

ANALYSING THE EFFECTS OF TRANSPORT LOGISTICS AND MOBILITY CHALLENGES ON OPERATIONAL EFFICIENCY OF PUBLIC SECTOR SECURITY ORGANISATIONS IN LILONGWE MALAWI

***Phillip Kondowe, Josephine Chinoko Nguluwe(Lecturer)**

Commerce (Bachelors Degree of Business Administration), DMI St John The Baptist
University.

Article Received: 30 June 2026, Article Revised: 20 July 2026, Published on: 07 August 2026

***Corresponding Author: Phillip Kondowe**

Commerce (Bachelors Degree of Business Administration), DMI St John The Baptist University.

Doi: <https://doi-doi.org/101555/ijarp.7869>

2. ABSTRACT

Transport logistics is a fundamental component of operational effectiveness in public sector security institutions because it facilitates the timely deployment of personnel, patrol operations, emergency response, and the delivery of essential security services. Despite increasing investment in transport systems, many public sector security institutions continue to experience vehicle shortages that constrain operational performance and reduce organisational efficiency. Understanding the relationship between vehicle availability and operational efficiency is therefore essential for informing evidence-based policy and resource allocation aimed at strengthening institutional performance.

This study assessed the effect of vehicle availability on operational efficiency in public sector security institutions. Specifically, the study examined how the adequacy of operational vehicles, timely vehicle allocation, vehicle availability for patrol coverage, and vehicle shortages influence operational efficiency. The study was guided by the Resource-Based View (RBV), which considers organisational resources as critical determinants of organisational performance.

A quantitative research approach employing a descriptive cross-sectional survey design was adopted. Data were collected from 68 participants selected from a target population through structured questionnaires. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarise the data, while Pearson's Product-Moment Correlation analysis was employed to determine the relationship between vehicle availability

and operational efficiency. Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS), with statistical significance assessed at the 5% level.

The findings revealed that although respondents generally perceived vehicle allocation procedures to be timely, the overall availability of operational vehicles was inadequate to support routine operational activities and patrol coverage. Most respondents indicated that vehicle shortages constrained operational performance by limiting mobility, delaying emergency response, and reducing service delivery capacity. Correlation analysis further demonstrated a statistically significant positive relationship between vehicle availability and operational efficiency, indicating that improvements in vehicle availability are associated with enhanced operational performance.

The study concludes that vehicle availability is a significant determinant of operational efficiency in public sector security institutions. It recommends increased investment in fleet acquisition, timely vehicle replacement, preventive maintenance programmes, and improved transport resource management to strengthen operational capability and enhance service delivery. The findings contribute to the growing body of knowledge on transport logistics and provide practical evidence to support transport planning and resource management within public sector security institutions.

2.1. KEYWORDS: Transport logistics, mobility challenges, operational efficiency, vehicle availability, vehicle maintenance, fuel management, transport planning, public sector security organizations.

3. INTRODUCTION

Transport logistics is widely recognised as a critical determinant of organisational performance because it facilitates the efficient movement of personnel, equipment, and operational resources required to achieve institutional objectives. Across both public and private sectors, effective transport logistics enhances operational efficiency by improving response time, resource utilisation, coordination, and service delivery. In security institutions, vehicle availability is particularly important because operational activities such as patrols, emergency response, investigations, and surveillance depend on the timely deployment of transport resources. Conversely, inadequate vehicle availability constrains mobility, delays response to incidents, increases operational costs, and reduces institutional effectiveness. Recent studies have shown that transport resource availability remains one of the key factors influencing organisational efficiency, particularly in institutions whose mandates require

rapid response and continuous operational readiness (World Bank, 2023; Organisation for Economic Co-operation and Development [OECD], 2021). Consequently, strengthening transport logistics has become an important priority for governments seeking to improve the performance and accountability of public institutions. Within public sector security institutions, operational efficiency is closely linked to the availability of transport resources that support personnel deployment and service delivery. These institutions operate in dynamic environments characterised by increasing security demands, resource constraints, expanding geographical coverage, and growing public expectations for timely and effective services. As a result, adequate vehicle fleets are essential for maintaining operational readiness, supporting patrol coverage, facilitating investigations, and responding promptly to emergencies. Globally, governments continue to implement reforms aimed at strengthening public sector performance through improved asset management, efficient resource utilisation, and evidence-based decision-making (OECD, 2021). In Malawi, these priorities are reflected in the Malawi 2063 development agenda, which identifies effective public institutions, improved governance, and enhanced public service delivery as key drivers of national development (National Planning Commission, 2020). Similarly, the Malawi Public Sector Reforms Programme emphasises efficient utilisation of public resources, institutional performance, and accountability as prerequisites for delivering quality public services. Ensuring the availability of operational vehicles therefore remains central to achieving these national development aspirations and strengthening institutional effectiveness.

Despite these policy initiatives, many public sector security institutions continue to experience operational challenges associated with inadequate transport resources. Vehicle shortages, ageing fleets, delayed replacement programmes, and competing operational priorities often reduce organisational mobility and limit the capacity to deliver timely services. Although available vehicles may be allocated efficiently, insufficient fleet capacity frequently constrains patrol operations, emergency response, and routine field activities. Such limitations undermine operational efficiency and reduce the ability of institutions to fulfil their public mandate effectively. While governments continue to invest in transport infrastructure and public sector reforms, evidence suggests that vehicle availability remains a persistent operational challenge requiring further empirical investigation (World Bank, 2023; United Nations Office on Drugs and Crime, 2022).

Although the importance of transport logistics has been widely acknowledged, existing empirical studies have predominantly examined transport management, fleet maintenance, fuel management, and logistics systems as broad determinants of organisational performance.

Comparatively fewer studies have specifically investigated the effect of vehicle availability on operational efficiency within public sector security institutions, particularly in developing countries where resource constraints and increasing service demands present unique operational challenges. Furthermore, much of the available literature focuses on single-country case studies or specific law enforcement agencies, thereby limiting the generalisability of findings across the wider public security sector. This creates a knowledge gap regarding the extent to which vehicle availability influences operational efficiency in public sector security institutions operating under similar institutional and resource conditions. Addressing this gap is important because evidence-based transport planning and fleet management decisions require empirical evidence on the relationship between vehicle availability and operational performance. Such evidence is essential for informing policies aimed at strengthening institutional resilience, improving resource allocation, and enhancing public service delivery in line with contemporary public sector management reforms (United Nations Office on Drugs and Crime, 2022; World Bank, 2023).

Against this background, the present study assessed the effect of vehicle availability on operational efficiency within public sector security institutions. Specifically, the study examined how the adequacy of operational vehicles, timely vehicle allocation, vehicle availability for patrol coverage, and vehicle shortages influence operational efficiency. The study contributes to the existing body of knowledge by providing empirical evidence on the relationship between vehicle availability and operational performance within the context of public sector security institutions. The findings are expected to inform transport logistics planning, fleet management strategies, and evidence-based policy formulation aimed at improving operational effectiveness. In addition, the study supports the implementation of Malawi 2063 by generating knowledge that contributes to the development of efficient, accountable, and responsive public institutions capable of delivering quality security services. The findings also complement the objectives of Malawi's Public Sector Reforms Programme, which seeks to improve institutional performance through efficient resource utilisation, strengthened governance, and enhanced service delivery. By highlighting the strategic importance of vehicle availability as a determinant of operational efficiency, the study provides practical recommendations that can assist policymakers, transport managers, and institutional leaders in strengthening organisational performance and achieving sustainable improvements in public sector service delivery.

3.1 OBJECTIVE

To analyse the effects of transport logistics and mobility challenges on the operational efficiency in public sector security organisations.

3.2 Specific Objectives of the Study

The study was guided by the following specific objectives:

To assess the effect of vehicle availability on operational efficiency within public sector security organisations.

To examine the influence of vehicle maintenance practices and fuel supply management on operational efficiency within public sector security organisations.

To determine the effect of transport planning and mobility challenges on operational efficiency within public sector security organisations.

4. LITERATURE REVIEW

4.1 Concept of Transport Logistics in Public Sector Security Organisations

Transport logistics refers to the systematic planning, coordination, and management of resources required to ensure the efficient movement of personnel, equipment, and operational assets from one location to another. In public sector security organisations, transport logistics represents a critical operational capability because security services depend on rapid deployment, continuous mobility, and timely access to operational areas. Unlike many other public institutions, security organisations operate in dynamic environments where delays in transportation can directly affect emergency response, public safety, and institutional effectiveness (*UNODC, 2023*).

Modern public sector management frameworks recognise logistics as an important component of institutional capacity and service delivery. Effective logistics systems enable organisations to optimise resource utilisation, reduce operational disruptions, and improve accountability in the management of public assets (*OECD, 2023*). Within security institutions, transport logistics involves several interconnected components, including vehicle availability, fleet management, preventive maintenance, fuel management, transport scheduling, and infrastructure support. Weaknesses in any of these components may reduce operational readiness and limit the ability of security personnel to perform their duties effectively.

The increasing complexity of security challenges has further strengthened the need for efficient mobility systems. Rising urbanisation, population growth, transnational crime, and emergency situations require security institutions to maintain reliable transport capacity.

According to the *World Bank (2024)*, efficient transport systems and infrastructure are fundamental to improving connectivity, institutional performance, and public service delivery, particularly in developing countries. Therefore, strengthening transport logistics has become an important component of public sector reform initiatives aimed at improving efficiency, accountability, and citizen-centered service delivery.

4.2 To assess the effects of Vehicle Availability and Operational Efficiency

Vehicle availability is widely recognised as one of the most important determinants of operational efficiency in organisations that depend on transport for service delivery. It refers to the extent to which vehicles are available, functional, and ready for deployment whenever operational requirements arise. In public sector security organisations, vehicle availability is particularly important because operational activities such as patrols, emergency response, investigations, crime prevention, and transportation of personnel depend heavily on reliable transport resources. Consequently, the availability of operational vehicles directly influences institutional responsiveness, resource utilisation, and overall organisational performance (UNODC, 2023).

Within the broader field of transport logistics, vehicle availability represents more than simply possessing an adequate fleet. It encompasses the readiness, reliability, accessibility, and deployment capability of vehicles to support organisational objectives efficiently. According to the *Organisation for Economic Co-operation and Development (OECD, 2023)*, effective public sector logistics require government institutions to maintain adequate operational assets capable of supporting timely service delivery while ensuring efficient utilisation of public resources. For security organisations, this means maintaining sufficient operational vehicles that are available whenever emergencies or routine operational activities arise.

Operational efficiency refers to an organisation's ability to utilise available resources effectively while achieving its intended objectives with minimum waste, delays, and unnecessary costs. Within public sector security organisations, operational efficiency is reflected through rapid emergency response, effective deployment of personnel, improved patrol coverage, timely investigation of incidents, and optimal utilisation of operational resources. *The United Nations (2023)* emphasises that strong public institutions depend upon efficient operational systems capable of delivering reliable public services while ensuring accountability and effective resource management. Consequently, transport resources, particularly operational vehicles, constitute a critical component of institutional efficiency.

The relationship between vehicle availability and operational efficiency is supported by logistics management theory, which argues that organisational performance is significantly influenced by the availability and effective utilisation of operational resources. Christopher (2016) argues that logistics management seeks to ensure that the right resources are available at the right place and at the right time to support organisational objectives. Although Christopher's work primarily focuses on commercial supply chains, the underlying principles are equally applicable to public sector security organisations, where operational success depends upon the timely deployment of personnel and equipment.

Vehicle availability influences operational efficiency through several mechanisms. First, readily available vehicles reduce response time to emergencies and security incidents. When vehicles are immediately accessible, security personnel can respond quickly to incidents requiring urgent intervention, thereby improving public safety and institutional effectiveness. Conversely, shortages of operational vehicles often result in delayed responses, limited patrol coverage, and reduced operational visibility. According to the *United Nations Office on Drugs and Crime (UNODC, 2023)*, inadequate operational resources remain one of the major constraints affecting the effectiveness of law enforcement agencies, particularly in developing countries where financial and logistical challenges continue to affect institutional capacity.

Secondly, vehicle availability contributes to improved utilisation of human resources. Security personnel can only perform their operational responsibilities effectively when adequate transport resources are available. Without reliable vehicles, trained personnel may experience delays, reduced mobility, and limited operational reach despite possessing the necessary professional skills. The *World Bank (2024)* argues that institutional effectiveness within the public sector depends not only on human resource capacity but also on the availability of operational assets that facilitate service delivery. This demonstrates that vehicle availability complements personnel capacity by enabling officers to execute assigned duties efficiently.

Existing empirical evidence consistently demonstrates a positive relationship between vehicle availability and organisational performance. Braga et al. (2014) observed that adequate transportation resources significantly improve police visibility, crime prevention activities, and emergency response capability. Although the study was conducted within policing institutions, its findings remain applicable across public sector security organisations because mobility forms the foundation of most operational activities. Increased vehicle availability

enables institutions to expand operational coverage, improve accessibility to communities, and strengthen service delivery outcomes.

Similarly, the *African Development Bank (2022)* reports that inadequate investment in operational assets, including transport fleets, continues to constrain institutional performance across many African public institutions. Limited vehicle availability often forces organisations to prioritise selected operational activities while postponing others due to insufficient mobility resources. Such reduce operational flexibility, limit geographical coverage, and ultimately affect organisational efficiency. These challenges are particularly significant for security organisations whose operational responsibilities frequently require immediate deployment across diverse geographical locations.

Vehicle availability is influenced by several organisational factors, including procurement policies, fleet replacement programmes, asset management practices, maintenance systems, and financial resource allocation. Organisations that invest consistently in fleet acquisition and replacement generally experience higher operational reliability than those relying on ageing vehicle fleets. According to the *World Bank (2024)*, effective asset lifecycle management enables public institutions to maintain operational readiness by ensuring that ageing assets are replaced before maintenance costs and breakdown rates become excessive. Consequently, strategic investment in vehicle acquisition contributes directly to sustained operational efficiency.

Ageing vehicle fleets present a major challenge to operational performance because older vehicles experience frequent mechanical failures, increased maintenance costs, and reduced reliability. As fleets age, vehicle downtime increases, reducing the number of operational vehicles available for deployment. This situation affects emergency response capability and limits routine operational activities. *The OECD (2023)* argues that efficient public asset management requires organisations to balance maintenance expenditure with planned replacement strategies to sustain long-term operational effectiveness. Therefore, maintaining vehicle availability requires both effective maintenance systems and timely fleet renewal.

Resource allocation practices also influence vehicle availability within public sector security organisations. Budgetary limitations often restrict procurement of new vehicles while simultaneously reducing maintenance funding for existing fleets. In many developing countries, competing government priorities result in inadequate investment in transport resources despite increasing operational demands. The *African Development Bank (2022)* notes that infrastructure and operational resource deficits remain major obstacles to

improving public sector performance throughout Africa. Consequently, vehicle shortages continue to undermine institutional efficiency despite ongoing public sector reforms.

Contemporary public sector reforms increasingly recognise transport resources as strategic assets rather than administrative support services. The **OECD (2023)** emphasises that governments should strengthen operational efficiency through improved asset management, performance monitoring, and evidence-based resource allocation. Within public sector security organisations, these reforms include improved fleet management systems, strategic vehicle allocation, lifecycle asset planning, and enhanced accountability in transport resource utilisation. Such reforms improve vehicle availability while simultaneously enhancing operational efficiency.

Technological advancements have also created opportunities for improving vehicle availability. Fleet management information systems, GPS monitoring technologies, predictive maintenance systems, and digital asset management platforms enable organisations to monitor vehicle utilisation more effectively and minimise unnecessary downtime. Although technology cannot replace inadequate fleet capacity, it improves the utilisation of existing vehicles by supporting efficient scheduling, preventive maintenance, and informed management decisions (OECD, 2023). These innovations contribute to increased operational readiness while reducing unnecessary operational costs.

Despite substantial literature on transport logistics, relatively few studies have specifically examined vehicle availability as an independent determinant of operational efficiency within public sector security organisations. Existing studies frequently focus on broader logistics systems, maintenance management, infrastructure development, or commercial fleet operations. Consequently, limited empirical evidence exists regarding how vehicle availability independently influences institutional performance within security organisations operating under conditions requiring rapid deployment, continuous operational readiness, and high mobility demands. Furthermore, many previous studies have concentrated on private sector logistics, where operational objectives differ significantly from those of public security institutions.

This study addresses this gap by examining the relationship between vehicle availability and operational efficiency within public sector security organisations. Unlike previous research that examines transport logistics broadly, the present study specifically investigates how the availability of operational vehicles influences institutional performance. By focusing on vehicle availability as a key dimension of transport logistics, the study contributes to the growing body of knowledge on public sector operational management and provides evidence

that may inform transport resource planning, asset management policies, and institutional capacity development within public sector security organisations. Generally the reviewed literature demonstrates that vehicle availability constitutes a fundamental determinant of operational efficiency. Adequate, reliable, and accessible transport resources enable security organisations to deploy personnel promptly, improve operational coverage, strengthen emergency response capability, and utilise organisational resources more effectively. However, persistent challenges relating to inadequate fleet capacity, ageing vehicles, financial constraints, and weak asset management continue to affect operational performance, particularly within developing countries. These observations provide a strong theoretical and empirical foundation for investigating the effect of vehicle availability on operational efficiency in public sector security organisation.

4.3 Conceptual Framework

The conceptual framework illustrates the hypothesised relationship between vehicle availability and operational efficiency in public sector security institutions. Guided by the Resource-Based View (RBV), the framework assumes that operational vehicles are strategic organisational resources that facilitate the effective deployment of personnel and the delivery of security services. Vehicle availability is conceptualised through four key dimensions: adequacy of operational vehicles, timely vehicle allocation, vehicle availability for patrol coverage, and the extent to which vehicle shortages constrain operations. These dimensions are expected to influence operational efficiency, which is reflected in improved response time, enhanced patrol effectiveness, efficient resource utilisation, and improved service delivery. Accordingly, the framework proposes that improvements in vehicle availability will positively influence operational efficiency within public sector security institutions. This relationship formed the basis for the empirical analysis undertaken in the study.

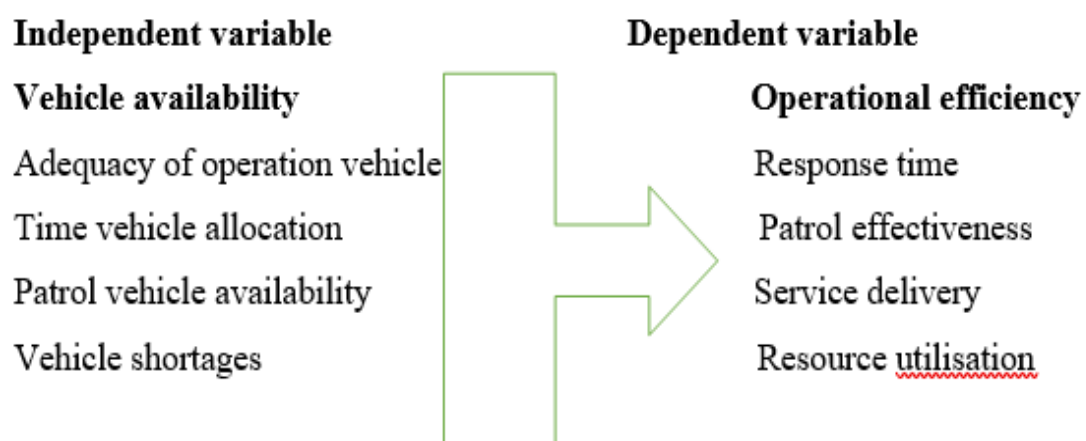


Figure 1. Conceptual Framework of the Study.

5. RESEARCH METHODOLOGY

This study adopted a quantitative research methodology to examine the influence of transport logistics and mobility challenges on operational efficiency within public sector security organizations. A quantitative approach was considered appropriate because it enables the collection of standardized numerical data that can be statistically analysed to establish relationships between transport logistics variables and organizational performance. Quantitative research enhances objectivity, facilitates hypothesis testing, and improves the generalisability of findings across similar institutional contexts (Creswell & Creswell, 2018; Saunders, Lewis, & Thornhill, 2023).

Research Design

The study employed a descriptive cross-sectional survey design. A descriptive survey enables researchers to systematically collect data from a defined population at a single point in time while describing existing conditions without manipulating the study environment (Bryman, 2016). The design was appropriate because the study sought to assess employees' perceptions regarding vehicle availability, fleet maintenance, fuel management, transport planning, and mobility challenges and determine how these factors influence operational efficiency. Cross-sectional survey designs remain widely recommended in organizational and public administration research because they provide reliable evidence for examining relationships among variables within resource and time constraints (*Saunders et al., 2023*).

Study Setting

Rather than focusing on a single institution, the study was conceptualised within the broader context of public sector security organizations responsible for maintaining public safety, law enforcement, emergency response, border protection, and related security services. These organizations rely heavily on efficient transport logistics to facilitate rapid deployment of personnel, movement of equipment, routine patrols, emergency response, and coordination of operational activities. Consequently, they provide an appropriate context for investigating how transport logistics systems contribute to operational effectiveness. Generalising the study setting also enhances the applicability of findings across comparable public security institutions while reducing institutional identification, thereby strengthening the suitability of the study for journal publication.

Target Population

The target population comprised employees working in transport-related, logistics, operational, procurement, fleet management, and administrative functions within *one selected* public sector security organizations. These personnel were selected because they possess direct knowledge and practical experience regarding transport resource allocation, vehicle utilisation, maintenance scheduling, fuel management, operational deployment, and organizational performance. Including respondents from multiple functional areas ensured that the study captured diverse perspectives on transport logistics and its influence on operational efficiency. Such heterogeneous sampling is recommended for organizational studies where different departments contribute to service delivery outcomes (*Sekaran & Bougie, 2019*).

Sampling Technique and Sample Size

The study employed stratified random sampling. Under this technique, the target population was first divided into homogeneous strata according to functional departments, including logistics, transport management, procurement, operations, administration, and fleet management. Respondents were then selected randomly from each stratum to ensure proportional representation and minimise sampling bias. Stratified random sampling improves representativeness and increases the precision of statistical estimates, particularly where populations consist of distinct subgroups (*Taherdoost, 2017*).

The sample size was determined using Yamane's (1967) formula at a 95% confidence level and a 5% margin of error. The formula remains widely applied in social science research where the population size is known and a representative sample is required. The calculated sample provided sufficient statistical power for descriptive analysis while remaining practical in terms of time and resource constraints.

Data Collection Instrument

Primary data were collected using a structured questionnaire consisting primarily of closed-ended questions measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire was organised into five sections covering demographic characteristics, transport logistics practices, mobility challenges, operational efficiency, and improvement strategies. Structured questionnaires are widely used in quantitative organizational research because they facilitate uniform data collection, reduce interviewer bias, simplify coding, and enhance statistical analysis (*Creswell & Creswell, 2018*). Furthermore, Likert-scale measurements provide reliable quantitative indicators of respondents' perceptions and attitudes towards organisational processes.

Pilot Testing, Reliability and Validity

Prior to the main survey, the questionnaire was pilot tested using respondents with characteristics similar to those of the target population but who were excluded from the final study. The pilot study assessed question clarity, response consistency, instrument structure, and completion time. Feedback obtained during pilot testing informed revisions aimed at improving wording, eliminating ambiguity, and enhancing the overall quality of the instrument.

Instrument reliability was evaluated using Cronbach's alpha coefficient, with values of 0.70 or higher considered acceptable for internal consistency (*Taber, 2018*). Content validity was established through expert review by academics and practitioners with expertise in logistics, transport management, and public administration. Construct validity was further supported by aligning questionnaire items with the study objectives and concepts identified in the literature.

Data Collection Procedure

Following ethical approval and institutional authorization, questionnaires were administered to selected participants using self-administered survey procedures. Participants received information explaining the purpose of the study, confidentiality assurances, and voluntary participation requirements. Completed questionnaires were checked for completeness before coding and entry into statistical software. Appropriate quality-control measures, including data cleaning and verification, were undertaken to minimise entry errors and improve data accuracy prior to analysis.

Data Analysis

Collected data were analysed using Statistical Package for the Social Sciences (SPSS) Version 27. Data analysis commenced with coding, cleaning, and screening to identify missing values, inconsistencies, and outliers. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarise respondents' demographic characteristics and perceptions regarding transport logistics and mobility challenges. Tables and graphical presentations were employed to enhance interpretation of the findings.

To examine relationships between study variables, inferential statistical techniques were employed. Pearson correlation analysis was used to determine the strength and direction of associations between transport logistics variables and operational efficiency, while multiple linear regression analysis was conducted to assess the predictive influence of vehicle availability, fleet maintenance, fuel supply, and transport planning on operational efficiency.

Regression analysis is appropriate for determining the extent to which independent variables explain variation in a dependent variable and is widely recommended in organizational performance research (Field, 2018).

Ethical Considerations

Ethical principles were observed throughout the research process. Participation was voluntary, and informed consent was obtained before data collection commenced. Participants were assured that their responses would remain anonymous and confidential and would be used exclusively for academic purposes. No identifying information was collected, thereby protecting participants from potential organisational or professional risks. Data were securely stored and accessed only by the researcher. The study further adhered to principles of honesty, transparency, integrity, and respect for participants in accordance with internationally accepted research ethics guidelines (American Psychological Association, 2020).

Overall, the methodology provided a rigorous and systematic framework for examining the influence of transport logistics and mobility challenges on operational efficiency within public sector security organizations. The combination of a quantitative survey design, stratified random sampling, validated measurement instruments, and appropriate statistical analyses enhanced the reliability, validity, and generalisability of the findings while ensuring compliance with ethical research standards.

6. RESULTS AND DISCUSSION

6.1 Results

This section presents the findings of the study on the effects of transport logistics and mobility challenges on operational efficiency within public sector security organizations in Lilongwe Malawi.

Table 1: Response Rate and Demographic Characteristics of 68 Respondents.

Variable	Category	Frequency	Percentage
Questionnaire	Distributed	80	100
	Returned	68	85
	Not returned	12	15
Gender	Male	48	71
	Female	20	29
Age group	20-29	13	19
	30-39	30	44
	40-49	17	25
	50 and above	8	12

The analysis is organized according to the study objectives and is based on responses obtained from 68 participants, representing an 85% response rate. Such a response rate is considered adequate for quantitative analysis and enhances the credibility and reliability of the study findings (*Baruch & Holtom, 2018*).

The demographic profile showed that the majority of respondents were male 71 while females accounted for 29%. Most respondents 44% were between 30 and 39 years of age, followed by those aged 40–49 years 25%. This age distribution suggests that the study captured the perceptions of experienced personnel actively engaged in operational and logistical responsibilities.

Table 2: Descriptive Statistics on Vehicle Availability and Operational Efficiency from 68 respondents.

Statement	Agree (%)	Neutral (%)	Disagree (%)	Mean
There are adequate vehicles available for operations.	26	14	60	2.41
Vehicles are allocated on time when required	73	15	12	4.07
Vehicle availability is sufficient to support patrol coverage	19	29	52	2.56
Vehicle shortages limit operational activities	79	10	10	4.23

The first objective examined the influence of vehicle availability on operational efficiency. The findings revealed that respondents generally perceived vehicle availability as inadequate to meet operational requirements. Approximately 74% agreed that there were insufficient operational vehicles, while 79% reported that vehicle shortages limited organizational operations. Similarly, more than half of the respondents (52%) disagreed that the available fleet was sufficient to support routine patrol coverage. Although 73% acknowledged that vehicles were allocated promptly when required, the overall findings indicate that timely allocation alone cannot compensate for an inadequate fleet. These findings demonstrate that vehicle shortages remain a significant constraint affecting organizational mobility, emergency response, and service delivery.

Table 3: Pearson Correlation between Vehicle Availability and Operational Efficiency.

Variables	Vehicle availability	Operation efficiency
Vehicle availability	1.000	
Operational efficiency	0.684**	1.000

N = 68. Correlation is significant at the 0.01 level, 2-tailed.

The Pearson correlation analysis revealed a statistically significant positive relationship between vehicle availability and operational efficiency ($r = 0.684$, $p < 0.001$). The correlation coefficient indicates a strong positive association, suggesting that improvements in vehicle availability are associated with higher levels of operational efficiency. This implies that public sector security institutions with adequate operational vehicles are more likely to respond promptly to emergencies, maintain effective patrol coverage, deploy personnel efficiently, and deliver services more effectively. The correlation findings reinforce the descriptive results by confirming that vehicle availability is a key determinant of operational efficiency within public sector security institutions. These findings are consistent with the Resource-Based View (RBV), which argues that organisational resources contribute to sustained organisational performance when they are valuable, available, and effectively managed (Barney, Ketchen and wright 2024). Within public sector security institutions, operational vehicles constitute strategic resources that facilitate mobility, rapid response, patrol operations, and logistical support. Consequently, inadequate vehicle availability weakens institutional capacity and reduces operational effectiveness.

The present findings are also consistent with previous empirical studies. For example, the United Nations Office on Drugs and Crime (2022) reported that adequate transport resources are fundamental to improving operational readiness, emergency response, and public safety outcomes within law enforcement agencies. Similarly, the Organisation for Economic Co-operation and Development (2021) emphasised that the availability of operational assets, including transport resources, enhances the efficiency and effectiveness of public sector institutions by enabling timely service delivery and improving resource utilisation. In addition, World Bank (2023) observed that inadequate transport infrastructure and fleet resources continue to constrain operational performance in many public institutions, particularly those responsible for security and emergency services.

4.2 DISCUSSION

The findings demonstrate that transport logistics constitute a fundamental determinant of operational efficiency within public sector security organizations. Vehicle availability remains one of the most significant operational challenges, as inadequate fleets reduce organizational mobility and constrain the timely deployment of personnel and resources. These findings support previous studies that identify fleet availability as a critical predictor of organizational responsiveness and public service effectiveness (Adebayo & Jagun, 2020; Tchanou & Wilson, 2022).

The study further establishes that effective vehicle maintenance contributes positively to operational performance. Although respondents generally regarded maintenance systems as satisfactory, maintenance delays were found to reduce vehicle availability considerably. This finding suggests that preventive maintenance programmes should be strengthened to minimise vehicle downtime and maximise fleet utilization. Previous logistics research similarly concludes that proactive maintenance strategies improve asset reliability while reducing operational interruptions (Ali, Hussain, & Khan, 2021).

Fuel supply emerged as the most influential operational constraint identified by respondents. Persistent fuel shortages were perceived to disrupt routine operations, reduce patrol coverage, and delay emergency responses. These findings reinforce earlier evidence that reliable fuel availability remains essential for sustaining mobility within public sector organizations, particularly those responsible for emergency response and security operations (United Nations Office on Drugs and Crime, 2023).

Although respondents generally viewed transport planning systems favourably, broader mobility challenges including poor road infrastructure, ageing fleets, and inadequate financial resources continue to undermine operational effectiveness. These findings illustrate that efficient planning alone cannot fully compensate for structural deficiencies in transport resources. Sustainable improvements therefore require integrated investments in fleet renewal, maintenance capacity, infrastructure development, fuel management, and logistics financing.

Generally the study demonstrates that improving transport prices logistics would substantially enhance operational efficiency within public sector security organizations. Strengthening vehicle availability, ensuring adequate fuel supplies, modernising fleet management systems, improving maintenance scheduling, and increasing budgetary support are likely to improve response times, expand operational coverage, and enhance organizational effectiveness. These findings provide practical evidence for policymakers and public sector managers seeking to strengthen transport logistics as a strategic component of organizational performance.

5. CONCLUSION AND PRACTICAL IMPLICATIONS

This study examined the influence of transport logistics and mobility challenges on operational efficiency within public sector security organizations. The findings demonstrate that transport logistics constitute a strategic resource that directly influences the ability of security institutions to respond effectively to operational demands. Adequate transport

resources facilitate rapid deployment, improve patrol coverage, enhance emergency response capabilities, and strengthen overall organizational performance.

The study established that vehicle availability is a significant determinant of operational efficiency. Insufficient vehicle fleets limit mobility, delay response times, and reduce the capacity of security personnel to execute routine and emergency operations effectively. Although vehicle maintenance systems were generally perceived positively, maintenance delays were found to reduce fleet availability, thereby constraining operational readiness. Fuel supply also emerged as a critical operational requirement, with fuel shortages disrupting service delivery and reducing organizational responsiveness.

Furthermore, the findings indicate that transport planning contributes positively to operational coordination; however, its effectiveness is undermined by broader mobility constraints, including ageing vehicle fleets, inadequate funding, and poor transport infrastructure. These challenges collectively reduce operational flexibility and limit the efficient utilization of transport resources. The study therefore confirms that improving transport logistics is essential for strengthening operational efficiency within public sector security organizations.

From a policy perspective, organizations should prioritize investment in fleet expansion, preventive vehicle maintenance, sustainable fuel management, and integrated transport planning systems. The adoption of digital fleet management technologies, including vehicle tracking, maintenance scheduling, and fuel monitoring systems, could further improve accountability and resource utilization. Equally important is increased financial investment in transport infrastructure and logistics management to support long-term operational sustainability. Future research should extend this analysis to different public sector security institutions and geographical contexts while examining the role of emerging technologies and sustainable transport solutions in improving operational performance. Comparative studies across security organizations would also provide broader evidence to inform policy and logistics management reforms.

7. REFERENCES

1. Adebayo, A., & Jagun, O. (2020). *Transport logistics and operational performance in public sector organisations*. *African Journal of Public Administration*, 12(2), 45–60.
2. African Development Bank. (2022). *African Economic Outlook 2022: Supporting climate resilience and a just energy transition in Africa*. African Development Bank Group. <https://www.afdb.org>

3. Ali, M., Hussain, S., & Khan, M. A. (2021). Fleet maintenance practices and organisational performance: Evidence from public sector transport management. *International Journal of Logistics Systems and Management*, 39(3), 287–304.
4. American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). American Psychological Association.
5. Barney, J. B., Ketchen, D. J., Jr., & Wright, M. (2021). Resource-based theory and the value creation framework. *Journal of Management*, 47(7), 1936–1955. <https://doi.org/10.1177/01492063211021655>
6. Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, 61(8), 1139–1160. <https://doi.org/10.1177/0018726708094863>
7. Braga, A. A., Papachristos, A. V., & Hureau, D. M. (2014). The effects of hot spots policing on crime: An updated systematic review and meta-analysis. *Justice Quarterly*, 31(4), 633–663. <https://doi.org/10.1080/07418825.2012.673632>
8. Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.
9. Christopher, M. (2016). *Logistics and supply chain management* (5th ed.). Pearson Education.
10. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
11. Field, A. (2018). *Discovering statistics using IBM SPSS Statistics* (5th ed.). SAGE Publications.
12. National Planning Commission. (2020). *Malawi 2063: An inclusively wealthy and self-reliant nation*. Government of Malawi.
13. Organisation for Economic Co-operation and Development. (2021). *Government at a glance 2021*. OECD Publishing. <https://doi.org/10.1787/1c258f55-en>
14. Organisation for Economic Co-operation and Development. (2023). *Government at a glance 2023*. OECD Publishing. <https://doi.org/10.1787/3d5c5d31-en>
15. Saunders, M., Lewis, P., & Thornhill, A. (2023). *Research methods for business students* (9th ed.). Pearson.
16. Sekaran, U., & Bougie, R. (2019). *Research methods for business: A skill-building approach* (8th ed.). Wiley.
17. Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48(6), 1273–1296. <https://doi.org/10.1007/s11165-016-9602-2>

18. Taherdoost, H. (2017). Determining sample size: How to calculate survey sample size. *International Journal of Economics and Management Systems*, 2, 237–239.
19. Tchanou, A., & Wilson, P. (2022). Transport logistics and operational efficiency in public service organisations. *Journal of Public Administration and Policy Research*, 14(2), 22–36.
20. United Nations. (2023). *Sustainable Development Goals report 2023: Special edition*. United Nations. <https://unstats.un.org>
21. United Nations Office on Drugs and Crime. (2022). *Handbook on police accountability, oversight and integrity*. United Nations.
22. United Nations Office on Drugs and Crime. (2023). *Global study on homicide 2023*. United Nations. <https://www.unodc.org>
23. World Bank. (2023). *Improving public sector performance through governance and institutional reforms*. World Bank.
24. World Bank. (2024). *World development report 2024: The middle-income trap*. World Bank. <https://www.worldbank..>