

Socio-cultural factors of the evolution of the urban transport system

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Abstract. The sociocultural urban space of a modern city is undergoing some transformational changes due to the high level of population mobility. The daily need to develop urban space determines the importance of the transport system in sociocultural interactions, the participants of which value safety, confidentiality, and rationality. In realizing their purpose, urban transport structures not only operate with economic, social and communication resources, but also involve citizens in the process of organizing urban life. This research aims to study the socio-cultural factors in the evolution of the urban transport system by systematizing theoretical scientific concepts, comparative analysis of dynamic changes in the use of public transport and summarizing some gaps in transport infrastructure. Identification of the correlation between sociocultural factors, passenger needs and the quality of transport services determines the need to develop a communicative culture, maintain moral values and overcome sociocultural barriers, which will subsequently lead to a constructive transformation of the urban transport system.

1 Introduction

The urban transport system is a complex infrastructure that combines many technical, communication, legal and sociocultural mechanisms of functioning of both a person and the urban space around him.

A significant increase in demand for transport services determines the conditions for the socio-economic development of urban areas, the level of population mobility, as well as the overall economic productivity of the locality, region and country.

The relevance of this study is justified by the importance of the transport communications system in the process of preserving the socio-cultural territorial community by identifying forms of settlement and self-organization of the population, determining the position of the city in the system of regional and interregional relations.

A significant element of the functioning of any transport system is the sociocultural space that regulates social improvement, cultural characteristics and the level of public and personal satisfaction in matters of transport communications.

In modern conditions, transport links as a component of urban sociocultural space are constantly transforming, revealing a number of problematic aspects: deterioration of roads,

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abolition of tram and trolleybus traffic, reduction in passenger traffic, wear and tear of public vehicles and their poor condition, and much more.

This leads to a transformation in the models of perception of urban space by city residents.

The degree of satisfaction with public transport, as a rule, indicates the socio-cultural characteristics of the population, which adapts to systemic changes in infrastructure.

The purpose of the paper is to study the sociocultural factors in the development of the urban transport system.

The implementation of this goal implies the solution of a number of sociocultural issues that determine the evolutionary transition of the urban transport system to a more orderly, safe, innovative and cost-effective model.

2 Materials and methods

The methodological basis for the study of sociocultural factors in the development of urban transport infrastructure includes the selection and analysis of relevant scientific sources in the direction of social space and everyday culture.

The historical and descriptive approach to the formation and transformation of the transport system was described by P. Bourdieu, who identified these structures as leading in modeling individual and collective social habits. Scientists such as M. Strigul, O. Mikhailiuk, S. Yagodzinsky, Yu. Romanenko and others devoted their works to the issues of institutional development of urban transport.

Sociological, cultural and communicative aspects in the process of interaction between society and transport structures are revealed in the studies of E. Korkiya, A. Maksimov, A. Mamedov, etc., studying behavioral models, communication processes and factors of transformation of the socio-cultural space of the city.

The influence of social stigma on the development of transport structures and the popularization of public transport is studied in the most general form by K. Nahiduzzaman, T. Kampsı, K. Assı and other scientists, identifying the need for equal access to the mobility system for all social strata of the population from the point of view of economic and gender perspectives.

A significant condition for the sociocultural transformation of urban space is the sustainable development of transport infrastructure from the perspective of the law and political course of the country (region and individual cities). Through empirical research, A. Kazemeini and A. Kermanchan confirm the fundamental interconnection of these scientific directions.

Systematization and compilation of theoretical concepts makes it possible to deeply study the role of urban transport in the system of sociocultural interactions.

In the process of conducting this research, a complex of general scientific methods was used, including: a structural-functional approach and an analytical description of all elements of urban transport, including management and regulation structures, sociocultural influence, planning and passenger use. Synthesis and generalization make it possible to identify a number of the most common gaps in the functioning of the transport system.

The method of comparative analysis reveals the influence of the urban transport system on human life and modern society, and also determines the dynamics of sociocultural changes in the process of transformation of transport infrastructure.

The use of a systematic approach to sociocultural methodology allows us to consider the entire transport system as a social phenomenon that integrates social and cultural features of relationships between people, various types of communication, interactions of government institutions and a number of other elements in urban space.

Thus, the fundamental part of the methodological basis of scientific work is determined by the need to diagnose the sociocultural environment, its value guidelines, functions and

properties of the urban transport system with further forecasting the conditions for the development of this infrastructure in the context of territorial, economic, communicative and ideological improvement.

3 Results and discussion

The pace and dynamics of life in modern society requires a high level of population mobility, which is ensured by the transport system. Being one of the significant social institutions, urban transport determines the degree of development of urban space, the distribution of time and the uniqueness of socio-cultural communications.

When interpreting the concept of “transport,” we mean a certain dimensional object for the development of the surrounding space. From the point of view of sociocultural knowledge, this object regulates the presence of social rules and norms aimed at establishing behavioral, communicative and cultural patterns.

According to its purpose, transport provides the opportunity to quickly move outside the permanent place of residence, thereby changing the everyday environment, geographical location, marked by special social and cultural values.

Physical mobility implies sociocultural mobility in terms of switching axiological guidelines, cognitive activity and mastering a new space.

Urban transport is a social phenomenon designed to satisfy human mobility needs, including sociocultural and physical ones.

“Historically, it was public transport and its infrastructure that formed the spatial framework of modern cities and megacities. Public transport arose and was institutionalized already in the early stages of society as an effective way to save money and professionalize transport services” [1].

The evolution of transport systems, considering the socio-economic, scientific and technical development of society, has led to the individualization of transport communications, changes in routes, the abolition of certain types of public transport (tram, trolleybus) and a general decrease in the level of use of urban transport. In this regard, in this process, the problem of the collision of social mobility with the increasing opportunities for individual mobility arose.

However, the effective development of the urban space of a modern city from the point of view of economic and environmental prospects must be ensured by public transport, the condition of which is the most important indicator of the attractiveness and development of the urban environment.

In this case, the question arises of satisfying individual and public interests and requirements on the part of urban transport structures.

Comparing the increasing number of means of individual transportation, the high degree of road congestion, the lack of parking spaces and several other problems associated with the unpopularity of public transport in many Russian cities, we conclude that it is necessary to popularize urban transport to normalize the environmental situation and develop the economic and legal segment and expansion of sociocultural ties.

The main purpose of public transport is to organize daily life activities and social routines. In fulfilling their functions, transport structures integrate cultural, social, economic and other elements of “involving citizens in the processes of city life, distribution and use of resources and needs of the city” [2].

However, another significant stage in the functioning of transport communications is the differentiation of urban space, which implies the regulation of social contradictions, manifested in the coordination of human relations carried out in the process of movement and movement.

“The urban environment as a sociocultural phenomenon forms the appropriate socio-psychological type of personality, endowed with rationality, mobility, readiness for change, the ability to compare one’s interests with the interests of others, the ability to overcome difficulties and obstacles” [1].

Consequently, it is necessary to regulate and develop the transport infrastructure that formalizes the collective and individual relationships of people, their value-symbolic characteristics and socio-cultural experience. By deepening and expanding the conditions for the creation and transformation of the sociocultural order of the urban transport system through the professionalization and development of driver culture, the introduction of elements of solidarity among passenger communities and the civic resource of users of transport services, we can come to a rethinking of sociocultural relations in the “state-transport-society-person” system.

In the context of globalization and open socio-economic changes, transport infrastructures transmit images and stereotypes about the rules of behavior and interaction of people, value experience and professional skills in this field. Consumer expectations and regulatory standards determine and shape the culture of transport services, which moves to the level of standardization and is reflected in the degree of passenger satisfaction. From the point of view of service science, transport becomes a public place that guides the socio-cultural expectations of consumers.

In this regard, meeting the needs of passengers for mobility includes meeting such requirements as safety, comfort, support for socially vulnerable groups of people and people with disabilities, well-established communication skills, etc.

As the practice of implementing transport services in Russia shows, these directions are the most lagging and disintegrated, which leads to sociocultural dissatisfaction of passengers.

To develop the urban transport structure, it is necessary to work out the transport system from the inside. A component analysis of this sector shows the interaction of four elements: users, infrastructure, vehicles, as well as a management and regulatory component [3].

It is important to note that all four elements must function comprehensively and in interaction with each other. The main task in this case is to normalize the functioning of these structures, which will further lead to the popularization of public transport.

In general terms, the system of integrated planning and safe management of urban transport, considering sociocultural factors, involves the cooperation of specialists in the field of law, long-term planning, economics, sociology and municipality. For their part, each participant must solve the problem of a clear relationship between security, comfort, convenience, privacy, and mobility [4].

It is also important to ensure the spread of democratic planning, protection, and support for marginalized sections of the population, including women, children, the poor, and people with disabilities, by building capacity for their inclusion in a functional public transport system [5].

Thus, to ensure the effective functioning of urban transport, it is necessary to implement the following sociocultural principles:

1. to provide full access to transport infrastructure for all segments of the population;
2. to expand the design of vehicles and infrastructures to promote the safety and security of passengers (planning of urban areas, monitoring the activities of drivers, widespread use of surveillance systems, etc.) [6];
3. to implement structures for planning and regulating transport services in order to meet the personal needs of passengers;
4. to conduct “short-distance” city planning by locating public transport stops close enough to allow walking to public transport, creating safe pedestrian routes and bicycle paths, and monitoring levels of social and residential activity [7];

5. to build strong communication models between all participants in the transport process, the basis of which should imply compliance with ethical values, the exclusion of an aggressive style of communication, and the transformation of behavioral norms.

Based on the results of this study, we can come to a generalization that the sociocultural environment within the urban space is a decisive factor in the formation in the minds of people of a positive or negative image of using public transport. The level of safety of this environment, comfort and convenience, compliance with moral and ethical standards, maintaining confidentiality, and the constant development of a communication culture will make it possible to popularize public transport services, which will further lead to a reduction in the use of individual vehicles, reduce the overall level of traffic on the roads and lead society to an economically efficient functioning.

4 Conclusion

In the context of the development of modern urban space, public transport, closely woven into the everyday urban reality of society, becomes an integral part of the lives of citizens and establishes symbolic connections between the individual and the city.

Formal principles of behavior, the procedure for regulating the mechanisms of functioning of the transport system, methods of communication between participants formalize the sociocultural ideas of the individual, create a cultural and communicative infrastructure and build sociocultural, material, technical and economic models of interactions within urban society, allowing the individual to identify himself as a subject of the life processes of the city [8].

The sociocultural space of the city forms a certain type of personality, characterized by a high level of mobility, cognitive aspirations, and rationality, thereby increasing the population's demand for transport services.

The urban transport system in this process ensures the full functioning of various government institutions and maintains a stable level of employment, organizes urban space, regulates the rules of sociocultural interactions, and helps to rethink communication patterns and behavioral models.

This leads to the conclusion about the importance of the urban transport system, however, as was revealed in the work, there are several unjustified risks and defects in this structure that cause inconvenience and discomfort for consumers.

Overcoming sociocultural barriers, building an attractive image of using public transport services, as well as attracting the interests of passengers from various social groups will help consolidate both the transport infrastructure and society as a whole.

References

1. M. Stryhul, O. Khomeriki, O. Mykhailych, S. Yahodzinskyi, Y. Romanenko and T. Perelyhin, *Transportation Research Procedia* **54** 6100616 (2021) <https://doi.org/10.1016/j.trpro.2021.02.113>.
2. E. Korkiya, A. Maksimov and A. Mamedov, *Transportation Research Procedia* **63** 2347-2353 (2022). <https://doi.org/10.1016/j.trpro.2022.06.269>.
3. H. Auvinen and A. Tuominen, *European Transport Research Review* **6** 343-354 (2014). <https://doi.org/10.1007/s12544-014-0135-3>.
4. Kh. Nahiduzzaman, T. Campisi, A. Shotorbani, Kh. Assi, K. Hewage and R. Sadiq, *Sustainability* **13** 12075 (2021). <https://doi.org/10.3390/su132112075>.

5. M. Dyer, M. Weng, S. Wu, T. Garcia Ferrari, and R. Dyer, *Urban Plan* **5** 20-32 (2020).
<https://doi.org/10.17645/up.v5i4.3208>.
6. E. Taylor, *Surveillance and Society* **14** 128-132 (2016).
<https://doi.org/10.24908/ss.v14i1.6285>.
7. S. Kenyon, G. Lyons and J. Rafferty, *Journal of Transport Geography* **10** 207-219 (2002). [https://doi.org/10.1016/S0966-6923\(02\)00012-1](https://doi.org/10.1016/S0966-6923(02)00012-1).
8. G. Hytrek, *Teaching Sociology - TEACH SOCIOLOGICAL* **36** 390-392 (2008).
<https://doi.org/10.1177/0092055X0803600409>.