists decreased (by 11%), and outbound tourists decreased (by 21%), while domestic tourists increased (by 10.6%). The number of foreign tourists has especially decreased due to the security factor.

In 2016-2017, the situation somewhat stabilized, and tourist flows started to grow: the total number of tourists increased by 10%, foreign tourists by 13%, outbound tourists by 11%, and domestic tourists by 5%. Furthermore, starting from June 11, 2017, Ukraine and the European Union implemented a visa-free regime, which further influenced the growth of outbound tourists.

If in the previous two years the growth of tourist numbers was moderate, then in 2018-2019 it was rapid. In particular, in 2018, compared to 2017, the total number of tourists increased by 62%, foreign tourists by 92%, outbound tourists by 76%, and domestic tourists decreased by 4%. In 2019, compared to 2018, the total number of tourists increased by 35%, foreign tourists by 14%, outbound tourists by 37%, and domestic tourists by 14%.

The dynamics of tourist flows for the years 2014-2019 clearly demonstrate a significant predominance of outbound tourists, especially after 2017. Statistical data indicates that outbound tourists have been predominant in the structure of tourist flows since 2010. However, during this period, the share of outbound tourists has been considerably higher, ranging from 80.8% to 90.1% in 2019. The share of foreign tourists in 2014-2015 was less than 1%, and in subsequent years it averaged at 1.4%, except for 2018 when it was 1.7%. The share of domestic tourists increased from 13% to 17% in 2014-2017, but decreased to 10.0% and 8.5% in 2018-2019 respectively (Table 6).

Table 6. Structure of tourist flows for 2014-2019 in Ukraine, %

Year	Share of tourists served by tour operators and travel agents, %	Inbound tourists, %	Outbound tourists, %	Domestic tourists, %
2014	100,0	0,7	86,0	13,3
2015	100,0	0,8	81,6	17,6
2016	100,0	1,4	80,8	17,8
2017	100,0	1,4	81,6	17,0
2018	100,0	1,7	88,3	10,0
2019	100,0	1,4	90,1	8,5

Source: based on State Statistics Service of Ukraine (n/d).

The forecasted indicators for the period 2020-2023 are reflected in Figure 7. It is worth noting that since 2015, there has been a rapid upward trend, which is why the forecasted indicators are also increasing. However, the number of tourists has been impacted by the epidemiological situation, including the COVID-19 pandemic, lockdown measures, resulting economic downturn, isolation, and sharp reduction in global and Ukrainian tourism activity. The forecast based on the trend of the previous period would not have been accurate. The mathematical interpretation of the forecasting results confirms Hypothesis 1 and Hypothesis 2.
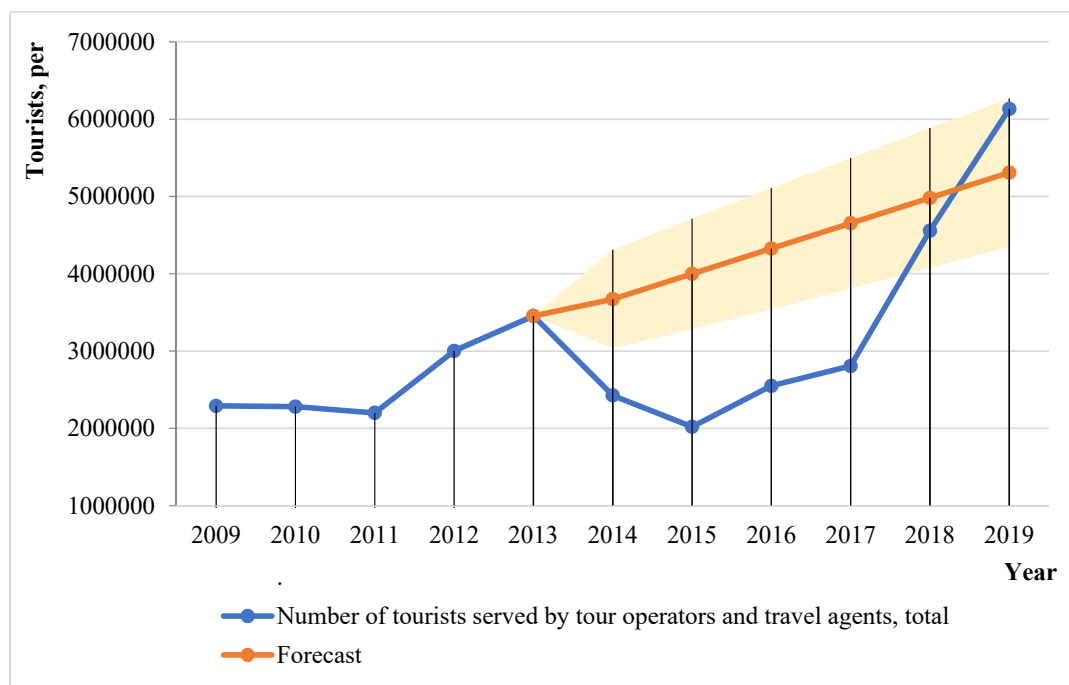
Fig. 7. Dynamics of tourist flows for 2014-2019 and forecast-comparison to 2022.

The application of a parabolic model for the dependence of domestic tourist flows on GDP per capita for the years 2014-2019 demonstrates a strong correlation between these indicators (Figure 8), confirming Hypothesis 3.
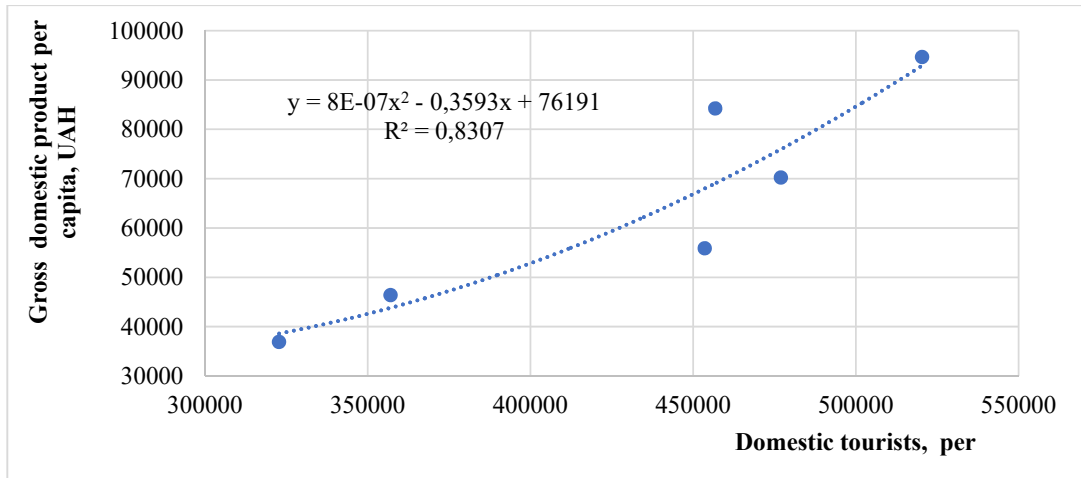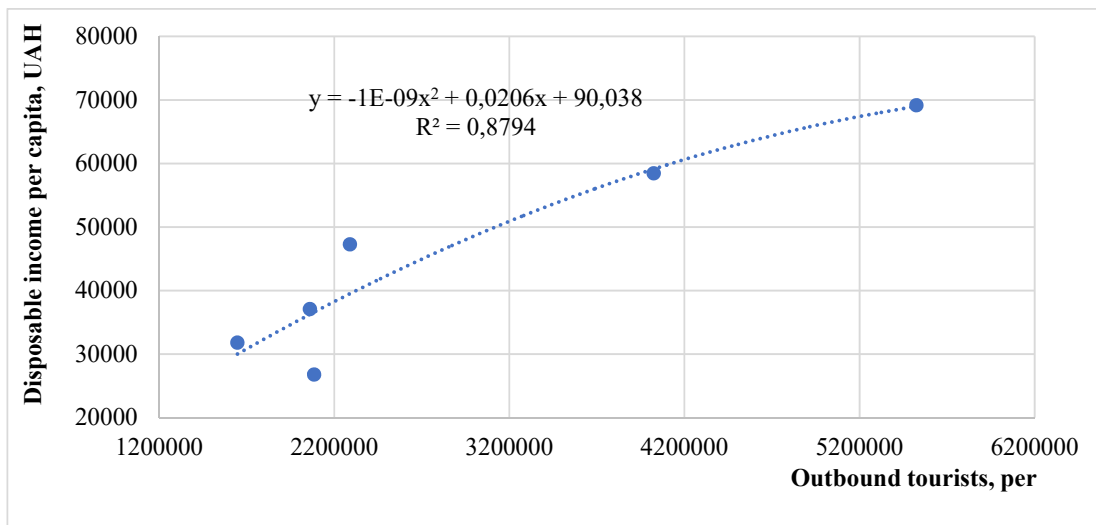
Fig. 8. Parabolic model of the relationship between domestic tourist flows and GDP per capita for 2014-2019.

Source: developed by the authors.

The parabolic model of the dependence of outbound tourist flows on disposable income per capita for the years 2014-2019 also demonstrates a strong correlation between the indicators, confirming Hypothesis 4 (Figure 9).

Fig. 9. Parabolic model of the dependence of outbound tourist flows on disposable income per capita for 2014-2019.

Therefore, during this period, all hypotheses are confirmed.

4.4. The period of COVID-19 pandemic, economic downturn, and isolation (2020-2021.)

During the period of 2020-2021, there was a significant decline in tourism activity due to the COVID-19 pandemic.

Specifically, compared to 2019, the data for 2020 showed the following reductions: the total number of tourists served by tour operators and travel agents decreased by 3,771,819 people (61.5%); foreign tourists decreased by 74,876 people (86.2%); outbound tourists decreased by 3,399,164 people (61.5%), and domestic tourists decreased by 297,779 people (57.2%) (Table 7).

Table 7. Source data for statistical research in Ukraine, 2020.

Indicator	Number of tourists served by tour operators and travel agents, total	Inbound tourists	Outbound tourists	Domestic tourists
Number of tourists, per	2360278	11964	2125702	222612
Structure of tourist flows for 2020-2021, %	100,0	0,5	90,1	9,4

Source: based on State Statistics Service of Ukraine (n/d).

In 2020, share of outbound tourists dominated in the structure of tourist flows. This indicator remained unchanged compared to 2019. However, the share of foreign tourists decreased almost threefold, while the share of domestic tourists increased from 8.5% to 9.4%.

There are no statistical data for 2021-2022, so it is not possible to comment on the changes in the last two periods.

5. Conclusions.

The research resulted in three separate conclusions based on different time periods.

The period from 2000 to 2008 was defined as a period of economic stabilization, development, and growth in Ukraine. The dynamics of GDP per capita and disposable income per capita during this period were consistently positive, leading to an expectation of stable growth in tourist flows. However, from 2003 to 2005, the statistics on the total number of tourists served by tour operators and travel agents decreased. This decline was attributed not to economic factors, but to changes in legislative and regulatory norms in the tourism industry, confirming Hypothesis 2. Therefore, the overall results of the statistical study in this period refute Hypotheses 1 and Hypothesis 3, and confirm Hypotheses 2 and Hypothesis 4.

The analysis for the years 2009-2013 is defined as a period covering the economic crisis and its relative recovery. GDP per capita was lower compared to 2008 only in 2009, and then it increased.

Disposable income per capita consistently grew. The dynamics of changes in tourist flows were as expected. Therefore, overall, the results of the statistical study during this period confirm the hypotheses proposed, including Hypothesis 1, as the forecast for 2014-2019 based on the trend of the previous period was not fulfilled.

The period from 2014 to 2019 was defined as a period of Anti-Terrorist Operation, stabilization, and economic growth. GDP per capita and disposable income per capita consistently increased. The dynamics of tourist flows were as expected, with a sharp decline in 2015-2016, followed by rapid growth in 2018-2019. The application of parabolic models for the dependence of domestic tourist flows on GDP per capita and outbound tourist flows on disposable income per capita confirms Hypotheses 3 and 4. In general, the results of the statistical study during this period confirm the hypotheses proposed, including Hypotheses 1 and 2, as the forecast for 2014-2019 based on the trend of the previous period would not have been accurate due to the COVID-19 pandemic.

The general outcome of the research is the confirmation of the hypotheses proposed, which position the tourism industry as particularly susceptible to the influences of various factors that can significantly impact tourism activity both in the context of tourist flows formation and the priorities of tourism enterprises' operations.

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