"Financing of tourism and recreation in municipal programs during the pandemic period: the case of Odesa"

AUTHORS	Mykola Petrushenko (1) R Hanna Shevchenko (1) R Nina Khumarova (1) R Alina Krivenceva (1)				
ARTICLE INFO	Mykola Petrushenko, Hanna Shevchenko, Krivenceva (2022). Financing of tourism an during the pandemic period: the case of Od 11(1), 63-78. doi:10.21511/pmf.11(1).2022.	d recreation in municipal programs esa. <i>Public and Municipal Finance</i> ,			
DOI	http://dx.doi.org/10.21511/pmf.11(1).2022.0	6			
RELEASED ON	Friday, 08 July 2022				
RECEIVED ON	Wednesday, 15 December 2021				
ACCEPTED ON	Monday, 04 July 2022				
LICENSE	This work is licensed under a Creative Con License	nmons Attribution 4.0 International			
JOURNAL	"Public and Municipal Finance"				
ISSN PRINT	2222-1867				
ISSN ONLINE	2222-1875				
PUBLISHER	LLC "Consulting Publishing Company "Bus	siness Perspectives"			
FOUNDER	LLC "Consulting Publishing Company "Bus	iness Perspectives"			
S	G				
NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES			
42	1	6			

[©] The author(s) 2023. This publication is an open access article.





BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives" Hryhorii Skovoroda lane, 10, Sumy, 40022, Ukraine

www.businessperspectives.org

Received on: 15th of December, 2021 Accepted on: 4th of July, 2022 Published on: 8th of July, 2022

© Mykola Petrushenko, Hanna Shevchenko, Nina Khumarova, Alina Krivenceva, 2022

Mykola Petrushenko, Doctor of Economics, SO "Institute of Market and Economic-Ecological Research of the National Academy of Sciences of Ukraine", Ukraine; Odesa National University of Technology, Ukraine. (Corresponding author)

Hanna Shevchenko, Doctor of Economics, SO "Institute of Market and Economic-Ecological Research of the National Academy of Sciences of Ukraine", Ukraine; Odesa National University of Technology, Ukraine.

Nina Khumarova, Doctor of Economics, SO "Institute of Market and Economic-Ecological Research of the National Academy of Sciences of Ukraine", Ukraine.

Alina Krivenceva, Ph.D. in Economics, SO "Institute of Market and Economic-Ecological Research of the National Academy of Sciences of Ukraine", Ukraine



This is an Open Access article, distributed under the terms of the Creative Commons Attribution 4.0 International license, which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.

Conflict of interest statement: Author(s) reported no conflict of interest

Mykola Petrushenko (Ukraine), Hanna Shevchenko (Ukraine), Nina Khumarova (Ukraine), Alina Krivenceva (Ukraine)

FINANCING OF TOURISM AND RECREATION IN MUNICIPAL PROGRAMS DURING THE PANDEMIC PERIOD: THE CASE OF ODESA¹

Abstract

The threat of rapid spread of COVID-19 infection was felt primarily by residents of big cities and in the economy of resort towns the tourism and recreation sector suffered the most. At the same time, the need for travelling and recreation in conditions of forced isolation and the need for rehabilitation of citizens has not decreased. Accordingly, the municipal authorities should carry out appropriate organizational and financial measures aimed at maintaining the functioning of the domestic market of recreational and tourist services. The study aims to analyze the indicators of financing tourism and recreation within the socio-economic programs of urban development in order to develop recommendations based on the results to improve this funding within the adaptation to the conditions of the pandemic period. This was done by analyzing the development programs of the city of Odesa in Ukraine, the effect of which extends to the pre-pandemic period of 2019, as well as the years of the pandemic 2020–2022. In substantiating the budgeting mechanism within urban development programs built on a systematic approach at the stage of comparative assessment of recreational expectations based on the modified Vroom model one took into account such indicators as: percentage of recreation costs, variability of prices for recreational services, anxiety associated with the consequences of the COVID-19 pandemic, etc. Within the proposed mechanism recommendations are aimed at justifying decisions regarding the variability of funding in urban programs relevant to the development of recreation and tourism, namely, by increasing the funding from the development budget and increasing control over the implementation of these programs, as well as improving the coordination function in order to prepare the ground for the implementation of "4P" and "people-first" models in recreation and tourism at the municipal level.

Keywords municipal finance, tourism, recreation, urban programs,

Odesa, COVID-19

JEL Classification H72, L83, R51

INTRODUCTION

Tourism and recreation are interrelated areas, the most affected within the global and national economies during the coronavirus pandemic, especially in the beginning of 2020. In particular, compared to the previous year, the number of international tourists decreased by 74% (World Tourism Organization, 2021). At the same time, contrary to pessimistic forecasts, in 2021 the decline in this area stopped, but growth was only 4% to the previous 2020 (World Tourism Organization, n.d.). One of the decisive roles is played by recreation. People, tired of isolation and constant anxiety, are interested in various forms of recreation, especially given the circumstances in their country.

¹ The results and conclusions that directly concern Ukraine must be rethought, and they should be reviewed against the background of the full-scale aggression of Russia.

In the transitional economy of Ukraine, the domestic market of recreational and tourist services, which is inferior in competitiveness to the global and, in particular, to the European market, needs significant support from the state and local authorities. After the completion of administrative-territorial reform in Ukraine in 2015–2020 the role of municipal authorities in the country has significantly increased, which in the future should have a positive impact on addressing tourism, recreation and other socio-economic issues of urban development and ultimately systematic implementation of Sustainable Development Goals 2030.

In the context of the COVID-19 pandemic the program documents regulating sustainability in cities should be revised. Thus, according to the European Urban Charter (Council of Europe, 2009), it is necessary to strengthen the protection of citizens' rights in the following aspects: security – a safe city not only in view of crime and offences, but also the consequences of pandemic; unpolluted and healthy environment – sanitary and hygienic indicators should be added to the main ecological indicators; health – it is necessary to expand a number of facilities conducive to the physical and psychological health of citizens taking into account the possibility of increasing the physical distance between them during organized recreation; sports and leisure, culture – expanding access for all persons; participation – increasing the participation of various stakeholders while avoiding over-regulation; economic and sustainable development – the responsibility of municipal authorities in direct or indirect participation in the development of the city in economic, social and environmental aspects; financial mechanisms – expanding the capacity of local authorities to seek funding to exercise the rights of citizens, in particular during the pandemic period. In Ukraine, such an initiative may be disseminated, in particular, by the Association of Ukrainian Cities.

In practice, it is advisable to review the relevant urban development programs, especially with regard to their funding as a basis for supporting the development of tourism and recreation. The reflection of changes related to the peculiarities of the pandemic period in such programs is the evidence of response of municipal authorities to new challenges threatening the lives and health of citizens, as well as socio-economic development, which has undergone transformations and requires a certain state intervention.

The main resort, recreational and tourist city of Ukraine is Odesa – a city that constantly maintains the status of an international resort and at the same time operates one of the biggest ports on the Black Sea coast, ensuring the economy and welfare of Odesa residents, the region and the country as a whole. However, the financial support of the local authorities for the tourism and recreation industry sufficient, in particular, in terms of programs of socio-economic development in the city, is insufficient. In the context of the pandemic crisis this issue is becoming more relevant and needs to be urgently addressed.

1. LITERATURE REVIEW

Recreational and tourist activity within the urban environment and the processes of its evolution are usually considered in symbiosis, but the development of the city and recreation in it can be a real dilemma (Jenkins & Young, 2008). Until a few years before the COVID-19 pandemic citizens in European countries, particularly in Wales, were largely dissatisfied with their recreation given the lack of open space and parkland. Urban development is usually based on previously approved standards rather than on the needs of the majority

of citizens in a particular situation. Accordingly, more flexible solutions should be provided for the arrangement of recreational facilities, in particular, in conditions that differ significantly from the standard solutions for a particular city.

Within the financing of recreational activities, in particular sports, at the municipal level, problematic situations periodically arise in almost any country regardless of the level of development of its economy such as the United Kingdom (Reid, 2018). The example of the United States (Legg et al., 2018) demonstrates the implementation of

youth sports programs in the context of the need to reduce the budget through public-private partnerships between public recreation agencies and private sports companies.

In the context of insufficient provision of tourism with municipal funds (Faraji et al., 2021) the hidden opportunities of this industry to obtain stable incomes in large cities are considered. The authors link the tourism potential, studied on the example of Iran, with aspects of planning and marketing, as well as the development of its types, such as health and event tourism. The issues of optimal allocation of funds in combination with the organizational capabilities of municipal authorities (Schenkel, 2018) may relate to innovative urban development projects aimed at combining opportunities for living, working and leisure in one space. The key point in this is the effectiveness of cooperation between stakeholders in order to reduce the budget deficit and finally find a balance between the economic, political and social interests of citizens.

Kapera (2018) analyzes the content of municipal programs in Poland regarding sustainable tourism development in terms of planning and implementation in order to identify weaknesses and propose solutions to strengthen them. In particular, conflicts within the framework of cooperation between local authorities, business and urban populations over the protection of environment in connection with its pollution by the tourism industry are studied. The role of municipalities in promoting the exchange of knowledge and experience in the field of sustainable tourism is also analyzed.

Jůza et al. (2021) investigate organizational and financial issues related to the activities, in particular recreational ones, of municipal forest enterprises. In cities with a population of up to 100,000 people, recreational forest services are mostly financed by such enterprises, mainly due to revenues from the sale of raw wood. In big cities the main source of such funding is the city budget. Municipal forestry programs in Texas, USA, involve minimal municipal funding of about 5 dollars per person, mostly for recreational development (O'Herrin & Shields, 2016). Along with this, the main support from the Texas Forest Service is the provision of technical and educational assistance to forestry workers.

Cheng and Yang (2019) diagnose the sphere of interaction between the government and non-profit organizations, in which these organizations not only see state funding as a source of their revenues, but also manage changes in state spending without being tied to the possibility to adjust these revenues. In particular, in the field of maintenance of parks and recreational areas in big US cities, such organizations adjust the funding of relevant programs depending on changes in public expenditures for this maintenance, namely, they look for ways to reduce administrative costs and prevent their deficit within the programs.

Su and Peng (2021) examine an integrated coastal zone management program. Branches of industry and tourism are no longer considered as alternatives, but in their synergistic combination within the framework of the use of marine resources according to the principle of zoning. For this purpose, an adaptive mechanism of coastal territory management is used. Lagarense and Walansendow (2015) justify the need for broad participation of interested parties in the development of promenade in the seaside city with the aim of creating innovative and modern infrastructure for the development of tourism, recreation and other areas of socio-economic activity, taking into account the ecological interests of the city at the same time. Boonsiritomachai and Phonthanukitithaworn (2019) study the processes of supporting the development of sports tourism in the so called beach city both by the local authorities and the local residents taking into account the socio-cultural, economic and environmental factors of holding sports events in the city.

Strzelecka et al. (2021) consider the case of citizens choosing to rest in a more ecologically clean rural area. The contribution of the natural factor to the development and spread of tourism during the pandemic period is studied. Cortinovis et al. (2018) study *nature-based recreation* as part of urban green infrastructure services, which should be taken into account when forming city development plans and programs. Budgetary constraints related to the use of natural objects as public space in cities force decision-makers to seek alternative activities within the framework of organized recreation such as innovative programs of environmental education and other socio-cultural activities in Latin America (Suárez-López & Eugenio, 2018).

Publications covering tourism in Ukraine primarily concern issues of the so-called rural green tourism (Shevchenko et al., 2016; Yakymchuk et al., 2021) and, in particular, the relationship between tourism, health and recreation at the urban level (Shevchenko et al., 2020), which is primarily related to the preservation of traditions in the tourism industry and relevant research since the days of the planned economy.

Changes in the field of urban tourism are constantly taking place, in particular, one should note the process of gentrification, which, for example, in Berlin has acquired such a large-scale development that it has been called "new urban tourism" (Füller & Michel, 2014). Changes in tourism and recreation caused by the consequences of the coronavirus pandemic, on the contrary, are closer to sub-urbanization and cause new relationships between urban and rural tourism.

The study of the impact of COVID-19 on the behavior and expectations of tourists in the first year of the pandemic (Orîndaru et al., 2021) gives simple and obvious conclusions, primarily regarding the improvement of hygienic conditions by companies in tourism and related industries within the framework of a positive forecast for the spread of pandemic. From a more critical point of view (Grech et al., 2020), the situation related to the coronavirus pandemic is not short-term, and accordingly, countries should adjust to developing national strategies in the fight for tourists, whose numbers are constantly decreasing. In particular, it is necessary to establish a systematic joint work of the government and public health care. From a broad point of view (Jiricka-Pürrer et al., 2020), the relationship between urban tourism development opportunities and the coronavirus pandemic situation has a complex bilateral nature, which is manifested in the aspect of climate change and, accordingly, the availability of green infrastructure, in particular in the context of economic and environmental feasibility of short-term air transportation, as well as in the aspect of increasing the role of free space in cities.

The research of innovative approaches to urban development and their adjustment in view of the coronavirus pandemic is also relevant, in particular, within the analysis of the smart tourism potential within the framework of developing destinations in sustainable cities (Casado-Aranda et al., 2021). In addition, it is relevant to study the innovative concept of "4P" (Zhang et al., 2015; Irazábal, 2016; Boniotti, 2021) related to the development of public-private partnership, which in the recreation and tourism sphere (World Tourism Organization, 2015) in transitive economies and, in particular, in Ukraine is poorly developed. The study of socio-economic development programs, in particular regarding the cooperation of the participants of tourism and recreational activities in Ukraine, is a significant prerequisite for substantiating the relevant prospects of public-private partnership.

Taking into account the above, this study aims to analyze the indicators of tourism and recreation financing within the socio-economic programs of urban development in order to develop recommendations for improving this financing within the framework of adaptation to the conditions of the pandemic period and in accordance with the concept of sustainable development based on the obtained results. This was done by analyzing the development programs of the city of Odesa in Ukraine, which cover the pre-pandemic period of 2019, as well as the pandemic years of 2020–2021 and the forecast year of 2022.

2. DATA AND METHODOLOGY

The paper analyzes socio-economic, environmental and other development programs of the city of Odesa in Ukraine during the pandemic period of 2019-2022 (Generalization of data on infected people per 1000 residents and deaths per 1000 people infected with COVID-19 was carried out by regions of Ukraine, in particular Odesa region, based on information from the National Security and Defense Council of Ukraine, n.d.). The main information base is the data on the content and funding of local target programs (Official site of the city of Odesa, n.d.a, n.d.b), in particular within the allocation of city budget expenditures for their implementation grouped by tourism-relevant industries and local authorities' departments by recreationally relevant small and big projects within the public budget of the city, as well as the data on the amount of revenues from tourist taxes as part of local taxes and environmental tax as

part of other taxes of the city of Odesa and its administrative districts.

When researching the budgeting mechanism for urban development programs, at the stage of comparative evaluation of recreational expectations (as an indicator for substantiation of variability of program funding - according to formula 1), the following indicators were taken into account: self-assessed income level; percentage of spending on recreation; the influence of factors restraining activity in the recreational sphere, namely: insufficient demand, lack of labor, lack of space and equipment, financial restrictions; variability of prices for recreational services; the level of public anxiety, which may be directly related to the consequences of the COVID-19 pandemic; the percentage of revenues allocation to recreation (based on the data from the State Statistics Service of Ukraine, n.d.). The evaluation is based on a variation of the expectation model adapted to the recreational sphere (Vroom, 1964; Expectation theory, 2000), according to which the specified indicators are combined into three interrelated groups, namely: result, instrumentality and valence.

$$RE = \exp(\sum_{i=1}^{n} \mu_i \cdot \ln re_i), \tag{1}$$

where RE – integral indicator of recreational expectation, $\rightarrow 1$; re_i – single i-th (i=1,...,n) indicator of recreational expectation, $\rightarrow 1$ (the list of indicators is presented in Table A1); μ_i – the weight of the i-th single indicator

$$\sum_{i=1}^{n} \mu_i = 1. (2)$$

The study compares the recreational expectations of Odesa and Dnipropetrovsk regions, the residents of which are domestic tourists – potential visitors to the city of Odesa for the purpose of recreation, by overcoming, respectively, a small and a relatively big distance. Taking into account that most of the vacationers are residents of big cities – regional centers, Odesa and Dnipro are compared in view of the similarity of these cities, in particular in terms of population. Changes in values of the integral indicator of recreational expectations are compared during the period 2016–2020.

The scheme of the proposed mechanism (Figure 1) is based on a systematic approach, namely: in the

process of interaction of stakeholders involved in recreational and tourism activities within the city, input resources (financial, human, physical and natural assets) are converted into output - recreational and tourist product, as well as external effects, including environmental pollution. During this transformation the recreation and tourism management system supports the development and creation of the game's rules, in particular, in relation to local development programs, which are funded mainly through the budgeting process, from information analysis relevant to tourism and recreation to performance appraisals and performance monitoring of these programs. The variability of tourist tax collection and environmental tax is studied separately within the framework of formation and use of general and special municipal funds.

3. RESULTS

During the pandemic period the situation with coronavirus infection in Ukraine (Table A2) is complicated, which affects all spheres of the socio-economic life in the country and its regions. Presumably, this situation will also affect recreational expectations, which is the starting point for the implementation of relevant changes in state policy, in particular, socio-economic development programs at the local level. In order to understand exactly how recreational expectations are formed and changed, their comparative assessment was carried out using the example of the tourist region of Odesa and non-tourist Dnipropetrovsk region. Both regions are interesting from the point of view of their comparison, given that their population chooses Odesa as one of the main destinations for seasonal recreation. Therefore, Odesa is the main object of this study.

According to the approach of Vroom (1964), for the systematic implementation and improvement of activities' efficiency one should take into account the relationship "expectation of the result for expended efforts,—instrumentality (expectation that the result will be rewarded) — valence (importance of reward)". In the modified approach used in this study (results are presented in Table A1) the specified relationship is implemented in a generalized form at the meso-level: from the level of an indi-

vidual who has recreational expectations there is a transition to the branch-territorial level, where it is measured according to formula 1 – integral level of expectations for the population (consumption of recreational services) and the production sphere (offer of recreational services) of the region.

The results of Table A1 show that in 2020 recreational expectations increased compared to the previous years and amounted to 0.936 and 0.927, respectively: for Odesa region and Dnipropetrovsk region, which is more distant from the studied tourist destination of the city of Odesa. The corresponding integral indicators for the entire studied period are 0.829 and 0.807, which demonstrates approximately the same interest in recreation in both indicated regions of Ukraine. According to this, local authorities should support the industry in order not to lose domestic tourists. However, the financing of tourism and recreation in the development programs of the city of Odesa, for which the department of culture and tourism, the department of ecology and development of recreational areas, as well as the department of physical culture and sports, are responsible, has a negative trend during 2019–2022 (Table 1) in terms of special and general funds. And it is even more negative that, in general, in the main resort center of Ukraine only about 1% of the total costs for the implementation of all city development programs is spent on these programs.

In addition, the volume of tourist tax (Table A3) occupies a small share in the total volume of local taxes and fees of Odesa (Official site of the city of Odesa, n.d.a, n.d.b), which for one of the main tourist destinations of Ukraine indicates, firstly, the low level of tourist flows during the pandemic period and, secondly, the low tax rates (in 2021 in Odesa the rates are 0.5% of the minimum wage for domestic tourism, namely 30 UAH). The lion's share is made up of tourist enterprises in the Primorsk District, which indicates, in particular, the low level of use of the tourist potential of other city districts.

Table 1. Expenditures on recreational and tourist-relevant programs in the structure of distribution of budget expenditures of the city of Odesa for the implementation of all local programs, thousand UAH, during 2019–2021

UAH, during 2019–2021	-					
		Source: Complied by the authors	on the basis o	of data (Official site of th	e city of Odesa	, n.d.a, n.d.b
Departments of the Odesa city council	Year	Local Programs (LP) / Local Target Programs (LTP)	Special fund	Development budget	General Fund	Total

Departments of the Odesa city council	Year	Local Programs (LP) / Local Target Programs (LTP)	Special fund	Development budget	General Fund	Total
	2019	1.1*; 2.1; 3.1	0.0	0.0	6,544.3	6,544.3
Department of physical	2020	1.2; 3.1	0.0	0.0	6,869.4	6,869.4
culture and sport	I Year Programs (LTP) fund budget 2019 1.1'; 2.1; 3.1 0.0 0.0 2020 1.2; 3.1 0.0 0.0 2021 1.2 0.0 0.0 2022 1.2; 3.2 0.0 0.0 2019 2.1; 3.1; 4; 5; 6.1 5,720.0 5,720.0 2020 2.2; 3.1; 4; 6.1; 11 2,990.0 2,850.0 2021 4; 11 540.0 400.0 2022 3.2; 6.2; 11 1,440.0 1,300.0 2019 2.1; 7; 8; 9; 10 8,721.2 6,282.6 2020 2.2; 7; 8; 12 4,264.6 2,020.8 2021 7; 9 1,940.0 0.0 2022 13 0.0 0.0 2023 1.2; 2.; 3.1; 4; 6.1; 7-10 0.5 0.4 2041 7; 9 1,940.0 0.0 2021 7; 9 1,040.0 0.0 2021 7; 9 1,040.0 0.0 2020 1.2; 2.2; 3.1; 4; 6.1; 7:	6,844.4	6,844.4			
		0.0	7,369.4	7,369.4		
Department of culture and tourism	2019	2.1; 3.1; 4; 5; 6.1	5,720.0	5,720.0	30,662.2	36,382.2
	2020	2.2; 3.1; 4; 6.1; 11	2,990.0	2,850.0	23,620.3	26,610.3
	2021	4; 11	540.0	400.0	20,362.3	20,902.3
	2022	3.2; 6.2; 11	1,440.0	1,300.0	10,243.0	11,683.0
culture and sport Department of culture and	2019	2.1; 7; 8; 9; 10	8,721.2	6,282.6	4,887.0	13,608.2
	2020	2.2; 7; 8; 12	4,264.6	2,020.8	8,230.7	12,495.3
•	2021	7; 9	1,940.0	0.0	3,440.0	5,380.0
G. 545	2022	13	0.0	0.0	100.0	100.0
	2019	1.1; 2.1; 3.1; 4; 5; 6.1; 7–10	0.5	0.4	2.0	1.2
, ,	2020	1.2; 2.2; 3.1; 4; 6.1; 7; 8; 11; 12	0.3	0.2	1.4	0.9
· ·	2021	1.2; 4; 7; 9; 11	0.2	0.0	1.4	1.0
or an iocal programs	2022	1.2; 3.2; 6.2; 11; 13	0.1	0.1	1.0	0.7

Note:*1.1 – LTP "Development of physical culture and sport in Odesa in 2015–2019"; 1.2 – in 2020–2023;2.1 – LP "Equality" in 2016–2019; 2.2 – in 2020–2022;3.1 – LTP of national-patriotic education of children and youth in the city of Odesa for 2016–2020; 3.2 – for the years 2021–2026; 4 – LP for the development of culture in Odesa in 2019–2021;5 – Employment program for the population of Odesa in the period up to 2022;6.1 – Tourism Development Program in Odesa in 2016–2020; 6.2 – in 2021–2023;7 – Program for the protection of wildlife and regulation of the number of homeless animals in Odesa in 2016–2021;8 – LTP of development and preservation of green plantations in Odesa in 2017–2020;9 – LTP protection and improvement of the environment in Odesa in 2017-2021;10 – LTP solution of priority social problems in the city of Odesa "Social Partnership" in 2019–2020;11 – Program of development and reconstruction of the Odesa Zoo "Zoo – 100" for 2013–2022;12 – LTP improvement of the city of Odessa in 2018–2021;13 – LTP promote the development of civil society in Odessa in 2021–2023.

The situation with the volume of environmental tax is approximately the same. Although this type of tax does not belong to local taxes and fees, its targeted use should be directed mainly at the Primorsky district, where most of the city's tourists are concentrated. For Odesa as a resort city (the population density in which can double during the tourist season, which accordingly significantly increases the level of ecological footprint), the percentage of the tourist tax and the environmental tax should be raised (at least 50% of the amount of environmental taxes should remain in the local budget, instead of 25% as of 2021) (Table A3).

Although over the years of the pandemic period there has been a slight positive trend towards an increase in spending on culture and art, physical culture and sports, even the combined budget expenditures of the city of Odesa on these areas, as well as agriculture, forestry, fisheries and hunting and protection of environment (Table A4) account for a small share (about 2%) of all expenditures.

Organizational and financial measures necessary to adjust the studied city programs are combined in the budgeting mechanism (Figure 1), which functions in two planes: exogenous (a set of institutional factors) and endogenous (interaction of institutional units). The endogenous plane includes the following main components: resource support (financial, human, physical and natural assets) for the production of a recreational and tourist product (RTP); production of RTP by recreational and tourist companies and organizations located outside the places of permanent residence of people within the city's territory; cooperation with companies and organizations of industries related to the recreation and tourism sphere in the process of RTP production; consumption of RTP by internal and external recreationists and tourists; the system of recreation and tourism management, which is subordinate to the city management system and includes a subsystem of administrative-territorial regulation, a subsystem of civil society influence and a subsystem of market self-regulation of recreation and tourism.

The exogenous plane includes the following main components: the surrounding natural environment, in particular, recreational environment within the territory of the city; population of the city and suburbs; factors of direct and indirect external influence, in particular, political, legislative, socio-cultural, etc.; factors affecting the coronavirus pandemic, which are considered separately in this study.

Along with this, the interrelationship of the planes in formation and development of the sphere of recreation and tourism aimed at meeting recreational and tourist needs of the city's population and other administrative-territorial units, is investigated. In the conditions of the coronavirus pandemic the priority is the need for health recreation, sports tourism, as well as ecological types of recreational and tourist activities.

The main results of the functioning of recreational and tourist sphere are its product, as well as external effects in the form of environmental pollution, which on the territory of the seaside urban tourist destination includes: pollution of the atmosphere and hydrosphere, aggravation of the problem of drinking water shortage; compaction and change in the physical and chemical properties of the upper soil horizons, especially within the narrow coastal zone; changes of micro-relief, development of surface erosion and change of configuration of sea shores and estuaries; pollution by household waste of beaches and water areas, as well as deposits of therapeutic mineral waters; noise generation; change in the species composition and structure of flora and fauna, etc. In this regard, measures to substantiate and observe the ecological capacity of the city's recreational areas are of particular importance.

Each of the blocks in Figure 1 contains a certain set of interrelationships, with the help of which it is possible to characterize the processes taking place in them. For example, the management system creates conditions for maintaining the development and creating rules of the game that ensure balanced use of recreational and tourist assets. Along with this, the part of the consumption fund, which is aimed at satisfying recreational and tourist needs of the population, ensures the restoration of human assets that were consumed during the production of the recreational and tourist product, as well as their extended reproduction. A special development fund/budget should be directed to the optimization of recreational and touristic

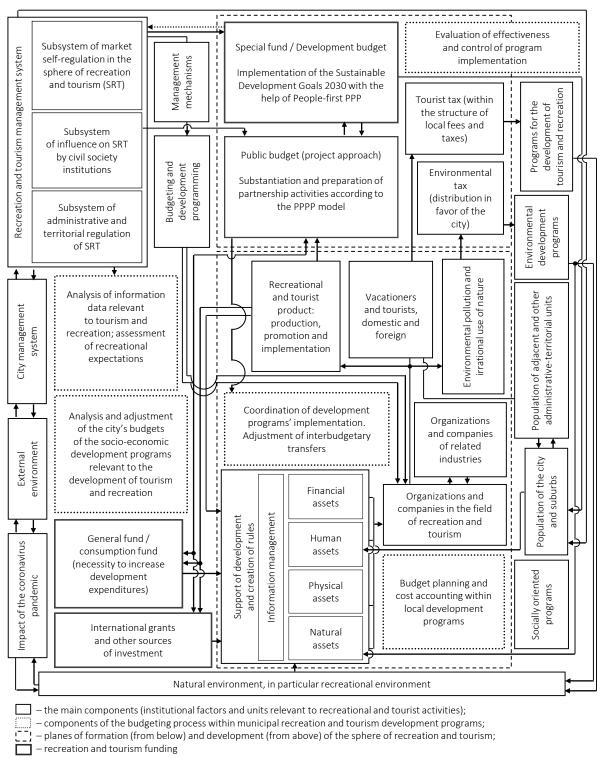


Figure 1. The budgeting mechanism within the framework of programs for the development of tourism and recreation at the municipal level

assets, as well as the accumulation and storage of relevant information data and, in addition to strengthening the market self-regulation subsystem of the city's recreational and touristic sphere,

in interaction with civil society, in particular, in the form of a participation budget. The interaction of these funds is ultimately aimed at improving the well-being of the city's population and accelerating the implementation of the 2030 Sustainable Development Goals.

The implementation of the budgeting process in the system of interconnections in scheme 1 primarily means ensuring a reliable base of financing for the recreation and tourism sphere. It is necessary to count on an increase in direct revenues to the budget: as mentioned above, the volumes of the tourist tax in the city of Odesa are extremely small and, therefore, it is necessary to increase the rate of this tax, to combine the increased volumes of revenues from it and the environmental tax (the percentage that remains from it in the local budget should be increased from 25% to 50% - for cities with the status of a resort of international or national importance), as well as to direct them exclusively to the improvement of the tourist infrastructure and recreational environment - within the relevant programs with a maximum increase in the level of control over their implementation.

For this purpose, a coordination center should be created in the city management system (with the participation of all interested parties to increase the role of the departments of culture and tourism, ecology and development of recreational areas), the functions of which should also include the adjustment of inter-budgetary transfers. The budgeting process should be adjusted in accordance with all its stages. In order to justify budget adjustments, the above-mentioned analysis of recreational expectations should be carried out: the budget should not focus on itself, it should be open in all senses, not only informational, but also in the sense of its main goal– improvement of citizens' well-being.

Control as the final stage/function of the budgeting process in pandemic conditions should be much stricter than in usual conditions, which is not yet noticeable in relation to Odesa city programs: there is planning and management of direct expenditures in the medical field, but preventive anti-pandemic measures regarding the recreation and tourism sphere are insufficient – there are practically no corresponding adjustments in the programs for 2022 (Table 1).

A clear understanding of the development budget significance is also necessary. In particular, from its analysis in the city of Odesa it is not clear to what extent it corresponds to the image of the tourist and resort center of the country. This budget is an indicator of the "price of the city", and not what percentage of problems is "uninteresting" and solved according to the residual principle in the chain "general fund - special fund - development budget - participation budget" with the minimization of actual development funds. The expenditures for the development of the city are dispersed in its general and special funds; expenditures on the development of tourism and recreation relate to the general expenditures by industry and, therefore, it is impossible to openly and quickly determine what amounts of finances are spent on the tourism and recreation sphere. Also, taking into account the situation related to the coronavirus, the development budget should include an innovative approach to the transformation of objects and infrastructure, in particular, from the point of view of security, which should be accompanied by an increase in the development budget, which, as a kind of insurance fund, is extremely important in crisis situations.

4. DISCUSSION

The funding of Odesa public budget projects remains stable during the pandemic period (Table A5), which is a significant addition to the budgeting of the city's recreational sphere. However, the presence of such organizational shortcomings as the fact that finances of these projects are mostly managed by other departments that are not directly related to recreation and tourism, the access of private businesses to the implementation of these projects is limited and the relevant information management process is not transparent enough, – causes the search for innovative models of participation and cooperation of interested parties.

According to the Ukrainian legislation (The Verkhovna Rada of Ukraine, 2010), tourism, recreation, culture and sports are among the priority spheres from the point of view of public-private partnerships (PPP). The following forms of PPP implementation are also legislated: concession agreement, property management agreement, agreement on joint activities, as well as a "mixed" form of agreement containing elements of different forms of agreements indicated above.

According to the knowledge base of the Public-Private Partnership Agency of Ukraine (Public-Private Partnership Agency of Ukraine, n.d.), a project is a PPP project if it meets the following requirements: it is implemented within the framework of the Sustainable Development Goals of Ukraine 2030; it provides for the creation/reconstruction and provision of socially significant services; state/municipal property is used within the project; the project is long-term; return of investment to the private partner is guaranteed; it is substantiated that the project has the highest performance indicators precisely in the case of its implementation using the PPP mechanism.

The life cycle of a PPP project in Ukraine involves the following main stages:

- identification, selection and initiation of the project, creation of a working group to prepare it for implementation;
- the state partner's decision regarding the expediency of preparing a feasibility study of the project based on the analysis of the developed conceptual note regarding its implementation;
- development of a feasibility study, analysis of efficiency and decision of the state partner regarding the implementation of the project;
- creation of a tender commission and preparation of relevant documentation, conducting a tender to identify a private partner and finally signing a PPP contract.

However, within the framework of implementation of the Goals of sustainable development and protection of the city's population interests, international recognition of objectivity and transparency of PPP processes in Ukraine, formal completion of the above stages is not enough. The involvement of "people-first" PPP models (UNECE, n.d.) and "4P" (Figure 1 above) is necessary. "4P" is a conceptual model that establishes productive relationships between public authorities, private companies and people (Ng et al., 2013, p. 377; Marana et al., 2018), namely: public-private partnership, active participation of citizens in decision-making processes in the system of government activity, corporate social responsibility. However, in order for these re-

lationships to be consistent in one system, it is necessary to subordinate them to their common goals and, accordingly, it concerns a symbiotic combination of two approaches: "4P" and "people-first" PPP (the second of these two approaches, the main principle of which is anthropocentricity, is an important component in the implementation of the Sustainable Development Goals 2030, particularly in Ukraine).

A combination into a single process of equal partnership relations between state/municipal authorities, business and people requires a multidimensional approach (Marana et al., 2018), which in the recreation and tourism sphere contains the following criteria defined in three planes (A – information flows; B – relationships between stakeholders; C – conflict resolution) and on three levels (I – general characteristics; II – characteristics depending on the specific context; III – characteristics taking into account types of participants), namely:

A.I – quality, including timeliness, accuracy and relevance of information; data sharing, both in terms of avoiding duplication and, most importantly, in terms of truly outlining partnership intentions; participation in the application of data and the use of knowledge; A.II – availability and transparency of information. Enlisting people as partners gives them more access to any information that other partners use; A.III – convenience of information for the user, i.e. the ease of use of all relevant information by partners;

B.I – commitment, i.e. willingness to put the interests of the partnership above one's own interests; coordination, in particular, the determination of duties, tasks and their scope in relation to the performance of tasks of other partners; interdependence and trust; B.II – integration, which acquires special significance within the framework of people-first mode; flexibility, the role of which increases in the situation with the coronavirus pandemic; B.III – inclusiveness as an increase in the legitimacy of decision-making: the partnership is interested in taking into account the opinions of all stakeholders;

C.I – constructive resolution of conflicts by conducting a constant dialogue between partners who may have different views on solving common

problems and should cooperate as partners; C.II – reflexivity: use of collective experience acquired by all partners in order to increase adaptability to the changing environment and ultimately ensure long-term partnership interaction; C.III – agreement of the partners' opinions, in particular, according to the consensus principle.

Orientation of budgeting processes within the formation and implementation of programs for the development of recreation and tourism on the set of criteria indicated above will make it possible to prepare the basis for the further implementation of the "4P" and "people-first" PPP models at the municipal level.

CONCLUSION

The paper analyzes the financing of municipal programs relevant to the recreation and tourism sphere during the COVID-19 period using the example of the city of Odesa in Ukraine. In particular, it was found that in practice the adjustment of these programs is carried out mainly by inertia, based on previous experience and in the conditions of a permanently insufficient level of spending on tourism and recreation from the city development budget. In the conditions of the threat of coronavirus with all its negative consequences, the expediency of additional organizational and financial measures, as well as a systematic approach to the budgeting process within the implementation of the specified programs, is well-founded. At the beginning of this process changes in recreational expectations are analyzed as an indicator for corresponding changes in the funding of local programs; according to the results of the assessment in 2020, the highest level of these expectations is observed in the regions of Ukraine. Taking into account the priority role of the recreation and tourism sphere for the economy of the big resort city, which does not lose, but on the contrary, acquires greater significance in the pandemic conditions, considering the identified shortcomings in the financing of these programs, in particular, only about 1% of the total costs are spent on them from all city development programs, the article provides substantiated recommendations for adjusting this funding. This concerns: increase and/or redistribution of expenditures from the city development budget subject to increased monitoring of program implementation; improvement of the coordination function, as well as planning, cost accounting and other functions within budgeting, in particular, with the participation of the public; creation of prerequisites for combining into a single process equal partnership relations between municipal authorities, business and people, by improving the management of information flows, relations between partners, as well as preventive resolution of conflict situations. In the future, it is planned to expand the obtained results in the direction of substantiating the implementation of the "4P" and "people-first" PPP models in the socio-economic spheres of the city.

AUTHOR CONTRIBUTIONS

Conceptualization: Mykola Petrushenko, Hanna Shevchenko.

Data curation: Mykola Petrushenko.

Formal analysis: Hanna Shevchenko, Mykola Petrushenko.

Funding acquisition: Hanna Shevchenko.

Investigation: Hanna Shevchenko, Mykola Petrushenko, Alina Krivenceva.

Methodology: Mykola Petrushenko, Hanna Shevchenko.

Project administration: Hanna Shevchenko.

Resources: Hanna Shevchenko, Nina Khumarova, Alina Krivenceva. Software: Hanna Shevchenko, Nina Khumarova, Alina Krivenceva.

Supervision: Hanna Shevchenko.

Validation: Hanna Shevchenko, Mykola Petrushenko, Nina Khumarova. Visualization: Hanna Shevchenko, Nina Khumarova, Alina Krivenceva. Writing – original draft: Hanna Shevchenko, Mykola Petrushenko.

Writing - review & editing: Mykola Petrushenko.

ACKNOWLEDGMENT

The paper contains the results of research conducted under the National Academy of Science of Ukraine's grant Formation and Use of Natural-Resource Assets of the Recreational and Tourism Sphere (0120U100159) and the Nominal Scholarship of the Verkhovna Rada of Ukraine for Young Scientists-Doctors of Sciences for 2021 (0121U113482).

REFERENCES

- Association of Ukrainian Cities.

 (n.d.). Holovna storinka [Main page]. (In Ukrainian).. Retrieved from https://auc.org.ua/
- Boniotti, C. (2021). The public-private-people partnership
 (P4) for cultural heritage management purposes. *Journal of Cultural Heritage Management and Sustainable Development*. https://doi.org/10.1108/ JCHMSD-12-2020-0186
- Boonsiritomachai, W., & Phonthanukitithaworn, C. (2019). Residents' Support for Sports Events Tourism Development in Beach City: The Role of Community's Participation and Tourism Impacts. SAGE Open, 9(2). https://doi. org/10.1177/2158244019843417
- 4. Casado-Aranda, L.-A., Sánchez-Fernández, J., & Bastidas-Manzano, A.-B. (2021). Tourism research after the COVID-19 outbreak: Insights for more sustainable, local and smart cities. *Sustainable Cities and Society*, 73, 103126. https://doi.org/10.1016/j.scs.2021.103126
- Cheng, Y., & Yang, L. (2019). Providing public services without relying heavily on government funding: How do nonprofits respond to government budget cuts? The American Review of Public Administration, 49(6), 675-688. https://doi. org/10.1177/0275074018806085
- Cortinovis, C., Zulian, G., & Geneletti, D. (2018). Assessing nature-based recreation to support urban green infrastructure planning in Trento (Italy). *Land*, 7(4), 112. https://doi.org/10.3390/ land7040112
- 7. Council of Europe. (2009). *Manifesto for a new urbanity:*

- European urban charter. Strasbourg: Council of Europe Publishing. Retrieved from https:// www.worldcat.org/title/manifestofor-a-new-urbanity-europeanurban-charter-ii/oclc/317442704
- Expectation theory. (2000). In P. M. Swamidass (Ed.), Encyclopedia of Production and Manufacturing Management. Springer, Boston, MA. https://doi.org/10.1007/1-4020-0612-8_303
- Faraji, A., Khodadadi, M., Nematpour, M., Abidizadegan, S., & Yazdani, H. R. (2021). Investigating the positive role of urban tourism in creating sustainable revenue opportunities in the municipalities of largescale cities: The case of Iran. *International Journal of Tourism* Cities, 7(1), 177-199. https://doi. org/10.1108/IJTC-04-2020-0076
- Füller, H., & Michel, B. (2014).
 "Stop being a tourist!" New dynamics of urban tourism in Berlin-Kreuzberg. *International Journal of Urban and Regional Research*, 38(4), 1304-1318. https://doi.org/10.1111/1468-2427.12124
- 11. Grech, V., Grech, P., & Fabri, S. (2020). A risk balancing act Tourism competition using health leverage in the COVID-19 era. *The International Journal of Risk & Safety in Medicine*, 31(3), 121-130. https://doi.org/10.3233/JRS-200042
- Irazábal, C. (2016). Public, private, people partnerships (PPPPs): Reflections from Latin American cases. In A. Lehavi (Ed.), Private communities and urban governance. Springer, Cham. https://doi.org/10.1007/978-3-319-33210-9_9

- 13. Jenkins, J. M., & Young, T. (2008). Urban development and the leisure dilemma: A case study of leisure and recreation in urban residential estates in the Lower Hunter, New South Wales. *Annals* of Leisure Research, 11(1-2), 77-100. https://doi.org/10.1080/11745 398.2008.9686787
- 14. Jiricka-Pürrer, A., Brandenburg, C., & Pröbstl-Haider, U. (2020). City tourism pre- and postcovid-19 pandemic – Messages to take home for climate change adaptation and mitigation? Journal of Outdoor Recreation and Tourism, 31, 100329. https://doi. org/10.1016/j.jort.2020.100329
- 15. Jůza, R., Jarský, V., Riedl, M., Zahradník, D., & Šišák, L. (2021). Possibilities for harmonisation between recreation services and their production within the forest sector – A case study of municipal forest enterprise Hradec Králové (CZ). Forests, 12(1), 13. https://doi. org/10.3390/f12010013
- Kapera, I. (2018). Sustainable tourism development efforts by local governments in Poland. Sustainable Cities and Society, 40, 581-588. https://doi.org/10.1016/j. scs.2018.05.001
- 17. Lagarense, B. E. S., & Walansendow, A. (2015). Exploring residents' perceptions and participation on tourism and waterfront development: The case of Manado waterfront development in Indonesia. Asia Pacific Journal of Tourism Research, 20(2), 223-237. https://doi.org/10.1080/10941665.2013. 877046
- Legg, E., Jones, G. J., & White, M. (2018). Whose job is it anyway? Public-private partnerships in

- youth sport. *Managing Sport and Leisure*, 23(4-6), 261-276. https://doi.org/10.1080/23750472.2018.1 530070
- 19. Marana, P., Labaka, L., & Sarriegi, J. M. (2018). A framework for public-private-people partnerships in the city resilience-building process. *Safety Science*, 110(C), 39-50. https://doi.org/10.1016/j.ssci.2017.12.011
- National Security and Defense Council of Ukraine. (n.d.). Coronavirus epidemic monitoring system. Retrieved from https:// covid19.rnbo.gov.ua/
- 21. Ng, S. T., Wong, J. M. W., & Wong, K. K. W. (2013). A public private people partnerships (P4) process framework for infrastructure development in Hong Kong. *Cities*, *31*, 370-381. https://doi. org/10.1016/j.cities.2012.12.002
- 22. O'Herrin, K., & Shields, P. (2016). Assessing municipal forestry activity: a survey of home-rule municipalities in Texas, US. *Arboriculture & Urban Forestry*, 42(4), 267-280. Retrieved from https://www.cabdirect.org/cabdirect/abstract/20173347296
- Official site of the city of Odesa. (n.d.a). City budget. Retrieved from https://omr.gov.ua/ua/opencity/budget/
- 24. Official site of the city of Odesa. (n.d.b). *City programs*. Retrieved from https://omr.gov.ua/ua/opencity/programs/#
- 25. Orîndaru, A., Popescu, M.-F., Alexoaei, A. P., Căescu, Ş.-C., Florescu, M. S., & Orzan A.-O. (2021). Tourism in a post-COVID-19 era: sustainable strategies for industry's recovery. Sustainability, 13(12), 6781. https://doi.org/10.3390/su13126781
- Public-Private Partnership Agency of Ukraine. (n.d.). Official site. Retrieved from https://pppagency. me.gov.ua/
- 27. Reid, G. (2018). Managing budget cuts in Edinburgh's sport and recreation services: Progressive localism in a resilient local authority? *International Journal of Sport Policy and Politics*, 10(1),

- 113-129. https://doi.org/10.1080/1 9406940.2018.1427127
- Schenkel, W. (2018). Urban governance by network management. In M. Dijst, W. Schenkel, & I. Thomas (Eds.), Governing cities on the move: Functional and management perspectives on transformations of European urban infrastructures (pp. 101-112). Abingdon, New York: Routledge. https://doi.org/10.4324/9781315191782
- Shevchenko, H., Pakhomov, V., & Petrushenko, M. (2016). Economic and legal issues of rural and recreational land use in Ukraine. Economic Annals-XXI, 156(1-2), 54-58. Retrieved from https://www. semanticscholar.org/paper/ Economic-and-legal-issues-ofrural-and-recreational-Shevchenko-Pakhomov/bb5360ec7ca5cf84822a29d55a145d7f9baeeb24
- 30. Shevchenko, H., Petrushenko, M., Burkynskyi, B., Khumarova, N., & Opanasiuk, Y. (2020). Management of wellness and recreation in urban agglomerations. *Problems and Perspectives in Management,* 18(1), 231-241. http://dx.doi.org/10.21511/ppm.18(1).2020.20
- 31. State Statistics Service of Ukraine. (n.d.). *Official site*. Retrieved from http://www.ukrstat.gov.ua
- Strzelecka, M., Prince, S., & Boley, B. B. (2021). Resident connection to nature and attitudes towards tourism: findings from three different rural nature tourism destinations in Poland. *Journal of Sustainable Tourism*, 1-24. https://doi.org/10.1080/09669582.2021.1 995399
- 33. Su, J., & Peng, B. (2021).

 Evaluating the trade-offs between alternative coastal policies: evidence from Xiamen's ICM programme. Ocean & Coastal Management, 207, 104516. https://doi.org/10.1016/j.ocecoaman.2018.05.012
- 34. Suárez-López, R., & Eugenio, M. (2018). Wild botanic gardens as valuable resources for innovative environmental education programmes in Latin America. *Environmental Education Research*,

- 24(8), 1102-1114. https://doi.org/1 0.1080/13504622.2018.1469117
- 35. The Verkhovna Rada of Ukraine. (2010). Zakon Ukrainy "Pro derzhavno-pryvatne partnerstvo" [Law of Ukraine "On public-private partnership"]. (In Ukrainian). Retrieved from https://zakon. rada.gov.ua/laws/show/2404-17?lang=en#Text
- UNECE. (n.d.). People-first PPPs. Retrieved from https://www. uneceppp-icoe.org/people-firstppps/
- 37. Vroom, V. H. (1964). Work and motivation (331 p.). New York: Wiley.
- World Tourism Organization. (2015). Affiliate members global reports. Volume eleven

 Public-private partnerships: Tourism development.
 UNWTO, Madrid. https://doi. org/10.18111/9789284417438
- 39. World Tourism Organization. (2021). Tourism suffers its deepest crisis with a drop of 74% in 2020 in international arrivals. *UNWTO World Tourism Barometer*, 19(1). Retrieved from https://www.e-unwto.org/doi/epdf/10.18111/wtobarometereng.2021.19.1.1
- World Tourism Organization. (n.d.). Impact assessment of the COVID-19 outbreak on international tourism. Retrieved from https://www.unwto.org/ impact-assessment-of-the-covid-19-outbreak-on-international-tourism
- 41. Yakymchuk, A., Popadynets, N., Valyukh, A., Skrypko, T., & Levkov, K. (2021). Rural "green" tourism as a driver of local economy development in the process of decentralization of power. Agricultural and Resource Economics: International Scientific E-Journal, 7(1), 232-259. https://doi.org/10.51599/are.2021.07.01.12
- 42. Zhang, J., Zou, W., & Kumaraswamy, M. (2015).

 Developing public private people partnership (4P) for post disaster infrastructure procurement. *International Journal of Disaster Resilience in the Built Environment*, 6(4), 468-484. https://doi.org/10.1108/IJDRBE-06-2014-0040

APPENDIX A

Table A1. Comparative assessment of recreational expectations, using the example of Odesa and Dnipropetrovsk regions in Ukraine, 2016–2020

Source: Calculated by the authors based on the data (State Statistics Service of Ukraine, n.d.).

Indicators (indicator weight)	2016	2017	2018	2019	2020
I Res	ult (1/3)				
Incomes (1/6). averaged:	26.4	28.0	31.2	29.2	33.5
incomes (1/0). averageu.	26.1	29.7	27.5	33.8	33.6
including: Income: sufficient with additional savings	19.9*	25.0	31.6	32.2	37.1
including. Income. sumclent with additional savings	2.5	7.8	0.6	8.2	10.3
Income: sufficient without additional savings	35.0	32.1	30.6	25.2	28.7
income. Sumcient without additional savings	57.5	59.0	63.3	67.9	64.6
Indiace****	0.781	0.828	0.923	0.864	0.991
Indices****	0.772	0.879	0.814	1.000	0.994
1-/)	-0.247	-0.189	-0.080	-0.146	-0.009
In(re ₁)	-0.259	-0.129	-0.206	0.000	-0.006
D 1 (4/5)	1.7	1.7	1.9	2.2	1.5
Percentage of expenditures on recreation (1/6)	1.4	1.4	1.1	1.5	1.8
	0.773	0.773	0.864	1.000	0.682
Indices	0.636	0.636	0.500	0.682	0.818
	-0.257	-0.257	-0.146	0.000	-0.383
In(re ₂)	-0.453	-0.453	-0.693	-0.383	-0.201
II Instrum	entality (1/	•			
Assessment of the influence of factors (1/9) restraining activity in	22.0***	19.9	17.4	15.1	9.1
the field of recreation. weighted average					
<i>including:</i> Insufficient demand	50.8	39.3	34.3	40.0	24.0
Labor shortage	1.3	2.0	1.0	5.5	0.0
Lack of space. equipment	0.0	6.5	4.3	6.8	5.0
Financial constraints	36.0	32.0	30.3	8.3	7.5
Indices	0.414	0.457	0.523	0.603	1.000
In(re ₃)	-0.882	-0.783	-0.648	-0.506	0.000
Price index (1/9) for recreational services (at the end of the year)	110.2*	111.2	120.2	113.0	108.2
The maex (1/3) for recreational services (at the end of the year)	116.7	121.7	114.2	114.0	110.1
Indices	0.982	0.973	0.900	0.958	1.000
indices	0.927	0.889	0.947	0.949	0.983
In/ro)	-0.018	-0.027	-0.105	-0.043	0.000
In(re ₄)	-0.076	-0.118	-0.054	-0.052	-0.017
Dtfiiiiii	1.3	4.3	2.3	0.4	0.7
Percentage of people with chronic anxiety (1/9) or depression	2.4	1.0	0.2	1.1	0.0
	0.987	0.957	0.977	0.996	0.993
Indices	0.976	0.990	0.998	0.989	1.000
	-0.013	-0.044	-0.023	-0.004	-0.007
In(re ₅)	-0.024	-0.010	-0.002	-0.011	0.000
III Vale	ence (1/3)				•
	17.9	17.7	18.5	20.2	23.3
Percentage of income (1/3) used on recreation	20.0	20.1	21.6	17.9	20.7
	0.768	0.760	0.794	0.867	1.000
Indices	0.858	0.863	0.927	0.768	0.888
	-0.264	-0.274	-0.231	-0.143	0.000
In(re ₆)	-0.153	-0.147	-0.076	-0.264	-0.119
	0.761	0.770	0.818	0.875	0.936
Integral indicator of expectations (<i>RE</i>) $ ightarrow$ 1	0.757	0.781	0.776	0.807	0.927
	5.757	3.701	0.829	1	3.527
Geometric mean during 2016–2020, (RE _{am})			0.807		

Note: *Dnipropetrovsk region.; **Odesa region; ***Both regions; ****The best value of the *i*-th indicator is taken as a reference value (1,000).

Table A2. Situation with coronavirus infection, by region of Ukraine, %, 2020–2021

Source: Calculated by the authors based on aggregated data (State Statistics Service of Ukraine, n.d.); National Security and Defense Council of Ukraine, n.d.).

	v		of people avirus. pe	infected rsons. 202	0	Number of people infected with coronavirus. persons. 2021				
Region*	In total. at the end of the year (31.12)	The number of people who died	Dead per 1000 infected	% of the country's population. 2019 (as of 01.01.2020)	The number of infected per 1000 inhabitants	In total. at the end of the year (31.12)	The number of people who died	Dead per 1000 infected	% of the country's population. 2019 (as of 01.01.2020)	The number of infected per 1000 inhabitants
Vinnytsia	22,500	395	17	3.69	14	112,346	3,099	27	3.68	73
Volyn	33,016	515	15	2.46	32	103,778	2,181	21	2.47	101
Dnipropetrovsk	58,561	1,409	24	7.58	18	242,142	8,820	36	7.56	77
Donetsk	36,391	704	19	9.86	8	167,885	5,101	30	9.86	40
Zhytomyr	39,202	655	16	2.88	32	140,441	3,246	23	2.87	117
Zakarpattia	28,200	637	22	2.99	22	87,891	2,363	26	3.01	70
Zaporizhzhia	54,088	594	10	4.03	32	182,207	5,259	28	4.01	109
Ivano-Frankivsk	43,190	805	18	3.26	31	127,416	3,101	24	3.27	93
Kyiv	59,204	966	16	4.25	33	185,369	4,656	25	4.30	103
Kirovohrad	8,448	253	29	2.23	9	33,054	1,521	46	2.21	35
Luhansk	10,508	293	27	5.10	4	59,774	2,205	36	5.10	28
Lviv	61,268	1,771	28	6.00	24	220,008	5,978	27	6.01	88
Mykolayiv	30,900	508	16	2.67	27	115,371	3,275	28	2.67	104
Odesa	71,125	1,055	14	5.67	29	240,190	5,560	23	5.69	101
Poltava	36,079	744	20	3.31	26	140,128	3,733	26	3.30	102
Rivne	40,990	516	12	2.75	35	127,499	2,267	17	2.76	111
Sumy	40,642	527	12	2.55	38	131,005	2,827	21	2.53	124
Ternopil	34,023	460	13	2.48	32	107,483	2,114	19	2.48	104
Kharkiv	69,377	1,092	15	6.34	26	243,167	6,349	26	6.33	92
Kherson	17,752	431	24	2.45	17	78,790	2,684	34	2.44	77
Khmelnytsky	39,187	674	17	2.99	31	146,665	3,322	22	2.99	117
Cherkassy	39,011	384	9	2.85	32	128,993	2,617	20	2.83	109
Chernivtsi	40,017	784	19	2.15	44	119,385	3,006	25	2.16	133
Chernihiv	29,897	442	14	2.37	30	94,726	2,430	25	2.35	96
The city of Kyiv	111,471	1,919	17	7.08	37	331,936	8,185	24	7.12	112
Total	1,055,047	18,533	17	100.0	25	3,667,649	95,899	26	100.0	88

Note: * Crimea, Sevastopol – no data available.

Table A3. Volumes of revenues from tourist tax as part of local taxes and environmental tax as part of other taxes of the city of Odesa, thousand UAH, 2019–2021

Source: Summarized by authors based on the data (Official site of the city of Odesa, n.d.a, n.d.b).

Income	Year	Kyivsky district	Malynovsky district	Primorsky district	Suvorovsky district	ODOTSFS*	Odesa
	2019	949.5	134.7	9,715.3	450.5	130.0	11,380.0
-	2020	533.4	95.7	6,499.3	340.0	48.7	7,517.0
Tourist tax	2021	-	_	-	-	-	9,150.0
	2022	-	-	-	-	-	10,000.0
	2019	397,283.3	499,434.8	726,964.2	371,561.4	162,157.8	2,157,401.5
Local taxes	2020	462,548.0	571,826.1	847,615.7	420,437.5	173,589.8	2,476,017.0
and fees	2021	-	_	-	-	-	2,403,500.0
	2022	-	_	-	-	-	2,909,250.0
•	2019	60.0	138.0	270.3	79.3	2,267.4	2,815.0
Ecological tax	2020	51.7	176.3	398.2	76.0	2,337.8	3,040.0
	2021	-	_	-	-	-	3,080.0
	2022	-	_	-	-	-	3,100.0

 $\textit{Note: *} \ \mathsf{Odesa} \ \mathsf{Department} \ \mathsf{of} \ \mathsf{the} \ \mathsf{Office} \ \mathsf{of} \ \mathsf{Taxpayers} \ \mathsf{of} \ \mathsf{the} \ \mathsf{State} \ \mathsf{Fiscal} \ \mathsf{Service}.$

Table A4. Recreation-relevant branches regarding the distribution of expenditures in the budget of the city of Odessa, thousand UAH, 2019–2021

Source: Summarized by the authors based on the data (Official site of the city of Odesa, n.d.a, n.d.b).

			General fund			Special fund		
Branch	Year	Consumption expenditures	Development costs	Total	Consumption expenditures	Development costs	Total	Together
	2019	98,924.3	0.0	98,924.3	7,176.8	4,315.0	11,491.8	110,416.1
Culture and art	2020	95,287.8	0.0	95,287.8	8,945.7	2,681.1	11,626.8	106,914.6
	2021	113,066.1	0.0	113,066.1	9,711.3	775.5	10,486.8	123,552.9
	2022	131,309.4	0.0	131,309.4	10,911.3	4,064.5	14,975.8	146,285.2
Physical culture	2019	50,556.7	173.0	50,729.7	223.3	2,885.3	3,108.6	53,838.3
	2020	65,586.3	0.0	65,586.3	229.0	1,600.0	1,829.0	67,415.3
and sport	2021	81,652.0	0.0	81,652.0	214.9	2,000.0	2,214.9	83,866.9
	2022	90,492.2	60.0	90,552.2	210.3	7,030.8	7,241.1	97,793.3
• • • • • • • • • • • • • • • • • • • •	2019	4,465.0	0.0	4,465.0	0.0	0.0	0.0	4,465.0
Agriculture.	2020	1,580.0	0.0	1,580.0	0.0	0.0	0.0	1,580.0
forestry, fishing and hunting	2021	3,000.0	0.0	3,000.0	0.0	0.0	0.0	3,000.0
and numing	2022	25,841.6	0.0	25,841.6	0.0	0.0	0.0	25,841.6
	2019	5,380.5	600.0	5,980.5	2,338.6	7,116.1	9,454.7	15,435.2
Environment	2020	5,646.6	800.0	6,446.6	2,450.0	1,760.4	4,210.4	10,657.0
protection	2021	5,341.9	824.0	6,165.9	1,730.0	1,470.0	3,200.0	9,365.9
	2022	6,435.5	900.0	7,335.5	520.0	2,710.0	3,230.0	10,565.5
•	2019	7,415,717.9	1,422,465.8	8,838,183.7	239,971.8	3,304,944.2	3,544,916.0	12,383,099.7
T	2020	6,475,835.4	1,692,910.5	8,168,745.8	186,310.4	3,088,793.2	3,275,103.6	11,443,849.4
Total	2021	688,6249.7	1,188,381.4	8,104,631.1	174,237.9	1,856,683.6	2,030,921.5	10,135,552.6
	2022	8,054,366.2	1,608,203.3	9,697,569.5	216,954.0	2,505,205.9	2,722,159.9	12,419,729.4

Table A5. Expenditures for the implementation of the public budget projects of the city of Odesa, thousand UAH, during 2019–2021

Source: Summarized by the authors based on the data (Official site of the city of Odesa, n.d.a, n.d.b).

Projects	Year	Names of some projects	Special fund	Development budget	General fund	Total
	2019	Yards of Odesa. Children's Dream	4,819.8	4,819.8	653.1	5,472.9
projects 2021	2020	The alley of long-livers. Cozy park	3,855.8	3,855.8	1,330.8	5,186.6
	2021	Beach wheelchairs for city beaches	4,735.2	4,735.2	497.5	5,232.7
	2022	Comfortable childhood	6,632.7	6,632.7	310.9	6,943.6
2019	2019	Territory of happiness. Our cozy yard	34,562.3	34,562.3	930.6	35,492.9
Diannoicoto	2020	Children's space "Fairy tale"	42,845.0	42,845.0	1,005.7	43,850.7
Big projects	2021	A big step towards health	43,781.1	43,781.1	942.7	44,723.8
	2022	The endless energy of sport	42,473.4	42,473.4	130.0	42,603.4
	2019	Rest area "Zhevakhova Gora"	39,382.1	39,382.1	1,583.7	40,965.8
A II : + -	2020	"Marseille" Square	46,700.8	46,700.8	2,336.5	49,037.3
All projects	2021	Street mini-theatre and art gallery	48,516.3	48,516.3	1,440.2	49,956.5
	2022	"Family Yard" recreation for everyone	49,106.1	49,106.1	440.9	49,547.0