POPULATION SPATIAL MOBILITY: ESSENCE AND CHARACTERISTICS

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INTRODUCTION

The population spatial mobility is becoming a more important concept in the world’s economic science. Spatial mobility is becoming particular relevant in demography, geography, sociology and other areas. This concept is becoming even more important in the context of globalization with the formation of a new world’s economic order and ideological weakening of national and identical moods. A transnational lifestyle is becoming more and more common and, as T. Faist writes, it could become the strategy of survival and improvement of modern society’s welfare [Faist 2000].

On the one hand, high spatial mobility is a pre-condition of development, a need for many social groups, including professional ones. On the other hand, its high level creates many risks. Most of them occur because of a very thin edge between mobility and the desire to leave due to poor conditions (for example “brain drain”). This phenomenon is actualizing the study of spatial mobility, its level and limits in the coordinates of a human development policy.

THE AIM AND STUDY METHOD

The aim of this article is the improvement of theoretical foundations of the research of the population spatial mobility as an actual socio-economic concept and the development of its three-dimensional model. The author used as a rule the research results of the Ukrainian and Russian scientists and took into account the works of foreign authors that
are freely accessible on the Internet. The approaches of different authors to considering the essence of spatial mobility are highlighted in the article.

The author used general scientific methods of scientific knowledge to achieve this goal – scientific abstraction, analysis, synthesis, induction, deduction to formulate the definitions of spatial mobility. The classification methods for a systematic presentation of the characteristics of the population spatial mobility are applied as well. The graphical methods in order to visually present some research results are used.

The theoretical basis of the study of spatial mobility and homologous concepts is formed by several Ukrainian researches and foreign scientists, including: N. Kovalisko (labour mobility), O. Kozlova, T. Maletska and D. Kozlov (professional and spatial mobility), V. Podliashanyk and H. Boiko (social mobility), O. Pozniak (migration mobility), V. Pryimak (interregional labour mobility), Yu. Sereda (concept of socio-spatial mobility), Yu. Stadnytskyi (concept of spatiology), L. Shevchuk (urban space) and others. The author also used the works of such foreign scientists as H. Andriienko, N. Andriienko and J. Fuchs (geovisualization of the study of spatial mobility), V. Gil, E.D. Widmer, V. Kaufmann (spatial mobility connected with the change of a work place), F. Duval (geographic mobility), K. Maggie, K. Letma, T. Tamara, M. van Ham (areas of spatial mobility), N.M. Romão and M.A.V. Escária (connection of spatial, labour mobility and wage), T. Faist (theory of trans-nationalism); the representatives of the Russian scientific school – P. Stroiev and M. Kahn (spatial mobility as a way of organizing social space), V. Yadov and R. Sokolov (spatial mobility as potential willingness of the population). The other modern foreign authors who have studied various aspects of the population mobility include W. Clark (residential mobility, USA), M. Cvajner (control of spatial mobility in the context of irregular migration, Italy), A. Favell (interaction between social and spatial mobility, France), M. Gonzalez (schemes of human mobility), I. Hrabowska-Lusinska (spatial mobility and professional, Poland), N. Kattan (student mobility, Germany), J. Shen (mobility in the context of urbanization, China) etc. The next author’s studies of spatial mobility will be carried out as continuation of their ideas. The disclosure of the essence of the population spatial mobility, its characteristics and the development of evaluation methodology is still relevant that will serve as a scientific basis for determining the possibilities of its regulation.

ESSENCE OF SPATIAL MOBILITY

Statistical data confirm the growth of spatial mobility. The number of international migrants has reached now almost 244 million people, representing 3% of the world’s population. The growing dynamics in the last decades is particularly significant: this figure increased threefold during 1960–2015. Persons with the status of international migrants form a larger share of the population in many countries: United Arab Emirates – 88% international migrants of the total population, Qatar – 75%, Kuwait – 74%, Liechtenstein – 63%, Andorra – 60%, Monaco – 56%, Bahrain – 51%, Singapore – 45%, Luxembourg – 44%, Saudi Arabia – 32%, Switzerland – 29%, Australia and New Zealand – 27%, Maldives – 26%, Israel – 25% (Ukraine – 14% in 2016). The number of refugees, asylum seekers, internally displaced persons is increasing in the conditions of unstable situation.
There were more than 16 million people with refugee status, 3 million asylum seekers and more than 37 million internally displaced persons in the world as of 2015. Whereas in the early 2000s the share of refugees was 0.3% of the world’s population, in 2015 it reached the highest value – 0.8%. The number of people studying abroad is another illustrative trend of the increase in the population spatial mobility. Their number has increased more than threefold since the early 1990s: in 1990 – 1.3 million, in 2000 – 2.1 million, in 2014 – 5 million [International Migration Report 2015].

Consequently, statistical data and practical monitoring confirm the relevance of the scientific research of population spatial mobility, particularly in terms of improving a theoretical basis. The two basic concepts form the essential understanding of spatial mobility. They are “mobility” and “space”. With regard to the concept of mobility, it can be considered as: desire, willingness and ability (opportunities); movement, displacement, adaptation and change; fact, cause and consequence. The concept of space is becoming an increasingly important subject of research not only in geographic fields of knowledge, but also in economics, regionalistics and public administration. According to Yu. Stadnytskyi “a spatial and logical way of thinking” is developing now: the question “What is this?” does not make sense unless it is accompanied by the question “Where is it?” [Stadnytskyi 2016]. The scientists determine different types of space (geographic, social, economic, political, scientific, educational, information and communication, cultural and mental) that also should be considered for the holistic understanding of the concept of population spatial mobility [Shevchuk 2016].

The author thinks that the following properties of space should be taken into account while considering mobility: the formation of communication systems (networks, systems), otherwise it would be geographic mobility (or territorial); causing spatial transformations of geographic, social, economic, political, scientific, educational, information and communication, cultural and mental character; the organization of territorial displacement under a defined trajectory.

Whereas the concept of space is becoming an increasingly important subject of research, including the Ukrainian science, spatial mobility is still not studied enough. As a rule, it is tied to the migration practice and is an established geographic concept. This is caused by the specific of the term of spatial mobility according to the goals of geographic science. Moreover, spatial mobility is often identified with geographical. Thus, F. Duval considers spatial mobility “as human geographic mobility” in his study [2007].

The author will consider the other examples of opinions on the essence of spatial mobility. Labour mobility occurs in the conditions of changing an employer by an employee, whereas spatial mobility – when an employee changes a workplace. We can find this opinion in the work of the Portuguese scientists N.M. Romão and M.A.V. Escária devoted to clarifying the interrelation of labour mobility, wage and spatial mobility [Romão and Escária 2004]. This approach, at first glance, seems somewhat narrow in the sense of spatial mobility, because it can be manifested not only in labour activities. However, the change of a workplace may have different spatial coordinates, not limited by the labour market of a separate region or settlement.

The Ukrainian scientist Yu. Sereda defines the concept of socio-spatial mobility in his study in sociology as a three-dimensional coordinate system with spatial, temporal and symbolic dimensions, where the first two describe physical characteristics of movement,
and the latter – its social projection. The physical space of movement is an objective social structure in this model, which is implemented in terms of perception and evaluation as a mental structure or the incorporation of objective spatial structures, and any spatial mobility (including tourism) can be expressed in terms of horizontal or vertical dynamics, for example when the “collection” of territories becomes a symbolic capital acquired while travelling [Sereda 2010]. This idea of Yu. Sereda’s of a three-dimensional coordinate system matches the author’s views on spatial mobility, but with some modification in economic terms, which will be discussed below.

The concept of migration mobility is presented in the work of the Ukrainian scientist O. Pozniak. The author notes that unlike stationary migration, the preservation of the migrant’s constant communication with their family both in personal information and economic forms is inherent for this type of migration [Naselelnnya Ukrayiny 2010]. This is a slightly different vision of mobility that is focused on the symbolic dimension defined by Yu. Sereda.

The essence of an interregional kind in the focus of labour mobility research is defined by V. Pryimak. Interregional labour mobility implies the ability to quickly move within country’s regions in order to be employed; high labour mobility contributes to work provision, and, therefore, some means of livelihood, reduces tension in regional and national labour markets, facilitates the best possible meeting of needs for production human resources that are revived or newly formed [Pryimak 2001].

The issue of spatial mobility is regarded by Russian scientists as well. Thus, spatial mobility is considered as a way of organizing society space in the work of P. Stroyev and M. Kahn [2016]. Mobility is regarded as potential willingness of the population to change their status, including territorial in the researches of V. Yadov and R. Sokolov [2011]. The importance of spatial mobility for the processes of urban space exploration is emphasized in this work as well.

Overall, the analysis of works on the spatial mobility subject among foreign authors shows (Ukrainian scientists rarely mention this concept) that an urbanization theme is clearly distinguished. As a rule, the spatial mobility is considered in the context of metropolises’ development, the opportunities of movement within them and the periphery. However, the author thinks that spatial mobility reveals only one of the scales of its implementation in this sense. Therefore, the focus of this concept understanding should be expanded. The review of spatial mobility associated with the change of a work place can be found in the researches of foreign authors (“job-related spatial mobility”), which can be of three types: with daily movements to the workplace within 2 hours; with movements for longer distances and at least one overnight stay; with movements for long distances [Gil et al. 2010]. Spatial mobility associated with the change of a work place is a reflection of the connection with labour mobility, and, therefore, it has wider importance, than in the author’s understanding in this area.

The author presents her vision of the population spatial mobility below: this is such a property, which reflects desire, willingness and opportunities to change the place of residence in specified space-time coordinates that is accompanied by the processes of human potential capitalization during the implementation.
Immobility is the opposite property of mobility. The term relatively immobile people could often be found in English-language works on mobility and migration, which means inactive persons.

A three-dimensional model of the population spatial mobility is reflected in Figure 1, which emphasizes the need to consider the factor of time, space and capitalization of human potential in spatial movements. The capitalization of human potential concerns all its components: physiological, reflecting the state of health – physical and psychological; psychological, reflecting personal characteristics gained by a person – orderliness, stress resistance, morality, adaptability, activity, etc.; intellectual, reflecting genetically inherent human abilities, the level of their use and development; education and qualification, reflecting the level of gained (lost) knowledge and skills; social, reflecting new social contacts; cultural, reflecting the adoption and preservation of values, norms and traditions.

Spatial mobility has two basic phases (stages) – formation and implementation. The process of human potential capitalization can occur already at the stage of formation, but it gets dynamic changes in the conditions of implementing a high level of mobility.

![FIG. 1. Three-dimensional model of the population spatial mobility](image)

Source: author's development.

**CHARACTERISTICS OF THE POPULATION SPATIAL MOBILITY**

The characteristics of the population spatial mobility reveal its epistemological essence – subjectivity, level and scale display, tempology, transformation, goal orientation, potency, functionality, ability to adjust and measurability. Consider them more in detail.
Spatial mobility is not only a property of humans but also of wildlife and other resources – financial, logistical, information, etc. In the study, the author considers population mobility, so subjectivity is expressed concerning the individual, household (family), a social group and society in general.

Level display is a more complicated characteristic of spatial mobility. The level of mobility is not so easy to define, because it is manifested specifically for each individual. The person can be mobile because of the availability of certain personal and professional qualities, but their mobility may be manifested only in activity [Kozlova et al. 2015].

The level of spatial mobility is reflected in the desire, willingness and opportunities to human movement. The reconciliation of desire and willingness is a complex internal process, which is significantly influenced by environment conditions (opportunities). It is quite difficult to assess them qualitatively (Table 1).

TABLE 1. Determinants of the population spatial mobility

<table>
<thead>
<tr>
<th>Desire</th>
<th>Willingness</th>
<th>Opportunities</th>
</tr>
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<tbody>
<tr>
<td>Aspiration to change the place of residence with a certain goal; intermediate emotion between need and action – real movements</td>
<td>Disposition to action (movement) at the moment or in the nearest future</td>
<td>Environment conditions of the realization of desires and willingness to act (move)</td>
</tr>
</tbody>
</table>

Source: author’s development.

There is still no developed methodology to determine the level of spatial mobility of the population in Ukraine. This methodology should be based on existing evaluation methods of immigration moods, aspiration (expectations, hopes), migration units (situational disposition to migration), finally, movements themselves for the purpose of tourism or migration. However, the main purpose of assessment should be the determination of population disposition to movements at the stage of desire and willingness. These estimates should be a basis for creating the “opportunities” of movement in the form of migration regime and other indirect regulatory influences.

Different types of the population spatial mobility are defined depending on its level. The approach of N. Kovalisko [1999], who defines six types of labour mobility, which are adapted to spatial dimension by the authors, matches the author’s vision (Table 2).

The structure of the population spatial mobility is formed depending on the dominance of a particular personality type. It is very important to determine the share of persons of the country’s (region’s) total population that are of active mobile personal type. This share can be set under the optimal indicator, thus, a situational fluctuation is also possible, denoting the concept of mobility structural limits (Fig. 2). These limits are advisable to determine from marginal and security positions. The security position shows that society runs the risk of significant loss of human potential both under very low share of active mobile persons in society and under too high.

The scale of spatial mobility is the next important characteristic of the population spatial mobility. It reflects the desire, willingness and opportunities of movement for a specified distance. At the same time, spatial mobility can occur at the every-day (daily) level – within the settlement, agglomeration, and in terms of finding the best environmental living conditions and development. Due to the conclusions of the Estonian scientists spatial mobility is manifested in
different coordinates: a settlement area (core of mobility) – there are such sub-kinds of spatial mobility as immobility, in-settlement mobility (in-city, in-metropolis), mobility (residential, daily); an area of the approach to settlements – as a rule, a district, a region, that are home to a person; there are such forms of mobility as urbanization and suburbanization; an area of remote settlements – there is interregional, including cross-border, intrastate mobility; an area of significantly remote settlements – international mobility or so-called long distance migration (“long-distance migration”) [Mägi et al. 2015].

Spatial mobility is specific within a settlement or agglomeration area (daily mobility). This is a separate section of scientific research with understanding of development infrastructure features. Significant research in this area is done by such scientists as H. Andrienko, N. Andrienko and G. Fuchs. The main directions of spatial movements depending on objects of social infrastructure and a personal residence zone can be determined, based on their work (Fig. 3).

### TABLE 2. Personality types of spatial mobility

<table>
<thead>
<tr>
<th>No</th>
<th>Types</th>
<th>General description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>realization</td>
</tr>
<tr>
<td>----</td>
<td>---------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>1</td>
<td>active</td>
<td>present</td>
</tr>
<tr>
<td>2</td>
<td>reluctantly active</td>
<td>present</td>
</tr>
<tr>
<td>3</td>
<td>potentially active</td>
<td>absent</td>
</tr>
<tr>
<td>4</td>
<td>potentially passive</td>
<td>at this time</td>
</tr>
<tr>
<td>5</td>
<td>reluctantly passive</td>
<td>absent</td>
</tr>
<tr>
<td>6</td>
<td>passively stable</td>
<td>absent</td>
</tr>
</tbody>
</table>

Source: author’s own research based on Kovalisko 1999.

![Conditional display scale of the share of active mobile population in the focus of security and marginal structural limits](source)

Source: author’s development.
Transformation is the next important characteristic, which reflects the forms of high-level implementation of the population spatial mobility. The author thinks that the main forms are tourism and migration activity. In the future there is a probability of institutionalization of another consequent form of the implementation of the population spatial mobility. This is a virtual form. However, migration and tourism consequences are basic forms now.

Goal orientation refers to other characteristics of spatial mobility. The mobile property of a person allows them to more quickly meet the needs through the achievement of demanded goals compared to other members of society, who are immobile. This is the main advantage of highly mobile society, where the right to choose belongs to defining freedoms of modern man (Fig. 4).

FIG. 4. Spatial mobility in the system of achieving person’s goals
Source: author’s development.
Spatial mobility is quite a variable property. It is important to understand its potentiality in this context. Mobility potential is determined by its capabilities. That is, the more opportunities a person gets by changing a residence place, the more likely the transition of the high level of mobility to real movement is. It is really difficult to estimate the potential of spatial mobility, because difficulties arise already at the stage of determining its level and permissible limits in society. However, this characteristic discloses the relativity and variability of mobile properties of a person, which justifies the necessity and possibility of its regulation.

Functionality is the next characteristic of spatial mobility. It reveals its ability to perform the following functions:

1. Ensuring of movement. Mobility is considered in a positive context, thanks to its ability to change. According to V. Podliashanyk, to be mobile is to be dynamic and creative, positive and modern, and therefore meet all the requirements of today’s rapidly changing life [Podliashanyk 2011].
2. Resistance to stagnation. This function is a logical conclusion from the previous one. It should be understood, that a change, whether it is progress or regress, is not stagnation, immobility, and this is positive.
3. Balancing and alignment. The implementation of spatial mobility is the factor of the establishment of social standards between countries (regions) that form networks and systems of migration, including wages. Mobility also influences the standards of social infrastructure objects, including within travel corridors and networks (roads, checkpoint capacity across the state border, etc.).
4. Variability, alternativeness. Spatial mobility allows people to choose their place of residence, development, opportunities of income to ensure personal welfare and the welfare of their families.
5. Freedom. Spatial mobility provides the freedom to choose the best conditions of residence, which is supported now by international law and laws of all developed democratic countries.
6. Protection. The implementation of spatial mobility allows the person to seek better conditions of protection (labour, development, reproduction, etc.), including to avoid dangers. This is where the practice of forced displacement is manifested, when a person is forced to implement their mobility in order to avoid the consequences of natural disasters, military conflicts and high social tension.
7. Development. Spatial mobility can ensure the development of a person and society with the reflection on the efficiency of labour potential, stimulation of innovation processes.
8. Self-responsibility. It is about the domination in persons, who are mobile and responsible for their welfare level. Dependency moods now are becoming in Ukrainian society more significant: every sixth person was responsible for their own well-being in the early 1990s, whereas in 2010 – only every tenth person [Libanova et al. 2012]. Highly mobile society weakens paternalistic attitudes, which is a positive change in modern market conditions.
9. Individualization. High spatial mobility causes social individualisation. The more possibilities of individual mobility are available in society, the lower level of cohesion of social groups and intergroup tension is [Boiko 2016]. The high level of personal
mobility contributes to the individualization of society, the prevalence of values of individual promotion. This trend is positive in the context of economic development, but it requires political stability and national unity.

CONCLUSIONS

So, the population spatial mobility is an important research object. It reveals such a property of society, which reflects desire, willingness and opportunities to change a place of residence in specified space-time coordinates, which is accompanied by human potential capitalization during implementation processes. The population spatial mobility is characterised by the following characteristics – subjectivity, level and scale display, tempology, transformation, goal orientation, potentiality, functionality, the ability to adjust and measurability. The characteristic of level display is of special practical importance, because it reflects the quantitative and qualitative indicators on the tendency of population to change a place of residence. Measurability is a mobile characteristic, which reveals a scientific and applied focus of mobility consideration. This may concern sustainable, innovative development, labour potential development, labour markets competitiveness, demographic reproduction, etc. Human development, including a human development policy, is a key measurement of spatial mobility consideration, determining its level and limits in the author’s studies. This position directs to the problems and effects of spatial mobility in the light of human development goals, which are used by leading international organizations and the entire civilized world. To understand the relationship between spatial mobility and processes of human development, it is important to find out what the policy of human development is and what its goals and objectives are. This will be the subject of the author’s further research.

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Summary. The aim of the paper is to improve theoretical foundations of the research of the population spatial mobility as an actual socio-economic concept and development of its three-dimensional model. Two basic concepts are used to understand spatial mobility – “mobility” and “space”. The population spatial mobility is suggested to consider its property, which reflects desire, willingness and opportunities to change a place of residence in specified space-time coordinates, which is accompanied by human potential capitalization during implementation processes. Immobility as the opposite property of mobility is identified. A three-dimensional model of the population spatial mobility is considered. The characteristics of the population spatial mobility are generalized. They include: subjectivity, level and scale display, tempology, transformation, goal orientation, potentiality, functionality, the ability to adjust and measurability. All the characteristics are described. The author points out that the methodology to determine the level of the population spatial mobility needs developing. The different types of the population spatial mobility are described in order to assess its level. This is active-mobile and passive-mobile population. The structure of the population spatial mobility is formed depending on the dominance of a particular personality type. The scale of spatial mobility as an important characteristic reflects desire, willingness and opportunities of movement for a specified distance. Functionality as the characteristic of spatial mobility reveals its ability to perform such functions as movement provision, stagnation resistance, balancing and alignment, variability, alternativeness, freedom, protection, development, self-responsibility and individualization. Goal orientation shows that the mobile property of a person allows them to more quickly meet the needs through the achievement of demanded goals compared to other members of society who are immobile. The actuality of the research of the population spatial mobility in the context of human development is proved in the conclusions.

Key words: population spatial mobility, movement, level of spatial mobility, personality types of spatial mobility, immobility

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