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TRANSPORT AND GEOGRAPHICAL POSITION OF MEDIUM-SIZED CITIES IN THE WESTERN REGIONS OF UKRAINE

Due to the compactness and high concentration of socio-economic phenomena urban areas require a developed transport infrastructure and a coherence in communication with the surrounding territory and centres of different levels to ensure the proper functioning. The article is dedicated to estimation of the position of medium-sized cities in an Western part of Ukraine relative to the existing transport system. Particular attention is paid to location relative to international transport corridors and European routes, to the proximity and transport accessibility to state border checkpoints.

It has been determined that in general cities are characterized by an advantageous position, as being situated within the border area, within or close to major highways, and most of them have easy connection to regional centres. The most favourable transport and geographical position, which can be described as arterial, belongs to Kovel, Mukacheve and Stryi. Kovel and Stryi are important transport hubs in Western Ukraine. However, comparing to other medium-sized cities of the area, the greatest amount of international and European transport routes lies across Mukacheve. Transport and geographical position of Colomyia and Chervonohrad can be considered as advantageous, as evidenced by their status of railway hubs, less advantageous – Drohobych and Kalush. Novovolynsk has the least advantageous, peripheral transport and geographical position. The transport and geographical position of medium-sized cities in the region serves as an additional incentive to use their potential, which is particularly important in view of their role as industrial and administrative centres.

Key words: medium-sized city, transport and geographical position, transport network, transport routes, transport hub.

Оксана Яцко. ТРАНСПОРТНО-ГЕОГРАФІЧНЕ ПОЛОЖЕННЯ СЕРЕДНІХ МІСТ ЗАХІДНИХ ОБЛАСТЕЙ УКРАЇНИ

Охарактеризовано особливості транспортно-географічного положення середніх міст західних областей України. Розкрито характерні риси географічного положення міст, зокрема по відношенню до обласного та регіонального центрів, державного кордону. Проаналізовано положення міст відносно до існуючої транспортної мережі, в тому числі до міжнародних та європейських транспортних шляхів. Виділено міста з найбільш вигідним транспортно-географічним положенням та периферійні міста.

Ключові слова: середнє місто, транспортно-географічне положення, транспортна мережа, транспортні шляхи, транспортний вузол.

Оксана Яцко. ТРАНСПОРТНО-ГЕОГРАФИЧЕСКОЕ ПОЛОЖЕНИЕ СРЕДНИХ ГОРОДОВ ЗАПАДНЫХ ОБЛАСТЕЙ УКРАИНЫ

Охарактеризованы особенности транспортно-географического положения средних городов западных областей Украины. Раскрыты характерные черты географического положения городов, в частности по отношению к областному и региональному центрам, государственной границе. Проанализировано положение городов по отношению к существующей транспортной сети, в том числе к международным и европейским транспортным путям. Выделены города с наиболее выгодным транспортно-географическим положением и периферийные города.

Ключевые слова: средний город, транспортно-географическое положение, транспортная сеть, транспортные пути, транспортный узел.

Introduction. Transport and geographical position of territory is an important factor that along with the potential of natural resources and demographic potential can stimulate or inhibit socio-economic development. According to Pashynska N., the level of transport infrastructure development has a significant impact on the cost of transportation of goods and passengers, their mobility; it also defines transport accessibility of settlements, forms the spatial connectivity of a territory, causing a degree of social-economic development of the whole region [7]. Nowadays the transport and geographical position is scientifically determined as a part of transport potential or in broader sense as a part of the positional potential. Its analysis allows to estimate all the advantages of geographical location and existing transport infrastructure primarily in terms of optimizing regional links and relations of social, economic and institutional nature. This especially concerns urban areas as compact territorial units that simultaneously have a large concentration of socio-economic phenomena and

requires developed transport infrastructure and coherence in communication with surrounding territory and with centres of different levels in order to ensure their proper functioning. Thereby, the estimation of the transport and geographical position of cities is an essential detail to determine their cumulative socio-geographical potential and the ways and possibilities of its realization.

The analysis of recent researches and publications. In Ukraine the scientific works written by V.O. Dzhaman, Yu.Yu. Zavaloka, M.M. Kuznetsov, V.D. Oliynyk, N.M. Pashynska and others should be distinguished among the latest researches dedicated to the analysis of the transport and geographical position of separate settlements and regions of the state. By many scientists the transport and geographical position is either identified or considered as a part of the transport potential of a territory, to the research of which works of V.H. Alkema, A.N. Horiainov, R.R. Hudyma, V.S. Kozlov, S.K. Kozlov, O.V. Perebyinis are devoted. The transport potential as a component of the integral potential of a territory is considered in the works of H.P. Pidhrushna, V.P. Nahirna, M.I. Fashchevskyi,

Yu.D. Kachaiev, O.O. Denysenko, I.H. Savchuk, L.Yu. Shabashova, M.P. Nemchenko, V.V. Bodnar.

The purpose of this paper is to analyze the main features of the transport and geographical position of medium-sized cities in the Western regions of Ukraine as a component of their positional potential.

The main material. Transport and geographical position of settlements and territories is an important component of an integral category of geographical location and also a determining factor of transport and positional potential formation. According to N.I. Dnistrianska in new socio-economic conditions the activation of very small urban settlements' functional possibilities depends primarily on their transport and geographical position [2, p. 39]. This statement may be applied to all categories of settlements, including medium-sized cities, thereby the transport and geographical position may be considered as an important factor and a precondition of their development.

Transport and geographical position of a settlement may be defined as a position relative to an existing transport system, which includes transport routes and transport centres considering the power and direction of the main traffic flows.

Structure of the transport system and the transport and geographical position of settlements depend primarily on the relief, the features of the hydrographic network, the geopolitical and economic-geographical position simultaneously of a settlement and the surrounding area, the existing settlement system, the level of economic development of a settlement, its status and the current network of functional ties.

Medium-sized cities are located extremely uneven in the Western part of Ukraine. The cities of Kovel, Novovolynsk (Volyn region) and Chervonohrad (Lviv region) are located in the north-western part of the territory and are situated sufficiently compactly in the direction tentatively from north to south. The second group of cities (Drohobych and Stryi in Lviv region, Kalush and Colomyia in Ivano-Frankivsk region) is located within the Precarpathians linearly relative to each other in the direction from north-west to south-east due to the peculiarities of the relief; their location is relatively compact. The last medium-sized city in the area is Mukacheve in the Transcarpathian region located in the utmost west of Ukraine and characterized by an isolated position concerning other medium-sized cities and regions of Ukraine, not only because of the distance, but also because of the seclusion by a significantly sized natural barrier, by the Ukrainian Carpathians. At the same time Mukacheve has an extremely advantageous geopolitical position, being close to the border of four foreign countries. It should be noted, that all the medium-sized cities in the region are characterized by an advantageous location within the border area. The geographical location of Kovel and Mukacheve within the region is also a favourable precondition of the transport system development, as these cities are located in the central area of the region therefore close to the centre, respectively, are the opposite of such regional centres as Lutsk and Uzhhorod.

Due to topography the following features of situating medium-sized cities may be identified in the region:

- The cities of Mukacheve (the Transcarpathian

Lowland) and Kovel (the Polissia Lowland) are located within the lowland relief, however, it should be noted, that Mukacheve is situated near the foothills of the Volcanic Ridge of the Ukrainian Carpathians;

- Novovolynsk is located within the Nadbuzka Height, which is the western part of the Volyn Upland, Chervonohrad is located in the Nadbuzhanska hollow within the Small Polissia;

- Drohobych is located on the border of the Precarpathian Upland and the Naddnistrianska Plain, Stryi – within the lowland part of the Stryi-Sian Highland, Kalush and Colomyia – within the Precarpathian Upland.

The features of cities' geographical location determine differences in their transport and geographical position, which can be characterized by following basic parameters: distance to the nearest railway station by transport routes (if the station is not located in the city), to the district centre (if this very city is not a district centre), to regional centres, the capital, the nearest state border checkpoint. Parameters and categories of transport routes that pass through the city or in the immediate vicinity to it, the city location relative to the major transport hubs also play an important role. Indicators of transport and geographical position of medium-sized cities in the region are reflected in the table 1.

Among all medium-sized cities in the region only Novovolynsk doesn't have a railway station; the nearest railway station is 18 km away in the district centre Ivanychi. Besides Novovolynsk, Chervonohrad is also not a district centre and is geographically located within the district of Sokal (the distance to Sokal is 12 km). However, these cities like other medium-sized cities in the area are of regional importance, that is they are administratively derived outside the districts and are subordinate to the authorities of regional centres. The reason of this situation is primarily the development of cities as of powerful coal production centres, which is a strategic direction for the region, however the administrative and organizational functions of these cities are limited.

Among studied cities in the region Kalush and Mukacheve are the closest to the regional centres (are located within 50 km by highways), the furthest is Novovolynsk, which, moreover, has no railway connection (the distance from Ivanychi to Lutsk by railways with a transfer in Kovel is 152 km). The remaining cities have direct railway connection with regional centres (the transport and geographical position of cities is shown in Fig. 1), and the distance to the regional centres by highways is shorter than by railways for all the cities except Colomyia. It should be noted that all cities are within 100 km accessibility from the regional centres that can be assessed as a sufficiently favourable indicator.

Cities that are the nearest to the regional centre Lviv are, of course, the cities of Lviv region and also Kalush and Novovolynsk (are located within 140 km, the distance from Ivanychi to Lviv by railways is 118 km). Mukacheve is the furthest from Lviv. Among the cities Kovel is the only one from which the distance to Lviv by railways is shorter than by highways. Kalush has no direct railway connection with Lviv, a transfer is needed in Stryi that is to some extent a limiting factor of freight and passenger traffic formation. What concerns the distance to the capital – Kyiv among the cities it is the

shortest from Kovel, Novovolynsk and Chervonohrad, the longest – from Mukacheve. The proximity to the regional centre and the capital is an additional favourable factor of socio-economic development, however, in the

case of Western Ukraine, the proximity to the state border offsets the remoteness from Kyiv as a more important factor for regional and local development in modern reality.

Table 1

The indicators of the transport and geographical position of medium-sized cities in the western regions of Ukraine

Cities	Distance to the nearest railway station, km	Distance to the district centre, km	Distance to the regional centre, km (by highways / railways)	Distance to the regional centre Lviv, km (by highways / railways)	Distance to Kyiv, km (by highways)	Distance to the nearest state border checkpoint, km (by highways)
Drohobych	0	0	86/100	86/100	628	61
Kalush	0	0	35/42	111/135	580	152
Kovel	0	0	73/84	196/186	441	54
Kolomyia	0	0	65/56	192/196	545	113
Mukacheve	0	0	42/63	225/225	767	39
Novovolynsk	18	18	95/-	126/-	510	19
Stryi	0	0	72/75	72/75	614	90
Chervonohrad	0	12	70/86	70/86	513	27

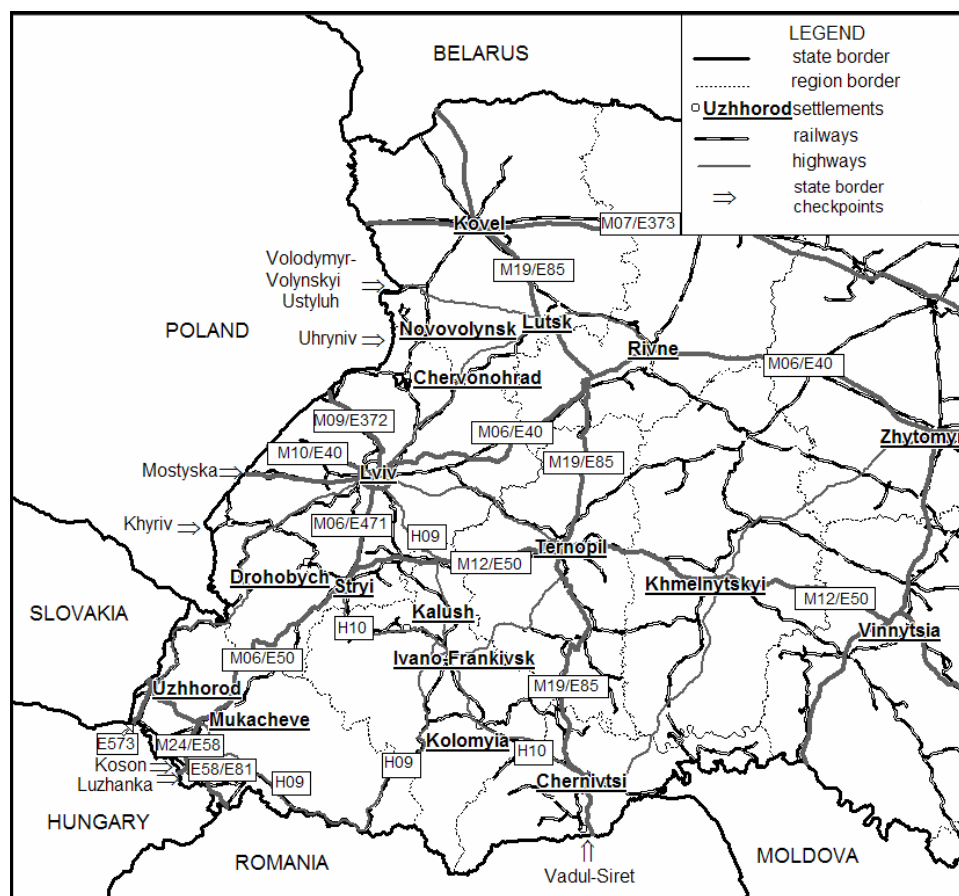


Fig. 1. The transport and geographical position of medium-sized cities in the western regions of Ukraine (built by the author according to [1, 4])

Among the cities Novovolynsk, Chervonohrad and Mukacheve are the closest to the state border checkpoints (are located within 50 km); Kovel, Drohobych and Stryi are located within 100 km. The longest distance from the state border checkpoints is to Kalush and Colomyia, however, comparing their location to many other regions of Ukraine their geopolitical position is also highly advantageous. The transport and geographical position of Mukacheve and Kovel is especially advantageous in terms of border location as characterized by the relative proximity to the state border checkpoints with four and two states, respectively. The border location of Novovolynsk is also extremely advantageous as the city is located 19 km from the state border checkpoint, and the direct distance from the city to the state border is only 5 km, which creates favourable conditions for the development of external economic activity. As a result, the city is the first in the region in terms of foreign direct investments per capita [6, p. 13], being ahead of both the regional centre and the main transport hub Kovel.

An important characteristic of the transport and geographical position of medium-sized cities is also their location relative to transport routes and airports. The most important and the most powerful transport arteries that run through the region are international transport corridors such as the Pan-European transport corridor №3, the Pan-European transport corridor №5 and the International transport corridor Gdansk-Odessa [5]. The Pan-European transport corridor №3 (Berlin-Kyiv) passes through the regional centre Lviv, accordingly among all the cities Drohobych, Stryi and Chervonohrad are located the closest to it. The Pan-European transport corridor №5 (Trieste-Lviv) passes straight through Mukacheve and Stryi in the direction of Lviv, respectively, Drohobych, Kalush and Chervonohrad are located closely to the corridor. The international transport corridor Gdansk-Odessa passes directly through Kovel, among other cities Chervonohrad and Novovolynsk are the closest to it. Therefore Kovel, Mukacheve and Stryi are characterized by an extremely advantageous position, these are transit cities and international transport corridors pass directly through them, Colomyia is located the furthest from these routes.

Besides international transport corridors European routes pass through medium-sized cities in the Western Ukraine, in particular through Kovel – E85 (Klaipeda-Alexandroupolis) and E373 (Lublin-Kyiv), through Mukacheve – E50 (Brest-Makhachkala), E58 (Vienna-Rostov-on-Don), E81 (Mukacheve-Constanta), E471 (Mukacheve-Lviv), through Stryi – E50, E471. In addition, the routes E40 (Calais-Ridder), E372 (Warsaw-Lviv), E573 (Pyshplkladan-Uzhhorod) [3] are held at a small distance from medium-sized cities in the region. The most remote city from European routes is again Colomyia.

The connection within the state is provided by highways of state (international, national, regional and territorial) and local (regional and district) importance. The state highways passing through medium-sized cities in the Western Ukraine are [8]:

- through Drohobych – territorial road T1418 (Nyzhankovychi-Stryi);

- through Kalush – national road N10 (Stryi-Mamalyha) and territorial roads T0910 (Burshtyn-Kalush), T1419 (Mykolaiv-Kalush);

- through Kovel – international roads M07 (Kyiv-Yahodyn), M19 (Domanove-Terebleche), regional road R15 (Kovel-Zhovkva) and territorial road T0311 (Sedlyshche-Lokachi);

- through Colomyia – national road N10, regional road R24 (Tatariv-Kamianets-Podilskyi) and territorial road T0905 (Deliatyn-Rakivchuk);

- through Mukacheve – international roads M06 (Kyiv-Chop), M24 (Mukacheve-Luzhanka), national road N09 (Mukacheve-Lviv) and territorial road T0710 (Velyka Dobron-Mukacheve);

- through Novovolynsk – regional road R15 and territorial road 0305 (Novovolynsk-Lokachi);

- through Stryi – international roads M06, M12 (Stryi-Znamianka), national road N10 and territorial road T1418;

- through Chervonohrad – regional road R15 and territorial roads T1404 (Chervonohrad-Rava-Ruska), T1410 (Brody-Chervonohrad).

It should be noted that international roads coincide with (are a part of) European routes and international transport corridors. National and regional roads connect several related regions and also the medium-sized cities within a region. Territorial roads mainly connect medium-sized cities with other settlements within regions except the road T1419 that connects the cities of Mykolaiv in Lviv region and Kalush in Ivano-Frankivsk region. A part of the roads (M06, M07, M19, M24, H10, T1418), which pass through the cities connect state border checkpoints with one another or with other settlements and that is an important factor of passengers and cargo flows passing through the city, what in its turn can be an additional source of revenue to the city budget.

Thus, the most advantageous position relative to the highway network of Ukraine belongs to Kovel, Mukacheve and Stryi because of the international roads passing through them, less profitable – to Drohobych and Novovolynsk that are located on the periphery of major highways. In the case of Drohobych it's compensated by railway connection that is non-available in Novovolynsk. However, in general, the extensive highway network of Ukraine connects medium-sized cities in the region with both the surrounding settlements and regional centres also with settlements in other areas and regions. Thus, the differences between cities depend on whether important transport routes pass directly through their territory or not, and whether at a certain distance or not, which determines the relative advantages of their transport and geographical position.

What concerns air connection, the nearest airports to medium-sized cities in the region are the airports of Lviv (to Drohobych, Kovel, Novovolynsk, Stryi and Chervonohrad), Ivano-Frankivsk (to Kolomyia and Kalush) and Uzhhorod (to Mukacheve). Thus, only in one region with medium-sized cities in the Western part of Ukraine there is no airport, which can be considered as a favourable indicator.

In our opinion, the most important indicators that allow to evaluate the profitability of the cities transport

and geographical position are their location relative to international transport corridors and European transport routes, the proximity and transport accessibility to state border checkpoints, since cross-border and international cooperation is the main stimulus of economy development and modernization in contemporary reality. Therefore, the most advantageous transport and geographical position among medium-sized cities of the region clearly belongs to Kovel, Mukacheve and Stryi.

A few medium-sized cities of the region serve as transport hubs based on the existing extensive transport system and the crossing of arterial transport routes within these cities. These are, above all, Kovel and Stryi that are important transport hubs in the Western part of Ukraine. Chervonohrad and Colomyia are railway junctions too. We must also distinguish the significance of Mukacheve as a city that although hasn't got the status of a transport hub, but is situated on the crossing of transport corridors and routes of international, European and state importance that connect not only Transcarpathia, but also the rest of Ukraine with the neighbouring states. The status of transport hubs is a logical result of the favourable transport and geographical position of cities and an important stimulus of their economic development.

Conclusions. The analysis of conditions and characteristics of the transport and geographical position of medium-sized cities in the Western regions of Ukraine shows us that in general cities are characterized by favourable location, as being situated within the border area, within or close to major highways, and most of

them have easy connection to regional centres (it doesn't take a long time to get to them). However, there are visible substantial differences between specific cities. The most favourable transport and geographical position, which can be described as arterial, belongs to Kovel, Mukacheve and Stryi. Kovel and Stryi are important transport hubs in Western Ukraine; the transport sector plays a significant role in their economy. Although, in comparison to other medium-sized cities of the area, the greatest amount of international and European transport routes lies across Mukacheve. The transport and geographical position of Colomyia and Chervonohrad can be considered as advantageous, as evidenced by their status of railway hubs, less advantageous – Kalush which has a quite bad railway connection, but is close to the regional centre and quite well connected to the surrounding settlements by highways and Drohobych through which only one territorial road passes. Although Novovolynsk is a border city it has no railway connection and is remote from the major highways, therefore has the least advantageous, peripheral transport and geographical position. Transport and geographical position of medium-sized cities in the area is an important but not a determinant factor of their development, serves as an additional incentive to use the potential of these cities by accelerating or restraining their economic growth. This is especially important for medium-sized cities, which are mainly industrial and administrative centres and require communication connectivity with the surrounding area.

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