Asian Journal of Technology and Applied Sciences
ISSN: 2301-xxxx (online) | IF: 10.01 | Vol: 1, issue 1
Available: http://asiansciencejournal.org

DEVELOPING THE COMPETITIVE ENVIRONMENT IN THE ROAD FREIGHT TRANSPORT SERVICES MARKET OF UZBEKISTAN

Nishanbayev Behzod Qahramonjon o'g'li
Researcher
beckksonedu@yahoo.com

Abstract: This article examines the structural and institutional barriers that constrain the development of a genuine competitive environment in the road freight transport services market of Uzbekistan, and proposes a digital-ecosystem-based mechanism for overcoming them. Despite the strategic importance of the sector - road transport carries approximately 90 percent of the country's total freight volume - the market remains largely fragmented and dominated by direct, informal agreements between cargo owners and drivers, with no centralized price-discovery mechanism and limited quality-based differentiation among carriers. Using document analysis, international benchmarking and a Porter's five-forces-based structural analysis, the study identifies the principal barriers to competition and evaluates the extent to which the proposed National Digital Freight Transportation and Logistics Ecosystem - built around a Broker- Carrier- Dispatcher institutional model, a national Freight Exchange platform and a public trust-rating system - can shift market competition from an informal, relationship-based pattern toward a transparent, quality- and efficiency-based one. The findings indicate that the main constraints are institutional and informational rather than purely technological, and that digital platforms can simultaneously expand and, if poorly governed, restrict competition. The article concludes with policy recommendations for licensing, platform governance and market-monitoring mechanisms.

Keywords: competitive environment, road freight transport, market structure, Broker–Carrier–Dispatcher model, Freight Exchange, digital platform.

Introduction

Competition is one of the central mechanisms through which markets allocate resources efficiently, discipline prices and stimulate improvements in the quality of services offered to consumers. In transport and logistics markets in particular, a well-functioning competitive environment translates directly into lower transportation costs, shorter delivery times and higher service reliability, all of which feed into the broader competitiveness of a national economy (Porter, 1980; Christopher, 2016). For this reason, the structure of competition in the road freight transport sector is not merely a sectoral concern but a matter of macroeconomic significance.

Road transport occupies a dominant position in Uzbekistan's logistics system. According to the State Statistics Committee of the Republic of Uzbekistan, in 2025 the country transported 1.601 billion tons of cargo across all modes of transport, of which approximately 90 percent (1.434 billion tons) was carried by road. Over the preceding seven years, the fleet of trucks owned by domestic carriers increased sevenfold, and the share of domestic carriers in international road haulage rose from 35 to 60 percent. At the same time, Uzbekistan's share of the regional transit market has remained at only 1–2 percent, indicating that the country's logistical potential is far from fully realized.

On 27 January 2025, the President of the Republic of Uzbekistan approved Decree No. PQ-28 'On measures for further development of the transport and logistics system of the Republic of Uzbekistan,' which sets ambitious quantitative targets, including doubling international freight volumes, doubling the export of transport and logistics services, raising

annual transit volumes to 22 million tons, and improving Uzbekistan's position in the World Bank's Logistics Performance Index (LPI) to at least 55th place. These targets, however, are framed primarily in terms of volume and infrastructure, while the underlying competitive mechanism of the domestic freight market — the way in which carriers compete for cargo, how prices are formed, and how market entry is regulated — has received comparatively little systematic analysis.

This creates the research problem addressed in the present article: despite sustained growth in transport volumes and an active state reform agenda, the road freight transport market continues to operate largely through direct, informal arrangements between cargo owners and drivers, without a centralized digital marketplace, standardized pricing mechanism or publicly available indicator of carrier quality. The absence of such mechanisms limits the extent to which competition is based on efficiency and service quality rather than personal networks and informal practice, and it constrains the entry of small and new carriers who lack established relationships with cargo owners.

The purpose of this study is therefore to analyze the structural and institutional barriers to competition in Uzbekistan's road freight transport services market and to assess the potential of a digital logistics ecosystem — comprising a Broker–Carrier–Dispatcher institutional model, a national Freight Exchange platform and a transparent carrier rating system — to transform the competitive environment of the sector. The article is structured as follows: Section 2 outlines the methodological approach; Section 3 presents the results of the structural market analysis and the assessment of proposed digital mechanisms; Section 4 discusses the findings in the context of competition and platform-economics theory; and Section 5 concludes with policy recommendations.

Methods

The study employs a qualitative, document-based research design combining three complementary methods.

First, content analysis was applied to the principal national strategic and statistical sources, namely Presidential Decree No. PQ-28 of 27 January 2025 and official data published by the State Statistics Committee of the Republic of Uzbekistan, in order to establish the quantitative scale of the road freight market and the government's stated competitiveness objectives.

Second, a comparative (benchmarking) analysis was conducted of the institutional organization of road freight markets in countries with mature competitive environments, with particular attention to the Broker–Carrier–Dispatcher model used in the United States, where the functions of cargo owner (shipper), intermediary (broker), service provider (carrier) and operational coordinator (dispatcher) are clearly separated and independently regulated. This institutional benchmark served as a reference point against which the structure of the domestic market was evaluated.

Third, the competitive structure of the domestic market was analyzed using an adapted version of Porter's five-forces framework (Porter, 1980), examining (i) the intensity of rivalry among existing carriers, (ii) barriers to entry for new and small carriers, (iii) the bargaining power of cargo owners (shippers), (iv) the bargaining power of carriers and drivers, and (v) the competitive pressure exerted by alternative transport modes and by neighboring countries' logistics systems. The five-forces output was then used to evaluate, qualitatively, the extent to which each component of the proposed National Digital Freight Transportation and Logistics Ecosystem addresses a specific competitive barrier identified in the analysis. Because firm-level transaction data from a national Freight Exchange platform do not yet exist, the analysis is qualitative in nature; quantitative market-concentration measures such as the Herfindahl–

Hirschman Index (HHI) are identified as a direction for subsequent empirical research once platform data become available.

Results

Structural barriers to competition in the current market

The analysis identifies several interrelated structural features that currently limit the development of a transparent, efficiency-based competitive environment in Uzbekistan's road freight transport market.

• Market fragmentation and informality. In most cases, cargo owners negotiate directly and informally with individual drivers or vehicle owners, rather than through a centralized marketplace. While workable for small, local shipments, at the national level this pattern prevents the formation of a single market price mechanism, keeps a share of transactions in the informal economy, and makes government monitoring of freight flows in real time practically impossible.

• Absence of a centralized price-discovery mechanism. Without a national Freight Exchange platform, prices are set through individual bilateral bargaining rather than through aggregated supply-and-demand signals. This increases price dispersion for comparable services, raises transaction costs, particularly for shippers seeking to compare multiple carriers, and disadvantages carriers who lack access to informal information networks.

• Entry barriers linked to information asymmetry. New and small carriers face a structural disadvantage because access to cargo demand is largely mediated through personal relationships accumulated over time, rather than through a transparent, openly accessible marketplace. This raises the effective barrier to entry even where formal regulatory barriers (such as licensing) are low.

• Absence of a public quality signal. There is currently no publicly available, standardized indicator of carrier reliability, safety or service quality. In the absence of such a signal, cargo owners cannot easily distinguish a high-quality carrier from a low-quality one, which weakens the competitive incentive for carriers to invest in service quality and instead channels competition toward informal reputation and personal trust.

• Rising regional competitive pressure. Neighboring countries, notably Kazakhstan and Azerbaijan, are actively developing their transit and logistics infrastructure. If Uzbekistan's domestic market structure is not modernized, the country risks losing part of its potential share of regional transit and logistics flows to these more institutionally advanced competitors, which constitutes an external competitive pressure on top of the internal structural barriers described above.

International experience: the Broker–Carrier–Dispatcher model

The road freight market of the United States, widely regarded as one of the most institutionally mature in the world, is organized around a clear functional separation of roles. The shipper commissions transportation; the broker, acting on the shipper's behalf, selects a suitable carrier, negotiates price and coordinates the logistics process, typically under a specific operating license and subject to regulatory oversight; the carrier is a licensed transport company that owns vehicles and employs drivers; the dispatcher, employed by the carrier, allocates loads, plans routes and maintains operational communication with clients; and the driver executes the physical transportation. Each participant specializes in a distinct professional function, which accelerates the matching of available capacity with demand, raises service quality, and — critically for the purposes of this study — lowers the effective barrier to entry for small and medium-sized carriers, since brokers aggregate and distribute demand rather than requiring each carrier to build an independent client network. This institutional specialization is widely credited with sustaining a highly competitive,

fragmented-but-efficient carrier market in which thousands of small operators compete on price and service quality rather than on personal connections alone.

The comparison suggests that the principal lesson for Uzbekistan is not that the market requires a larger vehicle fleet, but that it requires an institutional model capable of translating dispersed transport capacity into a transparent, competitively organized market.

Proposed digital mechanisms for developing competition

Building on the barriers identified in Section 3.1 and the international benchmark described in Section 3.2, the National Digital Freight Transportation and Logistics Ecosystem proposes three complementary mechanisms, each addressing a specific competitive barrier.

National Freight Exchange platform. A centralized digital marketplace through which cargo owners, brokers and carrier companies post, search for and book freight orders, with prices forming on the basis of aggregated market supply and demand rather than isolated bilateral negotiation. By making demand visible to all registered carriers simultaneously, such a platform directly addresses the information asymmetry identified as a structural entry barrier, allowing small and new carriers to compete for orders on equal informational footing with established operators.

Institutionalization of the Broker–Carrier–Dispatcher model. Formal licensing and legal recognition of broker, carrier and dispatcher functions — modeled on, but adapted to, the international experience discussed above — would professionalize intermediation, clarify liability, and reduce the information and trust deficit that currently channels transactions toward informal, relationship-based arrangements. A regulated broker institution, in particular, is expected to lower transaction costs for shippers while stabilizing the order flow available to small and medium-sized carriers, consistent with the economic function brokers perform in mature markets.

National Trust and Rating Index. A standardized, platform-generated rating of carrier reliability, safety and service history, visible to all market participants, is designed to supply the public quality signal currently missing from the market. According to the logic embedded in the proposed concept, carriers with a higher rating gain access to a larger volume of orders, which is intended to foster healthy competition and to create a direct incentive for carriers to improve service quality rather than compete primarily on informal reputation.

In addition, the ecosystem's AI Analytics module — designed to reduce empty-mile runs, recommend optimal routes and forecast demand — is expected to lower operating costs for carriers who adopt it, shifting part of the basis of competition toward operational efficiency, a pattern consistent with the role of digital optimization tools in mature freight markets.

Summary of the structural analysis

Table-style synthesis of the five-forces analysis indicates that the intensity of rivalry among existing carriers is currently dampened by information asymmetry rather than regulatory restriction; that entry barriers are predominantly informational rather than legal; that the bargaining power of cargo owners is high in the absence of transparent price benchmarks, while individual drivers and small carriers hold comparatively weak bargaining power due to fragmented, non-aggregated demand; and that competitive pressure from neighboring logistics hubs is increasing. Each of the three proposed digital mechanisms maps onto at least one of these forces, suggesting that the ecosystem approach, if implemented, is likely to alter the underlying structure of competition rather than merely digitizing existing informal practices.

Discussion

The results suggest that the barriers constraining competition in Uzbekistan's road freight transport market are primarily institutional and informational in nature rather than purely technological. This is consistent with the broader literature on transport market liberalization, which emphasizes that digital tools alone do not generate competitive markets; rather, their effect depends on the institutional rules — licensing, liability, data governance — within which they operate (Christopher, 2016; OECD, 2021).

At the same time, the proposed Freight Exchange platform, Broker–Carrier–Dispatcher model and trust-rating index should be understood through the lens of platform economics rather than as a simple digitization project. A national Freight Exchange functions as a two-sided market connecting cargo owners and carriers (Rochet & Tirole, 2003), and such platforms are known to generate strong network effects: the more carriers and shippers join the platform, the more valuable it becomes to each additional participant. This dynamic can substantially lower entry barriers and increase price transparency, which is the principal mechanism by which the proposed ecosystem is expected to develop competition in this study's framework. However, the same network-effect dynamic also carries a risk familiar from platform-economics research: if the operator of the platform — whether a state body or a designated operator — were to apply discriminatory access rules, opaque ranking algorithms, or preferential treatment to selected carriers, the platform itself could become a new source of market power and a barrier to entry, effectively replacing an informal gatekeeping mechanism with an algorithmic one.

This observation has a direct policy implication that is not always explicit in purely technological descriptions of digital logistics ecosystems: the competitive benefits of the proposed model are conditional on platform governance. Open, non-discriminatory access for licensed brokers and carriers, transparency in how the trust-rating algorithm is constructed and updated, and independent oversight of the platform operator are therefore not peripheral administrative details but necessary conditions for the ecosystem to achieve its intended competitive effect rather than reproducing market concentration in digital form.

The comparative evidence from the United States further suggests that institutional specialization — rather than platform technology per se — is the primary driver of a competitive, fragmented carrier market. This implies that the sequencing of reform matters: legal recognition and licensing of broker, carrier and dispatcher functions should accompany, rather than follow, the technical rollout of the Freight Exchange platform, since a transparent marketplace without clearly defined and liable intermediary roles risks reproducing existing informal practices in digital form rather than replacing them.

A limitation of the present analysis is that, in the absence of transaction-level data from an operating Freight Exchange platform, it was not possible to compute standard market-concentration indicators such as the Herfindahl–Hirschman Index or four-firm concentration ratios. Once such data become available following the platform's phased implementation, subsequent research should quantitatively re-examine market concentration and price dispersion before and after the introduction of each ecosystem component, in order to test empirically the qualitative expectations developed in this article.

Conclusion

This study has analyzed the structural and institutional barriers to competition in Uzbekistan's road freight transport services market and evaluated the potential of a proposed national digital logistics ecosystem to address them. The analysis shows that the current market is characterized by fragmentation, informal price formation, information asymmetry disadvantaging small and new carriers, and the absence of a public quality signal — all of which channel competition toward personal networks rather than price and service quality.

International experience, particularly the Broker–Carrier–Dispatcher model used in the United States, demonstrates that institutional specialization, rather than fleet size or technology alone, is the principal determinant of a genuinely competitive freight market.

Based on these findings, the following recommendations are proposed. First, the functions of broker, carrier and dispatcher should be formally institutionalized and licensed, with clearly defined liability, to professionalize intermediation and reduce information asymmetry. Second, a national Freight Exchange platform should be established as a centralized, transparent price-discovery mechanism, prioritized for implementation together with, rather than after, the legal institutionalization of market roles. Third, a public, standardized trust and rating index should be introduced to supply the quality signal currently missing from the market, shifting the basis of competition from informal reputation toward verifiable performance. Fourth, platform governance arrangements — open and non-discriminatory access rules, transparency of ranking algorithms, and independent regulatory oversight — should be established from the outset to prevent the digital platform itself from becoming a new barrier to entry. Fifth, once transaction data become available, market-concentration and price-dispersion indicators should be monitored systematically to verify, empirically, whether the intended competitive effects are being achieved.

Taken together, these measures reframe the National Digital Freight Transportation and Logistics Ecosystem not merely as an infrastructure or automation initiative, but as an instrument of competition policy for the road freight transport sector — one whose success will depend as much on institutional design and platform governance as on technological implementation.

REFERENCES

1. Christopher, M. (2016). Logistics & Supply Chain Management (5th ed.). Harlow: Pearson Education.
2. Decree of the President of the Republic of Uzbekistan No. PQ-28 of 27 January 2025, "On measures for further development of the transport and logistics system of the Republic of Uzbekistan."
3. Nishanbayev, B.Q. (2026). Concept for the development of the National Digital Freight Transportation and Logistics Ecosystem of the Republic of Uzbekistan through 2035 (project materials).
4. OECD. (2021). Competition Assessment Toolkit. Paris: OECD Publishing.
5. Porter, M.E. (1980). Competitive Strategy: Techniques for Analyzing Industries and Competitors. New York: Free Press.
6. Rochet, J.-C., & Tirole, J. (2003). Platform Competition in Two-Sided Markets. Journal of the European Economic Association, 1(4), 990–1029.
7. State Statistics Committee of the Republic of Uzbekistan. (2025). Official data on the transport and logistics sector.
8. World Bank. (2023). Logistics Performance Index (LPI) — Methodology Report. Washington, D.C.: World Bank Group.