THE ROLE, IMPORTANCE AND FUNCTION OF GREEN TRANSPORT SERVICES INFRASTRUCTURE IN THE NATIONAL ECONOMY.

B.M. Kuliyev

PhD, Independent researcher of the

Samarkand Institute of Economics and Service

Annotation: The green economy, green transport, and the transport infrastructure that creates the conditions for its functioning are among the system-forming sectors of the regional economy. They ensure the territorial integrity of regions and the unity of their economic space. Therefore, the development of transport infrastructure is a necessary condition for implementing an innovative model of economic growth and improving the quality of life of the regional population. Globally, within the framework of research aimed at increasing the competitiveness of the transport sector, priority attention is given to scientific studies focused on improving the efficiency of transport service infrastructure. The article describes the place, role, and functions of green transport service infrastructure in the national economy.

Key words: green economy, transport, service sector, green space, infrastructure, competitiveness, region, technocratic, function, investment, innovation.

Introduction: In the Republic of Uzbekistan, development in accordance with the requirements of the "green economy" is considered one of the important tasks. Therefore, the regulatory legal documents adopted in this area in our country serve as an important economic foundation. According to the "Uzbekistan–2030" strategy adopted in our republic on September 11, 2023, the task of expanding the nationwide "Green Space" project aimed at stabilizing the ecological situation has been defined as an important basis of the economy.

The service sector is considered an important foundation of the rapid development of the global economy, and its growth opens up significant economic opportunities. Unlike material production, this sector is focused on performing tasks and providing intangible services to customers, and it is regarded as the largest driver of global economic activity. It is also of particular importance due to the wide range of employment opportunities in the service sector. Therefore, studying the socio-economic essence of developing service sector infrastructure is one of the key tasks today.

The success of regional socio-economic systems largely depends on certain conditions that create opportunities for the effective development of material production and social life. In forming such conditions, regional infrastructure-closely linked with and serving a particular area-plays a key role.

Ensuring sustainable development of countries around the world, supporting the comprehensive development and territorial integrity of their economic space, and increasing the efficiency of using economic resources raise the issue of creating a balanced regional infrastructure. Its most important component is transport infrastructure, which is highly relevant.

At present, various approaches and factors influencing regional development (such as uneven distribution of resources, unfavorable geographical location, and limited investment flows) indicate that the current transport infrastructure system does not provide sufficient opportunities for the service sector-especially transport services-to become a driver of the economy. As evidence, according to the results of 2025, the service sector accounts for 48.1% of GDP, and the share of the transport sector within total services amounts to 85,198.4 billion soums [1].

President Shavkat Mirziyoyev emphasized: "This sector is the lifeblood of the economy. Without taking transport and logistics to a new level, we cannot ensure sustainable economic

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 15 Issue: 04 in April-2026
https://www.gejournal.net/index.php/IJSSIR

development" [2]. At the same time, a full competitive environment has not yet been formed in aviation, and the efficiency of 10 airports remains low. As a result, the country ranks 120th out of 160 countries in the International Logistics Performance Index in terms of delivery convenience at competitive prices.

The head of state has outlined measures to sharply increase railway transit capacity, transform aviation into a sector providing convenient, fast, and high-quality services, and expand the network of modern highways for international transit cargo.

Literature review: The study of the problems of formation and development of transport service infrastructure and transport systems under the conditions of a green economy has been reflected in the scientific works of A.P. Abramov, V.M. Buneyev, G.V. Veselov, V.G. Galaburda, V.V. Gasilov, A.E. Gorev, E.A. Gorins, Yu.V. Zadvorny, P.V. Kurenkov, V.I. Mineyev, L.B. Mirotin, N.V. Penshin and others.

Over the past few decades, studies on the impact of green transport infrastructure on economic outcomes have been widely conducted and have produced highly diverse results. Green transport infrastructure, as a complex network, connects cities and encompasses human activities linking social, economic, and ecological systems with urbanization and population growth. In addition, transport networks contribute to socio-economic development and improvement of quality of life by creating intercity and intracity connections during urbanization [3]. According to existing studies, the development of transport infrastructure affects economic growth in four main ways:

- directly increasing labor and capital productivity;
- reducing costs through improved transport efficiency;
- accelerating industrial agglomeration;
- influencing the economy by changing aggregate market demand.

Therefore, studying the factors of economic growth from the perspective of developing green transport infrastructure is of great importance for policymaking. Transport is a universal service for both the economy and society, closely interconnected with all other economic and non-economic sectors. From an economic point of view, like money, transport performs a fundamental function in any economic system based on the division of labor. As a branch of the service sector, the economic significance of transport lies in its ability to facilitate greater differentiation and integration of economic systems, as well as ensure a balanced distribution of production and consumption. At the same time, transport increases competitive opportunities, which in turn contributes to balanced pricing, price stability, and the prevention of monopolistic pricing.

Geographically separated regions become closer to each other through transport services. Thus, regions located closer to markets ultimately demonstrate more intensive economic activity. On the one hand, the transport system is a necessary and integral element for the functioning of any differentiated economy. On the other hand, the existence of various transport networks within the transport economy requires a consistent economic division of labor within the sector.

However, irrational planning of green transport infrastructure can lead to negative consequences such as environmental degradation, increased traffic accidents, climate change, CO_2 emissions, and reduced transport efficiency [4]. Therefore, it is necessary to identify several effects of green transport infrastructure based on existing research. Recently, the impact of transport infrastructure has become a highly relevant topic, attracting increased attention and debate due to its direct influence on the economic growth of regions and sectors [5]. To examine the multiple impacts of green transport infrastructure, a review of academic literature has been conducted, focusing on trends in specific areas such as transport infrastructure and public transport [6].

As one of the main elements of a city, transport infrastructure-including roads, railways, airports, bridges, waterways, canals, and terminals-plays a crucial role in the movement of materials and population flows during urban agglomeration and expansion [7]. As defined by the OECD

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 15 Issue: 04 in April-2026
https://www.gejournal.net/index.php/IJSSIR

(Organisation for Economic Co-operation and Development), transport infrastructure is a key component of economic development at all income levels and supports both individual well-being and economic growth. From a functional perspective, transport infrastructure is a type of large-scale public work that significantly impacts national policy, economy, society, science, technological development, environmental protection, public health, and national security. Furthermore, as part of the transport system, planning and constructing green transport infrastructure is complex, in addition to operational systems and vehicles.

According to scholars Grimes and Lewis, studying infrastructure is easier and more meaningful than strictly defining it, and the key to understanding infrastructure lies in identifying its characteristics. For example, during construction, it involves large-scale investments, long implementation periods, complex risks, and multiple stakeholders. "Transport infrastructure is a driver of economic growth and social welfare through improving production indicators and investment conditions for the private sector" [8].

More specifically, the construction of transport infrastructure reduces travel costs, attracts foreign investment, and expands the trade of overall resources [9]. From the perspective of social overhead capital, transport infrastructure plays a decisive role in industrialization and has a direct impact on regional innovation, factor redistribution, and production efficiency, contributing to the concentration of industry, population, and economic activity-often referred to as the economic agglomeration effect. However, some empirical studies show that the expansion of high-speed rail networks supports the development of central cities but may slow the economic growth rates of prefecture-level cities along the railway, a phenomenon known as the siphon effect [10]. Although different results have been found depending on data sources and research objects, empirical analysis remains the most common and effective method for identifying the positive or negative impacts of transport infrastructure.

Research methodology: The study analyzes the role, importance, and functions of green transport service infrastructure in the national economy. Within the scope of the research, methods such as induction and deduction, comparative analysis, and the study and analysis of foreign and domestic (Uzbekistan) scientific research were used to deeply examine the problems and to develop scientifically grounded conclusions and recommendations.

Analysis and results: The faster development of the transport system compared to the overall economy may be unfavorable for a country in terms of inequalities arising in the formation and development of various industrial and commercial areas. Due to a well-developed transport infrastructure, the local economy may fail to develop industrially, as the local population gains the ability to purchase necessary goods from other economically developed regions. At the same time, excessive infrastructure construction can exert significant pressure on the natural and ecological environment in meeting the needs of economic development and social improvement. Green transport infrastructure provides the basic conditions for economic activity, while at the same time causing certain spillover effects, such as CO_2 emissions generated through local and global production networks, ecological degradation due to the breakdown of living environments, changes in water flows, and deterioration of water quality.

Since the United States announced the Environmental Impact Assessment (EIA) in 1969, environmental issues have become an important part of legislation and have received wide attention across many areas. For the transport sector, in addition to cost-benefit, design, and investment analyses, environmental impacts such as CO_2 emissions and air quality are considered key evaluation criteria. Moreover, several universal and systematic methods have been applied to assess environmental indicators, including multi-criteria models, meta-analysis, ecological footprint index, and cost-balance analysis. From an environmental perspective, most impacts of transport

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 15 Issue: 04 in April-2026
https://www.gejournal.net/index.php/IJSSIR

infrastructure are negative; therefore, minimizing environmental impact has become a central research topic.

In addition, transport infrastructure assumes significant social responsibility. Although large capital investments in infrastructure projects create more jobs and optimize income distribution, issues such as health risks, land expropriation, and damage to wildlife should not be overlooked.

Considerable attention has been paid to the various impacts of green transport infrastructure. However, economic externalities remain the most important and widely discussed topic, often overlooking environmental and social aspects. As sustainable development becomes a central focus, the sustainable evaluation of transport infrastructure is gaining increasing importance. Based on the traditional cost–duration–quality decision model, numerous indicators and methods have been expanded to define and assess transport sustainability.

For example, several multi-criteria models based on panel data have been developed, such as the "multivariate cointegration approach," "logical evaluation," and "decomposition model." Furthermore, optimizing network structures and analyzing the spatial relationships of infrastructure activities are key methods for enhancing urban sustainability. The complex characteristics and multiple impacts of transport infrastructure have contributed to research on defining and modeling transport sustainability. However, existing studies are largely based on the review of published articles.

Analysis and results (continued): Research shows that the impact of the transport system on the domestic and regional economy differs between rural and urban areas and is closely related to economic growth. In addition, in some cases, inconsistencies may arise between short-term benefits and sustainable development. The scale of its impact may vary across different periods and may not always be consistent. However, transport infrastructure primarily contributes to the development of the economy and production, although this effect is not always permanent over time. Green transport infrastructure stimulates economic growth, reduces the cost of goods, facilitates access to global markets for producers and consumers, and increases the efficiency of global production by lowering transport costs and improving accessibility.

Transport specialization maintains its efficiency advantages. Producers need to collaborate with strategic partners and deliver goods and services to long-term customers from cost-effective locations in order to capture the full economic value of services. Efficient transport infrastructure in the United States has made economic specialization more effective, turning American companies into more efficient and competitive producers of goods and services and making them attractive to foreign firms within the global economy. Global supply chains rely on extensive freight networks to transport large volumes of goods. The expansion of global markets and increased competitiveness in supply chains-where goods travel long distances through various modes of transport-depend on infrastructure, utilities, and the diversity of participants. Effective global transport services require the integration of infrastructure, services, and stakeholders. From this perspective, it is important to study four types of transport infrastructure improvement and their impact on economic development (Figure 1).

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 15 Issue: 04 in April-2026
https://www.gejournal.net/index.php/IJSSIR

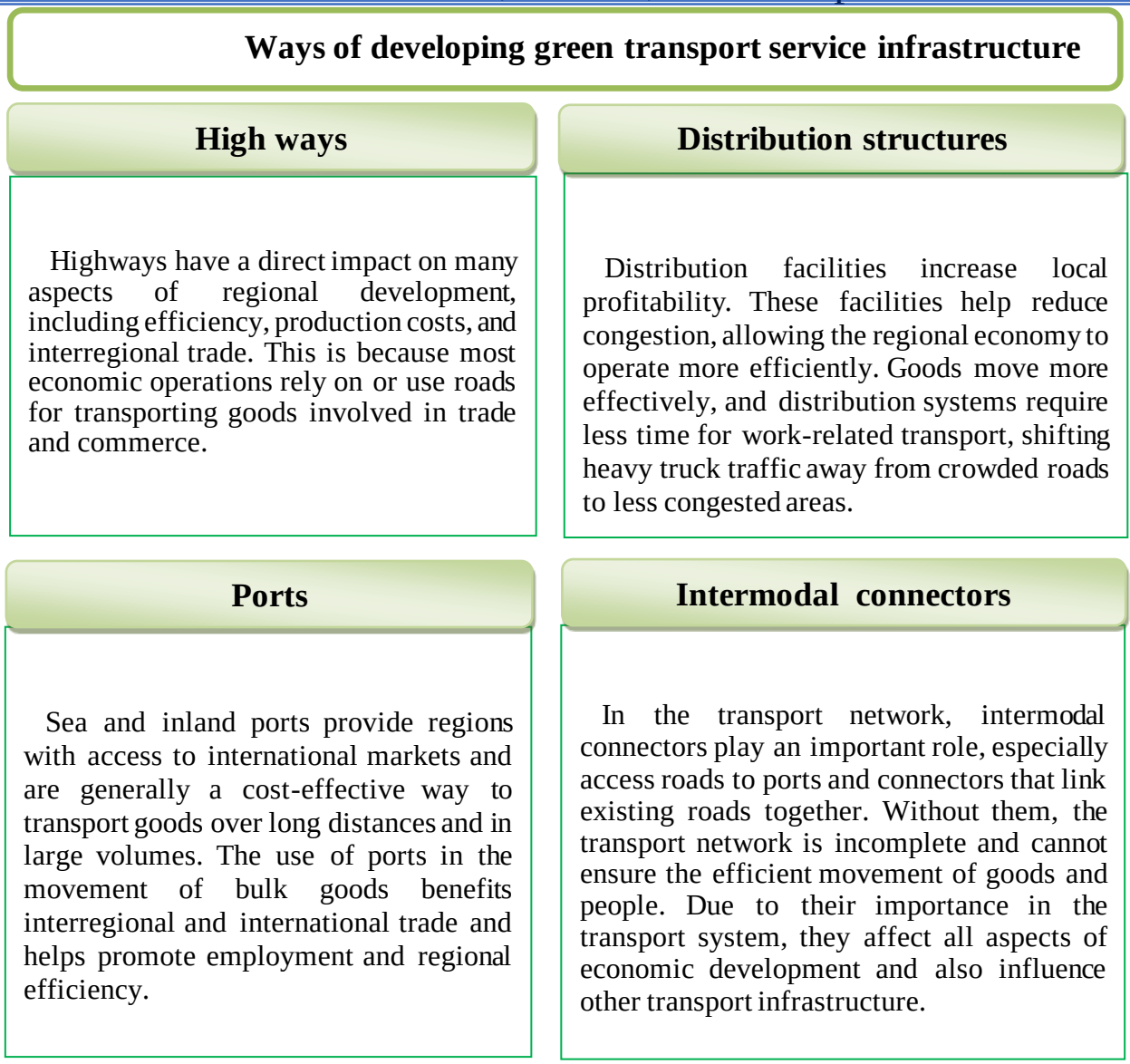

Figure 1. Ways of developing green transport service infrastructure

In highway infrastructure, the expansion of roads and the improvement of road systems to manage a greater number of vehicles and traffic volumes increase the efficiency of product flows across regions. Such upgrades also enable production that depends on larger transport vehicles for delivering goods and materials. This can stimulate urban economic growth and reduce costs for many businesses and individuals using the improved road systems.

In distribution infrastructure, production can be influenced geographically by attracting it closer to where facilities are located. When industrial zones or warehouses are established in areas with distribution centers, they affect the geography of production. As a result of efficient intersectoral transactions, productivity can be increased through segmentation at central locations.

Airports, along with seaports and inland ports, influence several key elements of regional economic growth and facilitate the rapid distribution of important goods and services. Airports utilize delivery services and a range of professional services. Low-cost airports attract businesses to specific locations and lead to increased employment, income, and productivity in those regions. Efficient and reliable airport services minimize delivery times and enhance both regional and business profitability. Providing such services also affects a company's position within a region.

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 15 Issue: 04 in April-2026
https://www.gejournal.net/index.php/IJSSIR

Intermodal connectors enable the system to function effectively. Main roads leading to ports serve as intermodal connectors, allowing regions access to port facilities and thereby reducing industrial production costs for companies using them. They also reduce costs by improving access for heavy vehicles to ports. Acting as links within the transport system, they increase the reliability of goods flows and enhance regional profitability.

In particular, in the Samarkand region, a number of reforms are being implemented in line with national programs and objectives to develop green transport services. These include the construction of charging stations for electric vehicles based on green technologies, the provision of maintenance services, and measures to ensure traffic safety. For example, in January 2022 alone, the volume of transport services in the Samarkand region amounted to 325.3 billion soums, representing a 14.2% increase compared to the same period in 2021. The share of these services in the total volume of market services was 21.6%. In January 2022, road transport services accounted for 92.8% of the total transport service volume.

At this point, it should be noted that the transport function can generally be defined as follows: covering distances in the delivery of goods by transporting goods, passengers, and information from one place to another. Thus, transport ensures the rapid delivery of goods to the required location, helping to eliminate local shortages and thereby increasing the value of the respective goods. Transport performs this function not only at the domestic level but also internationally, including interregional and intercontinental transport.

After briefly considering the various aspects of transport and its impact on the economy, certain conclusions can be drawn. The benefits of a sufficiently developed transport system usually lie in creating efficient transport services, reducing excessive and production-hindering transport costs within existing relations, and consequently enabling greater mobilization of a country's natural resources. Newly established or strengthened connections with external regions and communities can introduce new impulses into traditionally stagnant economies and, when combined with policy measures, can break rigid demand structures and stimulate new demand. At the same time, new and additional opportunities for profit can foster a new entrepreneurial spirit and encourage new initiatives.

The extent to which technological progress can be utilized to reduce costs in sectors other than transport largely depends on the size of the market served, which in turn is determined by the quality of the transport system, the population of the region, and its average level of demand. Mass production requires large markets, which depend on the efficiency of the transport system.

Conclusion: Based on the above, it can be concluded that the better the quality and efficiency of the transport system, the greater the opportunities for economic growth. In developing countries, the contribution of the transport system to national income is less important than creating a sufficiently efficient transport system capable of providing economically significant services; such a system can generate strong development impulses for the entire economy. For the overall economy of a developing country, the production value of the transport system, as well as its continuous expansion and improvement, is a necessary condition for economic development.

Major achievements in the technical development of transport and communication systems have effectively made our world smaller, and this development continues. Its structural component in the economic sector involves the formation of large economic communities aimed at broad economic integration. As a result, the transport system must be adapted to continental and intercontinental cooperation. This trend is strongly supported by the advantages of containerization, which enables seamless transport chains across continents.

At the core of any discussion about the economic importance of transport lies its primary economic function-freight transportation. However, passenger transport is also highly significant, as it builds connections across continents, countries, and people. This function, serving international

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 15 Issue: 04 in April-2026
https://www.gejournal.net/index.php/IJSSIR

understanding, cannot be measured purely by economic figures and quantities. In a future where all nations live in peace, freedom, and friendship, this function of transport will gain even greater importance.

References:

1. www.stat.uz
2. https://www.gazeta.uz/uz/2022/09/29/transport/
3. Rodrigue J.-P., Comtois C., Slack B. The Geography of Transport Systems. Taylor & Francis; Abingdon, UK: 2016.
4. Tasic I., Porter R.J. Modeling spatial relationships between multimodal transportation infrastructure and traffic safety outcomes in urban environments. Saf. Sci. 2016; 82:325–337. doi: 10.1016/j.ssci.2015.09.021. Camp J., Abkowitz M., Hornberger G., Benneyworth L., Banks J.C. Climate change and freight-transportation infrastructure: Current challenges for adaptation. J. Infrastruct. Syst. 2013; 19:363–370. doi: 10.1061/(ASCE)IS.1943-555X.0000151.
5. Ming Y.T., Yi J.L. Scientometric analysis of transport phenomenon literature, 1900–2007. Malays. J. Libr. Inf. Sci. 2009; 14:35–58.
6. Heilig L., Voss S. A scientometric analysis of public transport research. J. Public Transp. 2015; 18:111–141. doi: 10.5038/2375-0901.18.2.8.
7. Holl A. Manufacturing location and impacts of road transport infrastructure: Empirical evidence from Spain. Reg. Sci. Urban Econ. 2004; 34:341–363. doi: 10.1016/S0166-0462(03)00059-0. Durango-Cohen P.L., Sarutipand P. Capturing interdependencies and heterogeneity in the management of multifacility transportation infrastructure systems. J. Infrastruct. Syst. 2007; 13:115–123. doi: 10.1061/(ASCE)1076-0342(2007)13:2(115).
8. Achour H., Belloumi M. Investigating the causal relationship between transport infrastructure, transport energy consumption and economic growth in Tunisia. Renew. Sustain. Energy Rev. 2016; 56:988–998. doi: 10.1016/j.rser.2015.12.023.
9. Paul S. Effects of public infrastructure on cost structure and productivity in the private sector. Econ. Rec. 2003;79:446–461. doi: 10.1111/j.1475-4932.2003.00144.x.
10. Ni P., Kamiya M., Ding R. Cities Network along the Silk Road: The Global Urban Competitiveness Report 2017. Springer; Singapore: 2017.

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 15 Issue: 04 in April-2026
https://www.gejournal.net/index.php/IJSSIR