

The road factor of the cost of intercity road freight transportation services in Kazakhstan

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Abstract: The article considers one of the most important factors of the cost of intercity road freight transportation services in Kazakhstan – the road factor. It is shown how the condition of the road infrastructure affects the costs of road carriers. The reasons for the unsatisfactory condition of intercity roads in Kazakhstan have been identified, broken down into roads of national and local importance. It is shown what problems are created by restrictions on the movement of freight transport. Measures are proposed to reduce the costs of road freight carriers associated with travel expenses.

Keywords: logistics, intercity road freight transportation, highways, cargo transportation, bypass roads, roads of national and local importance.

To date, the total length of highways in Kazakhstan is 95 thousand km, of which 25 thousand km are part of the republican network, and the remaining 70 thousand km are roads of the local network. Road construction works cover 12 thousand km of roads, which is a record figure for the country. Of these roads, 8 thousand km belong to the republican network, and 4 thousand km belong to the local one. By the end of 2024, it is planned to complete work on 7 thousand km [1].

Nevertheless, the condition of the road infrastructure continues to have a significant impact on the cost of road transportation (Figure 1).

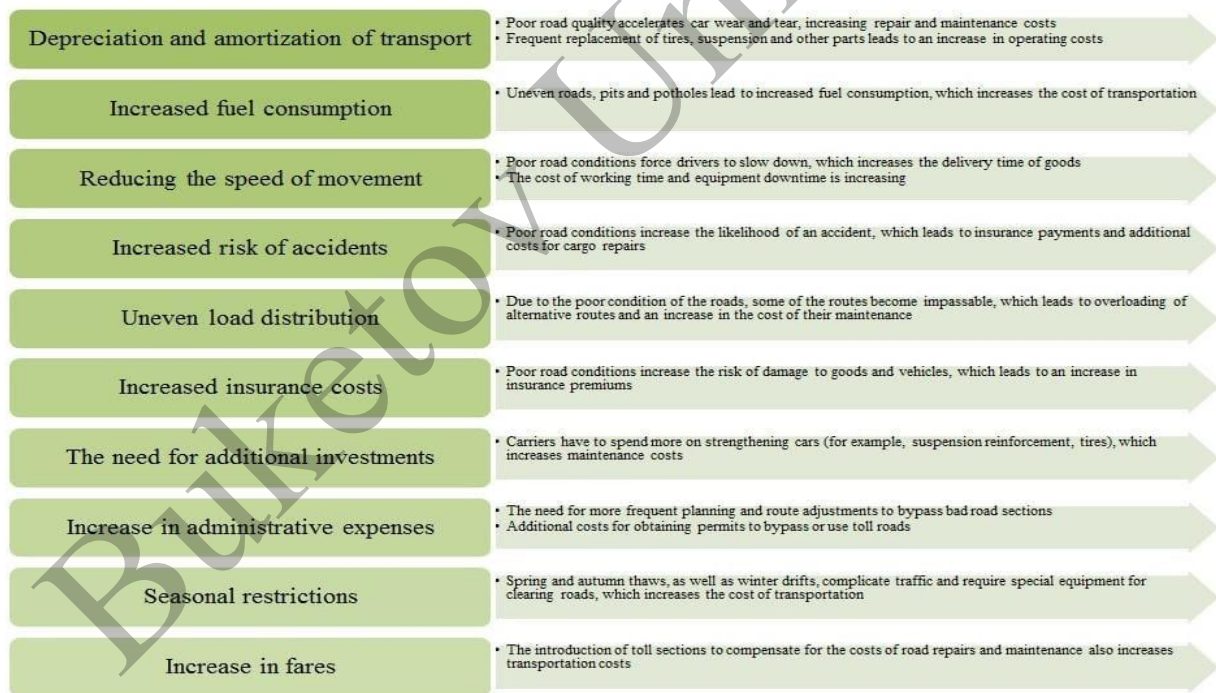


Figure 1. Factors influencing the condition of roads on the cost of intercity freight road transport

Note – compiled by the author

On intercity roads, the roadbed leaves much to be desired due to the fact that either it is not done well enough, or because it is literally crushed by overloaded cars. It is clear that freight carriers, in search of ways to increase the profitability of transportation, overload transport, exceeding the maximum permissible weight standards for each chassis of the vehicle. The following figure lists possible reasons for the poor condition of local intercity roads.

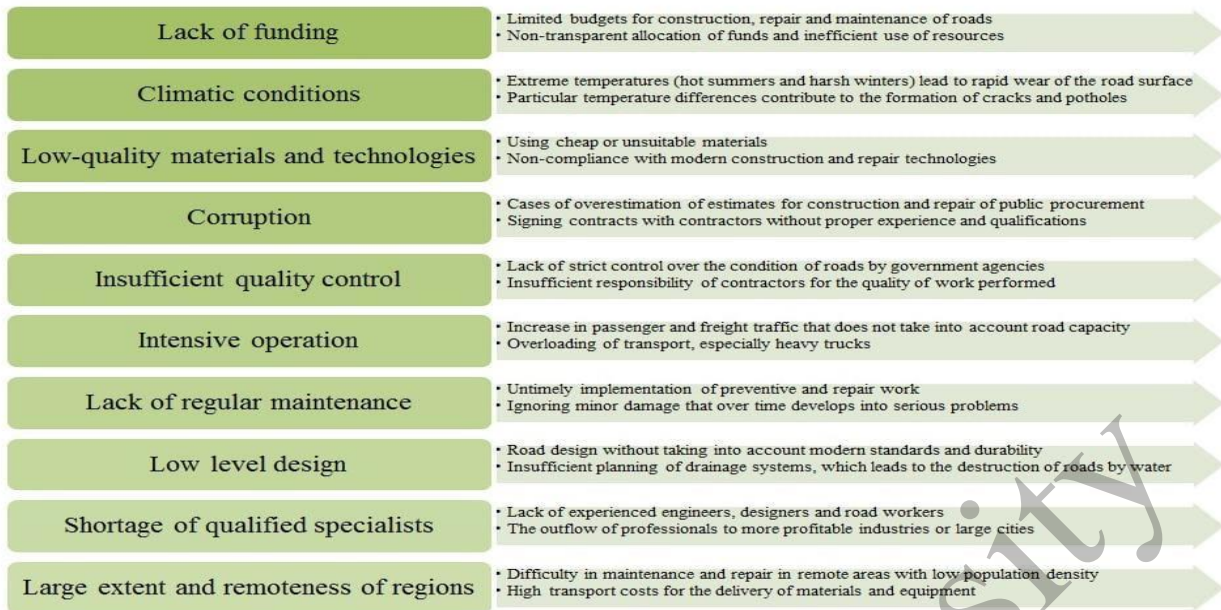


Figure 2. Causes of poor condition of local intercity roads in Kazakhstan

Note – compiled by the author

To improve the condition of roads of national importance in Kazakhstan, road projects are being implemented within the framework of the NurlıZhol program (Figure 3). They cover directions to all four corners of the world from the capital. These projects are being implemented not only with the support of the Government of Kazakhstan, but also China, which is also strategically interested in the development of a transcontinental highway corridor through Kazakhstan.

We have such a practice that intercity roads in Kazakhstan are either in poor condition or repaired, but they are paid. Thus, in both cases, this leads to the cost of freight carriers to travel on the roads. In the first case, due to increased wear and tear of the vehicle, in the second case, due to fare on toll roads.

The distances are very long, and the maintenance costs of repaired new roads are correspondingly high.



Green lines – active sections						
Red lines – the introduction of a fee in 2024.						
The blue lines indicate the introduction of density in 2025.						
Average fare per 1 km (tenge / km)						
	Kazakhstan	Russia	Belarus	Turkey	China	Poland
Passenger cars	1,2	7	20	7	25	100
Trucks	6-30	7-55	47-77	60	70	190

Figure 3. Toll roads of Kazakhstan

Note – source [2]

Highways in Kazakhstan are so long that drivers can easily get lost and lose their direction. To solve this problem, the Ministry of Foreign Affairs of the Republic of Kazakhstan is currently working on the implementation of a digital application of road maps using the digital e-Qurylys system [3]

Due to weather conditions in winter, roads are often blocked. This is usually carried out due to snow drifts during blizzards and blizzards, ice, severe frost, poor visibility due to fog or smoke, as well as spring floods.

Great difficulties for intercity freight carriers are the need to move within the urban area exclusively along bypass roads. The latter often also have poor quality and infrastructure, and there are no basic conditions for the work of cargo carriers. The ban on entry into the city limits, which is a set of forbidding road signs for trucks, complicates the organizational processes of loading and unloading, and also affects the increase in the cost of services provided. The following figure shows a map of the bypass roads of the city of Karaganda.

According to the Karaganda regional branch of KazAvtoZhol JSC, the construction of the road was divided into 4 lots. Three of them were won by the Turkish contractor JV Sine Midas Stroy LLP. This is the reconstruction of the "Northern Bypass" section, with a length of 15.6 km from Prishakhtinsky DAEWOO-46 to the interchange on the Karaganda-Ayaguz-Bugaz road. Reconstruction of the existing road from the transport interchange leading to Karkaralinsk to the Shakhterskymicrodistrict. And the construction of a new part of the Eastern Bypass road from the Shakhterskymicrodistrict to the Yekaterinburg-Almaty road, near the village of Zarechnoye. The fourth lot is the construction of interchanges. This was done by the Almaty company "Bridge-building detachment LLP. Ryazanova A.". The road has become four-lane, the main material is asphalt concrete, the top layer is crushed stone-mastic asphalt. The warranty period is 25 years.

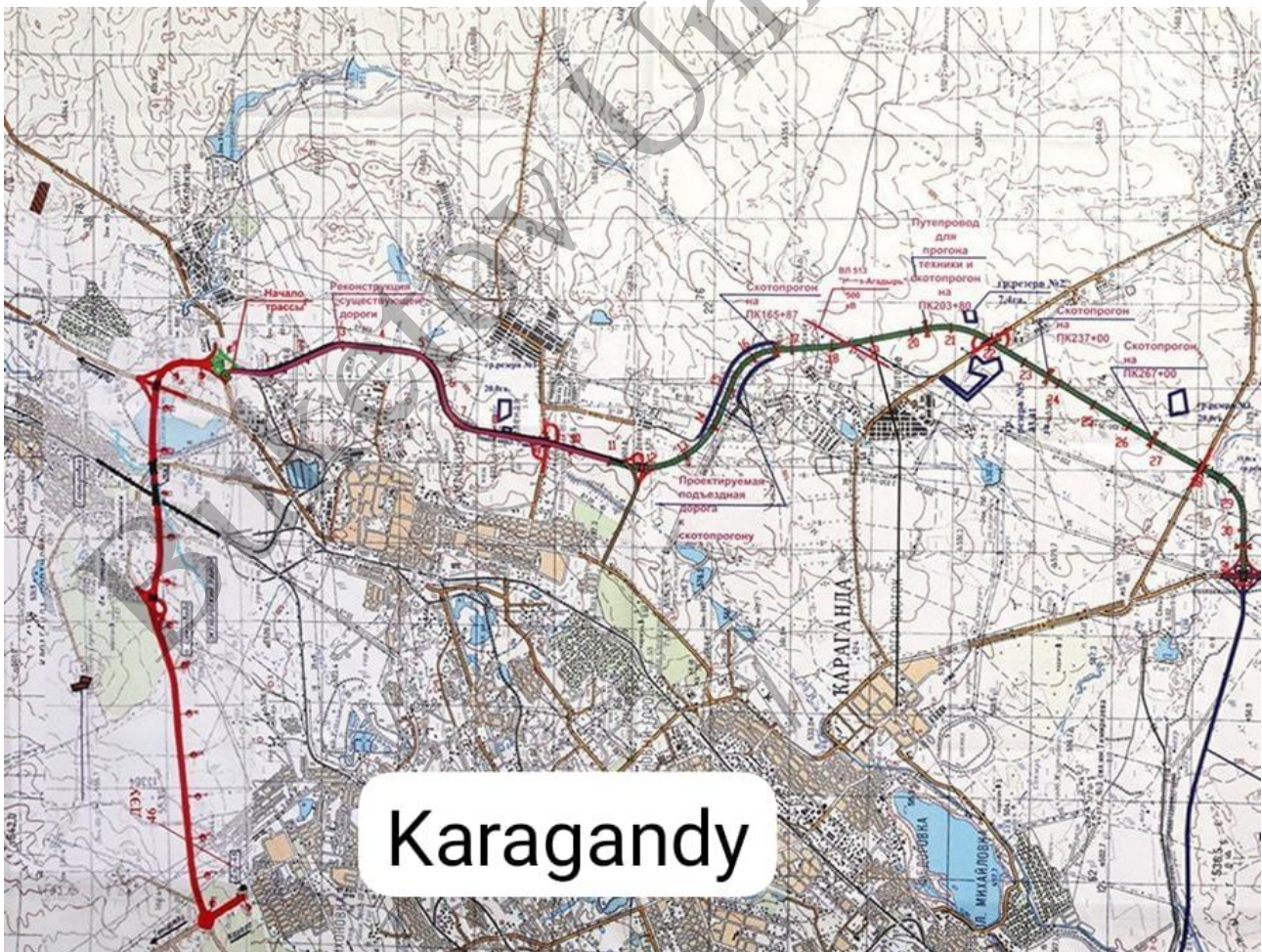


Figure 4. Map of the Karaganda bypass road

Note – source [4]

Also, within cities, movement for trucks is allowed along strictly defined streets. There are also inconveniences here, because cargo carriers do not have to accept and deliver cargo at their destinations, but overload it from other vehicles belonging to category B.

To reduce the cost of road freight transportation in Kazakhstan, we propose the following measures:

1. Continue to invest in road infrastructure, use modern technologies and innovative materials for paving;
2. Implement digital road condition monitoring systems for timely repair and maintenance;
3. Develop logistics hubs to improve coordination and optimize routes;
4. strengthen control over the overloading of vehicles;
5. permanent seasonal maintenance of roads in order to reduce the need for repair costs later;
6. Introduce a more flexible approach to toll road tariffs for freight carriers.

List of literature

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Перспективы цифровой трансформации экономики Казахстана

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Аннотация: В настоящее время цифровая трансформация экономики является наиболее актуальным трендом развития для большинства государств мирового сообщества. Она полностью изменила качество и скорость бизнес-процессов и уже прочно вошла в систему государственного управления. С каждым днем появляется все большее количество цифровых платформ, ширится их многообразие. Особую актуальность приобретает изучение вопросов изменения взаимосвязей между экономическими субъектами и появление новых форм бизнеса, получивших развитие под влиянием информационных технологий.

Ключевые слова: Цифровизация, информационные технологии, искусственный интеллект, автоматизация бизнес-процессов, социальные сети, аккаунт, биометрия, омниканальность, цифровая трансформация, цифровая экономика, цифровая среда, цифровые платформы.

Термины «цифровая экономика» и «цифровые ресурсы» прочно вошли в нашу повседневную жизнь. В настоящее время цифровое пространство непрерывно расширяется и включает в себя не только сферу развлечений и компьютерных игр. В зону виртуального пространства смещается торговля, все больше услуг предоставляются в формате онлайн, что позволяет быстро и качественно получить документ, либо заказать какой-либо товар, а также продать квартиру, выбрать путешествие и многое другое. Постепенно осуществляется переход в сторону цифровой трансформации экономики и цифрового общества.