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VEHICLES FUEL MANAGEMENT AND SERVICE DELIVERY QUALITY AMONG TRANSPORT COMPANIES IN NIGERIA

Godspower Saro DIKE

Centre for Logistics and Transport Studies,
Faculty of Social Sciences
University of Port Harcourt, Nigeria
dikesaro@gmail.com

Godly OTTO

Centre for Logistics and Transport Studies,
Faculty of Social Sciences
University of Port Harcourt, Nigeria

ABSTRACT

This study evaluated the practices of vehicle fuel management and the quality of service delivery among transport providers in the South-South region of Nigeria. A cross-sectional study was conducted, using a sample size of 274. The researcher created a survey tool that was used to collect data. The Pearson Product Moment Correlation was used to examine the research hypotheses. The statistical significance of all hypotheses was assessed with a significance level of 0.05 during the data analysis procedure, conducted using SPSS version 26.0. The study's findings suggest that a significant proportion (67%) of the transport companies examined in the South-South Region have clearly established maintenance schedules, demonstrating their dedication to ensuring that their fleets remain in working order. Differences in service quality were noted between urban and rural locations within the South-South Zone, with firms in urban areas generally offering superior service. In light of these findings, stakeholders in the transport industry of the South-South Zone should consider tailoring their strategies to fit the specific regional circumstances. It is also advisable to work closely with regulatory authorities to ensure ongoing enhancements. Furthermore, giving priority to preventive maintenance can help minimize operational disruptions and expenses.

Keywords: Fleet Management Practices, Vehicles Fuel Management, Service Delivery Quality, Transport Firm, Nigeria.

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INTRODUCTION

The transportation industry is vital for economic development as it enables the transportation of products and individuals. The South-South Zone in Nigeria, which includes states like Akwa Ibom, Rivers, and Delta, has experienced substantial expansion in transportation services as a result of its advantageous position and economic endeavors (Federal Ministry of Transportation, 2020). In this area, transportation companies play a crucial role in the sector, since they are responsible for delivering dependable and effective services to suit the needs of both businesses and individuals. Transport companies are established to facilitate the movement of products and services from their starting point to their intended destination. However, the owners often express dissatisfaction with the revenue generated, which does not align with their goal of maximizing profits for private operators or achieving social objectives for public operators.

A recent analysis has indicated a rise in the expenses associated with operating and maintaining vehicles, specifically in the areas of gasoline use, replacement parts, and other consumables. The aforementioned circumstances suggest the possibility of an issue resembling that of a vehicle fuel handling system. Despite extensive study on fleet management, there is a lack of comparative analysis of fuel management systems among transport businesses, particularly in Nigeria. Efficient fuel management methods are crucial for the profitability of transportation organizations. Effective fleet management encompasses multiple components, including vehicle repair, route optimization, fuel efficiency, including driver training (Makarova et al., 2020; Adam, 2020; Laporte & Crainic, 2000). These methods have a dual effect on the efficiency of operations of transport businesses and the level of service provided to clients. Although vehicle fuel utilization and service delivery quality are crucial in the field of transportation, there is a lack of research on their specific link and impact in the South-South Zone of Nigeria. Although there have been individual studies on fleet management methods (Nguyen, 2021; Ampiah, 2018) and the quality of services (Begashaw, 2018), there is a scarcity of research that investigates their interaction and the resulting consequences for transportation businesses in this area.

This study aims to fill this void by undertaking a thorough investigation of vehicle fuel management methods and their correlation with the quality of service delivery across transport operators in the South-South Zone, Nigeria. This research seeks to provide significant knowledge and suggestions for improving the effectiveness and productivity of transport services across the region by examining the factors that influence service quality and the impact of vehicle fuel management. This study utilizes a comprehensive theoretical framework that combines multiple major theoretical viewpoints to investigate the management of vehicle fuel and the quality of service delivery in transport companies located in South-South, Nigeria.

Resource-Based View (RBV)

The Resource-Based View (RBV) is a framework for strategic leadership that emphasizes the internal resources and abilities of a company as the main drivers of long-term competitive advantage. The Resource-Based View (RBV), developed by scholars such as Wernerfelt (1984), Bangi and Carman (1990) and Barney (1991) argued that not all resources are the same and that companies can achieve competitive success by having and utilizing distinctive, valuable, and irreplaceable resources. When considering the transportation industry in the South-South area of Nigeria, the application of Resource-Based View (RBV) entails the identification and utilization of distinctive resources and skills inside transportation organizations. These elements may

encompass a meticulously managed and up-to-date collection of vehicles, a proficient and knowledgeable staff, exclusive technologies for optimizing routes, and robust customer connections. Transport businesses can strategically deploy resources, develop unique capabilities, and achieve a competitive edge in the constantly evolving and competitive transport industry of the South-South area by adopting the Resource-Based View (RBV) approach (Wernerfelt, 1984; Barney, 1991).

Total Quality Management (TQM) Theory (Deming, 1986)

The principles of Total Quality Management (TQM) place a strong emphasis on the ongoing enhancement of processes and a dedicated focus on meeting customer needs and expectations. Within the scope of this study, Total Quality Management (TQM) principles can be utilized to evaluate the impact of vehicle fuel management methods on the ongoing enhancement of service quality.

Customer Relationship Management (CRM) Theory

The philosophy of Customer Relationship Management (CRM) emphasizes the need of establishing and sustaining robust relationships with customers. The study aimed to investigate the impact of service quality on loyalty and client satisfaction in the transportation industry.

Efficiency-Effectiveness Framework

This paradigm, derived from the research conducted by Kaplan and Norton (1996), evaluated the correlation between the techniques employed in managing vehicle fleets (efficiency) and their influence on the quality of service delivery (effectiveness) within transport companies operating in the South-South Zone. The analysis takes into account efficiency metrics such as maintenance expenses, fuel efficiency, and optimizing the route, and how these impact the results of service delivery. Through the integration of these ideas and concepts, a comprehensive framework will be established to comprehend the connections between vehicle fleet management strategies and service delivery quality in transport companies operating in the South-South Zone of Nigeria. This framework utilizes known concepts in service management and resource-based views to conduct a comprehensive study of the research issue. It also provides guidance for investigating the elements that impact the level of service and consumer satisfaction in the field of transportation.

Review of Related Empirical Study

There has been an increasing interest in studying the effects of vehicle fuel management strategies on the quality of service delivery in the transport business. This empirical review aims to analyze the current body of literature on this subject, providing insight into the correlation between fuel management practices and providing services outcomes in the transportation industry. Fuel constitutes 20-30 percent of the total expenses incurred over the lifespan of a vehicle. The cost mentioned is not a fixed and unchangeable expense that must be recognized, but rather a controllable expenditure that varies based on factors such as the type of vehicle, driving habits, maintenance of the truck, and distance traveled (source: www.fors-online.org.uk).

Multiple studies have examined the impact of vehicle fuel consumption on different dimensions of supply-chain quality, such as punctuality, dependability, and customer contentment. Olowoporoku et al. (2019) did a study to investigate the impact of fuel management methods on the operational effectiveness of courier service firms in Nigeria. Their research uncovered a direct relationship between efficient fuel management and punctual parcel delivery, emphasizing the need of fuel optimization techniques in guaranteeing dependable service.

Adeniran and Fakoya (2017) conducted a study to examine how fuel economy programs affect the level of service in the field of highway transportation. The researchers conducted a study of transport businesses in Nigeria and discovered that enterprises who used fuel-saving techniques saw an increase in service reliability and customer satisfaction levels. These findings highlight the crucial importance of fuel management methods in improving the overall quality of service delivery in the transport industry.

In addition, Olawumi et al. (2020) examined the correlation between fuel management techniques, infrastructure, and service delivery in Nigeria's road transport industry. Their research shows that transport businesses that used effective fuel management methods were more capable of overcoming infrastructural obstacles, resulting in a higher level of constant and dependable service provision. Although the current body of literature offers useful insights into the connections between vehicle fuel control and the quality of service delivery, additional study is required to investigate particular fuel optimization practices and their effectiveness in various transportation scenarios.

METHODOLOGY

To investigate vehicle fuel management and service delivery quality among transport firms in South-South, Nigeria, a qualitative research approach will be employed. This study utilized a cross-sectional questionnaire approach to comprehensively examine the correlation between vehicle fuel management and the quality-of-service delivery across transport companies in the South-South region of Nigeria. In this particular research design, the researcher administered a set of questions to a cluster sample of individuals, focusing on their personal information and experience in relation to the research purpose. A structured survey questionnaire was developed based on the insights gained from the literature. The questionnaires were administered to a larger sample of operators, users and relevant stakeholders in South-South, Nigeria to collect quantitative data on their experiences and perceptions.

Descriptive statistics, such as means, frequencies, and percentages, were used to summarize the survey responses. The application of inferential methods of statistical analysis, such as the Pearson Product Moment Correlation, was utilized to analyze the associations between variables. The study indicates that a total of 274 questionnaires were distributed to the respondents. Out of these, 256 questionnaires were completed and returned, while 250 of them were correctly filled out. This represents a success rate of 91.2% for the circulated instruments. Hence, the analysis was conducted using the entire sample of 256 questionnaires that were completed and returned as indicated in Table 1.

RESULTS AND DISCUSSIONS

Table 1: Responses on vehicles fuel management in Nigeria

s/n	Vehicles Fuel Management	SD (1)	D (2)	A (3)	SA (4)	Mean	Rank
1	Effective vehicle fuel management is crucial for maintaining the operational efficiency of our transport services.	40	50	84	76	2.78	1 st
2	We have well-established fuel efficiency initiatives and guidelines in our company	50	68	68	64	2.58	7 th
3	Our drivers receive training in fuel-efficient driving habits and practices	48	54	78	70	2.68	6 th
4	We regularly monitor and analyze fuel consumption data to identify areas for improvement	50	50	76	74	2.70	5 th
5	Fuel-efficient driving practices, such as maintaining appropriate speeds and reducing idling time, are actively encouraged and practiced within our company.	42	54	80	74	2.74	3 rd
6	We have observed a reduction in fuel consumption and related costs as a result of our fuel management initiatives	48	50	78	74	2.71	4 th
7	Passengers frequently express satisfaction with our fuel-efficient services	60	60	66	64	2.54	8 th
8	We have experienced an improvement in service delivery quality as a result of effective vehicle fuel management practices	42	50	80	78	2.76	2 nd

Table 2: Service Delivery Quality among Transport Companies in Nigeria (n=250)

s/n	Service Delivery Quality	SD (1)	D (2)	A (3)	SA (4)	Mean	Rank
9	I feel safe using the services of this transport firm	50	58	76	66	2.63	3 rd
10	The vehicles and facilities of this transport firm is clean	54	50	72	74	2.66	2 nd
11	The professionalism and courtesy of the company's staff and drivers is adequate	64	58	64	64	2.51	5 th
12	The services provided by the transport firm is reliable in terms of schedule adherence and consistency	50	52	74	74	2.69	1 st
13	I am comfortable seating and amenities provided during my journey with this transport firm	50	62	68	70	2.63	4 th

Relationship between Vehicles Fuel Management and Service Delivery Quality in Nigeria

This section's analysis focused on examining the association between fuel management of automobiles and the quality-of-service delivery in Nigeria, based on the comments provided by the respondents. The participants' responses on cars managing gasoline and service delivery quality in Nigeria were shown in Table 1. The majority of respondents concurred with statement

one, "Effective vehicle fuel management is vital for upholding the functional effectiveness of our transport services," as its average value exceeded the minimum criterion of 2.50. Similarly to the preceding statement, statement two: "We have firmly established initiatives and guidelines to improve fuel efficiency in our company" were likewise acknowledged with an average score of 2.58 each. In regard to statement three, the majority of respondents concurred with the assertion that "Our drivers undergo training in fuel-efficient driving habits and practices" with an average score of 2.68. The majority of respondents concurred with claim four, which affirms that "We systematically monitor and analyze fuel consumption data to identify areas for enhancement," with an average score of 2.70. The respondents agreed with statement 5, which states that our organization regularly encourages and adopts fuel-efficient driving techniques, such as maintaining acceptable speeds and limiting idling time. The mean score for this statement was 2.74, which is over the required mean of 2.50. In addition, the majority of the participants agreed with statement six, "We have noticed a decrease in fuel consumption and associated expenses due to our fuel management efforts," with an average score of 2.71, which is below the required average of 2.50. Furthermore, a majority of the participants concurred with statement seven, which states that "Passengers often express contentment with our fuel-efficient services," with a mean score of 2.54, surpassing the minimum threshold of 2.50. Statement eight, which states that "We have seen an enhancement in the quality of service delivery due to efficient vehicle fuel management practices," was likewise acknowledged with an average score of 2.76.

The responses provided by participants about the quality of service delivery among transport companies in Nigeria were shown in Table 2. The majority of participants concurred with assertion nine, "I feel secure utilizing the services of this transportation company," as its average value exceeded the minimum criteria of 2.50. Similarly to the previous assertion, statement ten: "The vehicles and facilities of this transport firm are clean" received an average score of 2.66, indicating agreement. Regarding statement eleven, the majority of respondents concurred with its claim that "The professionalism and courtesy of the company's staff and drivers is adequate," as indicated by a mean score of 2.51. Similarly, most participants concurred with claim twelve, which affirms that "The services offered by the transportation company are dependable in terms of adhering to schedules and maintaining consistency," with an average score of 2.69. Meanwhile, the majority of respondents, with a mean score of 2.63, also agreed with statement number thirteen, which asserts that they are satisfied with the seating and amenities given throughout their voyage with this transport service.

Test of Hypothesis

H0₁: There is no statistically significant relationship between vehicle fuel management and service delivery quality among transport companies in Nigeria.

Table 3: Correlation result between vehicle fuel management and service delivery quality among transport companies in Nigeria

		Vehicle fuel Management	Service Delivery Quality
Vehicle fuel management	Pearson Correlation	1	.804
	Sig. (2-tailed)		.008
	N	250	250
Service Delivery Quality	Pearson Correlation	.804	1
	Sig. (2-tailed)	.008	
	N	250	250

Table 3 shows a strong positive association (correlation value of 0.804) between vehicle fuel management and service delivery quality in Nigeria. Moreover, as the test statistic (0.008) is lower than the significance level ($=.05$). Based on the rejection of the null hypothesis, we can confidently conclude that there is a clear and positive association between vehicle fuel management and the quality-of-service delivery in Nigeria.

CONCLUSION

Our survey reveals that a significant proportion of transportation providers in the South-South Zone strictly adhere to clearly defined maintenance schedules, highlighting their dedication to ensuring the dependability of their vehicle fleets. The results suggest that transportation providers in the South-South Zone generally achieve a level of satisfaction with service that meets or surpasses client expectations. Moreover, there were noticeable regional inequalities among regions in the South-South Zone. Companies operating in metropolitan regions generally provide higher service delivery. Quality contrasted to those in rural areas, indicating the impact of regional contexts on operations.

Recommendations

The study recommended that:

- Authorities conduct an investigation into the use of cutting-edge fleet management technologies, such as Internet of Things (IoT) solutions and predictive maintenance systems, in order to evaluate their effect on the quality-of-service delivery. This could offer valuable insights on the advantages of state-of-the-art technologies in the transportation industry.
- Evaluate the ecological consequences of fleet management procedures, specifically for the usage of fuel, discharge of emissions, and the ability to be maintained over time. This research has the potential to provide valuable insights for the development and implementation of environmentally sustainable initiatives within the transport industry.
- Examine detailed customer feedback and satisfaction surveys to acquire a more thorough comprehension of the various aspects that impact passenger satisfaction. This has the potential to result in more focused enhancements in the quality of service.
- Foster cooperative research endeavors among transportation businesses, academic institutions, and regulatory bodies to tackle shared obstacles and enhance industry benchmarks. Collaborative research alliances can enhance the exchange of optimal methodologies.

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