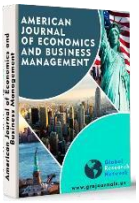

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Article

Efficiency Criteria for Automobile Border Customs Posts

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Abstract: Efficient operation of border customs posts is critical to national trade facilitation and economic security. These checkpoints serve as crucial gateways for both freight and passenger traffic. In Uzbekistan, the rapid growth of vehicle flow and increasing trade volume demand enhanced customs post performance through re-categorization and strategic resource allocation. Despite studies on customs efficiency in global and regional contexts, limited research exists that specifically analyzes Uzbekistan's automobile border customs posts using an integrated performance-based approach. This study aims to identify the core efficiency criteria for border customs posts, evaluate the current performance using both qualitative and quantitative indicators, and provide evidence-based recommendations for reclassification. The research identified five key performance indicators—time efficiency, economic output, control effectiveness, technical infrastructure, and management quality. Empirical data show a reduction in customs clearance time from 90 to 40 minutes (2021–2023), a 12-fold increase in contraband detection, and a 43% rise in daily vehicle throughput at the Yallama post. Forecasting models predict a 50% increase in daily vehicle flow from 2025 to 2030. The study presents a localized application of global customs efficiency standards (e.g., TRACECA, WCO) tailored to Uzbekistan, incorporating forecasting models and workload-based post re-categorization. The findings underscore the need for systematic post evaluation, infrastructure modernization, and digital system implementation (e.g., E-Transit) to sustain trade growth and enhance border control effectiveness in Uzbekistan.

Keywords: customs posts, efficiency, clearance time, risk management system, technical equipment, post categorization.

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1. Introduction

Border customs posts serve as a country's gateway and are often the first impression for traders and travelers. Efficiently functioning automobile border customs posts are crucial for ensuring external economic security, rule of law, and the smooth flow of export-import activities. Enhancing the performance of these posts is a strategic priority for trade facilitation and governance. Efficiency, a multifaceted concept in management theory, reflects how effectively resources are utilized. In customs administration, efficiency encompasses optimal resource allocation, prevention of legal violations, and the creation of favorable conditions for foreign trade participants [1].

The capacity and operation of border customs posts have been explored by international scholars such as Mariya Polner, Emmanuel Deutschmann, Lorenzo Gabrielli, and Ettore Recchi, and Russian researchers like O. Bobrova, A. Kozhankov, D. Kovoryakovsky, T.S. Nenadyshina, and S. Shokhin. In Uzbekistan, specific aspects of customs post management have been studied by domestic scholars including A. Suyunov, A. Saidov, and A. Nazarov. However, the management processes of automobile border

customs posts in Uzbekistan have not been thoroughly studied as an independent research subject, underscoring the relevance of this research [2].

Furthermore, in line with global best practices, the continuous development of customs procedures is essential for ensuring compliance, reducing administrative burden, and increasing operational transparency. It is recommended to evaluate resource allocation and invest in innovative technologies to meet growing demand across border posts [3].

2. Materials and Methods

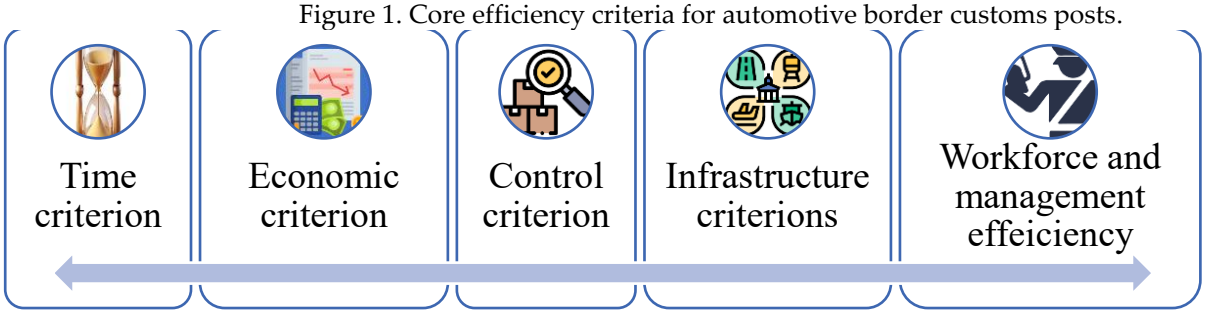
This study is based on a comparative analysis of domestic and international scientific literature, statistical data analysis, and case studies of customs post performance. Quantitative indicators such as clearance time, customs revenues, and traffic flow are used alongside qualitative assessments from field observations [4]

3. Results and Discussion

The following are identified as the primary indicators for evaluating border customs post performance:

Figure 1 identifies the five primary indicators used to evaluate the performance of automotive border customs posts: Time criterion, Economic criterion, Control criterion, Infrastructure criterions, and Workforce and management efficiency. These criteria collectively assess the operational effectiveness and resource utilization at border crossings, aiming to streamline customs procedures, reduce delays, enhance security, and optimize economic outcomes. The integration of these metrics is essential for achieving modern, efficient, and responsive border management systems [5].

Figure 1. Core efficiency criteria for automotive border customs posts.



Time Criterion

The time criterion is considered the most essential in evaluating the efficiency of customs posts. It measures the time required for the clearance of goods and vehicles moving through the posts. The shorter and more streamlined the clearance process, the more effectively foreign trade flows are managed. According to recommendations by the World Customs Organization and the United Nations Development Program, reducing border clearance times and automating processing via modern information technologies significantly accelerates foreign trade activity [6].

Economic Factors

Economic factors—such as the volume of customs duties collected for the state budget, the total value of cleared goods, and the number of clearances per employee—constitute another key criterion. For instance, in 2023, the 'Yallama' post collected 58.8 million UZS in customs duties for the state budget, whereas this figure increased to 165.3 million UZS in 2024. The number of vehicles cleared at this post rose by 43% in 2024 compared to the previous year, increasing from an average of 667 to 973 vehicles per day [7].

Control Functions

The effectiveness of control functions is measured by the number of inspections conducted based on risk analysis and the number of identified violations. Effective risk analysis helps prevent smuggling, illicit trade, and document forgery. This contributes to

national security and serves as a primary tool in selective customs control. The implementation of the risk management system in Uzbekistan's customs operations has yielded notable results. Specifically, the number of undocumented goods discovered during inspections in 2021 increased by 88% compared to 2016, while the effectiveness of detecting customs violations grew by 12.5 times. By 2021, the number of detected offenses increased by 49%, and the value of illicit goods increased 16-fold compared to 2016 [8].

Technical Infrastructure

The level of technical equipment at border customs posts also affects operational efficiency. The availability of modern scanners, inspection complexes, vehicle scales, dimensional measurement equipment, surveillance cameras, and electronic queuing systems facilitates faster clearance procedures. Additionally, the existence of road infrastructure, logistics centers, and terminals ensures the uninterrupted flow of goods. The World Bank's 'Doing Business' reports identify infrastructure indicators as one of the primary factors affecting a country's foreign trade activity [9].

Uzbekistan's Progress

In recent years, Uzbekistan has reduced the average customs clearance time from 90 minutes in 2021 to 40 minutes in 2023, increased the effectiveness of contraband detection by approximately 12%, and achieved growth in processed cargo volumes without increasing the number of personnel [10].

As of today, a total of 40 border customs posts designed for motor vehicles and pedestrian traffic are operating in Uzbekistan. In 2025, the classification of six customs posts was revised, resulting in the re-categorization of 12 as non-categorized, 15 as first-category, and 13 as second-category customs posts.

In the course of this research, we examine the reclassification of certain customs posts [11].

On September 25, 2017, the second-category "Rishton" border customs post was opened to facilitate pedestrian crossings for citizens of Rishton district in Fergana region (Uzbekistan) and Kadamjay district in the Kyrgyz Republic. Since 2021, with the introduction of traffic for both passenger cars and freight vehicles, there has been a significant increase in the number of travelers and vehicles passing through this post, see Table 1. However, due to the post's designation as a second-category customs post, shortages in personnel and other resources have emerged, highlighting the need to upgrade its classification [12].

Table 1. Passenger and Vehicle Flow at "Rishton" Border Post (2018–2024).

Year	Avg. Daily Vehicles	Avg. Daily Passengers
2018	0	567
2019	41	431
2020	17	85
2021	299	1466
2022	672	3431
2023	605	3645
2024	826	4226

When analyzing the daily number of vehicles processed at the post, it is observed that in 2024 this figure reached 826. For comparison, let us consider several major first-category border customs posts (BCPs) in the country: Yallama BCP processed 973 vehicles, Gishtkuprik BCP – 798, Daut-ota BCP – 564, Fergana BCP – 796, and Dustlik BCP – 679 vehicles per day [13].

A similarly sharp increase has been recorded at the second-category Andarkhon BCP, where the number of vehicles crossing the national border has tripled over the past seven years, see Table 2.

Table 2. Andarkhon Border Post Statistics by Year.

Year	Vehicles	Passengers (thousand)	Cargo Weight (thousand tons)
2018	31,540	619.1	93.7
2019	45,754	587.3	215.6
2020	10,606	118.4	32.7
2021	8,428	70.7	143.8
2022	54,027	430.5	244.3
2023	77,228	646.6	272.5
2024	94,020	758.9	145.9

As can be seen from this table, the number of vehicles and passengers passing through the post has been increasing year by year, with the exception of the quarantine period. This upward trend indicates that it would be appropriate to upgrade the category of this post [14].

The "Qarshi-Kerki" border customs post, located along the border with the neighboring Republic of Turkmenistan, is designated exclusively for movement between the citizens of the two countries. However, over the years, traffic through this post has significantly declined, see Table 3. Furthermore, since 2024, the post has been closed for an indefinite period.

Table 3. "Qarshi-Kerki" Border Post Statistics (2018–2024).

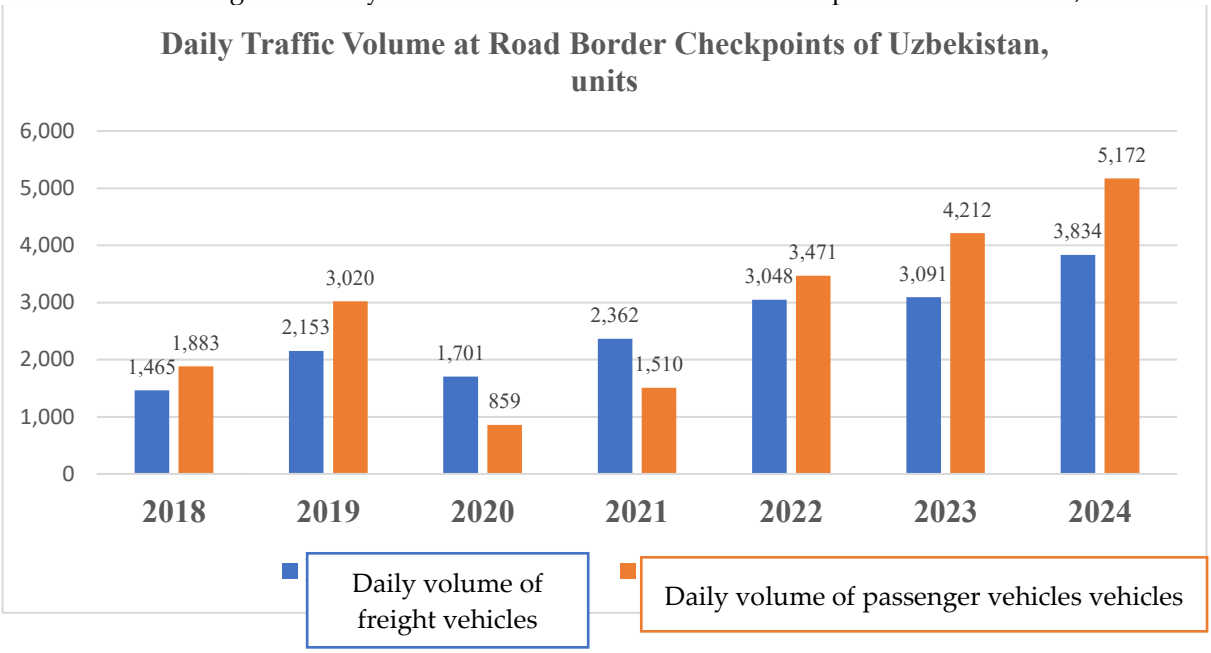
Year	Vehicles	Passengers (thousand)
2018	9,668	113
2019	9,492	106
2020	2,258	22.4
2021	1,078	1.6
2022	3,571	6.4
2023	1,032	2.7
2024	0	0

The results of the research indicate that reclassifying this first-category post as a second-category post would be appropriate.

As illustrated in the diagram №1 below, an average of 3,348 vehicles per day passed through the country's "gateways" in 2018, whereas by 2024, this figure had increased to 9,000.

Figure 2 illustrates the annual changes in daily traffic volume at Uzbekistan's road border checkpoints from 2018 to 2024. It differentiates between two vehicle categories: freight vehicles (blue bars) and passenger vehicles (red bars). The data shows a steady increase in both vehicle types over the years, with notable growth in 2023 and 2024. The consistent rise in traffic volumes highlights the growing cross-border mobility and underscores the increasing demand for efficient border infrastructure and customs operations[15].

Figure 2. Daily Traffic Volume at Road Border Checkpoints of Uzbekistan, units.



During the research, forecasting results based on the Holt method indicated a steady increase in the number of vehicles passing through Uzbekistan's customs posts from 2025 to 2030, see Table 4. Specifically, the average daily number of vehicles passing through customs posts is projected to reach 9,005 in 2025, and rise to 13,503 by 2030. This implies that over a five-year period, the daily traffic flow will increase by more than 50%. The difference between the UCL (Upper Control Limit) and LCL (Lower Control Limit), ranging from 9,890 to 17,116, reflects daily fluctuations, seasonal load variations, and temporary shifts in external trade demand.

Table 4. Forecast of Vehicle Flow through Customs Posts (2025–2030).

Model	2025	2026	2027	2028	2029	2030
Total Auto - Model 1 (Forecast)	3,286,967	3,615,358	3,943,750	4,272,141	4,600,533	4,928,925
UCL	4,605,696	4,934,088	5,262,481	5,590,873	5,919,265	6,247,657
LCL	1,968,237	2,296,628	2,625,019	2,953,410	3,281,801	3,610,192
Daily Auto - Model 2 (Forecast)	9,005	9,905	10,804	11,704	12,604	13,503
UCL	12,618	13,517	14,417	15,317	16,217	17,116
LCL	5,392	6,292	7,191	8,091	8,991	9,890

4. Conclusion

Customs posts are essential institutional mechanisms for trade regulation and border security. In Uzbekistan, vehicle flow increased from 3,348 per day in 2018 to 9,000 per day in 2024. Forecast models predict further increases to over 13,500 by 2030. This trend necessitates improved infrastructure, expanded capacity, and advanced digital tools. The modernization and strategic classification of border posts, as well as adoption of digital systems like E-Transit, will ensure improved efficiency. Continued evaluation using international standards such as TRACECA and the implementation of Coordinated Border Management principles will support Uzbekistan's trade competitiveness and border safety.

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