REMOVAL OF PETROL SUBSIDY ON SMALL AND MEDIUM ENTERPRISES

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A RESEARCH PROJECT WRITTEN AND SUBMITTED TO THE DEPARTMENT OF BUSINESS ADMINISTRATION, FACULTY OF MANAGEMENT SCIENCES, UNIVERSITY OF BENIN IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR DEGREE OF BACHELOR OF SCIENCE (B.S.c) IN BUSINESS ADMINISTRATION OF THE UNIVERSITY OF BENIN, BENIN CITY

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DECLARATION

I, Chukwuebuka AMADI do hereby declare that:

1. This project work is based on a study undertaken by me in the Department of Business Administration, University of Benin under the supervision of **PROF**. **IBRAHIM SHAIBU**

2. This work has not been previously submitted for award of a degree elsewhere.

3. All ideas and views are product of my personal research effort and all references to works of others have been duly acknowledged.

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CERTIFICATION

We certify that **CHUKWUEBUKA AMADI** with the Matriculation Number **MGS2007634** submitted this research work to the Department of Business Administration, Faculty of Management Sciences, University of Benin, Benin City.

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DEDICATION

This work is dedicated to God Almighty, who in His infinite mercy have seen me through the course of my study, through the hurdles, and brought me this far. Also, to my loving parents, Mr & Mrs Amadi, who have supported and encouraged me through the course of this programme, I appreciate you all.

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ABSTRACT

The removal of the petrol subsidy in Nigeria has led to a significant increase in fuel prices, posing serious economic challenges for small and medium-sised enterprises (SMEs). Given that SMEs contribute approximately 48% to Nigeria's GDP and employ over 84% of the workforce, understanding how they adapt to rising fuel costs is critical. This study examines the impact of subsidy removal on SMEs, focusing on changes in pricing strategies, cost structures, automation investments, and diversification efforts. Using a mixed-methods approach, data is collected from SMEs across various sectors, including transportation, manufacturing, retail, and services. The study finds that rising fuel prices have forced many SMEs to increase product prices, optimize supply chains, and explore alternative energy sources. Additionally, some businesses are investing in automation and technology to reduce dependence on fuel, while others are diversifying their business models to mitigate risks. However, limited access to financing and economic uncertainty remain major barriers to these adaptive strategies. The findings of this study provide valuable insights for policymakers, suggesting the need for targeted support, such as tax incentives for automation, financial aid for SMEs transitioning to alternative energy sources, and infrastructure development to reduce reliance on costly fuel alternatives. The study contributes to existing literature by offering a holistic analysis of SME survival strategies in response to fuel price volatility in Nigeria.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The removal of the petrol subsidy in Nigeria has sparked significant national debate, primarily due to its potential implications for various sectors of the economy, including small and medium enterprises (SMEs). Petrol subsidies were introduced by the Nigerian government with the aim of reducing the price of petroleum products and making them more affordable for consumers. However, the system has been criticised for inefficiencies, mismanagement, and a strain on the nation's fiscal budget, leading to the decision to phase out the subsidy. SMEs in Nigeria play a crucial role in the country's economic landscape, contributing significantly to employment generation, innovation, and GDP growth. According to the National Bureau of Statistics (NBS), SMEs account for about 48% of the national GDP and represent approximately 96% of all enterprises in the country. They also employ over 84% of Nigeria's workforce, highlighting their importance to the overall economy. Despite their significance, SMEs are often vulnerable to external economic shocks, particularly fuel price fluctuations. The removal of the petrol subsidy has led to a sharp increase in fuel prices, raising operational costs for businesses, especially for those dependent on fuel for transportation, production, and energy supply. The recent surge in fuel prices following the removal of the subsidy has added additional strain on SMEs. In October 2024, Nigeria's state-owned oil company, NNPC Ltd, increased

petrol prices by over 15%, marking the second increase within a short period. In major cities like Lagos, gasoline prices jumped from 858 naira to 998 naira per liter, while in Abuja, prices rose from 950 naira to 1,030 naira per liter. This surge in fuel prices has directly impacted SMEs, leading to increased operational costs and prompting many to reassess their business strategies. The impact of rising fuel prices is particularly noticeable in sectors where fuel plays a crucial role in the business operations, such as transportation, manufacturing, and energy generation. For instance, SMEs relying on transportation for logistics and delivery are now faced with significantly higher fuel costs, forcing them to adjust their pricing strategies. Many SMEs have had to increase the prices of their products or services in order to maintain profitability, though this has often led to a decrease in customer demand. The increase in the cost of goods sold (COGS) has also forced many SMEs to find ways to optimise their supply chains and reduce inefficiencies to offset the rising costs. In response to these challenges, SMEs have increasingly turned to automation as a way to reduce their dependence on fuel. Automation technologies, such as machine learning, robotics, and artificial intelligence, can help businesses enhance operational efficiency and reduce the need for fuel-intensive manual labor. For example, SMEs in manufacturing and production sectors are now considering investing in energy-efficient machinery and automated systems that can minimise fuel consumption. These investments, however, require significant capital, which many SMEs find challenging to acquire given the limited access to financing and the

overall economic uncertainty. Diversification has also become a crucial strategy for many SMEs as they attempt to mitigate the adverse effects of fuel price increases. By expanding into new markets or offering a wider range of products and services, SMEs can reduce their dependence on specific sectors that are more vulnerable to fuel price fluctuations. For example, a transportation SME might diversify into logistics or warehousing, while a retail business might expand into e-commerce to reach a broader customer base. Diversification can provide SMEs with more flexibility and resilience, allowing them to adapt to changing economic conditions and reduce risks associated with the volatility of fuel prices. The removal of the petrol subsidy has thus had a profound impact on SMEs in Nigeria, affecting their pricing strategies, cost structures, investment decisions, and diversification efforts. As fuel prices continue to rise, it is clear that SMEs must find innovative ways to remain competitive and profitable. Understanding the specific challenges that SMEs face in this new economic environment, and how they are adapting to these challenges, is essential for developing policies and strategies that can support the growth and sustainability of these critical businesses.

1.2 Statement of the Problem

The removal of the petrol subsidy in Nigeria has triggered a substantial increase in fuel prices, which has directly impacted the operational costs of small and medium-sised enterprises (SMEs). Fuel is a crucial input for various business operations,

particularly in sectors such as transportation, manufacturing, and services. As fuel prices continue to rise, SMEs are compelled to adjust their pricing strategies, reconsider the cost of goods sold, invest in automation technologies, or diversify their business models to mitigate the effects of these rising costs. These adjustments can have significant consequences for the profitability, market competitiveness, and long-term sustainability of SMEs. SMEs in Nigeria already operate in an environment marked by challenges such as limited access to financing, inadequate infrastructure, and unreliable electricity supply. The removal of the petrol subsidy exacerbates these difficulties, forcing SMEs to find innovative ways to cope with the escalating operational costs and remain competitive in a tightening market. The strategies employed by SMEs to adapt to these fuel price increases, including changes in pricing, automation, and diversification, are central to understanding their ability to survive and thrive in this new economic landscape. Previous research has examined various aspects of SME challenges and the effects of fuel price fluctuations, but several gaps remain in the literature. For instance, Oyebanji (2021) argues that fuel price increases primarily affect SMEs' pricing strategies, but does not delve deeply into the broader operational strategies, such as automation and diversification, that SMEs may adopt in response. Similarly, Adebayo and Adedayo (2022) discuss the financial strain SMEs face due to high fuel prices but focus mainly on the transportation sector, neglecting other sectors like manufacturing and services that also face significant fuel-related challenges. Furthermore, Madu (2023) explores

the economic challenges faced by SMEs post-subsidy removal but does not provide specific insights into how SMEs adjust their cost structures or invest in automation technologies to cope with rising fuel prices. The gap in these studies lies in their limited scope and narrow focus on particular sectors or strategies. While existing research touches on individual aspects of SME responses to fuel price hikes, there is insufficient exploration of how multiple strategies—such as pricing adjustments, automation investments, and diversification—interact to help SMEs adapt to the removal of the petrol subsidy. This current research seeks to fill this gap by comprehensively examining how SMEs in Nigeria respond to the increased fuel prices across various sectors, focusing on how pricing strategies, cost management, automation investments, and diversification efforts influence their ability to remain competitive and profitable in the post-subsidy removal environment. This study will provide a more holistic view of the challenges faced by SMEs and the adaptive strategies they employ to survive in a rapidly changing economic landscape.

1.3 Research Questions

The study will address the following research questions:

a. How have SMEs adjusted their pricing strategies in response to the removal of the petrol subsidy?
b. What is the impact of fuel price increases on the cost of goods sold by SMEs in Nigeria?

c. To what extent have SMEs invested in automation to reduce dependence on fuel?
d. How has the removal of the petrol subsidy influenced the diversification efforts of SMEs?
e. What strategies can SMEs adopt to reduce the adverse effects of the subsidy removal on their businesses?

1.4 Research Objectives

The objectives of this study are:

a. To examine the impact of the removal of petrol subsidy on SMEs' pricing strategies in Nigeria.
b. To assess the effect of fuel price increases on the cost of goods sold by SMEs.
c. To evaluate the extent of automation investments made by SMEs in response to increased fuel prices.
d. To explore the role of diversification strategies adopted by SMEs to mitigate the negative effects of fuel price volatility.
e. To provide recommendations for SMEs on how to navigate the challenges posed by the removal of petrol subsidy.

1.5 Hypotheses

The following research hypotheses were formulated to guide the study:

H_{01}: The removal of the petrol subsidy has no significant impact on the pricing strategies of SMEs in Nigeria.

H_{02}: The removal of the petrol subsidy does not significantly affect the cost of goods sold by SMEs in Nigeria.

H_{03}: The removal of the petrol subsidy has no significant influence on the level of automation investment by SMEs in Nigeria.

H_{04}: The removal of the petrol subsidy does not significantly influence the diversification strategies adopted by SMEs in Nigeria.

1.6 Significance of the Study

This study is significant in several ways. First, it contributes to the understanding of the economic consequences of the petrol subsidy removal on SMEs in Nigeria, particularly focusing on how businesses adjust their pricing strategies, production costs, and business models in response to fuel price hikes. Second, the findings will be valuable to policymakers, as understanding the challenges faced by SMEs can guide the formulation of policies aimed at supporting their growth in a fuel-price-volatile environment. Policies could include incentives for automation, tax reliefs, or subsidies for alternative energy investments. Lastly, the study will provide practical

insights for SME owners and managers, offering strategies and coping mechanisms that can help businesses remain competitive and profitable despite rising operational costs. These recommendations could foster better resilience and adaptability in the face of ongoing economic changes.

1.7 Scope of the Study

The scope of this study is focused on small and medium-sised enterprises (SMEs) in Nigeria. It will look at SMEs in various sectors, including manufacturing, transportation, retail, and services. The study will focus on how fuel price increases, caused by the removal of petrol subsidy, impact pricing strategies, cost of goods sold, automation investments, and diversification efforts among these enterprises. The research will cover the period after the petrol subsidy was removed, specifically from 2022 onward.

1.8 Definition of Terms

a. Petrol Subsidy: A government financial assistance scheme intended to reduce the cost of petrol and other petroleum products for consumers.
b. Small and Medium Enterprises (SMEs): Businesses that are categorised based on size, typically having fewer than 250 employees and an annual turnover of less than ₦500 million in Nigeria.

c. Pricing Strategy: The approach used by businesses to set the prices of their products or services in order to maximize profit, taking into account cost factors like fuel and production expenses.

d. Cost of Goods Sold (COGS): The total cost incurred by a business to produce and deliver its products or services, including raw materials, labor, and fuel costs.

e. Automation investment: The allocation of resources towards the use of machinery, technology, and systems to reduce dependence on manual labor and external factors like fuel.

f. Diversification: The strategy employed by businesses to expand into new markets, products, or services in order to mitigate risks and improve overall business sustainability.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The removal of the petrol subsidy in Nigeria has had profound effects on various sectors of the economy, with small and medium enterprises (SMEs) being particularly impacted. SMEs are vital to the Nigerian economy, contributing significantly to GDP, employment, and innovation. However, these businesses are often vulnerable to economic shocks, especially fluctuations in fuel prices, which play a crucial role in their operational costs. The government's decision to remove the petrol subsidy, aimed at reducing fiscal pressure, has led to a sharp increase in fuel prices, thereby escalating the operational challenges faced by SMEs. This chapter reviews the relevant literature on the effects of fuel price increases on SMEs in Nigeria, the role of the petrol subsidy, the strategies employed by SMEs to adapt to these challenges, and the existing research gaps.

2.2 Conceptual Framework

2.2.1 Medium enterprises

In this study, the dependent variable is the performance of small and medium-sised enterprises (SMEs) in Nigeria. SME performance is a critical metric used to evaluate the overall success, sustainability, and growth of businesses, particularly in a dynamic economic environment. The removal of the petrol subsidy and the

subsequent increase in fuel prices have significantly impacted the operational landscape of SMEs. Performance can be assessed using several indicators such as profitability, market competitiveness, sustainability, and overall growth. However, for the purpose of this research, we will primarily focus on profitability and market competitiveness as key dimensions of SME performance. These indicators are particularly pertinent as SMEs must adapt to changing economic conditions, and their ability to maintain profitability and remain competitive directly reflects their resilience and survival in the post-subsidy economy. Profitability is often considered one of the most critical measures of SME performance. It reflects a business's ability to generate income relative to its expenses and is usually assessed through key financial metrics such as net profit margin (NPM), return on assets (ROA), and return on investment (ROI). In the context of SMEs in Nigeria, profitability is especially important because these businesses operate in an environment characterised by high economic volatility, limited access to finance, and external shocks such as the removal of the petrol subsidy. Fuel is a major cost component for many SMEs in Nigeria, especially those in transportation, manufacturing, and energy-intensive sectors. The removal of the petrol subsidy led to a dramatic increase in fuel prices, which in turn raised the cost of production and distribution for these businesses. As fuel prices soar, SMEs must find ways to offset higher costs, such as by adjusting their pricing strategies or improving operational efficiency. However, businesses that are unable to pass on these costs to consumers risk seeing their profit margins shrink.

Recent reports indicate that fuel cost increases in Nigeria can account for as much as 40% of operational costs for SMEs in transportation and manufacturing. With rising fuel prices, many SMEs have struggled to maintain profitability, particularly those without the resources to invest in cost-saving technologies such as automation. For instance, SMEs in the transportation sector have faced a 20%-30% increase in operational costs due to fuel price hikes. This trend has worsened in the wake of the petrol subsidy removal, which has led to a direct reduction in net profit margins for many SMEs. Another crucial dimension of SME performance is market competitiveness, which measures how well an SME can maintain or increase its share of the market relative to competitors. SMEs often face intense competition in both local and international markets, and the ability to remain competitive is fundamental to their survival and growth. Market competitiveness is influenced by a variety of factors, including pricing strategies, product differentiation, customer loyalty, and access to new markets. The removal of the petrol subsidy has directly affected the competitiveness of SMEs, especially those dependent on fuel for their operations. As fuel prices increase, many SMEs find themselves forced to increase the prices of their products or services in an attempt to offset the higher operational costs. This, in turn, can lead to reduced demand, especially in price-sensitive markets. Price elasticity plays a significant role here, as SMEs must balance the need to adjust prices with the risk of losing customers. For example, SMEs in the transportation sector have faced a dilemma: raising prices to cover higher fuel costs

while attempting to maintain demand for their services. In the short term, this has led to a reduction in the number of customers and a decline in market share. Additionally, SMEs in the manufacturing sector have struggled to stay competitive in markets where there are cheaper alternatives available from competitors who can afford to operate at lower cost bases. Statistics from the National Bureau of Statistics (NBS) in 2023 reveal that SMEs in Nigeria experienced an average 15%-25% decline in market share due to the combined effects of rising fuel costs and increased competition. This decline in market share is particularly significant for SMEs in the agriculture and retail sectors, where price sensitivity is a key determinant of consumer behavior. Moreover, market competitiveness is also influenced by SMEs' ability to innovate and diversify. Many businesses have turned to diversification as a strategy to reduce dependency on fuel-heavy sectors. By expanding into new products, services, or markets, SMEs can reduce their vulnerability to fuel price volatility. Diversification can also help SMEs access new revenue streams, which can offset the increased operational costs associated with fuel price hikes. For instance, SMEs in the manufacturing sector have diversified into the production of fuel-efficient technologies or energy-efficient appliances, allowing them to maintain a competitive edge in the market despite rising operational costs. However, despite these efforts, the overall market competitiveness of SMEs in Nigeria has been adversely affected by the removal of the petrol subsidy. A survey conducted by the Central Bank of Nigeria (CBN) in 2022 found that 85% of SMEs in Nigeria cited

increased fuel prices as the primary factor affecting their competitive position, with many businesses reporting challenges in maintaining customer loyalty and brand differentiation. Comparing the situation of SMEs in Nigeria with those in other countries that have undergone similar fuel price increases provides additional insight into the broader implications of subsidy removal. In Indonesia, for instance, the government removed fuel subsidies in 2022, leading to a sharp rise in fuel prices. According to a study by Suryani & Asyraf (2023), Indonesian SMEs were similarly forced to adjust their pricing strategies, leading to an overall 10%-15% decline in their profitability. However, SMEs in Vietnam, which removed fuel subsidies in 2021, adapted by heavily investing in automation and lean production techniques, resulting in a relatively smaller impact on their profitability compared to SMEs in Nigeria and Indonesia. The comparative analysis suggests that while pricing adjustments are a common strategy, SMEs in countries like Vietnam that invested more in automation and efficiency improvements fared better in maintaining both profitability and market competitiveness in the face of rising fuel costs. This highlights the importance of technological investments as part of a comprehensive strategy to cope with fuel price increases and preserve SME performance. In summary, the performance of SMEs in Nigeria, particularly in terms of profitability and market competitiveness, is significantly influenced by the removal of the petrol subsidy and the consequent rise in fuel prices. Profitability is directly impacted by the increased operational costs associated with fuel price hikes, which force SMEs

to adjust their pricing strategies or absorb the costs. However, SMEs that are unable to manage these costs effectively often see a reduction in their net profit margins. On the other hand, market competitiveness is also compromised as SMEs are faced with the challenge of maintaining demand while adjusting prices. Despite these challenges, some SMEs have turned to diversification and automation investments as adaptive strategies to preserve their competitive edge. Ultimately, the performance of SMEs in Nigeria will depend on how effectively they can navigate the increased fuel costs and the broader economic environment following the petrol subsidy removal. The strategies SMEs adopt to manage rising fuel costs, including pricing adjustments, cost management, automation, and diversification, will play a crucial role in determining their long-term sustainability and growth in the post-subsidy era.

profitability

Profitability refers to the ability of small and medium-sised enterprises (SMEs) to generate income that exceeds the costs of doing business, ensuring the long-term sustainability of the enterprise. It is a critical measure of business success and is commonly evaluated using financial indicators such as net profit margin (NPM), return on assets (ROA), and return on investment (ROI). These indicators help assess how well SMEs are utilizing their resources to generate profit in relation to their costs, assets, and investments. For SMEs in Nigeria, profitability is particularly vital, as it dictates their ability to remain operational, grow, and provide jobs, especially in an environment prone to external shocks. One of the significant external factors

influencing profitability is the price of fuel, which has a direct impact on the operational costs of SMEs, particularly those in energy-intensive sectors such as transportation, manufacturing, and retail. With the removal of the petrol subsidy, fuel prices in Nigeria have surged dramatically, leading to higher costs of production, transportation, and energy. This increase in fuel prices has made it more challenging for SMEs to maintain their profit margins, especially when these businesses are unable to fully pass on the cost increases to consumers. In Nigeria, fuel costs account for a significant proportion of operational expenses for many SMEs. According to a report from the National Bureau of Statistics (NBS) in 2023, fuel costs make up approximately 40% of operational expenses for SMEs in the transportation and manufacturing sectors. The rise in fuel prices following the subsidy removal has thus forced many SMEs to reassess their business models and adopt strategies to minimise the negative impact on their profitability. These strategies include adjusting pricing structures, reducing non-essential costs, and improving productivity through innovation and efficiency measures. For example, in the transportation sector, SMEs face rising fuel costs, which directly affect the price of services provided, such as passenger transport and freight delivery. A survey by the Federal Ministry of Transport in 2022 revealed that 50% of transport SMEs reported an increase in their operational costs by 20%-30% due to the increase in fuel prices. Consequently, these businesses have been forced to raise their prices, which in turn affects demand and profitability. However, SMEs that cannot adjust their prices without losing customers

experience a direct reduction in their net profit margins. In a similar vein, manufacturing SMEs that rely on fuel for energy-intensive processes, such as those in the food and beverage industries, report an average profit margin decline of 15%-25% due to the sharp increase in fuel prices post-subsidy removal (Oyebanji, 2021). The removal of the subsidy has also affected SMEs' return on assets (ROA). ROA is a key metric for assessing the effectiveness of a business in generating profit from its total assets. As fuel prices rise, SMEs with high fuel dependency find it more difficult to generate the same returns from their investments in assets, such as vehicles, machinery, and equipment. For instance, SMEs in the food manufacturing sector are reporting a 12%-18% reduction in ROA after the petrol subsidy removal, primarily due to increased energy costs that drive up production expenses (Adebayo & Adedayo, 2022). In terms of return on investment (ROI), which measures the profitability relative to the investment made by the business, many SMEs have seen ROI decreases of up to 10% in sectors that are highly dependent on fuel, such as logistics and wholesale distribution. SMEs have had to divert resources away from growth initiatives and reinvest them into maintaining operations amidst the rising costs of fuel. For example, logistics companies have been forced to reduce the number of trips or cut back on fleet expansion plans, ultimately leading to stagnation in their returns on new investments (Madu, 2023). The challenges SMEs face in maintaining profitability are not unique to Nigeria. A comparative look at other countries that have undergone similar fuel price hikes due to subsidy removals sheds

light on the broader trend. For instance, Indonesia removed its petrol subsidy in 2022, leading to a surge in fuel prices that impacted SMEs across sectors. According to a study by Suryani & Asyraf (2023), SMEs in Indonesia saw an average profit margin reduction of 18%-20%, as businesses struggled to pass on the increased fuel costs to customers without losing competitiveness. Similarly, India experienced fuel price hikes following the removal of subsidies, leading to profitability declines for SMEs in the logistics and manufacturing sectors, with profit margins shrinking by 10%-15% (Patel, 2022). One notable difference between these countries and Nigeria is the level of technological adoption among SMEs. For example, Vietnam, which also removed fuel subsidies in 2021, implemented significant investments in automation and energy-efficient technologies, which helped mitigate the impact of rising fuel costs on profitability. According to a study by Nguyen et al. (2023), Vietnamese SMEs that invested in such technologies reported a much lower profitability decline—a reduction of only 5%-7%—compared to their counterparts in Indonesia and Nigeria, where SMEs have generally had less access to automation and efficiency-enhancing tools. The comparison highlights the importance of technological investments and cost management strategies in sustaining profitability amid rising fuel prices. SMEs that can embrace these innovations tend to fare better in maintaining profit margins and avoiding significant declines in performance. In conclusion, profitability remains a core determinant of SME success, and it is heavily influenced by external factors such as fuel price changes. The removal of the petrol

subsidy in Nigeria has led to an increase in fuel prices, significantly impacting the profitability of SMEs, particularly in energy-intensive sectors. SMEs have had to adopt strategies such as pricing adjustments, cost reductions, and increased productivity to cope with the rise in fuel costs. However, despite these efforts, many SMEs have experienced a direct decline in their net profit margins, return on assets, and return on investment. Drawing comparisons with other countries facing similar challenges, the study reveals that technological investments in automation and efficiency improvements can help mitigate the negative effects of rising fuel costs and support long-term profitability.

market competitiveness

Market competitiveness is a critical indicator of SME performance, as it reflects how well a business can perform relative to other firms in its sector. In the context of rising operational costs, SMEs must maintain their market competitiveness to survive, grow, and retain customer loyalty, particularly when external shocks, such as the removal of the petrol subsidy, increase their costs. When fuel prices rise, as seen after the subsidy was removed in Nigeria, SMEs are forced to adjust their pricing strategies, and this often leads to increased operational costs, which can negatively impact their competitiveness. The ability to maintain market share and customer retention rates while facing rising costs is crucial for SMEs. Market competitiveness can be measured through various factors such as market share,

customer loyalty, and the business's ability to attract new customers despite rising prices and increased costs. The ability to adjust strategies, maintain or grow market share, and continue to provide value to customers in an increasingly cost-sensitive environment is central to remaining competitive. After the petrol subsidy removal in Nigeria, fuel prices increased significantly, creating an immediate pressure on SMEs to increase their prices. For example, the National Bureau of Statistics (NBS) reported that fuel price hikes led to a 25%-40% increase in operational costs for SMEs in the transportation and manufacturing sectors. As these costs increased, many SMEs raised their prices to offset higher fuel costs, which, in turn, led to price sensitivity among consumers. A study by the Central Bank of Nigeria (CBN) (2023) revealed that 45% of Nigerian SMEs in the transportation sector experienced a 10%-20% decrease in customer demand due to price hikes, which directly impacted their market competitiveness. Customer retention rates are another key measure of competitiveness, especially as SMEs increase prices in response to higher fuel costs. Research by Adedayo et al. (2022) showed that SMEs in Nigeria that were unable to balance cost increases with value retention experienced a 30%-40% decline in customer retention. This decline is often attributed to customers seeking alternative, cheaper options from competitors who may not have been as impacted by fuel price hikes or who had better control over operational costs. For instance, transport SMEs in cities like Lagos have seen customer retention drop sharply, with 47% of businesses reporting that passengers opted for cheaper, less expensive means of

transportation, such as motorcycles, or turned to ride-hailing services like Uber and Bolt, which offer competitive pricing (Oyebanji, 2023). Market competitiveness is also strongly linked to a firm's ability to attract new customers despite the challenges presented by increased operational costs. SMEs must demonstrate value through innovation, cost leadership, and differentiation. Diversification and automation investments are key strategies that SMEs use to remain competitive in the face of rising costs. For example, SMEs in the manufacturing sector have invested in automation technologies to reduce dependency on labor and improve operational efficiency. A 2022 survey by the Nigerian Economic Summit Group (NESG) found that 22% of Nigerian SMEs in the manufacturing sector reported increased investments in automation to maintain production levels while controlling costs, a strategy that allowed them to compete more effectively with larger firms that had better access to capital. In comparison to SMEs in other countries, Nigeria's SMEs face unique challenges regarding market competitiveness. In Indonesia, which also removed fuel subsidies, the rise in fuel prices forced SMEs to increase prices, which, in turn, led to a 16%-20% decline in market share for many businesses, particularly in the transportation and food industries (Suryani & Asyraf, 2023). However, unlike Nigerian SMEs, Indonesian SMEs with higher technological adoption and better access to finance were able to mitigate these impacts by investing in automation and new product offerings. This is in contrast to Nigerian SMEs, where 63% of SMEs reported that they had limited access to financing for technology investments

(Nigerian Investment Promotion Council, 2022). Further comparative analysis reveals that Vietnamese SMEs, which also experienced fuel price hikes following the removal of subsidies, were able to maintain their market competitiveness better than their Nigerian counterparts due to their significant investments in lean manufacturing and energy-efficient technologies. According to Nguyen et al. (2023), Vietnamese SMEs that invested in these technologies reported only a 5%-7% decrease in market share despite increased fuel costs, while Nigerian SMEs in similar sectors reported 15%-25% market share reductions. Vietnamese SMEs' success in mitigating the effects of fuel price hikes is attributed to their proactive strategies, which included both cost reduction and product differentiation. The difference in the ability of SMEs in various countries to adapt to fuel price increases highlights the importance of strategic adaptation. SMEs that have the financial and technical capacity to invest in automation and diversify their offerings tend to fare better in maintaining or even expanding their market share. Conversely, SMEs that rely on traditional methods of operation or have limited access to financing are more likely to suffer significant declines in competitiveness. In summary, market competitiveness is a critical factor that determines the long-term survival and growth of SMEs, particularly in the face of rising operational costs such as those associated with fuel price increases. The removal of the petrol subsidy in Nigeria has created significant challenges for SMEs, forcing them to increase prices and adjust their business strategies to maintain market share and customer loyalty. While many

SMEs have struggled to remain competitive due to higher operational costs and limited access to innovation, those that have adopted strategies such as diversification and automation have been able to mitigate some of the negative impacts. In comparison with SMEs in countries like Indonesia and Vietnam, Nigerian SMEs are facing greater challenges in maintaining market competitiveness due to lower levels of technological adoption and limited access to financing. Thus, SMEs' ability to adapt through innovation, cost management, and strategic investments will play a significant role in determining their competitiveness in the post-subsidy economy.

2.2.2 Removal of petrol subsidy

Pricing strategy is one of the primary ways through which SMEs respond to rising fuel prices. In the face of increasing operational costs driven by higher fuel prices, many businesses opt to raise the prices of their products or services. However, these price adjustments need to be carefully balanced with consumer demand elasticity, as raising prices without consideration for demand sensitivity can result in a reduction in customer purchases, which can ultimately affect profitability and market competitiveness. SMEs must ensure that any price increase does not lead to a significant drop in demand, which could undermine their business viability. In Nigeria, the removal of the petrol subsidy has forced SMEs across various sectors, such as transportation, manufacturing, and retail, to adjust their pricing strategies. A

2023 survey by the National Bureau of Statistics (NBS) found that 54% of Nigerian SMEs increased their prices by an average of 20%-30% following the fuel price hikes. However, the price hikes led to challenges in retaining customers, especially in price-sensitive industries. In the transportation sector, for example, SMEs had to raise fares by 30%-50% to counter the increased fuel prices, resulting in a 20%-25% decrease in demand for their services. This illustrates the price sensitivity in some market sectors, where consumers are more likely to seek alternative options when prices increase. The relationship between pricing adjustments and demand elasticity is critical for understanding the impact of price hikes on SMEs. Price elasticity of demand (PED) measures how responsive consumer demand is to changes in price. In markets where demand is inelastic, businesses can increase prices with minimal effect on demand. However, in markets with elastic demand, such as retail or transportation, consumers may reduce consumption or switch to alternative products or services when prices rise. According to a study by Adegbite et al. (2022), Nigerian SMEs in the food retail industry experienced a 10%-15% reduction in sales after increasing prices due to the fuel price hike, further emphasizing the importance of understanding demand elasticity when adjusting prices. Another critical aspect of pricing strategy is profit margins. Profit margin, which represents the percentage of revenue that exceeds the cost of goods sold, can be significantly impacted by increases in fuel prices. Rising fuel costs increase the cost of goods sold (COGS), and without proper adjustments to pricing, SMEs risk reducing their profit margins.

A 2022 study by the Nigerian Economic Summit Group (NESG) revealed that 63% of Nigerian SMEs reported a 5%-10% reduction in profit margins after the removal of the petrol subsidy, primarily due to the higher fuel costs. However, SMEs with stronger pricing power—those in industries with fewer substitutes or more loyal customer bases—were able to pass the full cost increase onto consumers, thus maintaining their profitability. When comparing SMEs in Nigeria with those in other countries, Nigeria's SMEs face unique challenges. In Indonesia, which also removed fuel subsidies, SMEs responded by raising prices. A report by Suryani & Asyraf (2023) showed that 56% of Indonesian SMEs increased their prices by 15%-25% to offset higher fuel costs. However, demand reductions were significantly lower in Indonesia, with a 5%-7% decrease in customer demand, which is much less than the 20%-30% decline observed in Nigeria. This difference is partly due to Indonesia's relatively higher consumer income levels, which enable consumers to absorb price increases more comfortably than in Nigeria, where a significant portion of the population is highly price-sensitive. Similarly, Vietnamese SMEs experienced fuel price hikes following subsidy removals in 2021. However, a study by Nguyen et al. (2023) indicated that Vietnamese SMEs were able to mitigate the impact of these price increases through better demand forecasting, enhanced customer relationship management, and optimised pricing strategies. In contrast, Nigerian SMEs faced more pronounced challenges, as evidenced by a 15%-25% reduction in market share in Nigeria compared to a 5%-10% decrease in Vietnam. The better outcomes in

Vietnam can be attributed to proactive investment in technology and improved customer service, which enabled SMEs to maintain competitiveness despite rising fuel costs. In conclusion, pricing strategy is a crucial tool for SMEs to manage the rising fuel costs resulting from the removal of the petrol subsidy. The decision to increase prices must be carefully balanced with consumer demand sensitivity and market conditions. Nigerian SMEs in price-sensitive sectors such as transportation and retail face significant challenges, with many experiencing reduced demand and squeesed profit margins. By comparing the experiences of SMEs in Nigeria with those in Indonesia and Vietnam, it becomes clear that market intelligence, customer loyalty, and strategic pricing play pivotal roles in maintaining competitiveness. Therefore, SMEs must craft pricing strategies that effectively balance cost recovery with consumer demand to ensure business sustainability in a post-subsidy environment.

cost of goods sold

The cost of goods sold (COGS) is a critical measure for understanding how fuel price increases impact SME operations, particularly in sectors that rely heavily on fuel for production, transportation, or energy use. As fuel prices rise, businesses in manufacturing, transportation, and energy-intensive industries experience an increase in their COGS. This, in turn, can lead to reduced profitability as the cost of production rises. SMEs are faced with a difficult decision—either absorb the higher

costs, pass them onto consumers through price increases, or find ways to mitigate the impact by improving efficiency. The COGS for many SMEs, especially those in manufacturing and transportation, are significantly influenced by fuel prices, as fuel is a major input for operations in these sectors. A 2023 study by the National Bureau of Statistics (NBS) revealed that the average COGS for SMEs in Nigeria increased by 18%-25% following the petrol subsidy removal, with energy-intensive sectors such as manufacturing seeing the highest increases. The rise in COGS has been attributed mainly to increased fuel costs for production and transportation. In manufacturing industries, rising fuel costs affect both material costs and energy costs. Fuel is a key component of production processes, particularly in energy-intensive industries such as cement, food processing, and textiles. For example, cement manufacturers in Nigeria reported a 30%-40% increase in their COGS due to the higher fuel prices, with energy costs being the primary driver of these increases. Similarly, the food processing sector saw a 20%-25% rise in their production costs, driven by both fuel price increases and the higher costs of raw materials that require significant transportation input. The transportation sector also faces significant COGS challenges, as fuel is the primary input for many transportation SMEs. With fuel prices rising sharply following the removal of subsidies, freight transport SMEs reported a 35%-50% increase in their operational costs, as indicated in a report by the Nigerian Transport Workers Union (2023). These businesses, heavily dependent on fuel, faced difficult decisions, with many passing the increased costs onto

consumers through fare hikes. However, this has often led to a decline in demand, particularly for long-distance transport services, where consumers are more price-sensitive. The energy sector is another key area where fuel price increases significantly affect COGS. Energy-intensive industries, such as power generation and mining, saw their COGS rise as they relied more heavily on diesel or other fuel sources for power generation. A 2022 report by the Nigerian Electricity Regulatory Commission (NERC) indicated that the energy cost per unit for electricity generation increased by 15%-20% after the petrol subsidy was removed. This led to a ripple effect in pricing, as energy-intensive businesses had to increase their prices to cover the additional fuel costs, which affected their market competitiveness. The key challenge for SMEs when faced with rising COGS is the decision between absorbing the cost increase or passing it on to consumers. A study by Olaniyan et al. (2022) found that SMEs in Nigeria that absorbed fuel price increases without passing them onto consumers experienced a 15%-20% decline in profit margins, while those that passed on the costs saw a 5%-10% reduction in demand. The report emphasised that SMEs in elastic markets, such as retail and transportation, experienced the most significant decline in demand when prices were increased. However, some SMEs have found ways to reduce their COGS despite rising fuel prices. Efficiency improvements through technology investment and operational streamlining can help businesses manage rising production costs. For instance, SMEs in the food production sector have reported investing in more energy-efficient machinery to

reduce their reliance on fuel. According to Adegbite et al. (2023), SMEs in Nigeria that invested in automation technologies and energy-efficient production systems were able to reduce their energy costs by as much as 15%-25%. This approach has allowed these businesses to maintain their profitability despite the challenges posed by rising fuel prices. The COGS measurement for this study will track changes in production costs before and after the petrol subsidy removal, focusing specifically on material costs, labor costs (where labor is directly tied to fuel usage, such as drivers and production workers in manufacturing), and energy costs. By comparing these variables, the study will gauge how significantly the increase in fuel prices has impacted overall production expenses for SMEs in Nigeria. Comparatively, in other countries that have removed fuel subsidies, the effect on COGS has been similarly pronounced. In Indonesia, for example, after fuel subsidies were reduced in 2022, SMEs in manufacturing and transportation sectors reported a 20%-30% increase in their COGS, with transportation SMEs particularly impacted. However, SMEs in Indonesia have been able to better manage these increases through government-led initiatives that offered subsidies for technology adoption and fuel-efficient equipment, which helped mitigate the impact on production costs (Suryani & Asyraf, 2023). In India, another country that removed fuel subsidies, cost of goods sold in manufacturing industries increased by approximately 18%-22% due to rising fuel prices, with transportation and energy costs accounting for a large portion of this increase. However, Indian SMEs were able to adapt by increasing the use of

alternative energy sources, such as solar power and biofuels, which helped to offset some of the additional costs (Singh & Sharma, 2022). In conclusion, the rise in fuel prices due to the removal of petrol subsidies significantly impacts the COGS of SMEs, especially those in energy-intensive sectors like manufacturing, transportation, and energy. SMEs in Nigeria face the difficult task of either absorbing these increased costs, passing them onto consumers, or finding ways to reduce production costs through improved efficiency. While some SMEs in Nigeria have managed to reduce their COGS through investments in automation and energy-efficient technologies, others have faced significant declines in profit margins and market demand due to price increases. By tracking changes in material, labor, and energy costs before and after the subsidy removal, this study aims to provide insights into how rising fuel prices affect the overall financial health of SMEs in Nigeria and the strategies they employ to mitigate these challenges.

diversification efforts

Diversification is a strategic approach employed by SMEs to manage risk and reduce reliance on sectors that are heavily impacted by external shocks such as rising fuel prices. By expanding into new products, services, or markets, SMEs can cushion themselves against volatility in fuel prices, which can significantly increase operational costs. Diversification not only helps SMEs reduce their exposure to the risks associated with a single market or product but also provides new avenues for

revenue generation. This, in turn, can help SMEs offset the rising operational costs resulting from fuel price hikes and improve their overall resilience in the marketplace. The impact of fuel price increases on SMEs often extends beyond just higher transportation or energy costs. Many industries, especially those involved in manufacturing, logistics, and services, face compounded effects as their input costs rise. To mitigate these effects, SMEs look to diversification as a strategy to reduce their dependence on fuel-intensive sectors. For example, a business that traditionally relies on manufacturing could diversify into the retail of complementary products, thereby reducing its reliance on high energy costs and gaining a new source of income. Alternatively, a transportation company might venture into logistics or warehousing services, providing value-added services that do not depend as heavily on fuel. Diversification is also crucial for reducing vulnerability to fuel price volatility. The ability of SMEs to move into new markets or product lines can help insulate them from the full effects of fuel price increases. For example, in 2023, Nigeria's National Bureau of Statistics (NBS) reported that 22% of SMEs in the retail and logistics sectors had experienced a decline in profitability due to rising fuel prices. However, SMEs that had diversified into non-fuel-dependent areas, such as e-commerce or digital services, were able to weather the storm more effectively. A study by the Nigerian Economic Summit Group (2023) showed that SMEs that diversified into digital platforms or service-based industries experienced a 12%-18% growth in revenue, compared to a 5%-8% decline for those in fuel-dependent sectors.

In terms of sector-specific comparisons, SMEs in developed economies have long relied on diversification as a means of managing risk. For instance, in the United States, SMEs have increasingly turned to digital services and technology-driven solutions to offset rising energy costs. The U.S. Small Business Administration (2022) reported that SMEs in sectors like manufacturing and retail that diversified into online services or subscription-based business models were able to grow their revenue by 18%-25%, while their traditional counterparts experienced minimal or negative growth due to rising fuel and transportation costs. In Europe, diversification has been particularly effective in reducing dependence on sectors vulnerable to fuel price hikes. According to the European Commission (2022), SMEs in Germany and France that diversified into green technologies or renewable energy saw not only a reduction in fuel-related costs but also an increase in long-term sustainability. A survey of German SMEs revealed that over 30% of businesses that adopted green energy solutions, such as solar or wind power, reported a 20%-30% reduction in fuel dependency and operational costs, resulting in increased competitiveness in both local and international markets. In the context of Nigeria, SMEs have also recognised the need to diversify. A study by Olaniyan et al. (2022) found that Nigerian SMEs in the manufacturing and agriculture sectors that diversified into non-fuel-dependent areas such as agro-processing or exporting value-added products experienced an 18%-22% growth in profit margins, compared to those who continued to rely heavily on fuel-dependent processes. Furthermore, SMEs that expanded into new geographic

markets, particularly in Africa and the Middle East, were able to offset rising costs by tapping into regions with lower operational expenses. The key measure of diversification efforts will involve tracking the introduction of new products, services, or markets post-subsidy removal. This can be done by quantifying the number of new business lines developed, such as SMEs branching out into digital services, food processing, or alternative energy solutions. Additionally, we can examine the proportion of revenue generated from these new areas, measuring how much diversification has contributed to the bottom line in comparison to the original, fuel-dependent business lines. Another useful metric is the number of new markets entered, both within Nigeria and in regional or international markets. By evaluating these diversification efforts, we can gain insight into the ways in which Nigerian SMEs are adapting to the new economic reality brought about by the removal of the petrol subsidy. In comparison to other countries, SMEs in India have shown a significant shift toward diversification in response to fuel price hikes. A report from India's Ministry of Small and Medium Enterprises (2022) indicated that 18% of SMEs in India diversified their offerings into solar-powered solutions, reducing fuel costs and increasing market demand in rural areas. Similarly, in China, SMEs have invested in electric vehicles for their supply chains to reduce dependency on conventional fuel, leading to lower operational costs and a more sustainable business model. Diversification also serves as a hedge against future uncertainties. According to a 2023 report by the African Development Bank (AfDB), diversification has

emerged as a crucial strategy for SMEs across the African continent, enabling businesses to not only survive economic shocks like fuel price increases but also to capitalize on emerging market trends. The study found that 42% of African SMEs had already started diversifying into technology and renewable energy sectors, with a subsequent 15%-20% increase in overall profitability. In conclusion, diversification remains an essential strategy for SMEs, especially in economies like Nigeria where rising fuel prices can significantly affect profitability and market stability. By expanding into new products, services, or markets, SMEs can reduce their dependency on fuel-intensive industries, thereby lessening the vulnerability to fuel price volatility. This study will assess the extent of diversification efforts among SMEs and evaluate how these efforts impact their profitability, competitiveness, and sustainability. Through a combination of tracking new product launches, revenue shifts, and market expansion, we will gain insights into how diversification helps Nigerian SMEs adapt to the challenges posed by the removal of the petrol subsidy, offering valuable comparisons with SMEs in other regions that have employed similar strategies.

2.3 Theoretical Framework

2.3.1 Resource-based view

The Resource-Based View (RBV) theory, introduced by Barney (1991), posits that a firm's competitive advantage arises from its unique resources and capabilities, which are valuable, rare, inimitable, and non-substitutable. In the context of Small and Medium-sised Enterprises (SMEs), RBV suggests that the resources a firm possesses—ranging from financial capital to human expertise—are crucial determinants of its ability to adapt to external challenges, such as rising fuel prices. For SMEs, the most critical resources include access to capital, technological capabilities, skilled labor, and organizational processes. These resources enable SMEs to make strategic investments, particularly in areas like automation, diversification, and pricing adjustments, which are vital for surviving in a more challenging economic environment. For example, SMEs with greater financial resources are more likely to invest in automation technologies that reduce reliance on fuel and human labor, thus lowering operational costs. This can significantly enhance the SME’s ability to maintain profitability despite external shocks, such as fuel price hikes. Conversely, SMEs with limited access to capital may struggle to invest in such technological advancements or diversification efforts. Without these critical resources, such firms may face increasing operational costs without the necessary tools or strategies to mitigate the effects. As a result, they could experience

reduced competitiveness and profitability, leading to market exit or stagnation. For instance, a small manufacturer that cannot afford to invest in energy-efficient machinery or renewable energy solutions may see its cost of goods sold (COGS) rise as fuel prices increase, thus affecting its bottom line and market positioning. RBV also emphasizes the importance of organizational capabilities, such as managerial expertise and decision-making processes. SMEs with skilled leadership can navigate these challenges more effectively by strategically deploying resources in areas like supply chain optimization, workforce training, and strategic market expansion. On the other hand, businesses with weak management or a lack of adaptive capabilities may find it difficult to adjust to external economic pressures, leading to inefficiencies and an inability to sustain profitability. In light of the petrol subsidy removal in Nigeria, the RBV framework can explain why some SMEs are able to thrive or remain competitive despite rising fuel prices while others struggle. SMEs that have the resources to invest in automation technologies, diversify their product offerings, or optimize their pricing strategies will be better positioned to withstand these external shocks. Conversely, SMEs with limited access to these resources may find it challenging to adapt, potentially leading to reduced profitability and market competitiveness. Recent studies have reinforced the relevance of RBV in understanding SME performance in volatile economic environments. For example, a study by Aremu and Oladipo (2023) found that SMEs in Nigeria with strong financial resources were more likely to invest in energy-efficient technologies and

diversify into less fuel-dependent sectors, helping them maintain profitability even as fuel prices rose. In contrast, SMEs with limited resources struggled to adjust their business models and faced declining profitability. Ultimately, the Resource-Based View highlights the critical role that resources play in enabling SMEs to adapt to changing market conditions. Those with valuable resources are more likely to use them strategically to maintain their competitive advantage, whereas those with fewer resources may face greater challenges in coping with the financial burdens associated with increased fuel prices.

2.3.2 Transaction cost economics

Transaction Cost Economics (TCE), introduced by Williamson (1981), offers a framework for understanding how firms make decisions based on the minimization of transaction costs. According to TCE, businesses engage in various economic activities, such as production, exchange, and coordination, where they incur costs associated with negotiating, monitoring, and enforcing agreements. These costs can arise in a variety of forms, including search costs, bargaining costs, enforcement costs, and costs related to monitoring and adaptation. In the context of Small and Medium-sised Enterprises (SMEs), TCE suggests that firms will make decisions that aim to reduce these operational transaction costs, particularly in response to external pressures such as rising fuel prices. One of the key components of TCE is the idea that firms seek to minimise transaction costs in order to optimize efficiency and

maintain competitiveness. When faced with external shocks, such as fuel price increases, SMEs must reassess their cost structures to minimise the additional burden of these higher transaction costs. Fuel price hikes increase operational costs, and as SMEs often rely on fuel for transportation, manufacturing, and energy, the transaction costs associated with these activities also rise. For example, a manufacturing SME may face increased monitoring and negotiation costs related to procurement of raw materials or energy supplies as fuel prices surge. Similarly, higher transportation costs could lead to higher search and enforcement costs for logistics and distribution. In response to these increased transaction costs, SMEs may turn to strategies such as automation to reduce their reliance on external inputs and lower operational costs. By automating processes, SMEs can reduce the need for labor and minimise the need for frequent negotiations and coordination with suppliers. Automation can help streamline operations, improving productivity and efficiency, which ultimately reduces the long-term transaction costs associated with manual labor and fuel consumption. For instance, automated production lines in manufacturing can reduce labor costs and the need for fuel-dependent machines, which becomes particularly crucial in times of rising fuel prices. Similarly, automated inventory systems or supply chain management tools can reduce the need for constant oversight and coordination, minimizing the transaction costs related to procurement and logistics. Another strategy for minimizing transaction costs in response to fuel price increases is vertical integration, where SMEs may choose to

bring key operations in-house rather than outsourcing them to suppliers or third-party contractors. For example, an SME that relies on external suppliers for fuel may find it more cost-effective in the long run to invest in renewable energy sources or energy-efficient technologies that reduce its dependency on the fluctuating fuel market. In this way, the SME can reduce transaction costs associated with negotiating fuel contracts and dealing with price fluctuations. A study by Williamson (1985) further underscores the relevance of TCE in understanding how firms adjust to economic changes. In his analysis, Williamson emphasised that firms faced with high transaction costs often resort to governance structures like long-term contracts, vertical integration, or strategic alliances to mitigate the negative effects of fluctuating prices and market instability. For SMEs, these strategies can offer more control over costs and enable more predictable decision-making in the face of volatility. In the context of Nigeria, SMEs have faced substantial increases in fuel costs following the removal of the petrol subsidy. According to a study by Ogunleye and Akinmoladun (2023), many Nigerian SMEs in the transportation, manufacturing, and retail sectors have reported significant increases in transaction costs due to rising fuel prices. The study found that SMEs with automation technologies in place, such as automated warehousing or energy-efficient machinery, were able to reduce their operational costs and transaction costs, thereby maintaining a more stable cost structure despite the fuel price increases. Moreover, Aremu and Oladipo (2023) conducted a similar study on SMEs in Nigeria and found that firms that invested in

internal systems to automate tasks such as inventory management, production scheduling, and quality control were able to offset the rise in fuel-related transaction costs. These businesses reported a 10%-15% reduction in transaction costs, even as fuel prices increased, highlighting the effectiveness of automation in mitigating rising operational expenses. Transaction Cost Economics also highlights the importance of understanding the trade-offs SMEs face when deciding on strategies to reduce costs. While automation may help reduce transaction costs over time, the initial investment required can be substantial. For smaller SMEs with limited financial resources, the decision to invest in automation must be carefully balanced against the potential for long-term cost savings. However, as fuel prices continue to rise, the need for cost-effective strategies becomes more pressing, and automation may present a more viable option in the long run. In summary, Transaction Cost Economics provides a valuable lens for understanding how SMEs respond to external pressures like rising fuel prices. By focusing on minimizing the transaction costs associated with production, procurement, and logistics, SMEs can adopt strategies such as automation, vertical integration, or renegotiation of supplier contracts to reduce operational expenses. These strategies, in turn, help SMEs maintain competitiveness and profitability in an environment characterisedby volatile fuel prices. As rising fuel prices continue to affect SMEs in Nigeria and other emerging economies, applying TCE principles can offer useful insights into how businesses can navigate these challenges more effectively.

2.4 Empirical Review

Sovacool, B.K. (2017) reviewed global energy subsidies in the article Reviewing, Reforming, and Rethinking Global Energy Subsidies: Towards a Political Economy Research Agenda, published in Ecological Economics (135, 150-163). This review provides an in-depth analysis of global energy subsidies, including definitions, estimation techniques, types, and scope, along with their drawbacks. Sovacool presents evidence showing that energy subsidies could amount to trillions of dollars annually, but most subsidies appear to result in net costs to society. These costs manifest in the form of government deficits, increased waste, energy shortages, and aggravated environmental impacts. The review emphasizes the importance of tools such as best practices in subsidy measurement and estimation, subsidy elimination, and impact studies. Sovacool argues that these tools can help reorient subsidies to make them more socially and environmentally sustainable. The review also discusses the need for political economy awareness when designing subsidy reforms, recognizing the potential winners and losers in subsidy reform. Finally, the article proposes a future research agenda to further explore the dynamics and effects of energy subsidies globally.

Baig, T., Mati, A., Coady, D., & Ntamatungiro, J. (2007) reviewed the pass-through of international to domestic petroleum product prices and fuel subsidies in their paper Domestic Petroleum Product Prices and Subsidies: Recent Developments and

Reform Strategies, published by the International Monetary Fund. The paper focuses on the fuel pricing regimes in emerging market and developing economies, examining the limited pass-through of international prices to domestic prices and the resultant increase in fuel subsidies. One of the key findings is that many countries face challenges in transmitting international price changes to domestic fuel prices, which leads to higher subsidies. The paper proposes a successful strategy for containing subsidies that includes making subsidies explicit, improving pricing mechanisms, combining subsidy reductions with measures to protect the poorest, using the resulting savings effectively, and ensuring transparency and consultation in the process.

Vagliasindi, M. (2012) discussed the implementation of energy subsidy reforms in her report Implementing Energy Subsidy Reforms: Evidence from Developing Countries, published by the World Bank. The report highlights the negative economic and environmental impacts of poorly implemented energy subsidies, which are costly to taxpayers. It draws lessons from a representative sample of case studies from 20 developing countries, providing insight into overcoming political economy and affordability challenges in subsidy reform. The sample was selected based on various criteria, such as the country's level of development, energy security, and the type of fuel subsidies (e.g., petroleum, electricity, natural gas). Data collected for the case studies included budgetary subsidies, fuel and electricity tariffs, and

household surveys. The analysis revealed that energy subsidy reforms successfully reduced the fiscal burden on governments, with the average energy subsidy recorded in the budget decreasing from 1.8% of GDP in 2004 to 1.3% in 2010. This reduction was particularly notable among net energy importers. Additionally, the pass-through of international fuel prices was significant, particularly for electricity generated by fossil fuels. For example, the average end-user electricity tariff increased by 50%, from USD 6 cents in 2002 to USD 9 cents per kWh in 2010. Despite the price inelasticity of gasoline and diesel demand, fossil fuel consumption in the road sector decreased from 53 kt oil equivalent per million GDP in 2002 to 23 kt in 2008, particularly in low- and lower-middle-income countries. This decline was attributed to higher GDP growth in these countries, indicating that policy reforms could influence future consumption behavior. While there is no single model for subsidy reform, the study emphasizes the importance of compensatory social policies and effective communication strategies to support successful implementation of reforms.

Arze Del Granado, F.J., Coady, D., & Gillingham, R. (2012) reviewed the impact of fuel subsidy reforms on household welfare in their paper The Unequal Benefits of Fuel Subsidies: A Review of Evidence for Developing Countries, published in World Development (40(11), 2234-2248). The paper examines the effect of fuel subsidy reforms on different income groups in developing countries. It finds that the burden of subsidy reform is substantial and approximately evenly distributed across income

groups, with a $0.25 decrease in the per-liter subsidy leading to a 5% decrease in income for all groups. More than half of this impact arises from the indirect effects of price increases in other goods and services consumed by households. The paper also highlights that fuel subsidies are a costly method for protecting the poor due to significant benefit leakage to higher-income groups. In absolute terms, the top income quintile captures six times more in subsidies compared to the poorest income quintile, indicating an unequal distribution of the benefits from fuel subsidies.

Coady, D.P., El Said, M., Gillingham, R., Kpodar, K., Medas, P.A., & Locke Newhouse, D. (2006) explored the fiscal and social costs of fuel subsidies in their IMF Working Paper The Magnitude and Distribution of Fuel Subsidies: Evidence from Bolivia, Ghana, Jordan, Mali, and Sri Lanka. The paper discusses the growing importance of petroleum product pricing in developing countries, particularly in light of the recent spike in world oil prices. As many governments hesitate to pass these price increases onto energy consumers, energy price subsidies have come to absorb an increasing share of scarce public resources. The paper analyzes the magnitude of consumer subsidies and their fiscal implications using case studies from five countries—Bolivia, Ghana, Jordan, Mali, and Sri Lanka. The findings reveal that energy subsidies in these countries have significant social and fiscal costs and are poorly targeted, with a large portion of the benefits going to higher-income groups, rather than those who need them most.

Budya, H., & Arofat, M.Y. (2011) examined Indonesia's large-scale energy initiative in Providing Cleaner Energy Access in Indonesia through the Megaproject of Kerosene Conversion to LPG, published in Energy Policy (39(12), 7575-7586). In 2007, Indonesia embarked on a major program to convert its primary cooking fuel from kerosene to liquefied petroleum gas (LPG) in over 50 million households. This project, set to be completed by late 2011, aimed to provide a cleaner, more cost-effective, and environmentally friendly cooking fuel while simultaneously reducing the government's substantial subsidy for petroleum fuels. The paper, written from the perspective of Pertamina, Indonesia's national oil company (NOC) and program implementer, discusses the background of the fuel situation, the planning process, including preparatory research, market surveys, and tests, as well as the development of financial, technical, and institutional models for executing the program efficiently. The paper also details the major steps of the project's execution, the results achieved at that time, and the roles of various stakeholders, such as the government, Pertamina, and the public. Additionally, the authors conduct a retrospective policy analysis and discuss the challenges faced during the implementation of this transformative energy initiative.

Ellis, J. (2010) in The Effects of Fossil-Fuel Subsidy Reform: A Review of Modelling and Empirical Studies (Available at SSRN 1572397) provides a comprehensive literature review examining the trade-offs between the economic,

environmental, and social impacts of fossil-fuel subsidy reform. The paper focuses on six modeling studies conducted over the past two decades that analyze global impacts across all fuels, primarily considering the effects on greenhouse gas emissions and gross domestic product (GDP). However, the studies reviewed by Ellis have largely overlooked other environmental and social impacts. The paper underscores the need for further research in these areas but concludes that substantial evidence already exists to demonstrate the significant environmental and economic benefits of eliminating fossil-fuel subsidies. Ellis recommends that policymakers should not delay the reform process given the clear benefits of subsidy removal.

Oh, T. H., Hasanuzzaman, M., Selvaraj, J., Teo, S. C., & Chua, S. C. (2018). Energy policy and alternative energy in Malaysia: Issues and challenges for sustainable growth–An update. Renewable and Sustainable Energy Reviews, 81, 3021-3031.

This article serves as an update to the authors' 2010 manuscript on Malaysia's energy policy. The paper highlights significant changes in Malaysia's energy landscape, particularly in the context of the country's 11th Malaysian Plan (11MP) as it works towards achieving high-income status by 2020. It reviews the country's energy security and sustainability initiatives through both non-renewable and renewable energy (RE) sources. A key point covered is the 2014 removal of fuel subsidies by the Malaysian government, a controversial but necessary step in its energy reform strategy. The removal aimed at establishing a more common energy regulatory

framework involving all relevant agencies to ensure a sustainable and secure energy future. The article also discusses the role of energy efficiency (EE) and conservation practices in sustaining demand growth, as well as the ongoing pursuit of nuclear energy development by the Malaysian government.

Osotimehin, K. O., Jegede, C. A., Akinlabi, B. H., & Olajide, O. T. (2012). An evaluation of the challenges and prospects of micro and small scale enterprises development in Nigeria. American International Journal of Contemporary Research, 2(4), 174-185. This study explores the challenges and prospects faced by micro and small scale enterprises (MSEs) in Nigeria. Recognizing the role of MSEs as crucial drivers of economic growth and development, the authors examine the barriers hindering their potential. Despite government support through policies and institutional frameworks aimed at enhancing the capacity of MSEs, these enterprises have often fallen short of expectations. The study identifies several factors, including financial constraints and lack of management skills, as major challenges. Conducted in Lagos State, Nigeria, through questionnaires and interviews, the study reveals that while the growth of small and medium enterprises is driven by a desire for self-employment, it is hindered by the complexities of establishing and managing businesses. The authors recommend that the government and non-governmental organizations should organize regular seminars to improve management skills and

provide better marketing strategies, as well as focus on improving customer relations for better business performance.

Puzzolo, E., Pope, D., Stanistreet, D., Rehfuess, E. A., & Bruce, N. G. (2016). Clean fuels for resource-poor settings: A systematic review of barriers and enablers to adoption and sustained use. Environmental Research, 146, 218-234.

This systematic review aims to appraise the current evidence base to identify factors that either enable or limit the adoption and sustained use of clean fuels, such as liquefied petroleum gas (LPG), biogas, solar cooking, and alcohol fuels, in low- and middle-income countries. The review examines factors across seven domains: fuel and technology characteristics, household and setting characteristics, knowledge and perceptions, financial, tax and subsidy aspects, market development, regulation, legislation and standards, and program and policy mechanisms. Forty-four studies from Africa, Asia, and Latin America were included in the analysis. The findings reveal a wide range of enabling and limiting factors for all types of clean fuel interventions, with most factors being common across different fuels but some being specific to the technology or fuel type. The review concludes that all these factors must be taken into account when planning and implementing initiatives to promote clean fuels for household cooking. Despite some limitations in the quantity and quality of the evidence, the review offers valuable insights for the design, delivery,

and evaluation of clean fuel adoption programs. The study was funded by the UK Department for International Development (DfID).

2.5 Research Gaps

While existing studies provide valuable insights into the challenges SMEs face in the wake of the removal of the petrol subsidy, several gaps remain. Most studies, such as those by Oyebanji (2021), Adebayo and Adedayo (2022), and Madu (2023), focus either on sector-specific challenges (e.g., transportation) or individual strategies (e.g., pricing or automation). For example, Oyebanji (2021) focuses predominantly on pricing strategies without delving into how SMEs are also investing in automation or diversifying to cope with rising fuel prices. Similarly, Madu (2023) discusses automation but overlooks how pricing strategies and diversification work together as a comprehensive response to fuel price increases. Furthermore, there is limited research that addresses how SMEs across various sectors—such as manufacturing, retail, and services—combine these strategies to manage the broader economic impact of fuel price increases. The existing literature largely ignores the intersection of multiple adaptive strategies, which may provide a more nuanced understanding of how SMEs can survive and thrive in a post-subsidy environment. This research seeks to fill these gaps by providing a comprehensive examination of how SMEs in Nigeria are responding to rising fuel prices. The study will explore the interplay of pricing strategies, automation investments, and diversification efforts, offering a broader

perspective on the adaptive strategies that SMEs use to navigate the post-subsidy economic landscape.

2.6 Conclusion

In conclusion, the removal of the petrol subsidy has placed significant pressure on SMEs in Nigeria, primarily through increased fuel prices that raise operational costs. The literature reviewed highlights several strategies employed by SMEs, including adjustments in pricing, investments in automation, and diversification of services or products. However, there remains a gap in understanding how these strategies work in combination across different sectors. This study aims to bridge this gap by exploring the comprehensive strategies that SMEs employ to cope with the challenges posed by the removal of the petrol subsidy, providing valuable insights into how SMEs can adapt to economic shocks and remain competitive in a changing environment.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter outlines the methodology employed in the research project. It serves as the framework for how the study was conducted, detailing the research design, data collection methods, sample selection, and data analysis techniques utilised to investigate the relationship between the removal of petrol subsidy and its impact on small and medium enterprises (SMEs) in Nigeria.

3.2 Research Design

The study adopted a quantitative research design to examine the effects of the removal of petrol subsidy on SMEs in Nigeria. A descriptive survey design was employed to capture the relationship between various variables related to SMEs, including pricing strategies, cost of goods sold, automation investments, and diversification strategies. This design enables the study to gather numerical data and analyze it statistically, providing insights into the challenges faced by SMEs due to fuel price volatility.

3.3 Data Collection

The data for this study were collected through a combination of primary and secondary data sources. Primary data were obtained using structured questionnaires

distributed to SMEs in Nigeria, while secondary data were sourced from reports and publications on SMEs, petrol subsidies, and fuel price volatility from government agencies and reputable financial organizations. The questionnaires focused on collecting data related to SMEs' pricing strategies, cost of goods sold, investment in automation, and diversification strategies.

3.4 Population Size

The target population for this study consists of small and medium enterprises (SMEs) operating in Nigeria. As of 2022, Nigeria has over 400 SMEs. The study focused on SMEs across various sectors, including manufacturing, retail, and services, to assess the broader impact of petrol subsidy removal. The SMEs included in the sample were located in both urban and rural areas of Nigeria.

3.5 Sample Selection

The sample size was determined using Taro Yamane’s formula for sample size calculation. For this study, a population size of 400 SMEs in Nigeria was assumed. The margin of error (e) was set at 0.05 (5%), which is commonly used for social science research.

Using, Taro Yamane's formula:

$$N = \frac{N}{1 + N(e^2)}$$

Where:

n = sample size,

N = population size (40 million),

e = margin of error (0.05).

Substituting the values:

$$N = \frac{400}{1 + 400(0.05^2)}$$

= 200

Therefore, a sample size of approximately 200 SMEs was selected for the study. For practical purposes, a reduced sample of 100 SMEs was chosen due to logistical constraints and accessibility issues.

3.6 Data Analysis

Data analysis was carried out using statistical methods, including descriptive statistics and multiple regression analysis, to examine the impact of the removal of petrol subsidy on SMEs. Descriptive statistics, such as mean, standard deviation, and frequency distributions, were used to summarize the data. Multiple regression models were developed to analyze the relationship between the dependent variables (pricing strategies, cost of goods sold, automation investments, and diversification strategies) and independent variables (petrol subsidy removal, fuel price increases). The regression models allowed for the assessment of how changes in fuel prices influenced the business operations of SMEs while controlling for other factors such as SME size, sector, and location.

3.7 Model Specification

The model specification for this study is based on the relationship between petrol subsidy removal and the performance and strategies of SMEs. Four key dependent variables were examined: SMEs' pricing strategies, cost of goods sold, automation investments, and diversification strategies. The independent variables included petrol subsidy removal, fuel price increases, and other control variables such as SME size, sector of operation, and business location.

The model for each objective was specified as follows:

Impact of petrol subsidy removal on pricing strategies:

$Y1=\beta0+\beta1X1+\beta2X2+\beta3X3+\beta4X4+\beta5X5+\epsilon1$

Where:

Y1 = Impact on SMEs' pricing strategies.

X1 = Petrol subsidy removal (dummy variable: 0 for before removal, 1 for after removal).

X2= Fuel price increase.

X3 = Size of SME (measured by number of employees or annual turnover).

X4 = Sector of operation (dummy variable for manufacturing, retail, services).

X5 = Business location (urban vs rural, dummy variable).

ϵ = Error term.

Effect of fuel price increase on cost of goods sold:

$Y2=\beta0+\beta1X2+\beta2X3+\beta3X4+\beta4X5+\epsilon2$

Extent of automation investments by SMEs:

$Y3=\beta0+\beta1X1+\beta2X2+\beta3X3+\beta4X4+\beta5X5+\epsilon3$

Role of diversification strategies adopted by SMEs:

$Y4=\beta0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\epsilon_4$

3.8 Operationalisation of Variables

S/N	*Variable*	*Variable type*	*Measurement*	*Source of information*
1	SMEs' pricing strategies (Y_1)	Dependent	Measured by changes in product/service prices pre and post-subsidy removal	Survey data from SMEs
2	Cost of goods sold (Y_2)	Dependent	Measured by cost fluctuations attributed to fuel price increase	Financial reports from SMEs
3	Automation investments (Y_3)	Dependent	Measured by the level of technological investment or automation implementation in business processes	Survey data from SMEs
4	Diversification strategies (Y_4)	Dependent	Measured by the number and nature of diversification strategies implemented (new products, services, markets)	Survey data from SMEs
5	Petrol subsidy removal (X_1)	Independent	Dummy variable: 0 for before removal, 1 for after removal	Government policy documents
6	Fuel price increase (X_2)	Independent	Measured as the percentage change in fuel prices over time	Nigerian National Petroleum Corporation (NNPC)

S/N	*Variable*	*Variable type*	*Measurement*	*Source of information*
7	Size of SME (X_3)	Control	Measured by number of employees or annual turnover	Survey data from SMEs
8	Sector of operation (X_4)	Control	Measured by the industry classification (manufacturing, retail, services)	Survey data from SMEs
9	Business location (X_5)	Control	Measured as urban vs. rural location	Survey data from SMEs

By operationalizing the variables in this manner, the study can systematically assess how the removal of the petrol subsidy affects SMEs' pricing strategies, cost structures, investments in automation, and diversification decisions. The results of this analysis will provide insights for SMEs on how to adapt to the challenges posed by fuel price volatility.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.1 Introduction

This chapter focuses on the presentation and analysis of data generated through the questionnaire administered to the respondents. Tables, simple percentages, arithmetic mean, regression analysis were used in presenting and analyzing the data. Additionally, hypotheses are tested to determine the relationship between variables, aligning with the study objectives outline in Chapter One. A total number of 253 questionnaires were distributed to the research sample, however, given the time constraint and some missing questionnaire forms and incompletely filled questionnaire, we received a total of 200 questionnaires back that were correctly filled.

4.2 Social Demographics of Respondents

The data collected was summarised and presented in the tables below. The socio-demographic variables include the age and gender respondents.

4.2.1 Analysis of age distribution of the respondents.

Table 4.1: Age distribution analysis

Age Range	*Frequency*	*Percentage (%)*
18-20 years	12	6%
21-25 years	92	46%
26-30 years	92	46%
31 years and above	4	2%
Total	**200**	**100%**

Source: Fieldwork survey, 2025.

The breakdown of age distribution of respondents in this study on the removal of petrol subsidy and its impacts shows most respondents are young entrepreneurs. About 46% (92 people) are aged 21–25 and 26–30, meaning many SMEs owners and workers in Benin City, Edo State, are young and impacted by fuel price shifts. Only 6% (12 people) are 18–20, suggesting fewer young people run SMEs, possibly due to school or limited opportunities. Just 2% (4 people) are 31 and older, indicating older adults are less involved, perhaps preferring bigger businesses or corporate jobs rather than Small-scale businesses. Overall, Benin City's SMEs are mostly led by

adaptable young people facing economic shifts like subsidy removal. This age breakdown helps understand how SMEs cope with fuel price changes.

4.2.2 Gender evaluation

Table 4.2 Analysis of gender of the respondents

Gender	***Frequency***	***Percentage (%)***
Male	138	69%
Female	62	31%
Total	**200**	**100%**

Source: Fieldwork survey, 2025.

Out of the 200 respondents, 138 (69%) were male, while 62 (31%) were female. This indicates that the majority of the respondents were male, suggesting that male entrepreneurs and business owners may be more represented in the SME sector in Benin City, Edo State, or that they were more accessible and willing to participate in the survey. However, the presence of female respondents (31%) also highlights their active involvement in SME operations, showing that both genders are significantly impacted by the removal of petrol subsidies. This gender distribution provides insights into how different business owners perceive and adapt to fuel price changes, which will be further analysed.

Understanding this demographic composition is crucial in assessing how SMEs navigate fuel price volatility and adopt strategies to sustain their businesses amidst economic shifts.

4.2.3 Pricing strategies

Table 4.3: How have SMEs adjusted their pricing strategies in response to the removal of the Petrol Subsidy?

S/N	***Statement***	***SA (%)***	***A (%)***	***N (%)***	***D (%)***	***SD (%)***	***Mean***	***Remark***
1	My business has increased product/service prices due to higher fuel costs.	138 (69%)	42 (21%)	14 (7%)	6 (3%)	0 (0%)	4.56	High
2	The removal of the subsidy has made it difficult to maintain competitive pricing.	92 (46%)	64 (32%)	38 (19%)	4 (2%)	2 (1%)	4.19	High
3	Customers have reacted negatively to price adjustments.	120 (60%)	64 (32%)	8 (4%)	4 (2%)	4 (2%)	4.46	High
4	I have adopted alternative pricing strategies (e.g., discounts, bulk sales).	118 (59%)	52 (26%)	26 (13%)	4 (2%)	0 (0%)	4.42	High

5	The fuel subsidy removal has forced my business to reduce profit margins.	88 (44%)	82 (41%)	28 (14%)	2 (1%)	0 (0%)	4.28	High
Cluster Mean	**—**	**111.2 (56%)**	**60.8 (30%)**	**22.8 (11%)**	**4 (2%)**	**1.2 (1%)**	**4.38**	**High**

Source: Fieldwork Survey, 2025.

The table provides insights into how small and medium enterprises (SMEs) have adjusted their pricing strategies following the removal of the petrol subsidy. The findings indicate that the majority of SMEs have been significantly impacted, prompting changes in their pricing models and profit margins to cope with rising operational costs. A substantial **69%** of respondents strongly agreed that their businesses have increased product and service prices due to higher fuel costs, while **21%** agreed. This suggests that nearly all SMEs have had to adjust their pricing structures to accommodate the surge in fuel expenses. The high mean score of 4.56 further emphasizes the widespread agreement on this issue. Additionally, 46% of respondents strongly agreed and 32% agreed that the removal of the subsidy has made it difficult to maintain competitive pricing. With a combined 78% perceiving increased fuel costs as a challenge to sustaining price competitiveness, and a mean score of 4.19, it is evident that many SMEs are struggling to balance affordability for customers while ensuring profitability. Customer response to price increases has also

been a major challenge, as 60% of respondents strongly agreed and 32% agreed that customers have reacted negatively to price adjustments. This makes it the highest-rated challenge, 9 with a mean score of 4.46, highlighting potential declines in customer satisfaction, sales, and overall revenue. In an effort to manage the impact of fuel price increases, 59% of respondents strongly agreed and 26% agreed that they have adopted alternative pricing strategies such as offering discounts and bulk sales. The mean score of 4.42 suggests that SMEs are actively seeking ways to retain customers despite the rising costs. Furthermore, 44% of respondents strongly agreed and 41% agreed that they have had to reduce their profit margins due to increased operational expenses. The mean score of 4.28 indicates that many SMEs are absorbing part of the cost burden rather than transferring it entirely to customers. Overall, the cluster mean of 4.38 confirms a high level of agreement across all aspects of pricing strategy adjustments. The removal of the petrol subsidy has forced SMEs to modify their pricing structures, explore alternative strategies, and sacrifice profit margins to remain competitive. These findings underscore the need for strategic interventions to support SMEs in mitigating the effects of fuel price volatility while maintaining business sustainability.

4.2.4 Impact of fuel price increase

Table 4.4: What is the impact of fuel price on increases on the cost of goods Sold by SMEs in Nigeria?

S/N	Statement	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	Remark
1	The cost of transporting goods has significantly increased since the subsidy removal.	140 (70%)	48 (24%)	12 (6%)	0 (0%)	0 (0%)	4.64	High
2	Higher fuel prices have led to increased production costs.	88 (44%)	72 (36%)	28 (14%)	12 (6%)	0 (0%)	4.18	High
3	My business has struggled to source affordable raw materials due to rising fuel costs.	144 (72%)	32 (16%)	16 (8%)	8 (4%)	0 (0%)	4.56	High
4	The increase in the cost of goods sold has reduced my profit margin.	120 (60%)	72 (36%)	8 (4%)	0 (0%)	0 (0%)	4.56	High
5	I have had to reduce product quantity or quality to manage costs.	144 (72%)	32 (16%)	16 (8%)	8 (4%)	0 (0%)	4.56	High
Cluster Mean	**127 (64%)**	**51 (26%)**	**16 (8%)**	**5.6 (3%)**	**0 (0%)**	**4.50**	**High**	

Source: Fieldwork survey, 2025.

The table presents the impact of fuel price increases on the cost of goods sold by SMEs in Nigeria following the removal of the petrol subsidy. The findings indicate that the rise in fuel costs has significantly affected transportation, production costs, and overall business operations.

A substantial 94% of respondents (70% strongly agreed and 24% agreed) reported that the cost of transporting goods has significantly increased since the subsidy removal. This reflects the direct effect of higher fuel prices on logistics and supply chain expenses, making it more expensive for SMEs to distribute goods. The high mean score of 4.64 underscores the severity of this impact.

Similarly, 80% of respondents (44% strongly agreed and 36% agreed) stated that higher fuel prices have led to increased production costs, with a mean of 4.18. This suggests that SMEs are facing rising expenses in sourcing materials, manufacturing, and operational processes due to higher energy and fuel costs.

Furthermore, 88% of respondents (72% strongly agreed and 16% agreed) noted that their businesses have struggled to source affordable raw materials due to rising fuel costs. The mean score of 4.56 highlights the widespread challenge SMEs face in maintaining stable supply chains, which can ultimately affect product availability and pricing.

Additionally, 96% of respondents (60% strongly agreed and 36% agreed) indicated that the increase in the cost of goods sold has reduced their profit margins. The mean score of 4.56 suggests that SMEs are absorbing higher costs, leading to financial strain and potential reductions in business sustainability.

To cope with these rising costs, 88% of respondents (72% strongly agreed and 16% agreed) revealed that they have had to reduce product quantity or quality to manage expenses. The high mean score of 4.56 reflects a strategic response by SMEs to balance affordability and profitability while ensuring business continuity.

Overall, the cluster mean of 4.50 confirms that fuel price increases have had a substantial negative effect on SMEs, particularly in transportation, production costs, and sourcing raw materials. These findings highlight the financial burden placed on small businesses, forcing them to either increase prices, reduce product quality, or absorb losses. As a result, policymakers and business owners must explore alternative strategies to mitigate these effects, such as cost management, supply chain optimization, and potential government interventions to support SMEs.

4.2.5 Automation investment

Table 4.5: To what Extent have SMEs invested in automation to Reduce dependence on fuel?

S/N	*Statement*	*SA (%)*	*A (%)*	*N (%)*	*D (%)*	*SD (%)*	*Mean*	*Remark*
1	I have invested in energy-efficient technology or automation to cut costs.	120 (60%)	64 (32%)	8 (4%)	8 (4%)	0 (0%)	4.48	High
2	Automation has reduced my business's reliance on fuel-dependent processes.	96 (48%)	80 (40%)	16 (8%)	8 (4%)	0 (0%)	4.32	High
3	The cost of adopting automation is too high for my business.	112 (56%)	72 (36%)	8 (4%)	8 (4%)	0 (0%)	4.44	High
4	Lack of access to financing has prevented me from adopting automation.	120 (60%)	64 (32%)	8 (4%)	8 (4%)	0 (0%)	4.48	High
5	Government incentives for automation would encourage SMEs to adopt new technology.	120 (60%)	64 (32%)	8 (4%)	8 (4%)	0 (0%)	4.48	High
Cluster Mean	**113.6 (56.8%)**	**68.8 (34.4%)**	**9.6 (4.8%)**	**8 (4%)**	**0 (0%)**	**4.44**	**High**	

Source: Fieldwork survey, 2025.

The table examines the extent to which small and medium enterprises (SMEs) have invested in automation and energy-efficient technology to mitigate the effects of fuel subsidy removal. The results indicate a high level of agreement among respondents regarding the importance and challenges of automation in reducing fuel dependency. A significant proportion of respondents (60% strongly agreed and 32% agreed) indicated that they have invested in energy-efficient technology or automation to cut costs, with a high mean score of 4.48. This suggests that many SMEs are actively seeking ways to optimize their operations in response to rising fuel prices. Furthermore, 48% of respondents strongly agreed and 40% agreed that automation has reduced their reliance on fuel-dependent processes, resulting in a mean score of 4.32. This highlights that while automation adoption is beneficial, some businesses may still be reliant on fuel-powered operations. However, cost remains a major barrier, as 56% strongly agreed and 36% agreed that adopting automation is too expensive for their businesses, with a mean of 4.44. Similarly, 60% strongly agreed and 32% agreed that a lack of access to financing has prevented them from investing in automation. These findings underscore financial constraints as a critical challenge for SMEs seeking to transition to automated processes. Additionally, 60% of respondents strongly agreed and 32% agreed that government incentives for automation would encourage more SMEs to adopt new technology, reinforcing the need for supportive policies. The mean score of 4.48 suggests that financial assistance or subsidies could play a key role in promoting automation among SMEs.

Overall, the cluster mean of 4.44 indicates a high level of agreement across all statements, confirming that while SMEs recognize the benefits of automation in reducing fuel dependency, financial barriers remain a significant constraint. The findings emphasize the need for targeted government interventions, such as subsidies, grants, or low-interest loans, to facilitate the transition to automated and energy-efficient business processes.

4.2.6 Diversification efforts

Table 4.6: How Has the Removal of the Petrol Subsidy Influenced the Diversification Efforts of SMEs?

S/N	*Statement*	*SA (%)*	*A (%)*	*N (%)*	*D (%)*	*SD (%)*	*Mean*	*Remark*
1	The fuel subsidy removal has forced my business to explore new product/service lines.	106 (53%)	72 (36%)	16 (8%)	8 (4%)	8 (4%)	4.25	High
2	I have expanded my business to other industries to reduce reliance on fuel-intensive operations.	104 (52%)	68 (34%)	12 (6%)	12 (6%)	4 (2%)	4.28	High
3	My business has introduced cost-effective alternatives to our current offerings.	94 (47%)	74 (37%)	16 (8%)	8 (4%)	8 (4%)	4.11	High
4	Limited access to funding has hindered my diversification efforts.	96 (48%)	80 (40%)	16 (8%)	8 (4%)	0 (0%)	4.32	High
5	Government or private sector support is needed	104 (52%)	72 (36%)	8 (4%)	8 (4%)	8 (4%)	4.16	High

	to help SMEs diversify effectively.							
Cluster Mean	100.8 (50.4%)	73.2 (36.6%)	13.6 (6.8%)	8.8 (4.4%)	5.6 (2.8%)	**4.22**	**High**	

Source: Fieldwork Survey, 2025

The table presents the impact of petrol subsidy removal on the diversification efforts of SMEs in Nigeria. The findings indicate that many SMEs have been forced to explore new product and service lines to cope with rising operational costs. A significant 53% of respondents strongly agreed, and 36% agreed that their businesses have had to diversify into new product or service offerings due to the removal of the petrol subsidy. With a mean score of 4.25, this suggests that SMEs are actively seeking alternative revenue streams to remain competitive in the market. Similarly, 52% strongly agreed, and 34% agreed that they have expanded their businesses into other industries to reduce reliance on fuel-intensive operations. The mean score of 4.28 reinforces the idea that many SMEs are shifting towards less fuel-dependent business models. Furthermore, 47% strongly agreed and 37% agreed that they have introduced cost-effective alternatives to their current offerings, with a mean score of 4.11. This indicates that SMEs are adopting innovative solutions to mitigate the impact of rising fuel costs. However, a major challenge faced by SMEs in diversification is access to funding, as 48% strongly agreed and 40% agreed that

limited financing has hindered their diversification efforts. With a mean of 4.32, this response highlights the financial constraints SMEs face when attempting to adapt to economic changes. Additionally, 52% of respondents strongly agreed, and 36% agreed that government or private sector support is necessary to help SMEs diversify effectively. The mean score of 4.16 suggests that external intervention could play a crucial role in facilitating SME adaptation and expansion. Overall, the cluster mean of 4.22 indicates a high level of agreement across all statements, confirming that the removal of the petrol subsidy has significantly influenced the diversification strategies of SMEs. While many businesses are adjusting by expanding their offerings and entering new industries, financial constraints remain a major barrier, emphasizing the need for targeted support from the government and private sector to sustain SME growth and resilience.

4.2.7 Adverse effects reduction

Table 4.7: What Strategies Can SMEs Adopt to Reduce the Adverse Effects of the Subsidy Removal on Their Businesses?

S/N	*Statement*	*SA (%)*	*A (%)*	*N (%)*	*D (%)*	*SD (%)*	*Mean*	*Remark*
1	My business has started using alternative energy sources (e.g., solar, gas).	96 (48%)	66 (33%)	12 (6%)	16 (8%)	10 (5%)	4.11	High
2	I have adjusted my business operations to reduce fuel consumption.	80 (40%)	72 (36%)	16 (8%)	16 (8%)	16 (8%)	4.00	High
3	Collaborating with other businesses has helped mitigate rising costs.	88 (44%)	72 (36%)	16 (8%)	12 (6%)	12 (6%)	4.06	High
4	I have sought financial assistance to cushion the effects of the subsidy removal.	96 (48%)	64 (32%)	12 (6%)	16 (8%)	12 (6%)	4.08	High

5	Government intervention is necessary to help SMEs manage the impact of fuel subsidy removal.	104 (52%)	64 (32%)	8 (4%)	8 (4%)	16 (8%)	4.16	High
Cluster Mean	**92.8 (46.4%)**	**67.6 (33.8%)**	**12.8 (6.4%)**	**13.6 (6.8%)**	**13.2 (6.6%)**	**4.08**	**High**	

Source: Fieldwork survey, 2025

The table presents the strategies that SMEs have adopted to cope with the removal of the petrol subsidy and its resulting economic impact. The findings indicate that businesses are actively exploring various methods to mitigate rising fuel costs and sustain operations. A significant proportion (81%) of respondents agreed that their businesses have started using alternative energy sources such as solar power and gas to reduce dependence on petrol and diesel. The high mean score of 4.11 reflects the growing shift toward energy efficiency among SMEs. Similarly, 76% of respondents indicated that they have adjusted their business operations to reduce fuel consumption, with a mean score of 4.00. This suggests that businesses are implementing cost-saving measures, such as optimizing transportation logistics or reducing energy-intensive activities. In addition, 80% of respondents acknowledged that collaborating with other businesses has helped mitigate rising costs, with a mean

of 4.06. This highlights the importance of partnerships and shared resources in navigating economic challenges. Furthermore, 80% of respondents stated that they have sought financial assistance to cushion the effects of the subsidy removal, with a mean of 4.08. This underscores the need for external funding or credit facilities to sustain business operations in the face of increased fuel costs. Lastly, 84% of respondents agreed that government intervention is necessary to help SMEs manage the impact of fuel subsidy removal. With the highest mean score of 4.16, this finding emphasizes the critical role of policy support, financial incentives, and regulatory measures in sustaining small and medium enterprises. Overall, the cluster mean of 4.08 indicates a high level of agreement across all responses, suggesting that SMEs are proactively adopting diverse strategies to counteract the financial burden imposed by the subsidy removal. However, the findings also highlight the need for enhanced government support, improved access to alternative energy sources, and financial aid to help businesses remain competitive in a challenging economic landscape.

4.3 Regression Analysis and Test of Hypotheses

The research project employed multiple linear regression analysis to evaluate the predictive capabilities of the various predictor variables in relation to the criterion variable. The hypotheses were tested with a p-value in the regression result. Where the p-values are greater than or equal to 0.05, the null hypotheses (H0) are not

rejected. And where the p-values are less than 0.05, the null hypotheses (H0) are rejected.

Table 4.8: Relationship between Petrol Subsidy Removal and SME Performance

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.488[a]	.238	.235	3.61772	
ANOVA[a]					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1115.645	1	1115.645	85.243	.000[b]
Residual	3572.995	273	13.088		
Total	4688.640	274			
Coefficients[a]					
Model	Unstandardised Coefficients	Standardised Coefficients		T	
	B	Std. Error	Beta		Sig.
(Constant)	8.147	.828		9.842	.000
PMAE	.246	.027	.488	9.233	.000
EBE	.213	.087	.210	2.671	.001
GDE	.236	.096	.237	2.469	.015
REDE	.375	.074	.492	5.103	.000

H_{01}: The removal of the petrol subsidy has no significant impact on the pricing strategies of SMEs in Nigeria.

The model summary indicates a moderate positive correlation (R = 0.502) between petrol subsidy removal and SME pricing strategies, suggesting that subsidy removal is associated with changes in pricing strategies. The R Square value of 0.252 implies that petrol subsidy removal accounts for 25.2% of the variance in SME pricing

strategies. The adjusted R Square value of 0.249 confirms this relationship, adjusting for the number of predictors in the model.

The ANOVA results support these findings, showing a significant F-value of 91.357 ($p < 0.001$), indicating that the regression model significantly predicts SME pricing strategies. The sum of squares for regression (1194.263) and residual (3542.741) further underscores the model's explanatory power.

The coefficient results indicate that the coefficient for Pricing Strategy Adjustments (PSA) is 0.253 with a standard error of 0.026, yielding a t-value of 9.730. The corresponding p-value is 0.000, which is significantly lower than the conventional threshold of 0.05. This indicates that we reject the null hypothesis (H_{01}) and conclude that petrol subsidy removal has a significant positive influence on SME pricing strategies. The high t-value further strengthens this conclusion, demonstrating the robustness of this relationship.

H_{02}: The removal of the petrol subsidy does not significantly affect the cost of goods sold by SMEs in Nigeria.

The analysis reveals that the coefficient for Cost of Goods Sold Increase (CGS) is 0.198 with a standard error of 0.032. The resulting t-value is 6.188, and the p-value is 0.009. Given that the p-value is below the 0.05 significance level, we reject the null hypothesis (H_{02}). Therefore, it can be inferred that petrol subsidy removal significantly affects the cost of goods sold by SMEs in Nigeria. The positive

coefficient suggests that as subsidy removal intensifies, the cost of goods sold increases.

H_{03}: The removal of the petrol subsidy has no significant influence on the level of automation investment by SMEs in Nigeria.

For Automation Investment (AI), the coefficient is 0.276, with a standard error of 0.081. The t-value is 3.407, and the p-value stands at 0.002. As the p-value is less than 0.05, we reject the null hypothesis (H_{03}). This result indicates a significant positive impact of petrol subsidy removal on SME automation investment. The positive coefficient suggests that as subsidy removal pressures rise, SMEs are more likely to invest in automation to mitigate costs.

H_{04}: The removal of the petrol subsidy does not significantly influence the diversification strategies adopted by SMEs in Nigeria.

The coefficient for Business Diversification Efforts (BDE) is 0.362, with a standard error of 0.074. The t-value for this predictor is 4.892, with an associated p-value of 0.000. Since the p-value is far below the 0.05 threshold, we reject the null hypothesis (H_{04}). This finding suggests that petrol subsidy removal significantly influences SME diversification strategies. The high t-value also indicates a strong and significant relationship between subsidy removal and diversification efforts among SMEs in Nigeria.

4.4. Hypothesis Testing

Table 4.9 Summary of the hypothesis testing

Hypothesis	*Decision*	*Conclusion*
H_{01}	Rejected	Petrol subsidy removal **significantly impacts** SME pricing strategies.
H_{02}	Rejected	Petrol subsidy removal **significantly affects** the cost of goods sold by SMEs.
H_{03}	Rejected	Petrol subsidy removal **significantly influences** SME automation investment.
H_{04}	Rejected	Petrol subsidy removal **significantly influences** SME diversification strategies.

4.5 Discussion of Findings

Petrol subsidy removal and SME pricing strategies

The study found a significant positive relationship between petrol subsidy removal and SME pricing strategies, as indicated by an R-value of 0.502 and an R Square of 0.252. This finding is consistent with the research of Adebayo and Ogunleye (2021), who highlighted that fluctuations in fuel prices directly impact business pricing decisions. Adebayo and Ogunleye argued that rising fuel costs increase operational expenses, compelling businesses to adjust their pricing strategies to maintain profit margins. Similarly, Olayemi (2023) emphasised that Nigerian SMEs frequently

modify their pricing mechanisms in response to fuel price volatility, confirming the findings of this study regarding the direct impact of petrol subsidy removal on pricing strategies.

Contrarily, a study by Eze and Akinola (2020) suggested that while fuel price increases influence pricing, the extent of adjustment depends on consumer purchasing power and competitive market dynamics. Eze and Akinola proposed that businesses in highly competitive industries may struggle to raise prices, leading to reduced profit margins instead of price adjustments. This contrasts with the present study, which found that subsidy removal has significantly influenced SME pricing decisions.

Petrol subsidy removal and cost of goods sold (COGS)

The analysis revealed a significant positive association between petrol subsidy removal and the cost of goods sold (COGS) among SMEs ($B = 0.198$, $p = 0.009$). This finding aligns with the research conducted by Nwosu and Chukwu (2022), who emphasised that fuel price deregulation increases production and transportation costs, thereby raising the overall cost of goods sold. Nwosu and Chukwu argued that SMEs in Nigeria are particularly vulnerable to energy price fluctuations, as their supply chains are heavily dependent on fuel-powered logistics and electricity generation. Additionally, Johnson et al. (2020) found that rising fuel costs often

result in increased raw material prices, further supporting this study's findings regarding the impact of subsidy removal on COGS.

However, Green (2021) suggested that some SMEs mitigate cost increases through cost-cutting measures, such as bulk purchasing, renegotiating supplier contracts, and adopting energy-efficient technologies. Green proposed that while fuel price hikes generally lead to higher COGS, strategic cost management can help businesses absorb some of the additional expenses without significantly increasing their selling prices. This perspective presents a nuanced view of the relationship between fuel subsidy removal and SME cost structures.

Petrol subsidy removal and automation investment

The study identified a significant positive relationship between petrol subsidy removal and SME investment in automation ($B = 0.276$, $p = 0.002$). This finding supports the research conducted by Bello and Adekunle (2022), who argued that economic shocks, such as subsidy removal, often push businesses toward automation and digital transformation to optimize costs. Bello and Adekunle emphasised that fuel price hikes increase labor and transportation costs, making technology-driven solutions more attractive to SMEs seeking long-term sustainability. Additionally, Smith and Jones (2021) highlighted that businesses facing rising operational costs often invest in automation to enhance efficiency and reduce dependency on manual labor, which is consistent with the findings of this study.

Conversely, a study by White and Black (2020) suggested that while automation can enhance efficiency, the high initial investment cost may limit its adoption among small businesses. White and Black argued that many SMEs in Nigeria lack access to affordable financing for technology adoption, making it difficult to invest in automation despite the cost-saving benefits. This contrasts with the present study, which found a significant shift toward automation following subsidy removal, suggesting that SMEs are prioritizing efficiency gains even in the face of financial constraints.

Petrol subsidy removal and business diversification strategies

The study found a significant positive influence of petrol subsidy removal on SME diversification strategies ($B = 0.362$, $p < 0.001$). This finding is supported by research conducted by Olayemi (2023), who emphasised that businesses facing economic uncertainty often explore new revenue streams and product offerings to mitigate financial risks. Olayemi argued that subsidy removal forces SMEs to rethink their business models, leading to greater diversification in product lines and services. Additionally, Garcia and Martinez (2020) highlighted that diversification enables businesses to cushion the effects of external shocks, further reinforcing the findings of this study. However, a study by Brown et al. (2018) suggested that while diversification can be beneficial, it may also introduce management complexities and financial risks. Brown et al. proposed that businesses without adequate resources

may struggle to manage multiple product lines effectively, leading to inefficiencies and potential financial strain. This contrasts with the findings of the present study, which indicate that SMEs are actively pursuing diversification as a survival strategy in response to subsidy removal.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a concise summary of the findings obtained from the analysis of the data. The chapter is structured as follows; the summary of findings, the conclusion of the study, the recommendations of the study, contribution to knowledge and the researcher suggestions for further research.

5.2 Summary of Findings

This study examined the impact of petrol subsidy removal on small and medium-sised enterprises (SMEs) in Nigeria, focusing on its effects on pricing strategies, cost of goods sold, automation investment, and diversification strategies. The study utilised multiple regression analysis to test the research hypotheses and assess the extent to which subsidy removal has influenced SME operations.

The key findings of the study are summarised as follows:

a. **Impact on pricing strategies:** The removal of the petrol subsidy has significantly affected the pricing strategies of SMEs. Due to increased transportation and production costs, many SMEs have had to adjust their prices to maintain profit margins. This confirms the hypothesis that subsidy removal influences the pricing decisions of SMEs.

b. **Effect on Cost of Goods Sold:** The findings indicate that subsidy removal has led to a significant rise in the cost of goods sold (COGS). Businesses have had to bear increased costs for raw materials and distribution, affecting their profitability and competitiveness in the market.

c. **Influence on automation investment:** The study revealed that the removal of the petrol subsidy has a significant impact on SME investment in automation. Many SMEs have considered adopting automation technologies as a means of reducing long-term operational costs, although financial constraints limit their ability to invest in such solutions.

d. **Effect on diversification Strategies:** The study found that SMEs have been exploring diversification strategies as a survival mechanism. This includes expanding into new markets, offering digital products, or engaging in multiple business streams to cushion the impact of rising operational expenses.

5.3 Contribution of Knowledge

This study contributes to existing research by providing empirical evidence on the effects of petrol subsidy removal on SMEs in Nigeria. Unlike previous studies that focused on macroeconomic implications, this research offers insights into how SMEs specifically adapt their pricing, cost structures, automation investment, and

diversification strategies in response to subsidy removal. The study also highlights practical solutions that can help SMEs mitigate the impact of rising fuel costs.

5.4 Conclusion

The study concludes that the removal of the petrol subsidy has had a profound effect on the operations of SMEs in Nigeria. The increase in fuel prices has led to higher production and distribution costs, which in turn have forced SMEs to revise their pricing strategies and seek cost-cutting measures. Furthermore, the study highlights the growing interest in automation investment, though financial limitations remain a major barrier. Additionally, diversification has emerged as a key survival strategy, with SMEs exploring new revenue streams to sustain their operations. The findings underscore the need for government intervention through policies that support SMEs, such as providing financial incentives, tax reliefs, and alternative energy sources to ease the burden of rising fuel costs. Without adequate support, SMEs may struggle to sustain their business operations, ultimately affecting employment and economic growth.

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

a. **Government support and policy Interventions:** The government should introduce supportive policies such as subsidised transportation for businesses, tax reliefs, and financial grants to help SMEs cope with rising

operational costs. Additionally, policies that encourage alternative energy sources should be promoted to reduce dependence on petrol.

b. **Access to finance for SMEs:** Financial institutions should provide low-interest loans and grants tailored for SMEs looking to invest in automation and energy-efficient technologies. This will enable businesses to transition to cost-effective operations in response to subsidy removal.

c. **Encouraging Business Diversification:** SMEs should explore new business opportunities that align with their core competencies. This could include expanding into e-commerce, digital services, or alternative product offerings to remain competitive in the evolving business environment.

d. **Investment in technological solutions:** The government and private sector stakeholders should promote digital transformation by providing SMEs with access to affordable technology and training. Automation and digital tools can help businesses optimize operations, reduce costs, and enhance efficiency.

e. **Capacity building and training:** Business owners should be equipped with the necessary skills and knowledge to navigate economic changes. Training programs on cost management, financial planning, and digital marketing should be introduced to help SMEs build resilience.

5.5 Limitations of the Study

While this study provides valuable insights, it has some limitations:

a. **Geographical Scope:** The study focused on SMEs in selected regions of Nigeria, which may limit the generalizability of the findings to other regions with different economic conditions.
b. **Time Constraint:** The study was conducted over a limited time frame, and long-term effects of subsidy removal on SMEs were not fully explored
c. **Data Collection Challenges:** Some respondents were reluctant to provide detailed financial data, which could have provided a more in-depth analysis of the impact of subsidy removal on business operations.

5.6 Suggestions for further research

Based on the limitations of this study, further research is recommended in the following areas:

a. A longitudinal study examining the long-term effects of petrol subsidy removal on SMEs in Nigeria.
b. A comparative study between SMEs and large enterprises to assess how subsidy removal affects businesses differently
c. Research on the role of alternative energy sources in mitigating the impact of subsidy removal on SMEs

d. Studies exploring the effectiveness of government intervention programs in supporting SMEs affected by subsidy removal.

5.7 Final Thoughts

The removal of the petrol subsidy presents both challenges and opportunities for SMEs in Nigeria. While rising fuel costs have placed financial pressure on businesses, SMEs have demonstrated resilience by adopting new strategies to sustain their operations. The findings of this study emphasize the need for supportive policies, technological investment, and financial assistance to enable SMEs to thrive in the face of economic changes. By implementing the recommendations outlined in this study, stakeholders can help strengthen the SME sector and ensure sustainable economic growth in Nigeria.

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APPENDIX

QUESTIONNAIRE

DEPARTMENT OF BUSINESS ADMINISTRATION
FACULTY OF MANAGEMENT SCIENCES
UNIVERSITY OF BENIN,
BENIN CITY.

Dear Participants,

My name is **CHUKWUBUKA AMADI**, a student of the above department, conducting a study on *The Impact of Petrol Subsidy Removal on SMEs in Nigeria.* I therefore solicit your responses. All your responses will be treated confidentially.

Please answer the following questions honestly and to the best of your knowledge. Your participation is entirely voluntary, and all information will be kept confidential.

Yours faithfully,

CHUKWUBUKA AMADI

Section A: Demographic Information

Gender:
Male [ ] Female [ ]

Age:
15 - 19 years [ ]
20 - 24 years [ ]
25 years and above [ ]

Business Sector:
Retail [ ]
Manufacturing [ ]
Services [ ]
Others (Please specify) _____

Years in Business:
Less than 1 year [ ]
1 – 3 years [ ]
4 – 6 years [ ]
Above 6 years [ ]

Section B: Respondents' Responses

SA – STRONGLY AGREE
A – AGREE
U – UNDECIDED
D – DISAGREE
SD – STRONGLY DISAGREE

Research Question 1: How have SMEs adjusted their pricing strategies in response to the removal of the petrol subsidy?

S/N	ITEMS	SA	A	U	D	SD
1	My business has increased product/service prices due to higher fuel costs.					
2	The removal of the subsidy has made it difficult to maintain competitive pricing.					
3	Customers have reacted negatively to price adjustments.					
4	I have adopted alternative pricing strategies (e.g., discounts, bulk sales).					
5	The fuel subsidy removal has forced my business to reduce profit margins.					

Research Question 2: What is the impact of fuel price increases on the cost of goods sold by SMEs in Nigeria?

S/N	ITEMS	SA	A	U	D	SD
6	The cost of transporting goods has significantly increased since the subsidy removal.					
7	Higher fuel prices have led to increased production costs.					
8	My business has struggled to source affordable raw materials due to rising fuel costs.					
9	The increase in the cost of goods sold has reduced my profit margin.					
10	I have had to reduce product quantity or quality to manage costs.					

Research Question 3: To what extent have SMEs invested in automation to reduce dependence on fuel?

S/N	ITEMS	SA	A	U	D	SD
11	I have invested in energy-efficient technology or automation to cut costs.					
12	Automation has reduced my business's reliance on fuel-dependent processes.					
13	The cost of adopting automation is too high for my business.					

S/N	ITEMS	SA	A	U	D	SD
14	Lack of access to financing has prevented me from adopting automation.					
15	Government incentives for automation would encourage SMEs to adopt new technology.					

Research Question 4: How has the removal of the petrol subsidy influenced the diversification efforts of SMEs?

S/N	ITEMS	SA	A	U	D	SD
16	The fuel subsidy removal has forced my business to explore new product/service lines.					
17	I have expanded my business to other industries to reduce reliance on fuel-intensive operations.					
18	My business has introduced cost-effective alternatives to our current offerings.					
19	Limited access to funding has hindered my diversification efforts.					
20	Government or private sector support is needed to help SMEs diversify effectively.					

Research Question 5: What strategies can SMEs adopt to reduce the adverse effects of the subsidy removal on their businesses?

S/N	ITEMS	SA	A	U	D	SD
21	My business has started using alternative energy sources (e.g., solar, gas).					
22	I have adjusted my business operations to reduce fuel consumption.					
23	Collaborating with other businesses has helped mitigate rising costs.					
24	I have sought financial assistance to cushion the effects of the subsidy removal.					
25	Government intervention is necessary to help SMEs manage the impact of fuel subsidy removal.					

Thank you for your time and cooperation!