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Consumer Resilience in War Conditions in Ukraine: Travel Market Case

Iuliia Kostynets¹ and Valeriia Kostynets²

ABSTRACT

The article is devoted to the study and modeling of the behavior of Ukrainian consumers in the tourist services market in the context of the Russian military invasion of Ukraine. The authors conducted a study of current global market trends in the aspect of the functioning of the industry in the conditions of war in Ukraine. The authors identified prospects for the restoration and development of the tourist services market in the context of further stabilization and improvement of the situation in Ukraine. The article analyzes the potential and realized consumer demand in the market of tourist services in Ukraine. The authors analyzed the results of a survey of tourism business professionals, as well as consumer requests, in order to establish changes in consumer preferences over the past 5 years. Based on the use of the SARIMA model, the authors calculated the forecast values of the frequency of consumer requests for specific tourist destinations 12 steps ahead. The results obtained in the course of the study confirmed the hypothesis of stable consumption of tourist services by Ukrainian consumers.

KEY WORDS:

consumer resilience, continued pent-up demand, travel market, the Russian invasion of Ukraine

JEL Classification: C59, D12, M31, Z32, Z33.

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1. Introduction

Russia's military invasion of Ukraine has become a significant negative risk for international tourism. The war unleashed by Russia against Ukraine has exacerbated already high oil prices and transportation costs increased uncertainty, and led to negative trends in the global tourism industry, which is recovering from the devastating impact of the COVID-19 pandemic. According to stats from the World Tourism Organization, the most affected European countries in the tourism sector, in addition to Ukraine, were also the Republic of Moldova with a drop in the number of flights by 69% (since February 24, 2022, compared to 2019), Slovenia (-42%), Latvia (-38%) and Finland (-36%) (United Nations

World Tourism Organization [UNWTO], 2022). A military offensive has significantly increased the risk of hindering the restoration of confidence in global travel. So, just a week after the start of the offensive, the number of air ticket sales in Europe fell by 23%, and the number of flights from the United States to Europe fell by 13%. Countries close to the conflict zone – Bulgaria, Croatia, Estonia, Georgia, Hungary, Latvia, Lithuania, Slovakia, Slovenia, and Poland – saw bookings drop by 30-50% (Kamal-Chaoui, 2022). So, the Krakow hotel company Jordan Group (Poland) lost 80% of its group orders after the full-scale invasion began. In general, in the Malopolska Voivodeship of Poland, the number of foreign tourists decreased by 60% during March-August 2022, and only corporate guests kept their reservations.

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Orders for tours to Budapest (Hungary) decreased by 45%, and to Riga (Latvia) — by 39%. According to the Hungarian Tourism Agency, the total number of foreign visitors in the country for the first 6 months of the year decreased by 37% compared to 2019. Most of all, the number of tourists from the United States decreased – by 65%. In turn, the Slovak Tourism Board noted a 49% decrease in tourist arrivals compared to 2019 in the first 5 months of the year (Stefan, 2022).

It should be noted that today Ukraine and Russia, as markets for tourist exports, together account for 3% of world spending on international tourism. A prolonged conflict could lead to a loss of USD 14 billion in global tourism revenue in 2022. As tourist destinations, Russia and Ukraine account for 4% of international tourist arrivals to Europe (UN-WTO, 2022), so the importance of both markets is unconditional for neighboring countries, as well as for the world's traditional seaside resorts, popular among Ukrainian and Russian tourists.

The current situation in the global tourist services market caused by the Russian military invasion of Ukraine differs significantly from those previously studied in domestic and foreign scientific works. In turn, the behavior of Ukrainian consumers, even during a military invasion, supported, as a result, by a significant economic crisis, does not always fit into existing models of consumer behavior. As we have proven in previous studies (Kostynets et al., 2020), the most striking feature of the behavior of the Ukrainian consumer of tourist services in crisis conditions is not the preservation, but the maximum realization of available free funds. In this regard, the study of consumer resilience in war conditions in Ukraine requires additional research.

The aim of the study is to test the hypothesis that Ukrainian consumers in crisis conditions, in particular in the context of the Russian military invasion, maintain a stable consumption of tourist services. Tourist services are not essential goods, so the demand for them is sensitive to external factors that affect consumer behavior when buying them.

Structurally, this study consists of the following sections: 1) introduction indicating the relevance of the issue under study; 2) review of literature on sustainability and consumer behavior in general

and in conditions of military and political crises; 3) determination of the purpose, objectives, and methodology of the study; 4) coverage of the main theoretical results of the study and demonstration of the empirical implementation of the research results; 5) conclusions and prospects for further research.

2. Literature Review

The problem of consumer behavior research has been worrying the economic and scientific community for many centuries. The first ideas related to consumer behavior in the economic sphere appeared within the framework of classical economic theory. The consumer as an object of research was first considered in Smith's fundamental work "An Inquiry into the Nature and Causes of the Wealth of Nations" (Smith, 1997). In his understanding, an "Economic person" is an entity controlled by an "invisible hand" for the personal and public good. This is an autonomous individual, whose driving forces are two motives: self-interest and a tendency to exchange. It should be noted that at the end of the XVIII century the idea of an economic person guided by self-interest was very popular, but it was A. Smith who formulated it.

The main characteristics of an economic person were supplemented by Ricardo and finally formalized by representatives of marginalism (Ricardo, 1996). Marginalists' attention was focused on understanding the cause of human economic decisions. Their work was the first serious attempt to introduce psychology to the field of Economics. As the subject of consideration, they chose the relationship between the consumer and the product/service not in the process of production, but in the process of consumption. The first attempts to describe and explain the consumer's behavior and choice belong to them. Marginalists paid special attention to behavioral motivations that they associated with the maximization of utility. Axioms were added to this premise, which became known under the names of Gossen's first and second laws.

Schumpeter was one of the first to draw attention to the variability of the man himself as a subject

of economic relations: their variability, and ability to learn indicates that when making frequently repeated decisions, an individual is exposed to beneficial effects according to positive or negative experiences (Schumpeter, 2021).

Mises (2002) acknowledges that demand for goods and services is strongly influenced by metaphysical, religious, and ethical considerations, subjective aesthetic assessments, customs, habits, biases, traditions, changing fashion, and a host of other things.

In marketing, the generally recognized model of consumer behavior is the model proposed by Kotler. In his opinion, the starting point for understanding customer behavior can serve as a model of marketing incentives and customer response. This model shows that marketing incentives and other stimuli enter the "black box" of the consumer's consciousness and cause certain reflections (Kotler et al., 2016).

A rational model of consumer behavior was proposed by R. Thaler using a hybrid of cognitive psychology and microeconomics. The modeling involves imaginatively encoding combinations of gains and losses using a prospect theory value function, after which the valuation of purchases is modeled using the concept of "transaction utility" (Thaler, 1985).

A completely different concept of understanding consumer behavior is revealed in the so-called behavioral economics. Its ideological foundations were laid by Kahneman and Tversky (1979) in the work "Prospect Theory: An Analysis of Decision under Risk". The authors of this paper, in a series of experiments, demonstrated that real people are by no means inclined to perform actions in accordance with the requirements of neoclassical economics and often show a tendency to completely irrational behavior. The main idea that proponents of behavioral economics hold is that people's behavior is irrational. In particular, they found that irrational behavior is by no means chaotic. Many people commit irrational actions, but the most important thing is that this irrationality is not accidental or meaningless - on the contrary, it is quite systematic and predictable. This concept, by the way, is the most acceptable for studying consumer behavior

during crisis periods, which include, among other things, epidemiological threats, political crises and military conflicts.

The study of patterns of consumer behavior through the prism of Consumer Neuroscience is the key thesis of the research of Braeutigam, Hubert and Kenning (Braeutigam & Kenning, 2022; Hubert & Kenning, 2008), in turn, the perception of changes in the pricing policy for individual goods or services from a neuroscientific point of view was studied by B. Weber & N. Gier (2016).

Analytical reviews of scientific literature on the topic of consumer behavior conducted by the authors showed that in recent years the focus of research has been within the framework of research on environmentally friendly behavior and the dependence of consumer behavior on the factor of COVID-19. Interesting are the studies by Mishra (2020) "A review on changed consumer behavior during COVID-19 crisis" and Cruz-Cárdenas et al. (2021) "COVID-19, consumer behavior, technology, and society: A literature review and bibliometric analysis", where an analysis of the change in consumer behavior in the conditions of the epidemiological challenge of COVID-19 was carried out.

The research by Chen and Peng (2023) "Antecedents to Consumers' Green Hotel Stay Purchase Behavior during the COVID-19 Pandemic: The influence of green consumption value, emotional ambivalence, and consumers' perceptions" is of great interest in this aspect. In this study, the authors proved that consumers' perception of health risk can cause them to have conflicting emotions when booking hotels, while environmentally conscious consumers will change their purchasing behavior when they are emotionally ambivalent. In addition, the authors emphasize that consumers who are value-for-money sensitive will change their purchase behavior when they are emotionally ambivalent.

In researches designed to study and argue for psychological factors that influence travelers' intention to travel and willingness to pay for safe travel, leveraged the stimulus-organism-behaviour-consequence (SOBC) model (Sreen et al., 2023). The findings of the study revealed that perception

of safe travel positively associates with intention to travel and willingness to pay premiums for safe travel. Finally, intention to travel has no effect on willingness to pay premiums for safe travel. These findings provide valuable theoretical and managerial implications for further researches of consumer behavior in travel market.

Other studies investigate health-information seeking influences on tourists' travel intentions during and after the COVID-19 pandemic (Alhemimah, 2023). Some of the studies on the reasons for the change in human psychology regarding tourism during the COVID-19 pandemic have shown that tourists felt severely disturbed by the pandemic both psychologically and behaviorally when it came to their emotions, thinking process, and immediate behavioral responses. Due to the substantive and continual effect that COVID-19 generated, such as financial hardship, creating prolonged anxiety in people (triggered by feelings of being unsafe and always being on high alert and in a flight or fight response), the threat of sickness (and fear of this leading to death), mental trauma (and panic), unreliability (of the whole situation and others behavior around them), non-transparency, untrustworthy, protectionism, avoidance, etc., has all compounded to lead even the most experienced tourists to potentially have a negative attitude towards tourism (Shareef et al., 2023).

The peculiarities of changes in consumer behavior in the face of the coronavirus epidemic as a global crisis of modernity are considered in the aspect of developing new strategies of enterprises, which were based on social benefits for the consumer with the aim of further forming customer loyalty (Mendez-Wong et al., 2020).

The study of environmentally friendly behavior has also been devoted to scientific developments in recent years, the confirmation of why, in particular, is the paper of Park et al. (2022) "Volunteer tourists' environmentally friendly behavior and support for sustainable tourism development using Value-Belief-Norm theory: Moderating role of altruism".

Directly, the issues of consumer behavior in the context of the deployment of military conflicts are studied in the scientific work of Clerides et al. (2015) "National Sentiment and Consumer

Choice: the Iraq War and Sales of US Products in Arab Countries", where the authors examined the impact of rising anti-American sentiment against the background of the Iraq war on sales of American goods abroad, namely in nine Arab countries, and concluded that international politics can significantly influence consumer behavior and market results. In addition, the classic study of the impact of war on changing consumer buying habits is a series of works by Atkinson (1946) under the title "Wartime Changes in Consumer Buying Habits", which focuses on consumer behavior during the war and post-war period of World War II.

Based on the above review of literature sources, we note that despite the general popularity of the issue of consumer behavior and the presence of a certain number of scientific developments regarding changes in consumer behavior during crises of various types, today the topic of consumer sustainability and changes in their behavior remains undisclosed and the topic of the tourist services market in the context of the Russian military invasion and subsequent socio-economic collapse in Ukraine requires detailed analysis. The lack of established scientific research in recent years on the issue of the tourist behavior in the conditions of military intervention is due to the fact that the scale of the Russian-Ukrainian war reaches the level of the II World War, and therefore, similar military conflicts have not existed on the European continent for more than 70 years. Accordingly, in our research, the authors were based mainly on classical theories of consumer behavior, taking into account own empirical studies of consumers of tourist services, because the consumer behavior during the COVID-19 crisis, which has been the focus of many studies conducted in recent years, is significantly different from the consumer behavior in the conditions of a military invasion.

Based on the fact that a series of dynamics will be analysed, it should be noted that the classical time series component model and the moving average and seasonally adjusted time series were investigated by Cheng Fe Li (2020).

Autoregressive Integrated Moving Average also has been used as forecasting model for the

mortality rates of COVID-19. Deif et al. (2021) concluded that combining ARIMA with GA is further accurate than ARIMA alone and GA can be an alternative to find the parameters and model orders for the ARIMA model.

A detailed retrospective analysis of the application of statistical models for forecasting economic processes in the context of contrasting high-frequency models against a consensus forecast was carried out by Inada (2010) on the example of Japanese economy.

In the context of demand forecasting, stochastic modelling methods were applied to create synthetic energy demand profiles. Patidar et al. (2016) investigated the interoperable structure of stochastic modelling of the ARIMA model with decadal time series.

This makes it possible to claim that demand forecasting can be done with time-series component models. Taking into account the previously proven statement that forecasting of consumer demand can be carried out on the basis of their search queries (Kostynets et al., 2020), the application of forecasting models to time series of the frequency of consumer search queries can help predict consumer preferences and establish the degree of stability of consumer habits.

3. Research Methodology

In accordance with the goal, the main objectives of the study were to analyze the current state and prospects for the development of the global market of tourist services in the context of the Russian invasion of the territory of Ukraine, as well as to establish opportunities and determine the specifics of outbound tourism of Ukrainian consumers in the context of military conflict and existing restrictions in the provision and consumption of tourist services.

The key scientific and applied results of the study are obtained as a result of using a systematic approach to the study of consumer behavior in the formation of demand, taking into account the interrelationships and interdependence.

Professionals in the Ukrainian tourist services market were involved in the study. The study was conducted by the authors of this article. The analyzed data period is March-October 2022. The study was con-

ducted by interviewing representatives of the tourism business on the Facebook social network in a specific group of professionals in the tourist market of Ukraine ("tourist assistant" community). The total number of community members is 13,352, of which 30% are foreign partners and DMC tour operators. Previous research has shown that about 52% of travel agencies and tour operators have suspended their activities since the start of the large-scale Russian invasion, so they did not participate in the survey. At the same time, about 3,000 people have been active users of the community since the beginning of the large-scale Russian invasion. An active part of the community represented by travel agencies and tour operators of Ukraine from different regions was invited to participate in the survey by random sampling, according to the results of which 297 managers of travel agencies and tour operators of Ukraine took part in the survey. Thus, the general set of the study consists of managers of travel agencies and travel operators, the number of which, according to the State Statistics Service of Ukraine in 2021, was 5633 persons. The average representativeness error as a generalizing characteristic of the sampling error is calculated using V. I. Paniotto Formula (Paniotto, 1984) (1):

$$\Delta = \left(\sqrt{\frac{1}{n} - \frac{1}{N}} \right) \cdot 100\% \quad (1)$$

where Δ is the sampling error, n is the sample size, and N is the general size of the whole.

The average representativeness error of a random non-repeated sample of travel agents who took part in the survey is 5.65%.

The survey participants were asked a semi-closed question "which tourist destinations have become the most popular among bookings of Ukrainian tourists in the summer season of 2022?". Survey participants had the opportunity to add their own version and leave an additional comments on changes in consumer preferences of their customers in the context of the Russian invasion of Ukraine.

In order to compare consumer habits in the conditions of military conflicts, a comparison of consumers of tourist services in two countries: Israel and Ukraine was carried out. For the purposes of the study, consumers are conventionally divided into groups that

were studied separately: Israeli tourists, Ukrainian tourists permanently living in Ukraine, and Ukrainian tourists living on the territory of the EU, particularly in the Republic of Poland, since the beginning of the full-scale Russian invasion. The results of the study of Israeli consumers were taken from the Outbound tourism review (KOG Institute, 2022), the study of Ukrainian consumers was carried out through an anonymous online survey using Google Form without collecting e-mail addresses.

Consumer research from Israel covered 808 respondents, fieldwork dates: 2021.12.03-12.08, Target group: 25+ y. o. Israelis who travel abroad at least once a year (excluding the Covid period).

The survey of Ukrainian consumers included 640 respondents in Ukraine and 100 respondents from among persons under temporary protection in Poland, fieldwork dates: 2022.10.12-11.20. Target group: 20+ y.o. Ukrainians who travel abroad at least once a year (excluding the Covid period).

Dialectical and system approaches were used to conduct a detailed study using methods of structural, functional, and system analysis, scientific abstraction, as well as classical methods for predicting time series.

A time series is a sequence of values of a certain statistical indicator, arranged in chronological order. In this study, as the main statistical indicator that characterizes the preferences of consumers in the market of tourist services, the indicator of the frequency of queries for relevant tourist products in Google search, determined using the Google Trends service, was chosen. To characterize the stability of consumer behavior, requests for tourist products that were characterized by high frequency before the beginning of the Russian invasion of Ukraine and requests for tourist products that became popular among tourists from Ukraine after February 24, 2022, were selected as search queries.

To characterize consumer resilience time series analysis models have been applied to Ukrainian consumers in the tourist services market, which allowed them to identify the trend based on previous observations and make forecasts based on the results of the analysis to predict future values based on previous observations.

Based on the results of checking the time series of changes in the frequency of search for tourist products for stationarity, it was determined that the time series

of consumer requests in the tourist services market are characterized by non-stationarity and may or may not have a seasonal component.

Accordingly, in the case of studying consumer expectations based on the frequency of search queries in Google, it is advisable to use models for analyzing non-stationary time series, namely the autoregression integrated moving average model $ARIMA(p, d, q)$ or, if the time series contains a seasonal component, a seasonal integrated autoregression model-a moving average $SARIMA(p, d, q)(Ps, Ds, Qs)$. In the present case, d - this is the order of the time series difference, Ds - the order of difference in the seasonal component, Ps - the parameter of the autoregressive seasonal component, Qs - the parameter of the seasonal component of the moving average, s - the amount of seasonality.

Models $SARIMA(p, d, q)(Ps, Ds, Qs)$ are used to model seasonal time series in which the average value and other statistics for a particular season are not stationary for many years. Defined model $SARIMA(p, d, q)(Ps, Ds, Qs)$ is a direct extension of autoregression-moving average models $ARMA(p, q)$ and integrated autoregression-moving average models $ARIMA(p, d, q)$.

$$\Delta_s^D \Delta^d Y_t = c + \sum_{i=1}^p a_i \Delta_s^D \Delta^d Y_{t-1} + \sum_{j=1}^q b_j \varepsilon_{t-1} + \varepsilon \quad (2)$$

Where c - is a constant. εt - white noise, a_1, \dots, a_p - real numbers, autoregression coefficients, b_1, \dots, b_q - real numbers, moving average coefficients, δ^d - time series difference operator of the order d , Δ_s^d - operator of time series difference by the seasonality of order D .

The residuals of this time series can be calculated using the formula (3)

$$\varepsilon_i = y_i - \varphi_0 - \Phi_1 y_{i-4} + \varphi_1 \Phi_1 y_{i-5} - \theta_1 \varepsilon_{i-1} - \Theta_1 \varepsilon_{i-4} - \theta_1 \Theta_1 \varepsilon_{i-5} \quad (3)$$

To calculate ε_i we need to know the values of ε_{i-1} , ε_{i-4} , ε_{i-5} . Thus we arbitrarily set the values of the first five residuals equal to zero and use the above formula to calculate ε_6 .

Such models (integrated autoregression and moving average models) are quite flexible and can describe many characteristics of time series. In the autoregression model, each value of a series is linearly dependent

on previous values. The moving average model assumes that the model errors in previous periods contain information about the entire background of the series.

The advanced MS Office Excel suite with NumXL add-in was used for building models and forecasting.

4. Theoretical and Empirical Results

The war unleashed by the Russian Federation against Ukraine, global sanctions against Russia, high inflation, and the loss of Ukrainian and Russian tourists makes it argued that the return of European tourism to the level before the COVID pandemic will take place no earlier than 2025. The war in Ukraine has a significant impact on the European tourism industry in the following areas: a significant reduction in Russian and Ukrainian arrivals; restrictions on Russian airlines and the use of airspace for them; rising fuel costs and the economic crisis and inflation in Europe, which affected the behavior of European consumers of tourist services. At the same time, Russian tourists are not only undesirable in many tourist countries, but transportation logistics are also significantly complicated for them, given the bans on Russian airlines and restrictions on the use of airspace. In turn, millions of Ukrainians were forced to travel abroad due to the invasion, but rather as refugees, not tourists. Across Europe, the war is causing inflation and a corresponding increase in prices for food and basic necessities, as well as energy resources, increasing costs for debt airlines, hotels, and restaurants. High prices also reduce disposable income, making recreation less affordable for the average consumer.

4.1. Impact of the Russian Invasion of Ukraine and Anti-Russian Sanctions on Global Tourist Flows

A significant share of the loss of Ukrainian and Russian tourists is already significantly affecting the global tourism industry. Before the pandemic interrupted global tourism flows, Russia was the world's 11th largest supplier of tourists, while Ukraine ranked 13th. In 2019, Ukraine and Russia accounted for a total of 75 million tourists, or 5% of the total number of tourists in the world. In 2019, the total spending of Ukrainians and Russians on tour-

ism amounted to 50 billion US dollars (about 8% of the total global volume) (Economist Intelligence Unit, 2022). Due to the sanctions imposed on Russia and significant restrictions on travel caused by the war for Ukrainians, the loss of tourist expenses is currently most acutely felt in destinations that attract the wealthiest Russian and Ukrainian visitors, who usually spend significant funds on hotels, restaurants, and luxury retail products. These include cities such as Milan, Monaco, London, and Paris, as well as the popular resort towns of Karlovy Vary in the Czech Republic and Baden-Baden in Germany. At the same time, after the situation stabilizes, World Tourism expects a real boom and a return to the usual level of profitability due to continued pent-up demand.

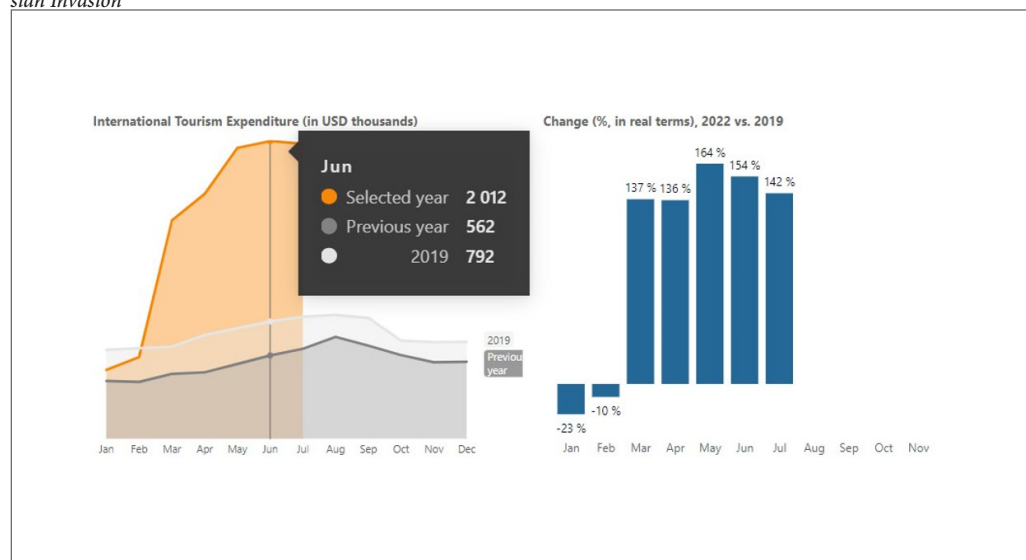
In general, the conducted research shows that the vast majority of Ukrainian consumers of tourist services continue to remain optimistic. It is worth noting that despite the military conditions, Ukrainian consumers spent money on travel – since the beginning of the year, changes amount to 107% (+7% growth). The increase in travel expenses of Ukrainians in 2022 compared to the same period of previous years is primarily due to a sharp increase in transportation prices and hotel rates, the longer duration of trips that was observed this summer season, as well as a purely subjective logistical factor - additional transportation costs on the territory of Ukraine and Europe in order to get to the departure airport for travel, if we are talking about air travel. This situation is clearly demonstrated in Figure 1.

4.2. An Alternative Experience of the Impact of Military Aggression on Changes in Tourist Flows

In terms of the scale of destruction and considerable economic consequences, it is quite difficult to compare the Russian invasion of Ukraine with other similar military aggressions, because the closest in terms of character, ruthlessness, purpose, strategy and tactics of conduct is the Second World War. Despite this, in more than 80 years since the beginning of the Second World War, consumer behavior has undergone significant changes, which is why comparing such data with consumer resilience in the 21st century will not be relevant. From this

Figure 1

International Tourism Expenses in Thousands of USD and Their Change (2022 vs 2019), % in Ukraine after the Russian Invasion



Source: UNWTO

point of view, the impact of military aggression on changes in tourist flows is expedient to cite the permanent Palestinian-Israeli military conflict as an alternative experience. The choice of Israel as a comparative experience is also connected with the high level of digitalization of consumers in the market of tourist services, which is typical for Ukraine as well.

Yes, Israel is an economically developed digital state, which throughout its history has been in a state of international conflict many times (since 1967 with Egypt and Syria, and since 1988 with partially recognized Palestine). In the 21st century, international tourist flows have relatively stabilized and most tourists come to Israel from the USA, the Russian Federation and France. However, due to the state of emergency, Israel is to some extent a dangerous area for tourists, primarily, that part of it that is near the Gaza Strip, where shelling and terrorist attacks are constantly taking place. At the time of the introduction of a special state in Israel, there is a decrease in tourist flows. According to the conducted studies, in 2000, tourists attracted to the Holy Land for the 2000th anniversary of Christmas spent 3.5 billion dollars in Israel, but the second intifada began in the fall, and Israel lost its attrac-

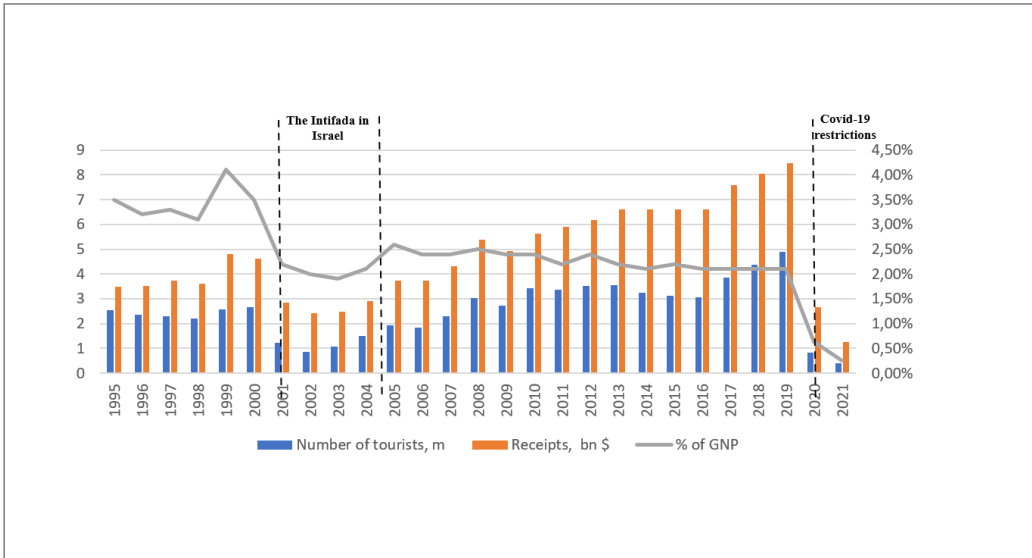
tiveness for tourists for years. The central bank estimated losses from the Palestinian uprising at nearly 4% of GDP per year. And for all four years and four months of the intifada, the Israeli economy created national wealth by 20 billion dollars less than it would have been able to do in peacetime (Fig. 2).

Thus, the escalation of the conflict deprived investors of optimism, undermined the state of tourism at that time and reduced consumption, as densely populated areas were hit, resulting in a reduction in the resilience of Israeli consumers and the economy as a whole. Despite this, it is worth noting that in recent years, about 6% of the workforce in Israel's tourism sector has been employed, and the number of international tourists is growing. Thus, despite the presence of a protracted military conflict, Israel's travel and tourism market revenue is projected to reach \$3,487.00 million in 2023.

The annual revenue growth rate (CAGR 2023-2027) is expected to be 6.33%, resulting in a forecasted market size of USD 4,458.00 million by 2027. The largest market segment today is hotels with a projected market volume of USD 1,836.00 million in 2023. It is expected that by 2027, the number of guests in hotels will be 5,244,000 visitors. Av-

Figure 2

International Tourism Arrivals, Receipts in Billions USD, the Share of Tourist Sector in GDP, % in Israel in Dynamics from 1995 till 2021 Including the Intifada Period and COVID-19 Pandemic Period



Source: World Bank (2023)

erage revenue per tourist (ARPU) is expected to be \$567.40. In Israel's travel and tourism market, 85% of total revenue will come from online sales by 2027, and for a global comparison, the majority of revenue will be generated in the United States of America (\$190.40 billion in 2023) (Statista, 2022).

The results of the study demonstrate that the traveling habits of Israeli consumers are characterized by a certain stability, as evidenced by the results of independent studies (KOG Institute, 2022). Table 1 shows the main results of a comparison of the consumer habits of Israeli tourists, Ukrainian tourists permanently living in Ukraine, and Ukrainian tourists living in the EU, particularly in the Republic of Poland, since the beginning of the full-scale Russian invasion. Habits for Ukrainian travelers before and after a full-scale Russian invasion in February 2022 are also highlighted.

4.3. Changes in consumer preferences in the travel services market

Conducted research of consumers in the travel market showed that as a result of the full-scale invasion, the behavior of consumers has changed in terms of reducing the number of trips in the travel

market as a whole. Thus, the survey conducted among Ukrainian consumers in Ukraine after the Russian invasion, first of all, included the search question "Have there been changes in the number of your trips for the purpose of tourism?" and testified that 42.2% of respondents stopped traveling altogether, 37.5% began to travel less, 10.9% did not travel at all, neither now nor before the full-scale invasion. The share of consumers who have started to travel more or their behavior has not changed is quite insignificant (fig. 3).

In fact, the demand within the market was also restructured. But the resilience of the consumer habit of traveling is evidenced by the results of the survey, which actually characterize the share of pent-up demand, which is 80.4% (fig.4).

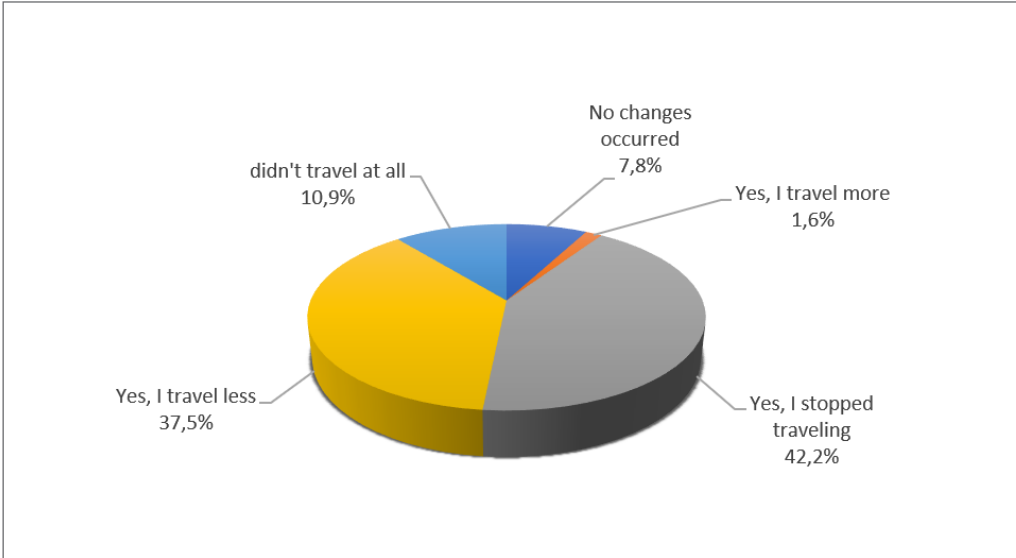
The main motives behind the formation of pent-up demand in Ukrainian travel market were traced in the respondents' answers to the search question "If you stopped traveling or travel less/more, please indicate why?". The key motives were the lack of an emotional desire to travel on vacation during the war and the psychological aversion to travel at that time, a significant increase in the price of tourist services and at the same time a decrease in the

Table 1

Comparison of Consumption Habits of Israeli Tourists, Ukrainian Tourists Permanently Living in Ukraine and Ukrainian Tourists Living in the EU Since the Beginning of the Full-Scale Russian Invasion

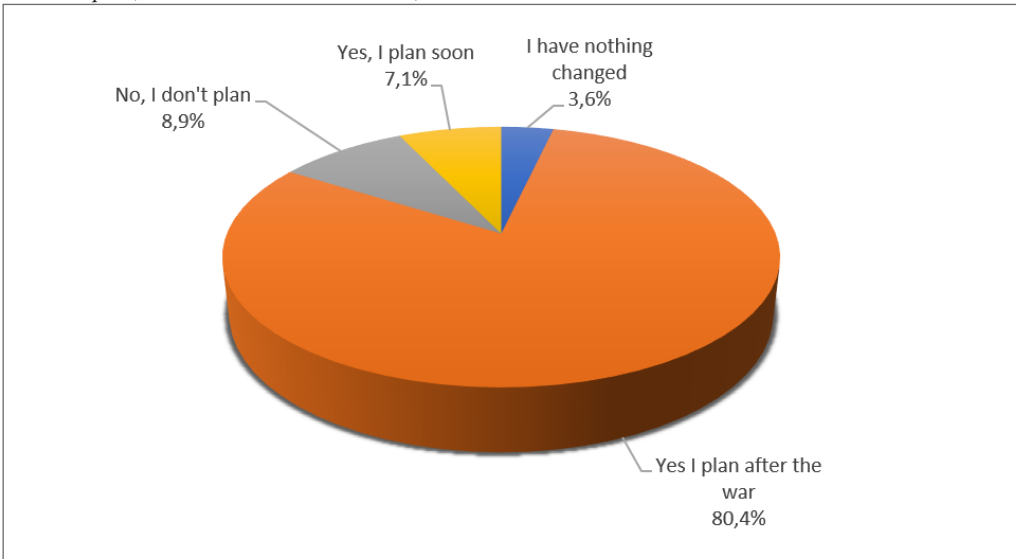
Criterion of comparison	Israeli consumers	Ukrainian consumers before a full-scale Russian invasion	Ukrainian consumers in Ukraine after the Russian invasion	Ukrainian consumers in the EU after the Russian invasion
Frequency of travel	60% travel once a year; 35% several times a year	78% travel once a year; 22% several times a year	28% travel once a year; 13% several times a year;	55% travel once a year; 25% several times a year;
Organization of travel	29% of Israeli travelers use travel agencies; 5% of respondents travel only with the help of travel agencies; 25% of Israelis do both: organize travel on their own and use services of travel agencies; 71% of people organize travel on their own.	35.6% of Ukrainian tourists organize their trip independently; 64.4% of Ukrainian tourists travel only with the help of travel agencies; 27.1% of respondents applied constantly to travel agents; 37.3% of respondents applied sometimes to travel agents	59% stopped traveling 58.6% stopped traveling; 24.1% of respondents organize travel on their own; 12.1% applied to the services of a travel agent	20% stopped traveling 20% stopped traveling; 50% continue to contact with travel agents for travel arrangements; 30% organize travel on their own
Search for information about tourist products	Information is most often obtained using search engines (such as Google (main source for 34% respondents), websites with travel reviews such as TripAdvisor (main source for 7%, one of the sources for 52% respondents), online booking platforms (like Booking.com) one of the sources for 43%, and from friends and family recommendations.	Information is most often obtained using search engines (such as Google) 78% respondents, websites with travel reviews such as TripAdvisor 35% respondents, online booking platforms, from friends recommendations and from travel agents recommendations (64.4% respondents)	Information is most often obtained using search engines (such as Google) 24.1% respondents, websites with travel reviews, online booking platforms, and from friends and travel agents recommendations (12.1 % respondents)	Information is most often obtained using search engines (such as Google) for 58% respondents, websites with travel reviews, online booking platforms are used by 45% respondents, and from friends and travel agents recommendations (50% respondents).

Figure 3
 Distribution of Consumer Answers to Question "Have There Been Changes in the Number of Your Trips for the Purpose of Tourism?" (Related to Consumers in Ukraine)



Source: Ukrainian consumers in Ukraine survey's data.

Figure 4
 Distribution of Consumer Answers to Question "Do you Plan to Return to the Pre-War Quantity and Quality of Tourist Trips?" (Related to Consumers in Ukraine)



Source: Ukrainian consumers in Ukraine survey's data.

real income of consumers due to inflation, job loss and other factors, the complexity of logistics due to the closed airspace over Ukraine, as well as a ban on men traveling abroad.

At the same time, among Ukrainian tourists living in the EU, particularly in the Republic of Poland, the share of those who completely stopped traveling during the war is much smaller and amounts to 20%, the other 20% began to travel more, 40% of respondents began to travel less, and for others - there were no changes. The indicated differences can be explained by the lower emotional exhaustion of Ukrainian tourists living in the EU, the presence of confidence in their safety, simple logistics for traveling in the middle of EU countries, etc. (fig. 5). The main reasons for the lack of travel are the deterioration of the financial situation, as well as difficulties in understanding European, in particular, Polish legislation regarding the possibility of traveling with the status of a person under temporary protection in an EU country.

Confirmation of consumer resilience in war conditions is the readiness of Ukrainian consumers to restore the amount and quality of tourist trips in the near

future (20% of respondents) and immediately after the end of the war (40%), which indicates the prospects of realizing the pent-up demand after the war (fig. 6).

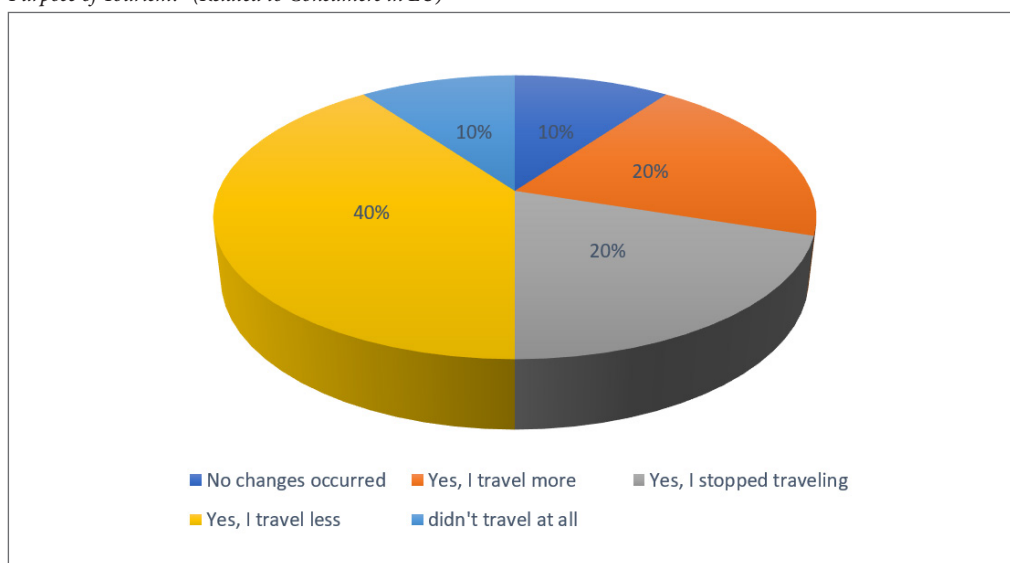
The existence and structure of realized consumer demand in the market of tourist services in Ukraine also are evidenced by the results of a survey of managers of travel agencies and travel operators in Ukraine. The survey showed that the popularity of individual booked travel products, that is, realized demand, differs in a certain way from the popularity of consumer search queries, that is, potential demand. This indicates a reorientation of consumer demand as a result of consultations with tourism business professionals – representatives of travel agencies who have the best knowledge of all market information. The survey data shows that the top three most popular destinations for booking, which accounted for the realized demand of Ukrainian consumers in the summer season of 2022, are as follows:

1. air tours to Turkey from Moldova;
2. bus tours to Bulgaria from Ukrainian cities;
3. bus tours to Montenegro from Ukrainian cities.

The results obtained are shown in Figure 7.

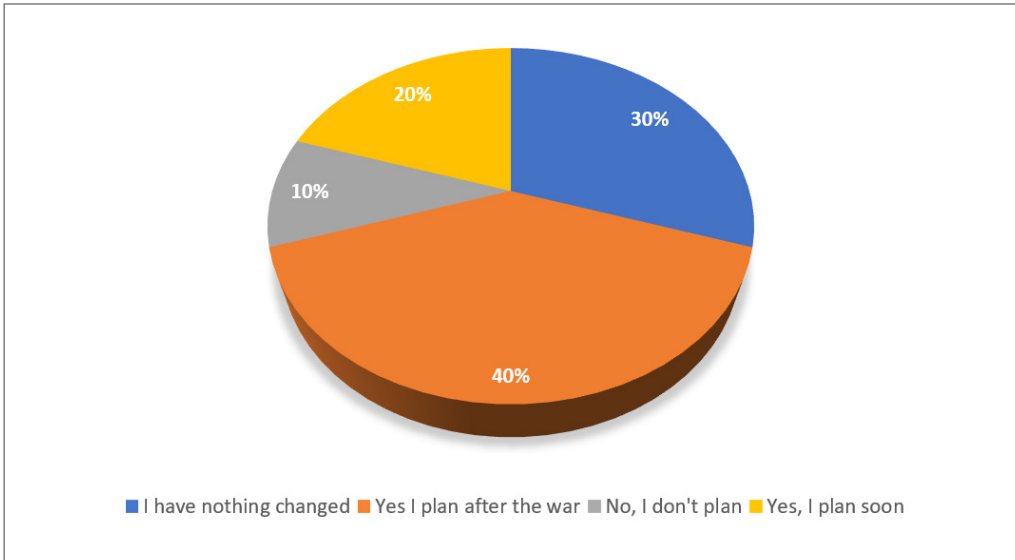
Figure 5

Distribution of Consumer Answers to Question "Have There Been Changes in the Number of Your Trips for the Purpose of Tourism?" (Related to Consumers in EU)



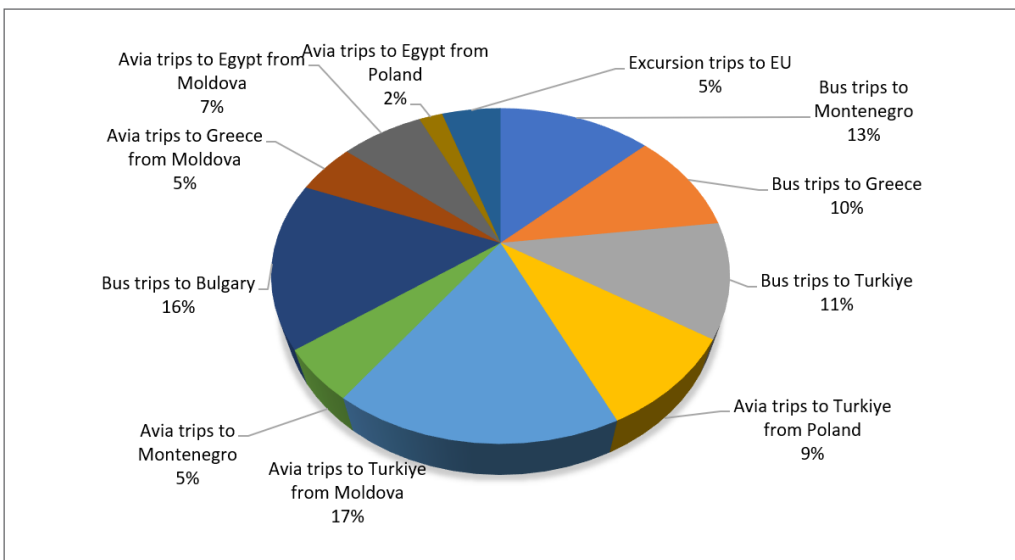
Source: Ukrainian consumers in EU (Poland) survey's data.

Figure 6
 Distribution of Consumer Answers to Question "Do you Plan to Return to the Pre-War Quantity and Quality of Tourist Trips?" (Related to Consumers in EU)



Source: Ukrainian consumers in EU (Poland) survey's data.

Figure 7
 Structure of Realized Demand of Ukrainian Consumers During the Period of Martial Law in Ukraine from February to December 2022 According to the Results of a Survey of Travel Agents and Operators in Ukraine



Source: created by authors according to survey's results

In turn, changes in consumer preferences in the travel services market were investigated on the search query "tours from Kyiv" in the Google search region "Ukraine" for a period of 5 years with a weekly time lag, so the number of observations is 260 weeks (fig. 8).

The expediency of using this Google tool is also related to the fact that, according to the results of a consumer survey, the vast majority plan a trip, looking for information specifically through search engines.

Visual analysis of the graph of the frequency of consumer requests for tourist services shown in Fig. 8, indicates the presence of a downtrend. The highest level of requests, indicating the highest interest of consumers in tourist services "tours from Kyiv", falls on the 87th week of observations (the last week of July 2019), and the lowest level of interest of consumers in tourist services for the first time is observed in the 123rd week (the last week of March 2020, which is associated with the closure of air traffic and the actual suspension of tourist activities due to the spread of COVID-19), and then – from 223 to 226 weeks of observations (March

2022). Such a sharp drop in consumer interest in tourist services is directly related to the Russian invasion of Ukraine on February 24, 2022.

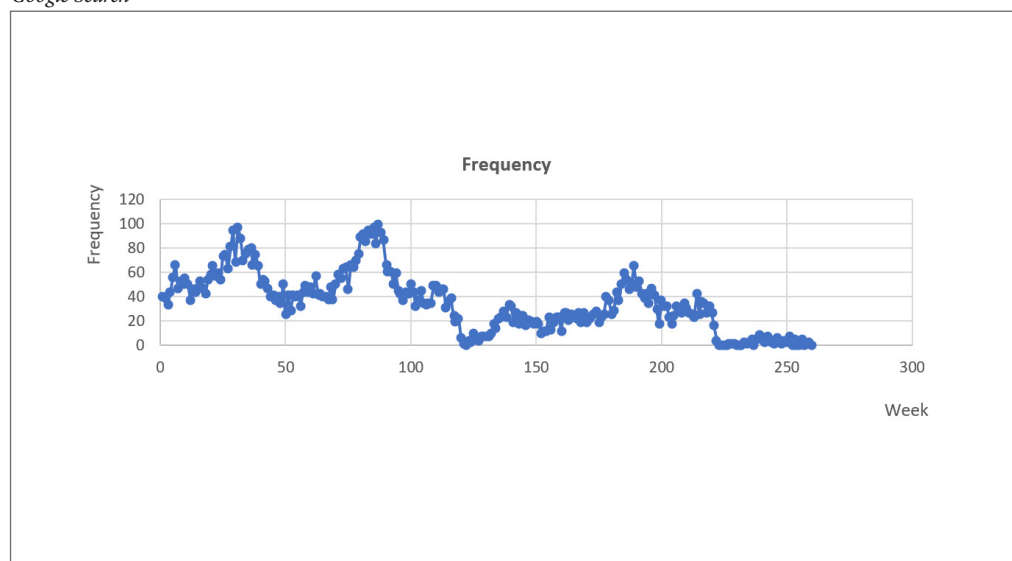
The Google Trends methodology assumes that the value of 100 is the maximum for the query frequency indicator. Accordingly, the dynamics of the frequency of requests indicate that during the Russian-Ukrainian war, the frequency of consumer requests for tourist services is less than 10% of the maximum, which allows us to conclude that the demand that can be realized in the tourist market of Ukraine is less than 10% of the demand in 2019.

Let's continue the analysis and calculate the chain indicators of the dynamics of the time series – growth, rate of increase, and rate of growth. Such calculations will allow you to compare the frequency values of consumer requests for different periods. A graphical interpretation of these indicators is shown in Figures 9 and 10 below.

Note that the calculated chain indicators repeat the dynamics of the variable. The most stable and

Figure 8

*Frequency Dynamics of Consumer Requests "Tours from Kyiv" in the Period December 2017 - December 2022 in Google Search**



Note: *Note: the frequency of 100 according to the Google Trends method is given to the largest number of search queries for the period under study.

Figure 9

Frequency Dynamics Increment of Consumer Requests "Tours from Kyiv" in the Period December 2017 - December 2022 in Google Search

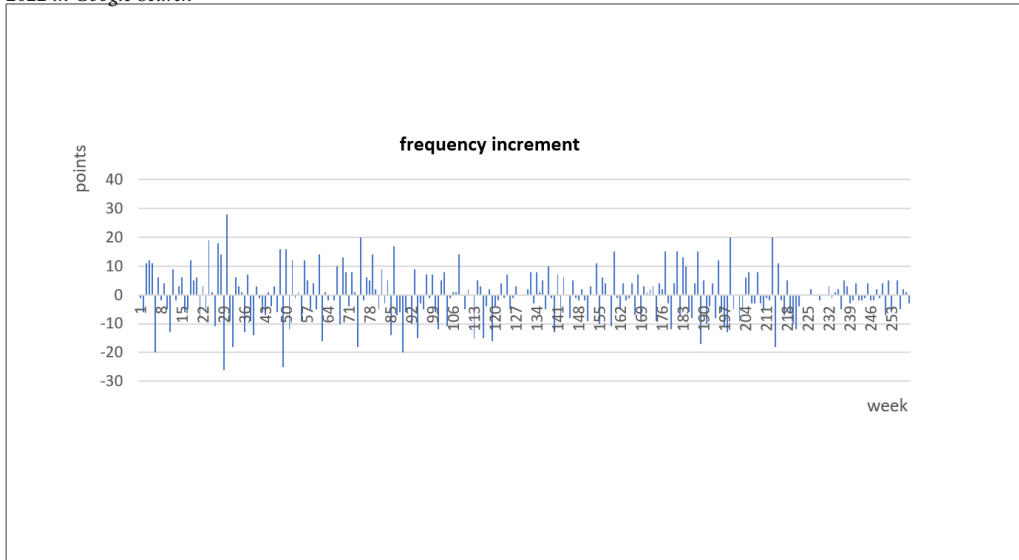
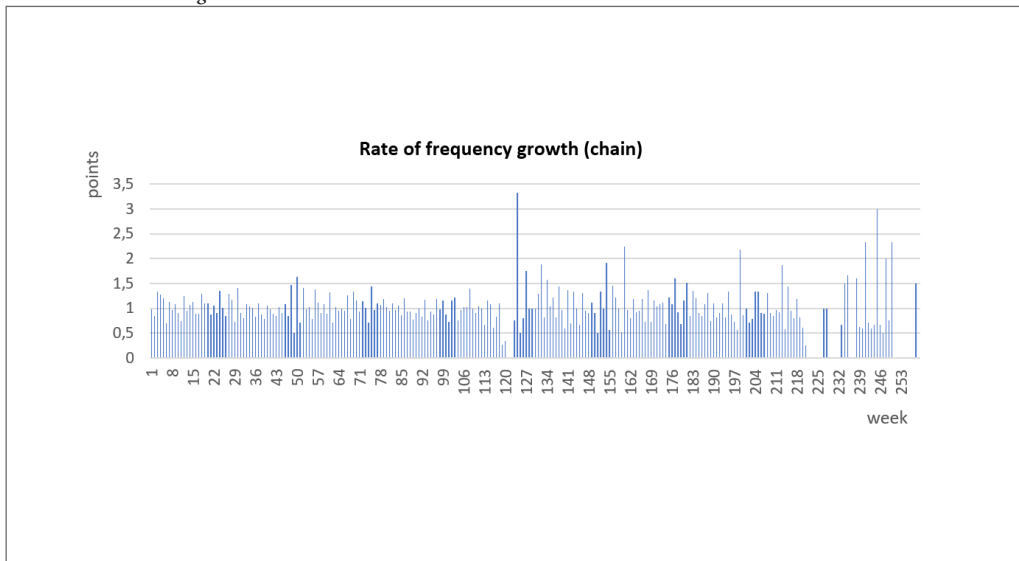


Figure 10

Dynamics Rate of Frequency Growth of Consumer Requests "Tours from Kyiv" in the Period December 2017 – December 2022 in Google Search



therefore useful indicator for analysis is the "chain rate of growth", although it also shows "high" and "low".

In fact, consumer interest in buying tourist services in the period from December 2017 to December 2019 has a pronounced rhythmic character with a peak frequency in the summer periods. Since March 2020, that is, since the beginning of the global lockdown due to the COVID-19 pandemic, consumer interest in buying tourist products and services has been irregular, but the gradual return of consumer interest in buying tourist services occurs from May to June 2020, when the ability to travel partially returned, although with certain restrictions.

In fact, from June 2020 to January 2022, the stability of consumer behavior of Ukrainian consumers in the market of tourist services returns: the dynamics of the chain growth rate of the frequency of consumer requests for tourist services are restored, the relative fluctuations in the frequency of requests for periods before and after COVID-19 coincide.

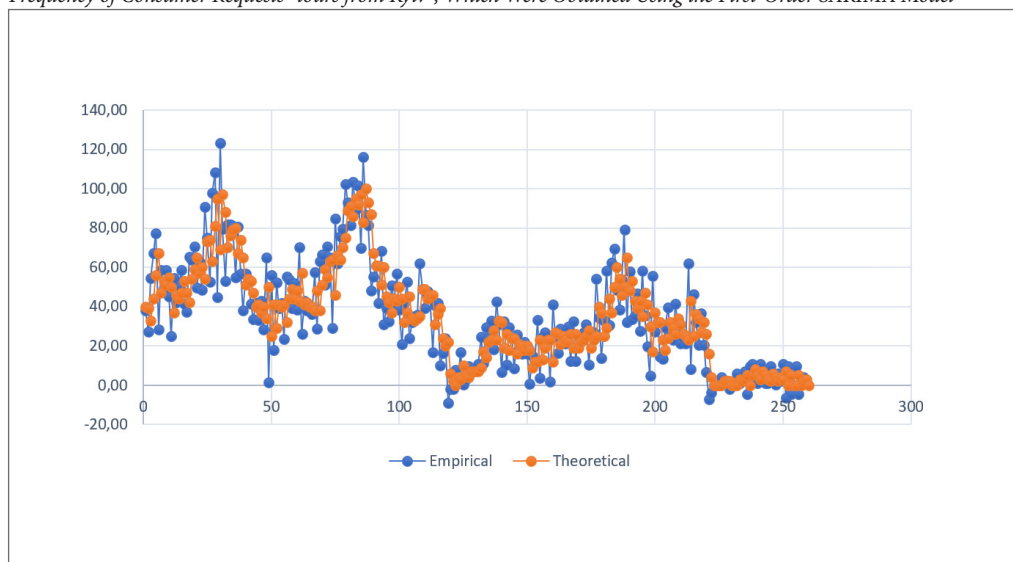
The end of February – beginning of March 2022 (Russia's invasion of Ukraine) is a turning point in

the renewed dynamics of consumer interests in relation to tourist products and services. During this period, the Ukrainian consumer is not interested in tourist products and services at all, but since the end of May 2022 (i.e., since the 235th week of observations), the dynamics of the relative indicator "the growth rate of request frequency" has been restored and preserved with fluctuations.

Since there is a downtrend and seasonality in the analyzed data, it is advisable to use the seasonal ARIMA model (SARIMA) before a retrospective analysis of observations of consumer requests of the Ukrainian consumer in the tourist services market. The calculation of the main parameters of the model allowed us to determine that fluctuations in the dynamic series of frequency of consumer requests for "tours from Kyiv" in the tourist market of Ukraine for the period from December 2017 to December 2022 occur in accordance with the patterns described by the model $SARIMA(0, 1, 1) (0, 1, 1)$, where the seasonality value is 12. Visual analysis of the comparison of actual data obtained empirically using the Google Trends service and theoretical values of the frequency of consumer requests "tours

Figure 11

Comparison of Actual Data Obtained Empirically Using the Google Trends Service and Theoretical Values of the Frequency of Consumer Requests "tours from Kyiv", Which Were Obtained Using the First-Order SARIMA Model



from Kyiv" obtained using the SARIMA model shows that the model generally accurately describes the pattern in the dynamic series of frequency of consumer requests (fig. 11).

Residuals (standardized) analysis shows that the selected model is quite suitable for analyzing and predicting the time series of consumer requests (Table 2).

The SARIMA model is suitable for describing processes and phenomena, as well as for predicting when model residues are white noise. Table 2 shows that the residuals of the developed first-order SARIMA model are normally distributed (Normal = True) and are white noise (Noise = True). The series under study is characterized by autoregressive

conditional heteroskedasticity (ARCH = True). So, the developed model adequately describes such a phenomenon as consumer requests in the tourist services market.

Since the SARIMA model in this case can be used to predict further consumer interest in buying tourist products and services, a forecast was made for the request "tours from Kyiv" 12 steps ahead, which determined that the gradual recovery of consumer interest in buying tourist products and services will continue until the beginning of February 2023, and then consumer requests should increase sharply (fig. 12) According to the same time series research methodology, consumer requests for "bus tours", "tours to Bulgaria", "tours from Poland", and "tours

Figure 12

Forecast Values of the Frequency of Consumer Requests "Tours from Kyiv" 12 Steps Ahead, Obtained Using the First-Order SARIMA Model with Seasonality Parameter 12

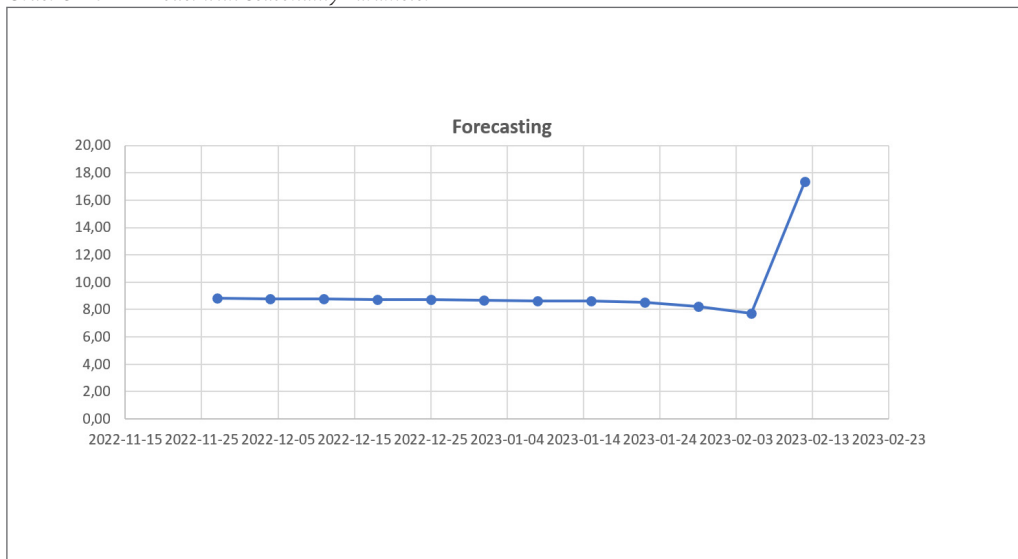


Table 2

Residuals (Standardized) Analysis of SARIMA Model for the Frequency of Customer Search Request "Trips from Kyiv"

Determinants	AVG	STDEV	Skew	Kurtosis	Noise?	Normal?	ARCH?
	-0.01	0.95	-0.20	0.26	True	True	True
Target	0.00	1.00	0.00	0.00			
SIG?	False	False	False	False			

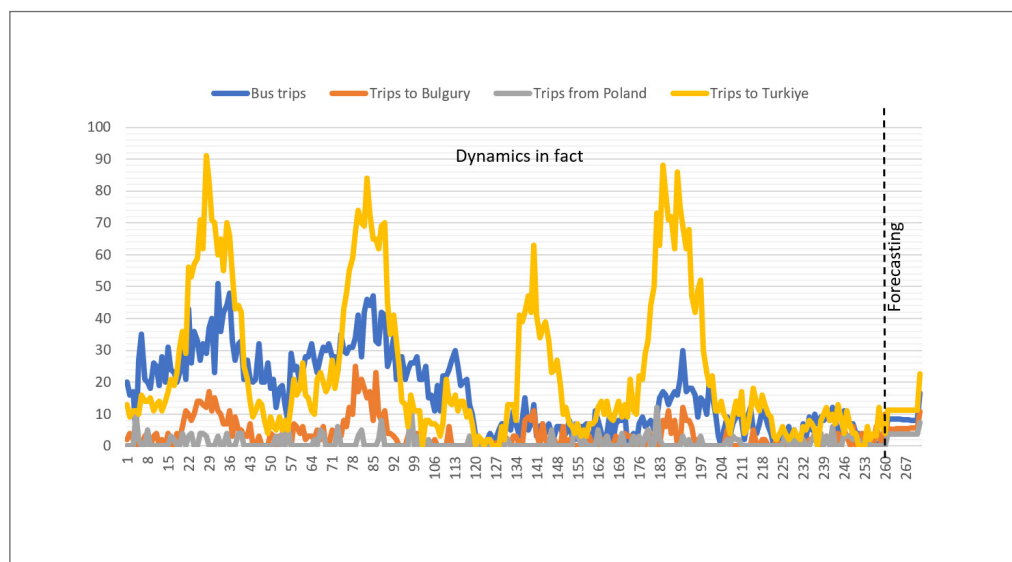
to Turkey" were studied for the same period from December 2017 to December 2022. The dynamics of the frequency of these requests are shown in Fig. 13. The results obtained in the course of the study confirmed the hypothesis of stable consumption of tourist services by Ukrainian consumers. Taking into account the existing logistics restrictions, the structure of demand for recreation destinations has changed somewhat, but outbound tourism in Ukraine remains relevant. The order of ground handling also remains relevant — Ukrainian consumers who are in Europe due to the Russian invasion of Ukraine book hotels and ground handling from Ukrainian tour operators and get to the place of the vacation on their own. From the point of view of the tourism business, these orders are only sufficient to partially cover the usual volume of travel. Despite this, in order to reach full capacity, Ukrainian tour operators continue to look for new ways of development and gradually study the European market, as well as the opportunities of other countries.

4. Conclusion and Implications

The war that is currently taking place on the territory of Ukraine has no analogs in modern European history, so it is quite difficult to draw a correct analogy and assess the possible impact on the tourism sector. However, the absolute awareness of the players in the tourist market remains that an important factor will be the ability of post-war Ukraine to implement a large-scale marketing campaign in foreign markets, which will allow switching the perception of Ukraine from the place of military operations to a safe location for travel. Future recovery programs should also cover domestic, inbound and outbound tourism. In general, even now the results of the study indicate both the existence of a realized consumer demand for tourist services under martial law in Ukraine and the formation of a pent-up demand, which can be controlled in the future by an opportunity or a certain interesting offer that concerns the tourist services market and more.

Figure 13

*Dynamics of Consumer Request Frequency (Fact and Forecast Based on the SARIMA Model)**



Note: *forecast values were obtained using the SARIMA methodology, starting from week 261.

Accordingly, the prospects for further research are related to the study of consumer resilience of the Ukrainian consumer in the markets of everyday and long-term demand goods.

In addition, consumer resilience research in the markets of goods and services is the basis for predicting consumer preferences, which can be carried out using a neural network based on open data about consumer interests. Based on the comparison of the results of the neural network with the results of the classical SARIMA forecasting model used in this study, we can choose the most effective model for predicting consumer demand.

Besides, the resilience of consumer behavior, taking into account the trends of recent years, namely the impact of the processes of digitalization and greening of consumption, is promising to be studied in future researches with the hypothesis that in the 21st century the consumer maintains "digital stability" and "green" resilience of his consumption, that is, corresponds to concepts of responsible consumption, preserving its principles.

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