Growth of Micro Small and Medium Enterprises (MSMEs) in Nigeria: Implication of Fuel Subsidy Removal

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Abstract
The study investigated the effect of subsidy removal on the growth trajectory of micro, small, and medium-scale enterprises (MSMEs) in Nigeria, with a specific focus on Bayelsa state. Utilizing a survey research design, the study aims to examine the effects of transportation and operational costs on both revenue generation and access to finance for MSMEs. The population of the study comprises 548,349 registered MSMEs in Bayelsa state, with a sample size of 400 MSMEs selected for data collection through questionnaire administration. The study relies solely on primary data sources. The findings of the study indicate a significant positive effect of transportation costs on revenue generation for MSMEs in Bayelsa state. Similarly, transportation costs demonstrate a moderate positive effect on access to finance for MSMEs. Furthermore, the study highlights a significant positive effect of operational costs on revenue generation, along with a modest but significant positive effect of operational costs on access to finance for MSMEs. Based on these findings, recommendations are proposed to improve transportation infrastructure, enhance operational efficiency, promote financial inclusion, and adopt a supportive policy framework tailored to the diverse needs of MSMEs in Bayelsa state

Keyword: Subsidy removal, Business growth, Transportation

1. INTRODUCTION

The essence of fuel subsidies is to shield the masses from the unpredictable fluctuations of the global oil market, which have been a longstanding feature of Nigeria's economic policy (Ikenga & Oluka, 2023). The government's intention is to provide affordable fuel to its citizens; however, this has unavoidably birthed a set of consequences that ripple across the economic spectrum, affecting businesses, particularly Micro, Small and Medium Enterprises (MSMEs), in ways both subtle and overt. Historically, the Nigeria government stepped in to cushion the impact of global oil price volatility by subsidizing fuel (Omotosho, 2020). This intervention, while providing immediate relief to consumers, carries the weight of significant financial implications for the government. The funds allocated to sustain these subsidies could have potentially find more productive deployment in critical sectors such as healthcare, education, and infrastructure. Historically, the Nigeria government stepped in to cushion the impact of global oil price volatility by subsidizing fuel (Omotosho, 2020). This intervention, while providing immediate relief to consumers, carries the weight of significant financial implications for the government. The funds allocated to sustain these subsidies could have potentially find more productive deployment in critical sectors such as healthcare, education, and infrastructure.

MSMEs, often hailed as the lifeblood of any thriving economy, find themselves navigating through the harsh reality of this subsidy-driven economy. At first glance, the subsidized fuel prices appear as beneficial for these enterprises, providing a semblance of stability in operational costs (Inegbedion et al., 2020). However, the façade of affordability masks a more intricate reality. Operational costs, the lifeblood of MSMEs, are unavoidably tied to the price of fuel. Transportation, a vital component for many MSMEs, relies heavily on fuel, and the subsidies, while obviously reducing costs, create a distortion in the perceived value of fuel. The real cost of production becomes obscured, and MSMEs, unwittingly operating on razor-thin profit margins, find their capacity for innovation and expansion stifled.

Removal of fuel subsidies has been perceived differently by various societal groups in Nigeria. Some argue that removing fuel subsidies would lead to an increase in fuel prices, thereby increasing the operational costs for MSMEs. This could potentially hamper their competitiveness and hinder their growth prospects. According to a survey conducted by the Nigerian Association of Small Scale Industrialists (NASSI, 2018), a significant proportion of MSME owners expressed concerns about the adverse effects of fuel subsidy removal on their businesses' viability and growth. While there have been discussions on the overall impact of fuel subsidy removal on the Nigerian economy, the existing literature lacks comprehensive studies specifically addressing the effects on MSMEs.

In a study by Okoye and Obanogba (2019), which examined the impact of fuel subsidy removal on the business environment in Nigeria, it was found that the removal contributed to rising costs of production and increased the financial burden on MSMEs. However, the study did not specifically explore the direct effects on MSME growth indicators such as employment, revenue generation, or access to finance. Furthermore, another research conducted by Ogunrinola and Olayiwola (2020) focused on the challenges faced by MSMEs in Nigeria but did not specifically consider the effects of fuel subsidy removal. This creates a gap in the literature, as there is limited

empirical evidence available on the direct link between fuel subsidy removal and MSME growth indicators.

2. LITERATURE AND HYPOTHESES FORMULATION

Subsidy Removal

Subsidies can be defined as financial incentives or support provided by the government to certain industries, sectors, or individuals to promote economic activities or alleviate financial burdens. They are essentially financial transfers from the government to specific beneficiaries aimed at achieving various economic, social, or political objectives. The historical background of subsidies can be traced back to ancient civilizations, where rulers often granted financial assistance to specific groups or industries (Jewel et al., 2018). The modern practice of subsidies gained prominence during the industrial revolution, as governments sought to support emerging industries, promote economic growth, and provide social welfare.

In Nigeria, subsidy removal has been a contentious issue. One prominent example is the removal of fuel subsidies. Historically, Nigeria has heavily subsidized fuel prices to ensure affordability for its citizens. However, due to budget constraints, corruption, and inefficiencies, the removal of fuel subsidies has been proposed as a means to address fiscal deficits and redirect resources to other sectors, such as health and education (Bhattacharyya & Ganguly, 2017). The removal of fuel subsidies in Nigeria has sparked nationwide debates and protests. Supporters argue that subsidy removal can lead to increased revenue for government investments, stimulate private sector growth, and improve the country's overall economic performance. On the other hand, critics contend that subsidy removal disproportionately affects the poor and vulnerable segments of society, as it often leads to higher costs of living, transport, and food prices.

Transportation Cost

Transportation cost is a vital component of any economy and plays a significant role in determining the affordability and accessibility of goods and services. Transportation cost refers to the expenses incurred in moving people, goods, or resources from one location to another (Litman, 2009). These costs encompass various elements, such as fuel expenses, maintenance and repair costs, labor costs, infrastructure charges, and administrative expenses. They can significantly impact the overall cost of production, trade, and economic transactions.

In Nigeria, transportation cost poses a significant challenge due to various factors, including inadequate infrastructure, high fuel prices, inefficient logistics, and poor regulatory frameworks. The country's vast geographical expanse, coupled with infrastructural deficiencies, amplifies transportation costs, making it a critical concern for businesses and consumers (Alfaro & Chen, 2018). One particular aspect of transportation cost in Nigeria is the high cost of fuel. Nigeria, as an oil-producing country, experiences relatively high fuel prices due to factors such as international crude oil prices, distribution challenges, and subsidy policies. These high fuel costs directly affect transportation expenses, leading to increased prices of goods and services and reduced affordability for the general population.

Operational Cost

Operational cost refers to the expenditures incurred in the day-to-day operations of a business. It encompasses various elements, such as raw material costs, labor expenses, rent or lease payments, utilities, administrative costs, marketing expenses, and maintenance charges (Idachaba, 2010). Managing operational costs is essential for MSMEs as they directly impact profitability, competitiveness, and sustainability. In the Nigeria, MSMEs face numerous challenges related to operational costs. Factors such as inadequate infrastructure, high energy costs, limited access to affordable credit, and regulatory burdens contribute to increased operational expenses (Iwarere, 2014). These challenges can constrain the growth and profitability of MSMEs, affecting their ability to create employment opportunities and contribute to economic development.

MSMEs heavily rely on electricity for their operations, and the country's electricity tariffs and unreliable power supply significantly impact their operational expenses. Frequent power outages force MSMEs to resort to alternative energy sources, such as diesel generators, leading to increased fuel costs and reduced profitability. Moreover, the cost of raw materials poses a significant challenge for MSMEs in Nigeria. Factors such as limited local production, importation costs, and exchange rate fluctuations contribute to high raw material expenses. Additionally, high transportation costs, as discussed earlier, further add to the overall operational costs for MSMEs.

Micro, Small and Medium Scale Enterprises (MSMEs) Growth

MSMEs growth refers to the expansion, development, and increasing contribution of Micro, Small, and Medium Enterprises to the overall economy. It encompasses various aspects, such as an increase in revenue, employment generation, market share expansion, and enhancement of competitiveness (Ebitu et al., 2016). The growth of MSMEs is essential for job creation, poverty reduction, and fostering inclusive economic growth. In Nigeria, MSMEs play a significant role in the economy and contribute to employment generation, innovation, and income redistribution. According to the Nigerian Bureau of Statistics, MSMEs account for over 80% of Nigeria's labor force and over 90% of registered businesses (Oseni & Oseni, 2015). The growth of MSMEs is crucial in achieving sustainable economic development, reducing unemployment, and stimulating entrepreneurship.

However, MSMEs growth in Nigeria faces numerous challenges. Limited access to finance, inadequate infrastructure, insufficient market linkages, and inadequate institutional support pose barriers to the growth of these enterprises. Due to these challenges, MSMEs often struggle to access affordable credit, upgrade their technologies, and expand their operations (Mpi, 2019). Another factor that hinders MSMEs growth in Nigeria is the unfavorable business environment characterized by excessive bureaucracy, multiple taxes, and inconsistent government policies. These factors discourage entrepreneurship and hinder the scaling up of MSMEs.

Empirical Review

Ojeme et al. (2021) study the implications on small company finance in Nigeria of the federal government's decision to remove gasoline subsidies. They look at the short-term consequences as well as the long-term effects on Nigeria's economic growth and development goals. The study uses statistical models to examine the impact of the elimination of fuel subsidies, using Fedpoly

Nasarawa Microfinance Bank Ltd. as a case study. These models include simple regression analysis, trends, ratios, and percentages. This research will make use of secondary sources of data, including scholarly articles, books, online papers, and spending records from the microfinance institution.

Ilodigwe (2023) looks at how removing fuel subsidies affected small and medium-sized enterprises (SMEs) in Anambra State. Small and medium-sized enterprises (SMEs) and their production costs, profits, sales, and financial stability are the focus of this area's research. The use of a mixed-method research strategy fulfilled these goals. For this study, researchers in Anambra State systematically sampled 105 SMEs from all 21 LGAs. He employed both formal surveys and in-depth interviews to collect the necessary information. He processed the gathered quantitative data using SPSS. He analyzed the quantitative data using descriptive statistics, like frequency tables, charts, and graphs. He interpreted the qualitative data using theme analysis. He evaluated the study's hypothesis using the Chi-square inferential statistics. The report reveals that the elimination of gasoline subsidies severely impacted small and medium-sized enterprises (SMEs) in Anambra State. High overhead expenses lead to a rise in production costs, a decline in profitability, a decrease in sales and revenue due to reduced patronage, and a financial burden on SMEs' general operations. These are the main conclusions.

Radas et al. (2015) examine the efficacy of direct grants and tax incentives in affecting SMEs' R&D endeavours. The research employed data from SMEs that had received either direct subsidies, tax incentives, or a mix of both. The study used statistical metrics to evaluate the influence of these tools on the R&D orientation, innovation output, and absorptive capacity of the included SMEs. They conducted comparisons between enterprises that used direct grants, tax incentives, both instruments, and those that did not use any of these measures. The study's results show that both direct subsidies and tax breaks make small businesses more focused on research and development. They also improve some aspects of their ability to produce and absorb new ideas. The impact of these policy initiatives is substantial when contrasted with enterprises that did not employ any of the two tools. Nevertheless, a comparison between users of direct handouts and those using both grants and tax incentives revealed little difference.

Ohonba and Ogbeide (2023) examine the intricate ramifications of gasoline subsidy elimination on enterprises of diverse scales and its overarching effect on Nigeria's economic development. They employed a qualitative strategy to achieve these objectives, which included a thorough review of pertinent literature. The report consolidates findings from several sources to offer thorough knowledge of the effects of gasoline subsidy elimination on enterprises and economic growth in Nigeria. The research findings indicate that the removal of fuel subsidies first leads to elevated gasoline prices, which subsequently affect transportation costs and the pricing of products and services. The research indicates that the effects on enterprises differ markedly according to their size and industry. Large firms, with a superior ability to withstand cost escalations, encounter few interruptions and may even gain advantages from diminished competition. Medium-sized enterprises encounter a complex scenario, managing heightened operating expenses while attempting to preserve market share. Small-scale firms, due to their inherent vulnerability, are susceptible to diminished profitability and the risk of operational discontinuation as a result of increased expenses.

Bazillian and Onyeji (2012) assess the effects of fossil fuel subsidy elimination policies on enterprises, especially in the context of insufficient electricity supply. The paper uses a case study methodology, concentrating on the 2012 elimination of the gasoline subsidy in Nigeria to attain these aims. The study utilizes existing literature, policy papers, and empirical data to examine the justifications for fossil fuel subsidy elimination programs and their tangible effects on businesses. The technique entails a thorough examination of the decision-making process, considering the frequently neglected infrastructural and institutional shortcomings that might influence the results of subsidy elimination programs. The study's findings indicate that fossil fuel subsidy removal strategies, exemplified by Nigeria's 2012 instance, may insufficiently address the unique constraints encountered by firms in poor nations. The justification for these initiatives, based on rectifying economic inefficiencies and market distortions, may neglect the actual consequences of infrastructural and institutional shortcomings.

In order to identify the difficulties high-growth potential MSMEs encounter, Ayadi et al. (2013) interview them. They then suggest practical policy solutions to mitigate these difficulties. In Algeria, Egypt, Morocco, and Tunisia, interviews with high-growth potential MSMEs are part of the study process. As a qualitative research technique, these interviews collect first-hand information from businesses that are having trouble realizing their high growth potential. The study's conclusions provide a thorough grasp of the difficulties encountered by MSMEs in the southern Mediterranean area with strong development potential. The report analyzes and assesses the main barriers that keep MSMEs in Algeria, Egypt, Morocco, and Tunisia from realizing their full development potential via interviews with businesses in these countries.

Rentschler et al. (2017) examined the effect of fossil fuel subsidy reform on corporate competitiveness. The technique includes a thorough review of scholarly publications, reports, and related literature that address the direct and indirect implications of subsidy changes on energy costs for businesses. The study focuses on identifying businesses' reaction strategies and possible transmission routes for price shocks. The results of this literature study highlight the varied effect of fossil fuel subsidy reform on company competitiveness. The research emphasises that cost rises caused by subsidy changes may not always result in competitiveness losses for businesses, as they use a variety of techniques to deal with and pass on price shocks.

Conceptual Operational Model

The conceptual operational model for the study is thus;
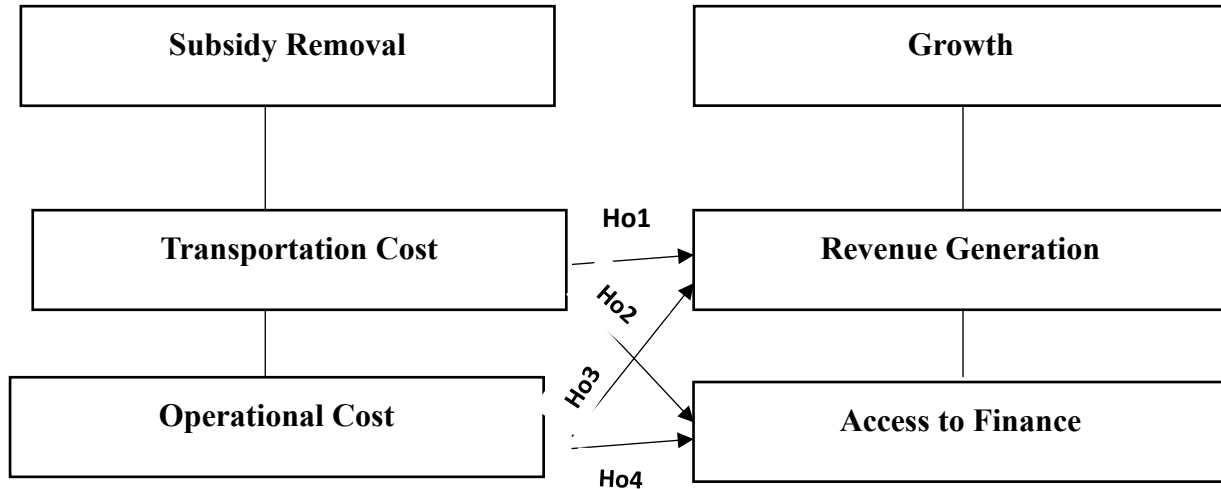
Source: researcher conceptualisation, 2024

Based on the conceptual model for the study, the study hypothesised that

Ho1 Transportation costs do not have a significant effect on revenue generation of micro, small, and medium-scale enterprises in Bayelsa State.

Ho2 transportation costs do not have a significant effect on access to finance of micro, small, and medium-scale enterprises in Bayelsa State.

Ho3 operational costs do not have a significant effect on revenue generation of micro, small, and medium-scale enterprises in Bayelsa State.

Ho4 operational costs do not have a significant effect on access to finance of micro, small, and medium-scale enterprises in Bayelsa state.

3. METHODOLOGY

This study employed a survey research design, which is appropriate for examining the impact of subsidy removal on the growth of micro, small, and medium-scale enterprises in Nigeria. The study's population consists of 548,349 registered MSMEs in Bayelsa State (SMEDAN, 2017). The study's sample size of 400 was established utilising the Taro-Yamane formula. The investigation relies exclusively on primary data obtained through the administration of questionnaires. The questionnaire was meticulously crafted to encompass all aspects of the study, with questions specifically formulated to draw out relevant responses from the intended participants based on the topic at hand. The questionnaire utilises a five-point Likert scale, which includes the options of Strongly Agree (SA), Agree (A), Neutral (N), Strongly Disagree (SD), and Disagree (D). The survey will be segmented into two sections: Part A presents the demographic characteristics of the

respondent. Part B includes various questions designed to gather information from the respondent based on their agreement with each of the variables or dimensions of the study.

Cronbach Alpha

VARIABLES	No of Items	CRONBACH ALPHA
Revenue Generation	4	0.763
Access to Finance	4	0.754
Transportation Cost	5	0.811
Operational cost	3	0.732

Source: SPSS 23

The data obtained for the research was analysed using descriptive and inferential statistics. The analysis was carried out using the Statistical Package for the Social Sciences (SPSS 23 Version). According to the descriptive statistics, the study's data set was characterised. In addition, regression analysis was used to generate the inferential statistics.

The model equation for the study based on the objective and submission of hypothesis is as follows:

Aggregated Model

$$BGrwth = f(SubsiRem) \qquad \text{eq. 1}$$

Explicitly written as:

$$RevGen, AccFin = f(TranCos, OperCos) \qquad \text{eq. 2}$$

Disaggregatio*n of Model:*

$$RevGen = \beta_0 + \beta_1 TranCos + \beta_2 OperCos + \varepsilon \qquad \text{eq. 3}$$

$$AccFin = \beta_0 + \beta_1 TranCos + \beta_2 OperCos + \varepsilon \qquad \text{eq. 4}$$

Table 3.1   Model Explanation

S/N	Variable Code	Meaning
1	Bgrwth	MSMEs Growth
2	SubsiRem	Subsidy Removal
3	RevGen	Revenue Generation
4	AccFin	Access to Finance
5	TranCos	Transportation Cost
6	OperCos	Operational cost
9	β_0	Constant
10	$\beta_1 - \beta_4$	Coefficients for the independent variables
11	ε	Error term

4. RESULT, CONCLUSION AND RECOMMENDATIONS

Descriptive Statistics Result

Transportation Cost

Descriptive Statistics

	N	Sum	Mean	Std. Deviation
The rise in transportation costs, due to subsidy removal, has negatively affected the profit of business.	304	690.00	2.2697	.86341
The removal of fuel subsidies has impacted the efficiency of supply chain and logistics operations of business.	304	664.00	2.1842	.94342
Increased transportation costs, following subsidy removal, have adversely influenced the competitiveness of my business in the market.	304	690.00	2.2697	.86341
The affordability and accessibility of my products or services to customers have been affected by the rise in transportation costs.	304	1023.00	3.3651	1.30051
The increased transportation costs place a significant burden on the overall operations and financial stability of my business.	304	856.00	2.8158	1.34199
Valid N (listwise)	304			

Source: SPSS 23

The descriptive statistics reveal a consistent pattern of negative impacts stemming from the rise in transportation costs following the removal of subsidies. Across 304 responses, the mean transportation cost varies between 2.1842 and 3.3651, indicating a substantial increase from the previous subsidized rates. This surge in costs has notably affected various aspects of business operations, including profitability, supply chain efficiency, market competitiveness, customer accessibility, and overall financial stability. The standard deviations suggest some variability in how intensely these impacts are felt, but the general trend underscores a significant burden placed on businesses due to the escalated transportation expenses, posing challenges across multiple facets of their operations and market presence.

Operational Cost

Descriptive Statistics				
	N	Sum	Mean	Std. Deviation
My business in the market has been negatively affected by the escalation in operational expenses.	304	773.00	2.5428	1.15676
The current operational costs negatively influence my business's ability to offer competitive pricing for products or services.	304	772.00	2.5395	1.15973
The current economic climate in Nigeria has led to an unsustainable increase in the day-to-day operational costs of my business.	304	1103.00	3.6283	1.07322
My business in the market has been negatively affected by the escalation in operational expenses.	304	1160.00	3.8158	1.03357
Valid N (listwise)	304			

Source: SPSS 23

The descriptive statistics for operational costs reveal a consistent trend of negative impact on businesses, with mean operational expenses ranging between 2.5395 and 3.8158 across 304 responses. These elevated operational costs, exacerbated by the current economic climate in Nigeria, are significantly affecting businesses' ability to compete in the market and offer competitive pricing for their products or services. The standard deviations indicate some variability in the intensity of these effects, but collectively they point to a widespread challenge of sustaining day-to-day operations amidst escalating expenses, posing substantial obstacles to businesses' viability and competitiveness.

Revenue Generation

Descriptive Statistics				
	N	Sum	Mean	Std. Deviation
The economic environment in Nigeria positively contributes to the revenue generation capabilities of MSMEs.	304	662.00	2.1776	1.40298
Government policies have a supportive role in fostering increased revenue generation for MSMEs in Nigeria.	304	633.00	2.0822	.98996

MSMEs face significant challenges in maintaining consistent and predictable revenue streams in the current economic situation.	304	1076.00	3.5395	1.15973
The accessibility of financial resources and funding options greatly influences the revenue potential of MSMEs.	304	773.00	2.5428	1.15676
Valid N (listwise)	304			

Source: SPSS 23

The descriptive statistics for revenue generation among MSMEs highlight a mixed scenario. While the mean revenue generation varies between 2.0822 and 3.5395 across 304 responses, indicating a range of revenue levels, there are discernible challenges in maintaining consistent and predictable revenue streams within the current economic environment. Despite positive contributions from the economic climate and supportive government policies, MSMEs grapple with fluctuations in revenue generation, influenced by factors such as the accessibility of financial resources and funding options. This suggests a need for strategic measures to mitigate uncertainties and enhance the revenue potential for MSMEs, ensuring their sustained growth and resilience in the market.

Access to Finance

Descriptive Statistics				
	N	Sum	Mean	Std. Deviation
Non-banking financial institutions provide viable financing options for MSMEs.	304	689.00	2.2664	1.13367
MSMEs face challenges in obtaining credit from formal financial institutions.	304	635.00	2.0888	.79728
The collateral requirements for MSME loans are reasonable and accessible.	304	636.00	2.0921	1.08913
MSMEs in Nigeria have easy access to traditional banking services.	304	606.00	1.9934	.73567
Valid N (listwise)	304			

Source: SPSS 23

The descriptive statistics concerning access to finance for MSMEs reflect a nuanced landscape. Across 304 responses, mean ratings range between 1.9934 and 2.2664, indicating varying perceptions of accessibility and challenges related to financing options. While non-banking financial institutions are viewed as offering viable financing avenues, MSMEs encounter difficulties in obtaining credit from formal financial institutions, potentially hindering their growth

and operations. However, the collateral requirements for loans are perceived as reasonable and accessible, suggesting some positive aspects within the financial ecosystem. Although MSMEs generally have relatively easy access to traditional banking services, the challenges in securing credit highlight areas for improvement to better support the financing needs of MSMEs in Nigeria.

Inferential Statistics Result
Regression Result for Effect of Transportation Cost on Revenue Generation

Model Summary[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.585[a]	.343	.340	1.05153	.343	157.328	1	302	.000	1.715

a. Predictors: (Constant), Transportation
b. Dependent Variable: Revenue

An R-squared value of 0.343 indicates a moderately strong effect of transportation cost on revenue generation in the regression analysis. As a result, shifts in transport expenses account for almost 34.3 percent of the variation in income production. At 0.340, the adjusted R-squared value has not changed; this value considers the total number of predictors in the model. The estimated standard error is 1.05153, which is the average distance between the observed and anticipated values. By integrating transportation cost as a predictor, the model's capacity to explain variance was significantly boosted (F change statistic = 157.328, p-value = 0.000). Additional research may be necessary due to the possibility of autocorrelation in the model residuals, as indicated by the Durbin-Watson statistic of 1.715.

Coefficient for Transportation Cost on Revenue Generation

Coefficients[a]

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | |
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	14.245	.207		68.778	.000	13.837	14.653
Transportation	.155	.012	.585	12.543	.000	.131	.180

a. Dependent Variable: Revenue

The coefficient for transportation cost on revenue generation indicates that for every unit increase in transportation cost, there is a corresponding increase in revenue generation by approximately 0.155 units. This coefficient is statistically significant with a t-value of 12.543 and a p-value of 0.000, suggesting that the effect of transportation cost on revenue generation is unlikely to be due

to random chance. Additionally, the standardized coefficient (Beta) of 0.585 suggests that transportation cost has a relatively strong influence on revenue generation within this context. The 95.0% confidence interval for the coefficient ranges from 0.131 to 0.180, indicating a high level of certainty about the true value of the coefficient falling within this range.

Regression Result for Effect of Transportation Cost on Access to Finance

Model Summary[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.536[a]	.287	.285	1.09510	.287	121.505	1	302	.000	2.936

a. Predictors: (Constant), Transportation
b. Dependent Variable: Access to Finance

An R-squared value of 0.287 shows that the impact of transit costs on access to financing is modest, according to the regression study. This indicates that fluctuations in transit costs account for about 28.7 percent of the variation in access to financing. After taking into consideration the total number of predictors in the model, the adjusted R-squared value stays at 0.285. One thousand nine hundred fifty-ten is the standard error of the estimate, which is the mean difference between the expected and observed values. The model's explanatory ability was much enhanced by including transportation cost as a predictor, according to the change statistics. An F change statistic of 121.505 and a matching p-value of 0.000 suggest statistical significance. With a Durbin-Watson score of 2.936, the model residuals can have very little autocorrelation.

Coefficient for Transportation Cost on Access to Finance

Coefficients[a]

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence interval for B | |
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	14.019	.254		55.214	.000	13.519	14.518
Transportation	.121	.011	.536	11.023	.000	.099	.142

a. Dependent variable: Finance

The coefficient for transportation cost on access to finance indicates that for every unit increase in transportation cost, there is a corresponding increase in access to finance by approximately 0.121 units. This coefficient is statistically significant with a t-value of 11.023 and a p-value of 0.000, suggesting that the effect of transportation cost on access to finance is unlikely to be due to random chance. Additionally, the standardized coefficient (Beta) of 0.536 suggests that transportation cost has a moderate influence on access to finance within this context. The 95.0% confidence interval

for the coefficient ranges from 0.099 to 0.142, indicating a high level of certainty about the true value of the coefficient falling within this range.

Regression Result for Effect of Operational Cost on Revenue Generation

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
					Change Statistics					
1	.225[a]	.223	.210	1.03153	.443	157.328	1	302	.000	1.815

a. Predictors: (Constant), Operational
b. Dependent Variable: Revenue

With an R-squared value of 0.223, the regression study shows that operational expense has a little impact on revenue creation; in other words, it explains about 22.3% of the variation in revenue generation. With a somewhat lower value of 0.210, the modified R-square takes into account the number of predictors in the model. The average variation of the observed values from the projected values is represented by the standard error of the estimate, which is 1.03153. F change statistic of 157.328 with a matching p-value of 0.000, showing statistical significance, shows that the model's explanatory ability was much enhanced by including operational cost as a predictor. Additional research is needed since the Durbin-Watson value of 1.815 indicates that the model residuals may include autocorrelation.

Coefficient for Operational Cost on Revenue Generation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	14.245	.207		68.778	.000	13.837	14.653
	Operational	.225	.022	.485	12.543	.000	.131	.180

a. Dependent Variable: Revenue

According to the operational cost on revenue generation coefficient, there is a 0.252 unit increase in revenue generation for every unit rise in operational cost. It is very improbable that the impact of operating cost on revenue generation is due to chance alone, since this coefficient is statistically significant with a t-value of 12.543 and a p-value of 0.000. In this setting, operating cost somewhat affects revenue generation, according to the standardised coefficient (Beta) of 0.485. There is a great deal of assurance that the actual value of the coefficient falls within the range of 0.131 to 0.180, which is the 95.0% confidence interval for the coefficient.

Regression Result for Effect of Operational Cost on Access to Finance

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.305[a]	.223	.140	1.24460	.079	25.873	1	302	.000	2.323

a. Predictors: (Constant), Operational
b. Dependent Variable: Finance

There is a modest influence of operational cost on access to finance, according to the regression analysis. The R-square value is 0.223, which means that changes in operational costs explain around 22.3% of the variation in access to financing. When taking the total number of predictors into account, including operational cost as a predictor increases the model's explanatory power by a little margin (adjusted R-squared = 0.140). The average divergence of the observed values from the projected values is represented by the standard error of the estimate, which is 1.24460. An F-change statistic of 25.873 and a matching p-value of 0.000, suggesting statistical significance, demonstrate that adding operational cost as a predictor marginally enhanced the model's explanatory ability. There may be very little autocorrelation in the model residuals, according to the Durbin-Watson statistic of 2.323.

Coefficient for Operational Cost on Access to Finance

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	14.245	.207		68.778	.000	13.837	14.653
	Operational	.069	.014	.281	5.087	.000	.042	.095

a. Dependent Variable: Finance

The coefficient for operational cost on access to finance indicates that for every unit increase in operational cost, there is a corresponding increase in access to finance by approximately 0.069 units. This coefficient is statistically significant with a t-value of 5.087 and a p-value of 0.000, suggesting that the effect of operational cost on access to finance is unlikely to be due to random chance. Additionally, the standardized coefficient (Beta) of 0.281 suggests that operational cost has a modest influence on access to finance within this context. The 95.0% confidence interval for the coefficient ranges from 0.042 to 0.095, indicating a high level of certainty about the true value of the coefficient falling within this range.

Conclusion

This study's findings highlight the substantial impact of transportation and operational costs on revenue generation and access to finance, serving as a growth measure for micro, small, and medium-scale enterprises (MSMEs) in Bayelsa State, Nigeria. The findings underscore the vulnerability of MSMEs to alterations in transport infrastructure and operational management, with both elements exerting a positive influence on revenue generation and financial accessibility. The findings highlight the necessity of targeted interventions to improve transport infrastructure and enhance operational efficiency, thereby supporting the growth and sustainability of MSMEs in the state.

Recommendations

Based on the findings of the study, the following recommendations are proposed:

1. Given the significant impact of transportation costs on revenue generation and access to finance for MSMEs in Bayelsa State, there is a need for targeted investments in improving transportation infrastructure.
2. To further support MSME growth and financial sustainability, efforts should be made to enhance operational efficiency.
3. Recognizing the moderate influence of transportation and operational costs on access to finance, policymakers should prioritize initiatives aimed at promoting financial inclusion for MSMEs.
4. Finally, policymakers should adopt a flexible and supportive policy framework that acknowledges the diverse needs and challenges faced by MSMEs in Bayelsa State.

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