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TRANSPORT ACCESSIBILITY AS FACTOR OF EXCURSION TOURISM DEVELOPMENT (CASE OF CHERNIVTSI, UKRAINE)

In the course of scientific research found that for parameterization of complex socio-economic processes with the use of transport infrastructure in tourism advisable to use transport accessibility ratio (the ratio of current and potential routes) with auxiliary coefficients movement time or distance of travel or the tourist center facility within the first. In this article was first investigated the problem of understanding the theoretical and methodological foundations and practical solution of transport accessibility of tourist and excursion objects, on the example of Chernivtsi city.

Given the average rate of transport accessibility of tourists to Chernivtsi nearest airport (0.575), the use of direct flights from Chernivtsi obvious since the nearest infrastructure nearby passenger airports (including Romanian), without running Chernivtsi be able to meet the potential needs of the city only in 57.5%. Otherwise reasonable alternative supplies Transfer of tourists from nearby international airports "Ivano-Frankivsk", "L'viv" named after D. Halytskyi that concerning, among all others, are the best indicators of transport accessibility (0.823 and 0.641 respectively). Overall, the current rate of Chernivtsi transport accessibility is up to 0.858 if conditionally accept that the level of satisfaction of the needs of all tourists wishing to visit the city by road and rail passenger transport is 100%. In general, today the organization of municipal transport scheme of motion in Chernivtsi city to tourist objects requiring priority of improving on the main points of arrival of tourists and sightseers, and major hotels in the city because the average level of public transit for the needs of tourists by 80% theoretically the best indicator.

Key words: transport accessibility to tourist objects, tourist destinations, excursion tourism coefficient, historical and cultural objects, transport infrastructure, lines of communication.

Роман Гищук, Олександра Пилипець. ТРАНСПОРТНА ДОСТУПНІСТЬ ЯК ЧИННИК РОЗВИТКУ ЕКСКУРСІЙНОГО ТУРИЗМУ (НА ПРИКЛАДІ МІСТА ЧЕРНІВЦІ)
Комплексно досліджено вплив транспортної доступності на використання туристичних ресурсів, визначено основні методологічні засади та підходи вивчення транспортної доступності. Зокрема, запропоновано формулу розрахунку коефіцієнту транспортної доступності туристичних об'єктів із урахуванням розробленої шкали коефіцієнтів відстані та часу руху до туристичної дестинації. Розраховані коефіцієнти транспортної доступності і запропоновані оптимізаційні кроки її поліпшення в м. Чернівці відносно найважливіших аспектів, які впливають на неї.

Ключові слова: транспортна доступність до туристичних об'єктів, туристична дестинація, екскурсійний туризм, коефіцієнт, історико-культурні об'єкти, транспортна інфраструктура, шляхи сполучення.

Роман Гищук, Александра Пилипец. ТРАНСПОРТНАЯ ДОСТУПНОСТЬ КАК ФАКТОР РАЗВИТИЯ ЭКСКУРСИОННОГО ТУРИЗМА (НА ПРИМЕРЕ ГОРОДА ЧЕРНОВЦЫ)
Комплексно исследовано влияние транспортной доступности на использование туристических ресурсов, определены основные методологические основы и подходы изучения транспортной доступности. В частности, предложена формула расчета коэффициента транспортной доступности туристических объектов с учетом разработанной шкалы коэффициентов расстоянии и времени движения к туристической дестинации. Рассчитаны коэффициенты транспортной доступности и предложены оптимизационные шаги ее улучшения в г. Черновцы относительно важнейших аспектов, которые влияют на нее.

Ключевые слова: транспортная доступность к туристическим объектам, туристическая дестинация, экскурсионный туризм, коэффициент, историко-культурные объекты, транспортная инфраструктура, пути сообщения.

Introduction. Today effective tourism development requires not only unique recreational and tourism resources but also corresponding level of tourism infrastructure. One of the most important components of this infrastructure is destination accessibility. The state of transport infrastructure and its ability to meet the needs of tourism corresponds to the term "transport accessibility". Studies of transport accessibility allow identifying shortcomings in the functioning of the transport system around tourist facilities, to develop ways to address them and propose steps for optimizing its organization.

Contemporary sphere of recreation and tourism covers a large number of objects of the natural, historical, cultural and socio-economic sphere. Excursion services belong to the category of tourist services, which can be used only in place of their placement or production. That is quite a significant role in this system plays the movement to the location of historical and cultural sites. This article studies the transport accessibility of tourist excursion activity since transport infrastructure determines the possibility of tourists comfortably coming to the some tourist destination.

Literature review. Transport accessibility issues using graphic-analytical method while developing tours in the recreational sphere are highlighted in the works of O. Lyubitseva, S. Koval'chuk, M. Mel'niychuk and by O. Shabliy in the field of human geography research. The study of the city transport network planning was conducted by P. Kolyadyns'kiy [1-3].

However, the problem of theoretical and methodological foundations and practical study of transport accessibility of tourist and excursion sites on the example of Chernivtsi in particular, was interpreted and studied at first by the author.

Problem setting. In order to evaluate the transport accessibility of Chernivtsi and its tourist sites, the study of the basic problems of the industry and identifying perspective ways their decision of this goal: necessary to find out the essential approach to transport accessibility in tourism; determine the impact on transport accessibility development of tourism potential; to assess the availability of transport most visited tourist objects Chernivtsi city; consider prospects and suggest ways to optimize the transport infrastructure of tourist sites near the city of Chernivtsi.

The main contents of research. Transport accessibility is an economic category, which is relevant not only to the transport sector but also to the entire socio-economic structure of the city, country, region [3].

There is no only answer to the question "What is accessibility" in the literature, as there is no single methodology for determining its level. Different authors use their own interpretations of transport accessibility. In the field of tourism and excursions service transport accessibility is a relative measure that simultaneously displays the distance, procedure and severity of traffic between tourist attractions. Also, transport accessibility can be considered as the simplicity to get to certain place using transport services and infrastructure. Now in the definition of "transport accessibility" appear a lot of specific concepts that are ancillary to determine its type: the temporary availability, potential accessibility, availability of public transport.

The same level of transport accessibility of the country, region, city or prominent building, forms a large part as economically and their demographic development. In tourism activities it is appropriate to consider several aspects which analyze transport accessibility:

• availability of transport routes (existing and potential);

• access of object from the main points of tourists arrival, which include railway stations, stations, bus stations and stations and airports;

• accessibility regarding accommodation facilities, which include hotels, motels, hostels and other accommodation facilities for tourists.

Provision of transport accessibility of tourist resources is one of the most important elements of tourist infrastructure and include to the basic range of services that are included in the composition of the tourism product, namely subparagraph transport infrastructure.

Let's review some basic methodological principles and approaches to assess transport accessibility in the tourism business. As we live in a world where there are resistance forces, the movement becomes a process of overcoming obstacles. To characterize the transport accessibility, it is necessary to determine the formal numeric indicators which allow quantifying the complexity of the movement and availability. To these formal numerical indicators we include:

• existing connections **Ke**;

• possible connections **Kp**.

These indicators provide a new indicator – the utilization of transport capacity (**Ktc**), which may be calculated with the help of a simple formula:

$$Ktc = Ke/Kp \qquad (1)$$

However, for parameterization of complex socio-economic processes with the use of transport infrastructure in tourism transport accessibility factor (**Ktc**) should be used in a broader sense with the addition of auxiliary coefficients movement time or distance to tourist object, including the public transport or parking for tour buses or personal car (within settlements):

$$Ktc = \left(\frac{\sum_{i=1}^{p} kKe}{\sum_{i=1}^{p} Kp} \right) \qquad (2),$$

where: **Ke** – all (pedestrian and transport) available connection ways; **Kp** – potentially possible ways of connection, **p** – the total number of existing or potentially possible routes of tourist object, **k** – coefficient of time or movement distance to tourist objects in it.

If the tourist objects located within the public transport or equipped parking for tour buses or own cars, then **k = 1**; if the places for stop or parking to the facility can walk up to 10 minutes, it will amount to 0.8; if from a stop (parking) to the object movement will be from 10 to 15 minutes, then **k** is equal to 0.5; if from a stop (parking) to the object movement will be from 15 to 20 minutes, then **k** equal to 0.2; if the distance from the stop (parking) to the tourist object movement will make more than 20 minutes, then the ratio would be 0.1 points [4-8]. The above factors appropriate to use in the calculation of **Ktc** within a single tourist center (destinations).

For parameterization data arriving tourists alternative transport routes to tourist and excursion objects are outside their localized placement (usually a tourist center, which is the settlement) coefficient. Coefficient «k» how the distance (d) in formula (1.2) have the following characteristics: $k_d = 1$ – tourist center has a direct connection with various remote areas; $k_d = 0,95$ - direct transport links to the tourist center is located within a radius of 30 km; then $k_d = 0,9$ - within a radius of 50 km; $k_d = 0,85$ – within a radius of 75 km; $k_d = 0,8$ – within a radius of 100 km; $k_d = 0,7$ – within a radius of 200 km; $k_d = 0,6$ – within a radius of 300 km; $k_d = 0,5$ – within a radius of 400 km; $k_d = 0,4$ – within a radius of 500 km; $k_d = 0,3$ – within a radius of 600 km; $k_d = 0,1$ – within a radius of 800 km and more.

However, at the nearest location of tourism center from the potential places of tourist arrivals and consequently a high coefficient «k» concerning the distance, the latter can be corrected by its average value of the time spent by tourists on the way to the tourist center or facility. On this can affect poor road surface, complexity and dissection of terrain through which laid ground lines of communication, time spent on customs clearance or implementation more direct on the way, traffic congestion due to low throughput or weather conditions and so

on.

Thus, to take account of the time factor (t) getting to the tourist center by tourists in formula (1.2) need to use such factors « k_t »: time of his arrival is less than 30 min., then $k_t = 1$; 0.95 – tourist arrival time is 30 minutes., $k_t = 0.9$ – from 30 min. to 1 hour; $k_t = 0.85$ - from 1 hour to 1 hr. 30 min .; $k_t = 0.8$ - from 1 hour to 2 hour; $k_t = 0.7$ - from 2 hours to 3 hours; $k_t = 0.6$ – from 3 hour to 4 hour; $k_t = 0.5$ – from 4 hour to 5 hour; $k_t = 0.4$ – from 5 hours to 6 hours ; $k_t = 0.3$ – from 6 hours to 7 hours; $k_t = 0.2$ – from 7 hours to 8 hours ; $k_t = 0,1$ – more than 8 hours.

On the formation of transport accessibility of Chernivtsi has a significant impact of natural and geographical location. The city is located 40 km from the border with Romania. It is characterized by a typical inland location, so it can only be reached by land or air. Direct rail connections Chernivtsi carried out only with the cities of Kyiv, Ivano-Frankivsk, L'viv, Odesa, Kovel', Oknytsia, Moscow. At the end of 2015 «L'viv Railroad» company connected Chernivtsi with L'viv by high-speed regional express by the inland producers, which overcomes this distance in 3.5 hours. With another international project Chernivtsi was connected by railway from Suceava and Bucharest in Romania with a passengers' transfer in Vadul Siret.

In the region existing rather tight network of highways which connecting Chernivtsi with all areas and regions of Ukraine. This particular highway M-19, M-20, P-04. Highways: E-50, E-85 that connecting the city with Central and Southern Europe.

In Chernivtsi operates an airport, which until recently served regular flights from Kyiv and Timisoara (Romania), but at this time it was suspended passenger traffic. Currently, the closest alternative ways of indirect flights from Chernivtsi which regularly take regular simple and low-cost flights remained Ivano-Frankivsk, L'viv, and, according to the data of "Center of transport strategies", Iasi, Bacau, Cluj-Napoca in neighboring Romania and Kyshyniv in Moldova [9] (Table 1).

Table 1

Transport accessibility to Chernivtsi by road from the nearest airport

Airport	Distance, km	Average journey time	Minimum journey time considering customs control on the Romanian-Moldovan border	Coefficient with taking into account the distance factor (k_d)	Coefficient with given the time factor (k_t)	Coefficient of transport accessibility (**Ktc**)
Ivano-Frankivsk	135	1 hour 50 minutes	1 hour 50 minutes	0.765	0.880	**0.823**
L'viv	268	3 hour 30 minutes	3 hour 30 minutes	0.632	0.650	**0.641**
Iasi	206	4 hour 10 minutes	5 hour 10 minutes	0.694	0.485	**0.590**
Bacau	231	4 hour 14 minutes	5 hour 14 minutes	0.669	0.475	**0.572**
Kyshyniv	333	5 hour 30 minutes	6 hour 30 minutes	0.567	0.350	**0.459**
Cluj-Napoca	359	7 hour 20 minutes	8 hour 20 minutes	0.561	0.165	**0.363**
Average value	**255**	**5 hour 06 minutes**	**5 hour 08 minutes**	**0.648**	**0.501**	**0.575**

Considering the average rate of transport accessibility of tourists to Chernivtsi from the nearest airport (0.575) question of using direct flights from Chernivtsi is obvious. It means that even in case of increase of tourists' number in Chernivtsi due to prospective air flow, the nearest infrastructure nearby passenger airports without running Chernivtsi will be able to meet the potential needs of the city at only 57.5%.

Otherwise rational alternative is supplying transfer of tourists from the nearest international airport "Ivano-Frankivsk" that respect Chernivtsi, among all others, has the best indicators of transport accessibility (**Ktc**). However, today we must remember that the low-cost airlines base airport "Atlasjet Ukraine" will be at the airport "Lviv" named after Danylo Galician, which has a relatively Chernivtsi the second most important figure **Ktc**, while geographically closer Romanian airports still have worse transport accessibility in today's logistics system.

Thus, for Chernivtsi current rate is 0.858 km up if conditionally accept that the level of satisfaction of the needs of all tourists wishing to visit the city by road and rail passenger transport is 100%. The latter condition of course is only theoretical and therefore requires further studying by the method and subject to the conditions and factors referred to above.

Today Chernivtsi is known by certain number of historical and cultural monuments. An important factor of effective use of tourism is to assess their transport accessibility. Using formula 1.2, we have made some assessment **Ktc** tourist sites of cultural heritage of Chernivtsi already at its limits (Table. 2). It includes five historical and cultural heritage of the city and transport accessibility factors are calculated against four major aspects which affect it:
• available transport routes;
• access object from the main points of arrival of

tourists (bus stations, railway station, airport);

• accessibility of relatively accommodation facilities;

• the average coefficient of transport capacity.

Thus, the best indicators of transport accessibility are City Hall and Drama Theatre named after Olga Kobylianska (Table 2), which are a core part of the transport hub of all public transport. Second place at the average rate of transport capacity occupied Residence of Metropolitans in Bukovina and Dalmatia, where the weakest link among indicators of transport accessibility of the facility is the link with the main points of arrival of tourists, especially excursionists.

Table 2

Evaluation of transport accessibility of some tourist sites of cultural heritage in Chernivtsi

Research object	The criteria for the study, coefficients			
	Availability of transport routes	Access object from the main points of arrival of tourists (bus stations, railway station, airport)	Accessibility relatively accommodation capacity	**The average coefficient of transport capacity**
Cathedral of St. Spirit	0.60	0.61	0.90	**0.70**
Residence of Metropolitans' Bukovina and Dalmatia	1.00	0.56	0.75	**0.77**
City Hall	1.00	0.84	1.00	**0.95**
Music and drama theatre named after Olga Kobylianska	1.00	0.84	0.90	**0.91**
Armenian Church of the St. Apostles Peter and Paul	0.65	0.57	0.65	**0.62**
Average for tourist objects	**0.91**	**0.68**	**0.84**	**0.79**

The lowest rates are typical for the Cathedral of the Holy Spirit and the Armenian Church. Transport accessibility to them is estimated at 2/3 capacity, with improvement and optimization require the use of transport routes to these tourist sites, and availability of their main points of arrival of tourists and accommodation facilities.

In general, today the organization of municipal transport motion's scheme in Chernivtsi to tourist object requiring priority of improving on the main points of arrival of tourists and sightseers. Also, not be amiss shall be a review of the main transport routes in terms of their relationship with the major hotels of the city, since the average coefficient of providing transport links major tourist sites of the city (0.79) indicates insufficient traffic organization scheme for the needs of tourists, which today is 79% of the theoretically optimal performance.

Conclusions. For parameterization of complex socio-economic processes with the use of transport infrastructure in tourism advisable to use transport accessibility coefficient (the ratio of current and potential routes) with auxiliary coefficients movement time or distance to the tourist center to tourist facilities or within the first. Given the average coefficient transport accessibility to tourists from Chernivtsi nearest airport (0.575), questions of the use of direct flights from Chernivtsi obvious since the nearest infrastructure nearby passenger airports (including Romanian), without starting Chernivtsi, can meet the potential needs of the city at only 57.5 %. Overall, the current rate of Chernivtsi transport accessibility is up to 0.858 if conditionally accept that the level of satisfaction of the needs of all tourists wishing to visit the city by road and rail passenger transport is 100%. The latter condition is only theoretical, and, therefore, requires further study.

In general, today the organization of municipal transport schemes of objects in Chernivtsi tourist excursion showing its improvement requires priority on the main points of arrival of tourists and sightseers, and major hotels in the city because the average level of public transit for the needs of tourists is 79% the theoretically optimal performance.

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