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Smart mobility, smarter governance: Transport tech driving performance in inter-governmental organizations in Nairobi

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Abstract: *Purpose*: This study examines the relationship between Transport Management Systems (TMS) and the performance of Inter-Governmental Organizations (IGOs) in Nairobi City County. The research investigates how adopting TMS influences operational efficiency, cost reduction, and service delivery among IGOs. *Methodology*: A descriptive research design was employed, utilizing a census approach targeting 134 IGOs. Data was collected from supply chain managers using structured questionnaires, and descriptive and inferential statistical analyses were conducted. Pearson correlation and regression analysis were applied to determine the strength and significance of the relationship between TMS adoption and performance. *Results*: Findings revealed a significant positive correlation ($r = 0.421$, $p < 0.001$) between TMS adoption and IGO performance, indicating that organizations with well-integrated transport systems experience improved logistics efficiency and service delivery. Regression analysis further confirmed that TMS accounts for 53.7% of performance variations among IGOs. *Theoretical Contribution*: This study extends the application of Systems Theory by demonstrating the interdependence between transport management, logistics coordination, and organizational performance in an inter-governmental context. *Practical Implications*: IGOs in Nairobi City County can enhance operational efficiency by adopting advanced TMS solutions such as real-time tracking, route optimization, and automated reporting. Policymakers and stakeholders should also invest in infrastructure and regulatory frameworks that support effective transport management in IGOs.

Keywords: transport management system, inter-governmental organizations, logistics efficiency, systems theory, organizational performance

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1. Introduction

Logistics plays a critical role in supporting organizations as they strive for more efficient management systems in business practices. An inefficient logistics system and weak internal management can prevent organizations from responding swiftly to customer needs, compromising their competitiveness and service delivery (Judith, 2014). Modern enterprises recognize the importance of logistics management in reducing costs, increasing competitiveness, and improving operational efficiency. Coordinating and integrating material and product movement through physical, organizational, and informational logistics is crucial for overall firm success (Ristovska et al., 2017). Efficient logistics practices, including transportation, warehousing, inventory, and order processing, are essential in maintaining a competitive edge in a globalized business environment.

Transportation Management Systems (TMS) is a significant logistics and supply chain management component, directly influencing an organization's efficiency and effectiveness. The transportation function ensures the smooth flow of goods from suppliers to manufacturers, warehouses, and end consumers. Efficient transportation management reduces costs, improves service delivery, and enhances organizational performance (Samita, Kadima, & Juma, 2020). In contrast, inefficient transport systems can lead to delays, increased operational costs, and customer dissatisfaction. Organizations must leverage transportation management in highly competitive environments as a strategic tool to optimize operations and maintain sustainability (Tuttle & Heap, 2008).

Inter-Governmental Organizations (IGOs) operating in Nairobi City County face numerous logistical challenges that impact their performance. The efficiency of transport management practices significantly affects their ability to fulfill their mandates, whether in humanitarian aid, policy implementation, or trade facilitation. As a hub for international organizations such as the United Nations Environment Programme (UNEP) and the World Food Programme (WFP), Nairobi requires well-structured transport management systems to support its complex logistical operations. Given the dynamic nature of global logistics, these organizations must adapt to technological advancements such as route optimization, real-time tracking, and fleet management systems to ensure timely and cost-effective operations (Lea, 2016).

The increasing globalization and digitalization of business operations necessitate firms and IGOs to adopt logistics management strategies that align with modern technological innovations. According to Vlachos (2016), logistics management strategies are critical in corporate governance, particularly in asset management and financial planning. Adopting advanced transportation management technologies, such as GPS tracking and automated scheduling, has significantly improved efficiency and reduced organizational costs. These technologies enable real-time monitoring of shipments, route optimization, and enhanced delivery accuracy (Tan et al., 2018). As a result, IGOs and other institutions that rely on extensive logistical operations benefit from the improved accountability and efficiency these systems provide.

Despite the proven advantages of transport management systems, many organizations still face logistical inefficiencies due to inadequate infrastructure, high operational costs, and poor planning. Studies indicate that transportation inefficiencies account for significant operational costs, leading to reduced financial performance and service quality (Samita et al., 2020). To address these challenges, organizations must prioritize strategic transport management, invest in advanced technology, and ensure continuous improvement in logistics processes. For instance, IGOs in Nairobi City County could enhance their performance by implementing integrated transport management systems to move goods and personnel efficiently.

Furthermore, procurement performance is heavily dependent on transport management efficiency. Effective transportation management ensures timely supplies, reduces wastage, and enhances service delivery in private and public organizations (Mburu, 2012). This is particularly critical for IGOs engaged in humanitarian efforts, where timely delivery of aid and resources can significantly impact affected populations. Integrating logistics and procurement strategies allows organizations to

improve decision-making, optimize resource allocation, and enhance overall operational efficiency (Mangan et al., 2008).

1.1. Statement of the problem

Traditionally, the purpose of Inter-Governmental Organizations (IGOs) has been to create mechanisms for the world's inhabitants to work more successfully together in peace and security areas and address economic and social questions. In this era of increasing globalization and interdependence of nations, IGOs play a significant role in international political systems and global governance (Urquijo, 2022). These organizations address many issues and involve governments from every world region. However, despite their critical roles, IGOs face substantial and unique challenges in supply chain management that hinder their ability to function effectively. Transport management inefficiencies, in particular, pose significant operational difficulties that impact their performance.

Transport management inefficiencies can lead to delays, increased operational costs, and reduced effectiveness in service delivery. The World Economic Forum (2022) reported that supply chain disruptions have surged 42% in recent years, mainly due to geopolitical instability, natural disasters, and health crises such as the COVID-19 pandemic. For IGOs operating internationally, such disruptions complicate the logistics of coordinating aid, managing resources, and maintaining reliable communication channels across borders. The inefficiencies in transport management systems contribute to these disruptions, making it difficult for IGOs to meet their objectives promptly and cost-effectively.

Moreover, managing transportation costs is a significant challenge for IGOs, as inefficient transport systems can consume up to 25% of an organization's budget (Urquijo, 2022). This is particularly concerning for IGOs, whose funding often relies on contributions from member states. High transportation costs, coupled with delays and inefficiencies, reduce the overall effectiveness of IGOs in fulfilling their mandates. To remain operationally sustainable, these organizations must adopt advanced transport management solutions that enhance efficiency, reduce costs, and optimize logistics processes.

While studies have explored the impact of supply chain technologies on organizational performance, there remains a gap in research focusing specifically on transport management systems within IGOs. Studies such as Waganda (2018) examined electronic procurement in United Nations agencies but did not address transport management challenges. Other research, including Barasa, Namusonge, and Fredrick (2017), concentrated on county governments, leaving a gap in understanding the transport management needs of IGOs. Additionally, studies like Kipkemoi (2017) focused on manufacturing firms rather than service-oriented organizations like IGOs.

Given these gaps, it is imperative to investigate the influence of transport management systems on the performance of IGOs in Nairobi City County. Addressing these inefficiencies will contribute to better resource utilization, service delivery, and enhanced operational performance. Future research should explore best practices in transport management, leveraging technological advancements to optimize logistics for IGOs.

1.2. Research objective

This study aimed to examine the influence of the Transport Management system on the Performance of Inter-Governmental Organizations in Nairobi City County.

2. Literature review

2.1. Theoretical review

This study was underpinned by systems theory. General System Theory was initially developed in 1972 by the Hungarian biologist Ludwig Von Bertalanffy. From a logistics and transport management perspective, the theory emphasizes the interconnectivity and interdependence of various components within a transport management system and how these elements enhance efficiency and performance (Von Bertalanffy, 1972). In transport management, systems theory views transport as a subsystem of

the broader supply chain, with interactions between infrastructure, technology, personnel, and regulatory frameworks determining overall performance (Osifo & Omoregbe, 2011).

Transport management systems (TMS) function as open systems, continuously interacting with external environments, including suppliers, regulatory bodies, and consumers. These systems rely on information feedback loops to optimize routes, monitor deliveries, and enhance service efficiency (Gorkhali & Xu, 2019). Feedback is critical in transport management, ensuring that organizations adjust operations in response to delays, cost fluctuations, or disruptions (Wang, Li, Wang & Jones, 2012). The open system approach highlights the need for adaptability in TMS, allowing organizations to remain responsive to external changes such as fuel price variations, geopolitical factors, and infrastructure constraints (Gunasekaran & Choy, 2012).

A key tenet of systems theory is functional integration, which refers to the seamless coordination of various logistical components such as fleet management, warehousing, and inventory control (Bueno, De Toledo & Da Silva, 2020). When applied to transport management, this principle underscores the necessity of aligning transport operations with procurement, inventory management, and distribution networks to create a cohesive supply chain (Fatorachian & Kazemi, 2018). Efficient transport management requires cross-functional collaboration, where departments work together to streamline operations and reduce inefficiencies.

Another critical concept in systems theory is emergent properties, which refer to outcomes that arise from the interactions of system components rather than from any single element in isolation (Jaradat et al., 2017). Optimizing a single aspect – such as vehicle routing—without considering warehousing capacity, supplier lead times, or regulatory compliance may not yield significant efficiency gains in transport management. Instead, a holistic approach that integrates all transport system elements is necessary for achieving long-term performance improvements (León & Calvo-Amodio, 2017).

In an intergovernmental organization (IGO) context, transport management systems must operate efficiently across multiple jurisdictions, requiring high levels of coordination and integration. IGOs often deal with complex logistical challenges such as cross-border trade regulations, humanitarian aid distribution, and diplomatic transport arrangements. Systems theory provides a framework for understanding how different components of an IGO's transport network interact and influence overall performance. By analyzing these interactions, IGOs can identify inefficiencies, optimize resource allocation, and improve service delivery (Puche et al., 2016).

Ultimately, systems theory offers a structured approach to analyzing and enhancing transport management systems by focusing on interdependence, feedback mechanisms, and functional integration. This perspective enables organizations to develop adaptive, resilient, and efficient transport strategies that align with broader operational objectives. For IGOs in Nairobi City County, applying systems theory to transport management can lead to better coordination, reduced costs, and improved service efficiency, ensuring that logistical challenges are addressed systematically and effectively.

2.2. Empirical review

A transportation management system (TMS) is a technological logistics platform that aids organizations in strategizing, implementing, and enhancing the physical transportation of goods, encompassing both inbound and outbound movements (Chehri et al., 2022). It ensures compliance and facilitates the availability of appropriate documentation for shipments. This type of technology is frequently integrated into a broader framework of supply chain management (SCM) systems (Rudskoy, Ilin & Prokhorov, 2021). A transportation management solution, also referred to as transportation management software, encompasses various functionalities, including visibility into daily transportation operations, trade compliance information, and paperwork, and the facilitation of timely freight and commodities delivery (Muhalia, Ngugi & Moronge, 2021). Transportation management systems (TMS) can enhance the efficiency of the shipping process and facilitate effective management and optimization of transportation operations across various modes of transportation, including land, air, and sea.

Logistics and transportation management are the backbone of efficient supply chain operations (Jena & Ghadge, 2021). It entails coordinating the movement of goods from suppliers to customers while ensuring timely deliveries and cost-effective processes. Traditionally, this has been a complex and

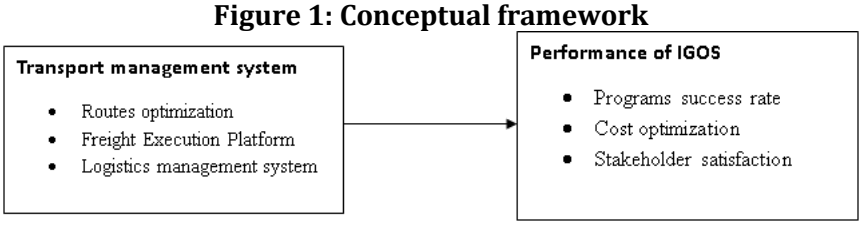
resource-intensive task, often fraught with challenges such as route optimization, monitoring of multiple shipments, and real-time decision-making (Rudskoy, Ilin & Prokhorov, 2021). This is where automation steps in to revolutionize the landscape. Route optimization is one of the primary benefits of automation in logistics and transportation management. Advanced algorithms and software solutions analyze vast datasets, considering traffic patterns, weather conditions, and delivery schedules (Muhalia, Ngugi & Moronge, 2021). This analysis results in the identification of the most efficient routes for transporting goods. As a result, delivery times are significantly reduced, and fuel consumption is minimized, leading to cost savings and environmental benefits.

Several empirical studies have sought to analyze the relationship between the transport management system and performance. Muhalia, Ngugi, and Moronge (2021) studied the Effect of Transportation Management Systems on Supply Chain Performance of FMCG in Kenya. The study adopted a descriptive research design. The unit of observation was the operations manager of the 51 FMCG manufacturers located in Nairobi. The sampling frame of the current study consisted of operations managers in the manufacturers of the FMCGs in Nairobi. The study used the census method to select 51 manufacturers of FMCGs in Nairobi. Thus, the study sample consisted of 51 respondents. Primary data was used in the study. The study used questionnaires to collect data. A mixed method of analyzing data was used, where descriptive and inferential analyses were used. The data collected from the field was analyzed using the SPSS 23 program. The questionnaires were referenced, and the items were coded for easier data entry. The findings were presented using tables. The study found that transport management systems positively and significantly influence the Supply chain performance of FMCG in Kenya. This study was, however, based on a different industry and not on IGO.

Musau et al. (2017) studied the effect of inventory management on organizational performance among textile manufacturing firms in Kenya. The study adopted the convergent parallel mixed methods design. The study targeted 196 respondents drawn from employees of procurement departments and departmental heads of the respective 15 textile manufacturing industries operating in Nairobi County. Questionnaires and interview schedules were used to gather the data from primary sources. The study applied qualitative and quantitative data, which were analyzed using the statistical package for social sciences (SPSS Version 22). Inferential statistics using hierarchical multiple regression and Correlation analysis were applied to test the relationship between the variable and the formulated hypothesis. The study concludes that transport management can positively influence the supply chain performance of Textile firms and therefore recognizes the importance of transport management in the supply chain. Similarly, this study was based on a different setting than the one proposed for the present study.

Conceptual Framework

Figure 1: Conceptual framework



3. Research methodology

The study adopted a descriptive research design. This research design was appropriate as it enables systematic observation, measurement, and classification of phenomena while capturing the perspectives and experiences of respondents (Asenahabi, 2019; Pandey & Pandey, 2021). Additionally, descriptive research accurately represents individuals, situations, and organizational characteristics, including the frequency of specific occurrences (Bloomfield & Fisher, 2019).

The study's target population comprised all IGOs operating within Nairobi City County, amounting to 134 organizations, as documented by the Intergovernmental Relations Technical Committee (IGRTC, 2025). The sampling frame was sourced from IGRTC (2025) and was periodically updated to maintain accuracy (Stratton, 2021). Given the relatively small population, a census approach encompassed all 134 IGOs in the study. The unit of analysis was the IGO, whereas the unit of observation was the supply chain

manager within each organization, as they hold key knowledge regarding automation and performance in logistics and procurement (Merriam & Tisdell, 2015).

Data collection was conducted using a structured questionnaire comprising both closed and open-ended questions, allowing for efficient data quantification while capturing qualitative insights (Mohajan, 2020). The questionnaire was distributed using a drop-and-pick-later approach, with research assistants overseeing the process to improve response rates and reduce errors. A pilot study was conducted two weeks before the primary data collection phase, involving 10% of the sample (13 organizations), to refine the questionnaire and ensure its clarity and relevance (Aginako et al., 2021). Deputy supply chain officers participated in the pilot phase instead of the primary respondents to prevent response bias in the main study.

To assess instrument reliability, the study employed Cronbach's alpha, a widely recognized internal consistency metric with a reliability threshold of 0.70 (Garson, 2013; Nawi et al., 2020). Validity was ensured through expert evaluations from supply chain and logistics professionals and academic scholars. Construct validity was examined through correlation tests, while criterion-related validity was determined by comparing the instrument's scores with an external benchmark (Zohrabi, 2013).

Data analysis was incorporated using quantitative methods (Albers, 2017). This was done using both descriptive and inferential statistical techniques. Measures of central tendency, such as mean values, and measures of dispersion, such as standard deviation, were used to summarize key findings and provide a detailed understanding of the data. Inferential statistics included Pearson correlation and a simple regression model, and were used to show the relationship between variables.

4. Findings and discussion

4.1. Response rate

The response rate indicates the proportion of individuals who responded to a survey or questionnaire compared to the total number invited to participate. It's typically presented as a percentage and is determined by dividing the responses received by the total number of questionnaires sent out, then multiplying by 100. In this study, 113 out of 134 distributed questionnaires were completed and returned, resulting in a response rate of 84.33%, as shown in Table 1. According to Fincham (2018), a response rate above 65% is acceptable for most research purposes. Therefore, the high response rate of 84.33% in this study was regarded as satisfactory, suggesting that the collected data were reliable and valid for the study's objectives.

Table 1: Response rate

Category	Frequency	Percent
Response	113	84.33
Non response	21	15.67
Total	**134**	**100**

4.2. Descriptive findings

The study examined the extent of adoption of Transport Management Systems (TMS) among various intergovernmental organizations (IGOs) in Nairobi City County. Through a 5-point Likert scale questionnaire, respondents provided insights on how different components of the TMS were integrated within their organizations, with 1 indicating the lowest level of adoption and 5 the highest. The results from the responses received are shown in Table 2 below:

Table 2: Descriptive statistics on transport management system

Statement on transport management system	Not at All	Small Extent	Moderate extent	Large extent	Very large extent	Mean	Standard Deviation
Our organization utilizes a comprehensive Transport Management System (TMS)	7.08%	8.85%	12.39%	18.58%	53.10%	4.018	1.289
Our TMS automates route optimization to improve efficiency.	10.62%	1.77%	11.50%	18.58%	57.52%	4.106	1.312
The TMS provides real-time tracking of shipments for proactive monitoring and better customer service.	5.31%	7.08%	9.73%	23.89%	53.98%	4.142	1.179
The TMS automates carrier selection processes to enhance efficiency in logistics operations.	8.85%	13.27%	3.54%	25.66%	48.67%	3.920	1.364
The TMS automates freight rate management for cost-effective transportation solutions.	7.96%	3.54%	7.96%	23.01%	57.52%	4.186	1.221
The TMS provides automated reporting on transportation performance for data-driven decision-making	5.31%	7.96%	5.31%	27.43%	53.98%	4.168	1.172

One of the key aspects assessed was the overall utilization of a comprehensive Transport Management System. The findings show that a majority of respondents (53.10%) indicated that their organizations used a TMS to a "Very Large Extent," and an additional 18.58% reported adoption to a "Large Extent." This indicates that approximately 71.68% of the organizations have significantly integrated TMS into their operations. Conversely, a smaller segment (16.93%) acknowledged using it to a "Small Extent" or "Not at All," indicating that while most organizations have embraced TMS, there are still a few that have yet to integrate it into their processes fully. The mean score of 4.018 supports the idea that TMS utilization is relatively high, although the standard deviation of 1.289 suggests some variability in adoption among different IGOs.

The automation of route optimization, another key feature of TMS, was also assessed. A majority of respondents (57.52%) indicated that this feature was used to a "Very Large Extent," and an additional 18.58% reported adoption to a "Large Extent," suggesting that route optimization is a widely recognized benefit of the TMS among the IGOs. Nonetheless, 12.39% of the respondents indicated low or no adoption of this feature, hinting at disparities in how this function is utilized. The mean score of 4.106 reflects a strong inclination toward implementing route optimization, while the standard deviation of 1.312 points to notable differences in how extensively this feature is applied across different organizations.

The real-time tracking of shipments was another aspect of the TMS that showed considerable adoption. More than half of the respondents (53.98%) stated that real-time tracking was used to a "Very Large Extent," while an additional 23.89% reported it being used to a "Large Extent." This means that 77.87% of the organizations have integrated this feature into their operations, underscoring its importance for monitoring shipments and enhancing customer service. However, a minority (12.39%) reported using this feature to a "Small Extent" or "Not at All," indicating that real-time tracking is not uniformly implemented across all IGOs. The mean score of 4.142 suggests a generally high level of adoption, and the standard deviation of 1.179 indicates moderate variability in how different organizations use this capability.

The automation of carrier selection processes is another function examined in the study. Nearly half of the respondents (48.67%) indicated that this feature was used to a "Very Large Extent," while an additional 25.66% reported a "Large Extent," suggesting that about 74.33% of IGOs employ TMS for carrier selection. However, a significant portion (13.27%) mentioned using this feature to a "Small Extent," indicating that not all organizations have fully adopted this process. The mean score of 3.920 points to a relatively high degree of adoption, although the standard deviation of 1.364 reflects considerable differences in how effectively this feature is being used.

Freight rate management automation was one of the most widely adopted features of the TMS. Over half (57.52%) of the respondents stated that this feature was used to a "Very Large Extent," while another 23.01% indicated a "Large Extent," which means that approximately 80.53% of the IGOs have embraced automated freight rate management for cost-effective transportation. This indicates a high recognition of its value in reducing transportation costs. However, a smaller segment (7.96%) noted limited or no use, suggesting that some organizations may not fully leverage this feature. The mean score of 4.186 confirms that freight rate management is a critical aspect of TMS utilization, while the standard deviation of 1.221 implies some variation in adoption levels.

Lastly, the provision of automated reporting on transportation performance, essential for data-driven decision-making, was also examined. A substantial proportion of respondents (53.98%) stated that their TMS provided automated reports to a "Very Large Extent," while another 27.43% indicated a "Large Extent." This shows that approximately 81.41% of IGOs use automated reporting as a key feature of their transport management operations. Only a minority (7.96%) reported minimal or no use, which indicates that most organizations recognize the importance of data-driven insights for transportation management. The mean score of 4.168 further suggests a strong inclination toward automated reporting, and the standard deviation of 1.172 implies that while this feature is generally well-implemented, there is still some variability in its use.

The findings are in tandem with existing literature. Muhalia, Ngugi, and Moronge (2021) studied the Effect of Transportation Management Systems on Supply Chain Performance of FMCG in Kenya. The study established that transport management systems provides trade compliance information and documentation; transport management systems make it easier for businesses to manage and optimize their transportation operations, whether they are by land, air, or sea; transport management systems ensures timely delivery of freight and goods; transport management systems provides visibility into day-to-day transportation operations; and transportation management systems helps to streamline shipping process. Musau et al. (2017) studied the effect of inventory management on organizational performance among textile manufacturing firms in Kenya. The study concludes that transport management can positively influence the supply chain performance of textile firms and therefore recognizes the importance of transport management in the supply chain.

4.3. Correlation analysis

Correlation coefficients provide a numerical summary indicating the direction and strength of the linear relationship between two variables. The Pearson correlation coefficient (r) ranges from –1 to +1, where the sign denotes whether the correlation is positive or negative. The magnitude of the absolute value indicates the strength of the relationship. A value of 0 means that the variables have no relationship, while a value of +1 indicates a perfect positive correlation, and a value of -1 signifies a perfect negative correlation (Saunders et al., 2018). For this study, the Pearson Product-Moment Correlation was employed to determine the strength and direction of the linear relationship between the independent and dependent variables, with the results summarized below.

Table 3. Correlation of the study variables

		Transport Management System	Performance
Transport Management System	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	113	
Performance	Pearson Correlation	.421**	1
	Sig. (2-tailed)	.000	
	N	113	113

The correlation analysis revealed a statistically significant positive relationship between the Transport Management System and organizational performance. The Pearson correlation coefficient ($r = 0.421$, $p < 0.001$) indicates a moderate positive association, suggesting that improvements in Transport Management Systems contribute to enhanced performance in Inter-Governmental Organizations (IGOs). The significance level ($p = 0.000$) confirms that the relationship is unlikely to have occurred by chance, reinforcing the importance of transport efficiency in optimizing logistics and operational outcomes.

4.4. Regression analysis

A simple linear regression analysis was conducted between the Transport Management System (TMS) as the independent variable and the Performance of IGOs as the dependent variable. The analysis included the Model Summary, ANOVA, and Regression Coefficients tables, each explained in detail below.

The model summary in Table 4 below provides an overview of how well the Transport Management System explains variations in the Performance of IGOs. The R Square of 0.537 indicates that the Transport Management System explains 53.7% of the variation in IGO performance. This suggests that the Transport Management System has strong explanatory power in predicting the performance of IGOs.

Table 4: Model summary for transport management system

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.733[a]	.537	.533	5.33702

a. Predictors: (Constant), Transport management system

The ANOVA results in Table 5 further test the overall significance of the regression model. The F-value of 128.715 and p-value < 0.05 confirm that the model provides a good fit and that the relationship between the Transport Management System and performance is statistically significant.

Table 5: ANOVA for transport management system

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3666.288	1	3666.288	128.715	.000[b]
	Residual	3161.695	111	28.484		
	Total	6827.982	112			

a. Dependent Variable: Performance
b. Predictors: (Constant), Transport Management System

Table 6 below presents the regression coefficients between the Transport Management System and the performance of IGOs.

Table 6: Regression coefficient for transport management system

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	28.755	3.456		8.320	.000
	TMS	.316	.028	.733	11.345	.000

a. Dependent Variable: Performance

The table shows that when the Transport Management System is zero, the predicted performance score is 28.755. For every one-unit increase in the use of the Transport Management System, IGO performance increases by 0.316 units, holding other factors constant. The t-value of 11.345, with a p-value < 0.05, confirms this relationship is highly significant.

5. Conclusions

The study concludes that adopting Transport Management Systems (TMS) significantly enhances the performance of Inter-Governmental Organizations (IGOs) in Nairobi City County. The findings indicate that an efficient TMS leads to improved service delivery, cost reduction, and better resource allocation. The correlation results reveal a positive and significant relationship between TMS and organizational performance, emphasizing the role of transportation efficiency in optimizing logistics operations. Furthermore, regression analysis confirms that TMS accounts for significant performance variation among IGOs, highlighting the importance of real-time tracking, route optimization, and automated reporting in strengthening operational effectiveness. Therefore, investing in transport management technologies and practices is essential for IGOs seeking to enhance their logistical capabilities and achieve their mandates more efficiently.

6. Recommendations

Based on the findings, the study recommends that IGOs in Nairobi City County invest in advanced Transport Management Systems to improve efficiency and reduce operational costs. Organizations should adopt real-time tracking and automated route optimization to enhance delivery speed and minimize disruptions. Training and capacity-building programs should also be implemented to equip staff with the necessary skills to utilize TMS functionalities effectively. IGOs should also integrate their transport systems with other supply chain technologies, such as procurement and inventory management, to enhance overall logistical coordination. Finally, policymakers should support infrastructure development and regulatory frameworks that facilitate seamless transport operations for IGOs, ensuring that technological advancements are leveraged to improve service delivery and organizational performance.

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Conflicts of interest

The authors declare no conflict of interest.

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