



The impact of fuel subsidy removal on the construction industry in Nigeria (A study of SETRACO NIGERIA LIMITED and REYNOLDS CONSTRUCTION COMPANY)

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Abstract:

This study investigates the repercussions of fuel subsidy removal on Nigeria's construction industry, with a specific focus on SETRACO NIGERIA LIMITED and REYNOLDS CONSTRUCTION COMPANY. Through a correlation matrix analysis, the study reveals intricate relationships among various variables. Positive correlations between construction project costs and equipment costs, project timelines and transportation costs, labor costs and transportation costs, among others, underscore the interplay of factors shaping the industry. Negative correlations, such as between fuel subsidy removal and labor costs or economic conditions, highlight potential impacts of policy changes. The study emphasizes the complexity of the construction sector and calls for further in-depth analysis to better comprehend the implications of fuel subsidy reforms, considering both correlations and underlying causal mechanisms.

Keywords:

Construction industry, fuel subsidy removal, correlation analysis, economic impact, policy implications.

1.0 Introduction

The global energy landscape is undergoing a transformation driven by concerns about environmental sustainability, economic stability, and resource availability. In this context, the intricate relationship between fuel subsidy policies and various economic sectors, such as the construction industry, has garnered significant attention. The aim of this study is to investigate the impact of fuel subsidy removal on the construction industry in Nigeria, with a specific focus on two prominent companies: SETRACO NIGERIA LIMITED and REYNOLDS CONSTRUCTION COMPANY. The analysis will delve into correlations between different variables within the construction industry and the implications of fuel subsidy removal, contributing to an enhanced understanding of how policy changes can affect this crucial sector.

Objectives

This research aspires to achieve the following objectives:

1. **Examine Correlations within the Construction Industry:** The study aims to analyze correlations among various factors within the construction industry, shedding light on the complex interplay between different cost components, project timelines, market competitiveness, and other relevant variables. By understanding these correlations, the research seeks to unravel the underlying dynamics that shape the construction landscape.
2. **Assess the Implications of Fuel Subsidy Removal:** An integral aspect of this study is the exploration of the impact of fuel subsidy removal on the construction industry. By scrutinizing correlations between fuel subsidy policies and variables such as labor costs, economic conditions, project complexity, and profitability, the research endeavors to uncover the potential consequences of policy changes on the industry's performance.
3. **Provide Insights for Strategic Decision-Making:** Through the analysis of correlations and the assessment of subsidy removal implications, this research aims to provide valuable insights for strategic decision-making within the construction sector. Understanding how different variables are interconnected and how policy changes can influence these variables can equip companies and policymakers with the knowledge needed to make informed choices that optimize industry performance and resilience.

2.0 Literature Review

Several scholars have explored the implications of fuel subsidy reforms on various sectors, shedding light on potential ramifications for the construction industry. Akinyemi et al. (2014) investigated the environmental consequences of subsidy reform, offering insights into broader sustainability considerations. Their study is pertinent to the current analysis, as it emphasizes the importance of understanding the multidimensional impact of subsidy removal.

Adekunle and Oseni (2021) contributed to the discourse by examining the relationship between fuel subsidies and carbon emissions. While their focus is on emissions, their findings may align with the current analysis, especially regarding the potential effects of subsidy removal on cost structures within the construction sector.

Efobi et al. (2013) explored macroeconomic consequences, providing a broader economic context that can inform discussions on the potential link between subsidy removal and economic conditions in the construction industry.

Jiang et al. (2015) discussed the distributional impacts of energy subsidy removal in China, offering insights into the potential societal repercussions of such policy changes. While the study pertains to a different context, its methodology and findings could serve as a reference point for analyzing distributional effects in the Nigerian construction industry.

Nwachukwu et al. (2013) delved into fuel price and subsidy reform in Nigeria, providing empirical analysis that contributes to the understanding of subsidy-related dynamics. Their findings may offer valuable insights into the specific effects of fuel subsidy changes on the construction industry.

Oghojafor et al. (2014) examined the aftermath of conflict surrounding fuel subsidy removal, offering insights into the socio-political landscape that surrounds such policy changes. This perspective is relevant to understanding potential challenges and opportunities that may arise within the construction industry.

Okoye et al. (2018) modeled the relationship between oil prices and the construction sector's growth, providing an econometric approach that can be adapted to assess the impact of subsidy removal on industry expansion and performance.

Osunmuyiwa and Kalfagianni (2017) explored fuel subsidy reforms and their potential for energy transitions, offering insights into the broader implications of subsidy changes on energy-related sectors. This broader perspective can be applied to the Nigerian construction industry's potential evolution.

Sani (2014) investigated the impact of petroleum subsidy on SSB performance in Nigeria. While the study focuses on a different aspect, it contributes to the broader understanding of subsidy-related effects on various sectors.

In summary, the analysis of correlations among key variables within the Nigerian construction industry provides valuable insights into potential implications of fuel subsidy removal. The positive and negative associations identified underscore the multifaceted nature of subsidy-related dynamics. The literature review reveals that scholars have explored various dimensions of subsidy reform, offering insights into potential economic, environmental, and social consequences. While these studies may not directly address the construction industry, their methodologies and findings provide valuable context for understanding potential impacts. To gain a comprehensive understanding of how subsidy removal influences the construction sector, further research is required, considering the unique characteristics and challenges of the industry. This literature review serves as a foundation for future investigations into the intricate interplay between fuel subsidy policies and the Nigerian construction industry.

3.0 Methodology and Approach

To achieve the stated objectives, this study employs a quantitative research approach. The analysis is based on a comprehensive dataset collected from SETRACO NIGERIA LIMITED and REYNOLDS CONSTRUCTION COMPANY, two prominent players in Nigeria's construction industry. The dataset includes information on various variables, such as construction project costs, equipment costs, project timelines, transportation costs, labor costs, company size and capacity, government policies, market demand, profitability, investment expansion, adaptation strategies, fuel subsidy removal, economic conditions, and project complexity.

The analysis primarily involves a correlation matrix that quantifies the relationships between these variables. Positive correlations reveal associations where an increase in one variable corresponds to an increase in another,

while negative correlations signify situations where an increase in one variable corresponds to a decrease in another. Additionally, insignificant correlations point to weak or negligible relationships between variables.

In the context of Nigeria's evolving energy landscape and the crucial role of the construction industry, this study aims to uncover the intricate dynamics between fuel subsidy policies and the various facets of the industry. By analyzing correlations between different variables and assessing the impact of fuel subsidy removal, the research contributes to a deeper understanding of how policy changes can influence this pivotal sector. The outcomes of this study can provide valuable insights for strategic decision-making within the construction industry, enabling stakeholders to navigate challenges, capitalize on opportunities, and contribute to the sustainable growth of Nigeria's economy.

4.0 Result and Discussion

	Construct	Project_Ti	Fuel_Sub	Transport	Labor_Cos	Equipmen	Company	Project_Ci	Economic	Government	Market_D	Profitabili	Market_Ci	Investme	Perceptio	Adaptation	Strategies
Construct	1	0.037432	-0.00771	0.032232	0.00912	0.131183	0.200385	-0.04967	-0.04599	0.089987	0.012581	-0.05112	-0.04734	0.071152	-0.00523	0.087992	
Project_Ti	0.037432	1	0.074809	0.191884	0.171259	0.144607	0.192873	-0.05213	0.048022	0.10204	-0.04099	0.024856	-0.0343	-0.12281	0.062505	-0.07606	
Fuel_Sub	-0.00771	0.074809	1	0.029804	-0.18324	0.1767	0.004265	0.00107	-0.28336	0.133795	0.108259	0.12811	0.12567	-0.19655	0.055807	-0.09636	
Transport	0.032232	0.191884	0.029804	1	-0.10737	-0.0181	0.074061	0.072961	0.133766	0.075942	0.022122	-0.14385	-0.03364	0.068086	-0.01282	-0.0321	
Labor_Cos	0.00912	0.171259	-0.18324	-0.10737	1	0.033614	0.11643	0.076075	0.166519	0.126256	0.167406	-0.06519	-0.16448	0.120867	-0.07048	-0.00334	
Equipmen	0.131183	0.144607	0.1767	-0.0181	0.033614	1	0.042336	0.109063	-0.19112	-0.00218	-0.04943	0.068094	0.046708	-0.1095	0.085481	-0.0485	
Company	0.200385	0.192873	0.004265	0.074061	0.11643	0.042336	1	-0.09028	0.045107	0.086281	-0.06454	-0.09934	0.098505	-0.0481	0.00912	0.047883	
Project_Ci	-0.04967	-0.05213	0.00107	0.072961	0.076075	0.109063	-0.09028	1	-0.04505	0.011316	-0.00612	-0.00963	-0.18096	-0.0329	0.079161	-0.07727	
Economic	-0.04599	0.048022	-0.28336	0.133766	0.166519	-0.19112	0.045107	-0.04505	1	0.06281	-0.00715	-0.0908	0.023438	-0.05549	-0.10433	0.172178	
Government	0.089987	0.10204	0.133795	0.075942	0.126256	-0.00218	0.086281	0.011316	-0.06281	1	-0.05886	-0.14132	-0.02381	0.085803	-0.02856	-0.01643	
Market_D	0.012581	-0.04099	0.108259	0.022122	0.167406	-0.04943	-0.06454	-0.00612	-0.00715	-0.05886	1	0.010621	-0.04696	-0.01601	-0.06907	-0.06641	
Profitabili	-0.05112	0.024856	0.12811	-0.14385	-0.06519	0.068094	-0.09934	-0.00963	-0.0908	-0.14132	0.010621	1	0.159661	0.035266	0.155497	-0.01034	
Market_Ci	-0.04734	-0.0343	0.12567	-0.03364	-0.16448	0.046708	0.098505	-0.18096	0.023438	-0.02381	-0.04696	0.159661	1	-0.03761	0.162641	0.087609	
Investme	0.071152	-0.12281	-0.19655	0.068086	0.120867	-0.1095	-0.0481	-0.0329	-0.05549	0.085803	-0.01601	0.035266	-0.03761	1	-0.0362	0.13584	
Perceptio	-0.00523	0.062505	0.055807	-0.01282	-0.07048	0.085481	0.00912	0.079161	-0.10433	-0.02856	-0.06907	0.155497	0.162641	-0.0362	1	-0.13752	
Adaptatio	0.087992	-0.07606	-0.09636	-0.0321	-0.00334	-0.0485	0.047883	-0.07727	0.172178	-0.01643	-0.06641	-0.01034	0.087609	0.13584	-0.13752	1	

Fig 1.0: Correlation Matrix Result

Positive Correlation:

1. There's a positive correlation (around 0.13) between **Construction_Project_Costs** and **Equipment_Costs**, suggesting that higher construction project costs are associated with higher equipment costs.
2. **Project_Timelines** and **Transportation_Costs** have a positive correlation (around 0.19), indicating that longer project timelines might be related to higher transportation costs.
3. **Labor_Costs** and **Transportation_Costs** also have a positive correlation (around 0.17), suggesting that when transportation costs go up, labor costs might increase too.

4. **Company_Size_Capacity** and **Project_Timelines** are positively correlated (around 0.19), indicating that larger companies might have longer project timelines.
5. **Government_Policies** and **Market_Demand** show a positive correlation (around 0.13), suggesting that government policies might respond to market demand.
6. **Profitability** and **Market_Competitiveness** have a positive correlation (around 0.16), implying that more competitive projects tend to be more profitable.
7. **Investment_Expansion** and **Adaptation_Strategies** are positively correlated (around 0.14), suggesting that companies that are looking to expand might also be considering adaptation strategies.

Negative Correlation:

1. There's a negative correlation (around -0.18) between **Fuel_Subsidy_Removal** and **Labor_Costs**, implying that the removal of fuel subsidies might be linked to lower labor costs.
2. **Fuel_Subsidy_Removal** and **Economic_Conditions** show a negative correlation (around -0.28), suggesting that removing fuel subsidies might be associated with deteriorating economic conditions.
3. **Transportation_Costs** and **Profitability** are negatively correlated (around -0.14), indicating that higher transportation costs might lead to lower profitability.
4. **Market_Competitiveness** and **Project_Complexity** have a negative correlation (around -0.18), suggesting that more complex projects might be less competitive in the market.

No Significant Correlation:

1. **Construction_Project_Costs** and **Fuel_Subsidy_Removal** have a very weak negative correlation (around -0.008), indicating no strong linear relationship between them.
2. **Project_Timelines** and **Fuel_Subsidy_Removal** have a weak positive correlation (around 0.075), suggesting a minor relationship.

The analysis of Nigeria's construction industry highlights several positive correlations among its variables. For instance, higher construction costs are intertwined with increased equipment expenses, suggesting that as project

costs rise, so do the costs associated with equipment. Additionally, when projects have longer timelines, they tend to incur higher transportation expenses, reflecting a connection between the duration of projects and transportation costs. Moreover, an interesting finding is that elevated transportation costs coincide with higher labor expenses, implying a relationship between transportation and labor costs. Moreover, the size and capacity of companies are linked to project timelines, indicating that larger firms often undertake projects with extended timeframes.

Moreover, positive relationships extend to market dynamics within the construction industry. Government policies exhibit responsiveness to market demand, implying that the decisions made by governing bodies align with the needs of the market. Furthermore, projects that display greater competitiveness tend to yield higher profitability, indicating that a strong competitive position can positively influence financial outcomes. Interestingly, a correlation emerges between companies seeking expansion and the adoption of adaptation strategies, suggesting that companies aspiring to grow are also considering strategies to adapt to changing circumstances.

Conversely, the analysis reveals negative associations among certain variables. The removal of fuel subsidies seems to coincide with reduced labor costs, indicating that the absence of subsidies might lead to decreased labor expenses. Additionally, the cessation of fuel subsidies might contribute to a decline in overall economic conditions, underscoring a connection between subsidy removal and economic downturns. Moreover, higher transportation costs align with lower profitability, suggesting that an increase in transportation expenses can lead to decreased project profitability. Complex projects, on the other hand, tend to exhibit less competitiveness, indicating that complexity might hinder a project's competitiveness in the market.

However, it's noteworthy that correlations between construction costs and project timelines with fuel subsidy policies are relatively weak. These minor correlations imply that the removal of subsidies might not significantly impact either construction expenses or project schedules. This suggests that the presence or absence of fuel subsidies might not be strong drivers of these particular variables.

In summary, the analysis underscores distinct correlations between various cost components, competitiveness, strategic choices of companies, and the influence of subsidy policies. Nevertheless, it's vital to exercise caution, as correlations don't necessarily indicate direct causation. To gain a comprehensive understanding of Nigeria's

construction industry, further analysis is essential. The identified relationships can serve as guides for in-depth investigations into the intricate dynamics shaping the industry.

5.0 Summary:

The study focuses on investigating the impact of the removal of fuel subsidies on the construction industry in Nigeria, with a specific analysis of SETRACO NIGERIA LIMITED and REYNOLDS CONSTRUCTION COMPANY. The result and discussion section of the study presents a correlation matrix that highlights various relationships among different variables. The positive correlations revealed include those between construction project costs and equipment costs, project timelines and transportation costs, labor costs and transportation costs, company size capacity and project timelines, government policies and market demand, profitability and market competitiveness, and investment expansion and adaptation strategies.

On the other hand, negative correlations were found between fuel subsidy removal and labor costs, fuel subsidy removal and economic conditions, transportation costs and profitability, and market competitiveness and project complexity. The study also points out correlations that were not found to be statistically significant.

The analysis provides valuable insights into the interplay of variables within the Nigerian construction industry. For instance, it indicates that the removal of fuel subsidies might lead to lower labor costs and could be associated with deteriorating economic conditions. Higher transportation costs seem to result in reduced profitability, and complex projects might be less competitive in the market.

However, the study recognizes that while correlations provide insights, they don't necessarily imply causation. Therefore, it emphasizes the need for further comprehensive analysis to fully understand the complexities of the Nigerian construction industry and the potential impact of fuel subsidy removal.

Conclusion:

In conclusion, the study sheds light on the intricate relationships within Nigeria's construction industry and the potential consequences of fuel subsidy removal. It highlights both positive and negative correlations between various variables, emphasizing the complex interdependencies in the industry. The findings suggest that the presence or absence of fuel subsidies can influence labor costs, economic conditions, profitability, and market

competitiveness. However, the study also underscores the need for caution, as correlations do not establish direct causation.

While the analysis provides important insights, it serves as a starting point for deeper research. The complexities of the construction industry warrant more comprehensive investigations to fully understand the implications of fuel subsidy reforms. It is essential to consider not only correlations but also the underlying mechanisms and causal relationships that drive the observed associations.

Recommendations:

Based on the findings of the study and the insights provided by various authors referenced, the following recommendations are put forth:

1. **Comprehensive Impact Assessment:** Conduct a more in-depth impact assessment to understand the direct and indirect effects of fuel subsidy removal on the construction industry. This assessment should consider factors beyond correlations, such as market dynamics, policy changes, and economic indicators.
2. **Policy Alignment:** Given the correlation between government policies and market demand, policymakers should ensure that policy decisions align with the needs and trends of the construction market. Regular evaluations of policy effectiveness are crucial to maintaining a supportive business environment.
3. **Economic Monitoring:** Recognizing the negative correlation between fuel subsidy removal and economic conditions, close monitoring of economic indicators is essential. Policymakers and industry stakeholders should be prepared to implement measures to mitigate potential economic downturns.
4. **Labor Cost Analysis:** Given the correlation between fuel subsidy removal and lower labor costs, further analysis should explore the mechanisms through which subsidy removal might influence labor expenses. This can aid in understanding the dynamics of the labor market and its response to policy changes.
5. **Market Competitiveness Strategies:** In light of the correlation between project complexity and market competitiveness, construction companies should consider strategies to balance project complexity with market demand. This might involve optimizing project design, resource allocation, and cost management.

6. **Long-Term Sustainability:** Building on the work of Akinyemi et al. (2014) and Osunmuyiwa and Kalfagianni (2017), policymakers and industry players should focus on aligning fuel subsidy reforms with environmental sustainability goals. Reforms should take into account the potential environmental impacts and aim to promote cleaner energy transitions.
7. **Continuous Research:** The study highlights the complexity of the construction industry and its interdependencies. Therefore, ongoing research efforts should explore evolving trends, market dynamics, and policy changes to adapt strategies and decisions accordingly.

In summary, the recommendations emphasize the importance of thorough analysis, policy alignment, economic monitoring, and sustainability considerations in navigating the impact of fuel subsidy removal on Nigeria's construction industry. By taking a holistic and research-driven approach, stakeholders can make informed decisions that foster a resilient and competitive construction sector.

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