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STRUCTURAL AND LOGICAL IMPROVEMENT SCHEME OF INTRA-REGIONAL PASSENGER TRANSPORTATION

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The modern market of motor vehicle services, which is rapidly developing, requires the regional transport system to constantly adapt to continuously changing internal and external conditions [1-3]. Passenger route transport develops and improves closely with economic changes in production and people's living conditions. The higher the level of development of society, the greater the need to move people. In suburban and intercity traffic, rail passenger transportation competes with road route transport. The cost of providing rail passenger services is lower. Still, in turn, rail passenger transportation has greater territorial restrictions on the delivery of passengers from point A to point B, and the time a passenger spends traveling by rail is longer than by bus.

Analysis of the system of intra-regional passenger road transportation in recent years shows that its technical and organizational potential is not fully used. Revenues of motor vehicle enterprises-carriers are not growing. Indicators of the efficiency of using rolling stock of enterprises remain at a low level. The number of routes does not increase, and the number of runs on individual routes decreases. Since the transportation costs of almost all automobile enterprises exceed their revenues, the system of intra-regional automobile transport has remained subsidized in recent years. This situation does not stimulate enterprises to increase efficiency and quality of work.

To attract passengers to the use of intra-regional bus services, it is necessary to carry out measures to improve the quality of transport services. Improving the intra-regional passenger transport system can contribute to improving the mobility of the population and reducing transport problems. Here are some ways to improve the intra-regional passenger transport system:

- Expanding the public transport network:
- Infrastructure improvement:
- Improving the quality of service:
- Development of multimodality:
- Encouraging the use of environmentally friendly vehicles:
- Motion control systems:
- Effective urban planning:
- Encouraging the use of public transport:
- Data monitoring and analysis

The question of finding a balanced model of relations of all participants in road transport, which would meet their interests and be oriented towards their own efficiency criteria and achieve a common result in terms of quality satisfaction of consumers' needs, is an urgent issue.

The main problem is the construction of a mathematical model of the functioning of the system, which determines the main areas of improvement of the system and ensures its maximum social and economic significance.

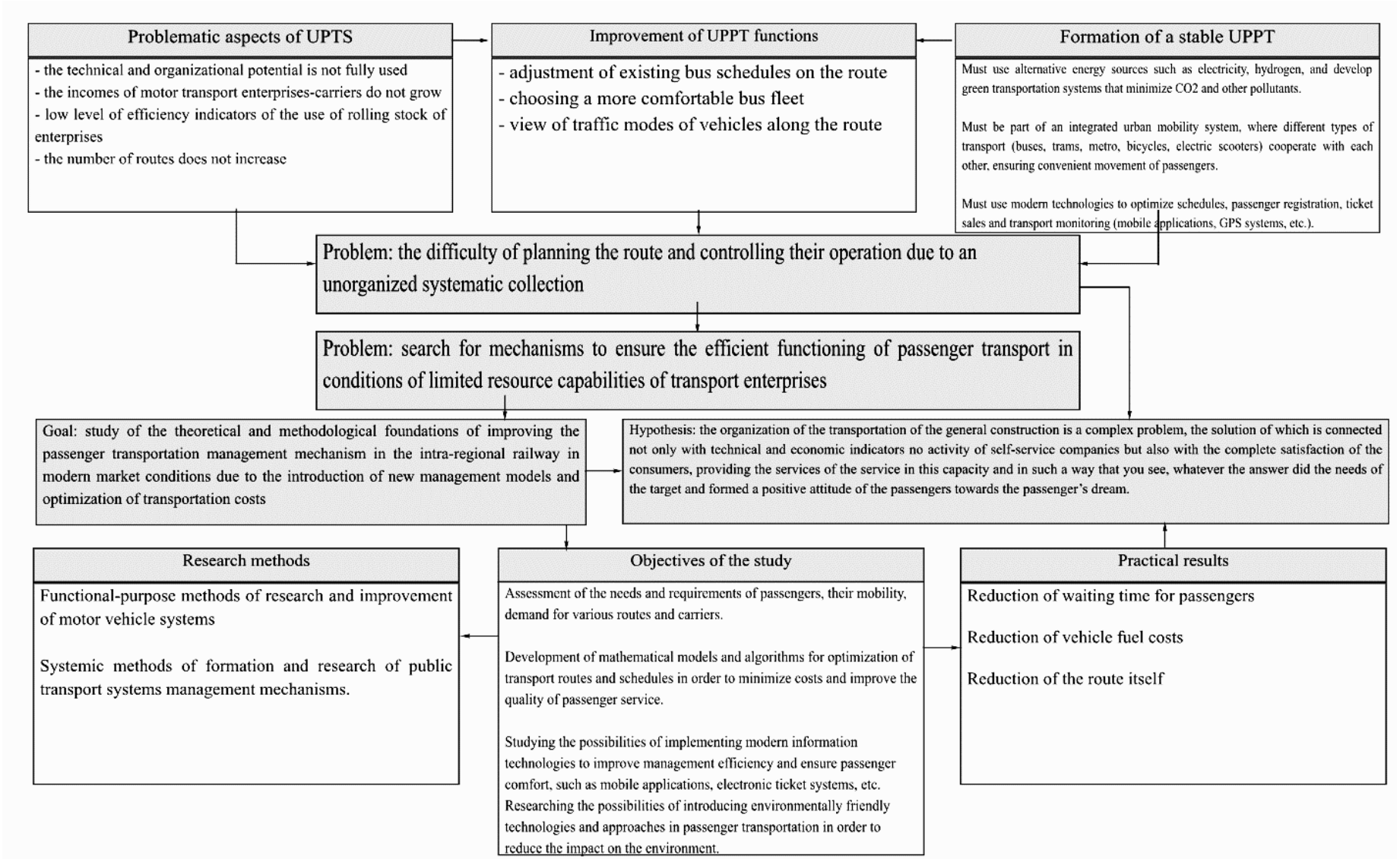
Based on the obtained information, a structural and logical scheme of research was built. Scheme 1 shows the correlation between the main aspects of UPPT and UPTS, their general problem, and steps of improvement that could resolve such an issue in the future.

Complex approaches to the study of the dynamics of road transport systems can be classified into one of the following groups:

1) Methods of simulation modeling of motor vehicle systems.

The use of simulation models allows experimentation and testing without real risks and costs. Also, it allows the study of different scenarios and alternative solutions for improving the road transport system.

The main drawback of this group of methods lies in the modeling process itself. Building simulation models can be very complex, require a lot of effort and resources, and require expert knowledge in the area under study.



Abbreviations: UPTS - urban passenger transport system, UPPT - urban public passenger transport

Scheme 1 - Structural and logical scheme of research

2) Functional-purpose methods of research and improvement of motor vehicle systems.

The advantages of these groups of methods are the possibility to study the motor vehicle system as a whole and not its individual components. This allows you to understand how all elements of the system interact with each other.

The subjectivity of determining goals and the limitations of decision-making are among the main disadvantages of these methods.

3) Game methods of formation and research of the management mechanism of public transport systems.

The advantages of these methods are considered to be the ability to consider the conflicts and interests of various participants in the system and identify possible ways to resolve them. The disadvantages of game models are that they can simplify the actual situation and do not always consider all the nuances and dynamics of the actual system. The results of the games depend on the specific model and its parameters and may differ from reality.

4) Systemic methods of formation and research of public transport systems management mechanisms.

The first of these methods is considered a global approach, which allows you to study and manage the system as a whole, considering all its components and their interaction. The disadvantage is the dependence on the quality and reliability of the input data, which affects the accuracy and reliability of the results.

Solving the problem of ensuring the balanced development of intra-regional passenger road transport as a determining element of the sustainable functioning of the industrial and social spheres of the regions of Ukraine is of great importance. Intra-regional passenger transportation, along with other infrastructural sectors, is an important tool for achieving social, economic and other goals, ensuring the improvement of people's quality of life. Analysis of the current system of managing the transport complex gives reasons to assert the existence of significant reserves for its improvement. This system is in the stage of reorganization and does not meet the modern requirements of managing multi-component infrastructure objects that are components of the socio-economic infrastructure of the region.

The formation of a resource-saving concept of public transport service is an urgent task, as modern problems such as environmental pollution, energy efficiency, and resource conservation are becoming an integral part of the transport strategy of many countries. Some modern scientific and practical approaches and directions in the formation of a resource-saving concept of public transport service are presented below: Electric mobility, Public transport, Bicycle and walking routes, Multimodality and integration of transport, Business trips and carpooling, Green technologies and alternative fuels, Traffic control systems, Economic incentives and subsidies.

In general, the modern organization of passenger transport strives for optimization, efficiency and reduction of negative impact on the environment. A resource-efficient development concept plays an important role in achieving these goals by accelerating innovation in the transport industry and providing more choice and convenience for passengers. supports the development of public transport, which can help reduce the number of private cars on the road and CO2 emissions. In general, the resource-saving concept of the development of passenger transportation has great potential to ensure sustainable and efficient development of this industry, contributing to the reduction of emissions and the use of resources and improving the quality of life of citizens.

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