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AN ANALYSIS OF THE EFFECT OF FUEL SUBSIDY REMOVAL ON RESIDENTIAL LOCATION PREFERENCES AMONG MIDDLE-INCOME EARNERS IN ABUJA, NIGERIA

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Abstract

The removal of fuel subsidies in Nigeria has resulted in spectacular socio-economic change that has implications for middle-income households, particularly in urban areas such as Abuja. This research examines the policy reform's impact on choice of residential location, with particular emphasis on the wider implications for household decision-making in a context of increasing fuel prices. The research seeks to evaluate the impact of fuel subsidy removal on house choice, travel behavior, and welfare of middle income earners in Abuja. Hypotheses were formulated on the impact of subsidy removal on residential choice, the moderating effect of socio-demographic characteristics, and migration towards lower-cost residential zones. A mixed-method strategy was used in data collection. 300 copies of structured questionnaire were administered to middle-income earners resident in different neighborhoods of Abuja, out of which 208 questionnaires were duly completed and retrieved. Findings indicate a strong negative correlation between Fuel subsidy removal and residential choice of location, and with respondents demanding more low-cost housing. Socio-demographic factors, including age and earnings, also work towards mediating such tastes. Proper planning and policy action are proposed to redress such concerns by the study in favor of measures like low-cost housing development, enhanced public transport, and directed subsidy options. Policymakers must include these factors while planning towards a more inclusive cityscape responsive to the concerns of middle-income residents changing in line with economic transformation. Further research is called for to explore long-term impacts and other controls on household decision in the changing urban environment.

Keywords: *Fuel Subsidy Removal, Residential Location Preferences, Middle-Income Earners, Urban Planning, Socio-Demographic Factor***s**

1. INTRODUCTION

Removing fuel subsidies in Nigeria has also triggered broad debates over its socio-economic implications, particularly against middle-income individuals. Fuel subsidies, originally implemented to reduce consumers' cost burden, have consistently been criticized as putting undue strain on local resources and as encouraging wasteful use (Abubakar Akinola and Olaniyi 2023). With the government of Nigeria heading towards a more sustainable economic strategy, it is essential to observe how such policy changes affect household location choice (Nwafor and Dike, 2023). Being the capital city of Nigeria, Abuja provides an apt setting for the study, ranging from high-income residential estates to low-income residences.

The removal of fuel subsidies, especially under President Bola Ahmed Tinubu in 2023, has ushered in widespread socio-economic change across many sectors, including housing and residential choice (Owolabi, 2023). Traditionally, fuel subsidies have assisted in smoothing fuel prices, which has implications on the cost of living and transport. Nonetheless, the sudden elimination of such subsidies has caused escalating fuel prices that directly influence the disposable income of urban middle-income group individuals in cities such as Abuja. In this context, the group is heavily dependent on low-cost transport for access to work and general provision of basic services, resulting in likely changes to their preferred place of residence due to adaptation towards rising fuel and transportation costs (Udo and Zubairu, 2023).

Comprehensions of the reforms are needed to drive urbanization and policy-making. With middle-class earners rethinking their living conditions, aspects like accessibility to workplaces, availability of public transport, and housing affordability in general become increasingly relevant (Adelakun and Lawal, 2023). The deregulation of fuel will redefine the economy for most Nigerian citizens with the primary focus being on middle-class earners who constitute the majority of Abuja's labor force. As transportation and living costs increase while disposable income suffers, individuals and households can reassess where they reside to better suit this changing economic landscape.

Increased transportation and living costs can cause them to move into cheaper locations or favor areas with more mass transit availability. The transformation is likely to increase housing demand in areas with lower overall costs of living and improved transport accessibility. However, few studies empirically examine how such transformations affect middle-income earners' location decisions for residential use in Abuja. Such socio-economic effects of such transformations have far-reaching implications on the trends of urban development, housing market dynamics, and the overall welfare of the city (Ikye and Olaniyan, 2023). This knowledge shortfall raises the call for an examination of how fuel subsidy removal affects the living choice decision, commuting patterns, and general well-being of such families. It is on this basis that this research aims to examine these dynamics, shedding light on the effects of fuel subsidy removal on middle-class earners' residential location choice in Abuja.

This will be done by examining changes in residential location choice after the removal of fuel subsidies, examining what affects housing decision among middle-income households, examining the most salient factors that easily come to mind when middle-income people make decisions on where to reside, e.g., transport fares, affordability, and proximity to amenities and examining the effect on travel behavior and examining how transport choice making among Abuja middle-income people is affected by changes in

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fuel prices. Also, hypotheses on Fuel Subsidy Removal Significantly Influences Residential Location Preferences, Socio-Demographic Factors Moderate Residential Location Choices Post-Fuel Subsidy Removal and Higher Fuel Costs Lead to a Shift in Residential Preferences Towards More Affordable Areas were tested in order to achieve the aim of the study.

2. LITERATURE REVIEW

2.1 Fuel Subsidy and Economic Policy

Fuel subsidies are fiscal tools used by governments to reduce the price of fuel to consumers, thus reducing cost of living and economic stability. Fuel subsidies have been contentious in Nigeria, with concerns about their sustainability and long-term economic effects (Umar and Ahmadu, 2022). The Nigerian subsidy history is two-sided – while they offer consumers temporary relief, in the long run, they are bound to increase inefficiencies in the economy and result in misallocation of resources (Ojo et al., 2021). Fuel subsidy deregulation, especially during the time of President Bola Ahmed Tinubu in 2023, resulted in an overnight hike in fuel prices, impacting disposable income and living costs for the populace directly (Adeyemo, 2023).

2.2 Middle-Income Earners: Definition and Characteristics

Middle-income earners are normally characterized as people or households whose incomes sit between a certain point, usually delimitated by their capability to live a life over the poverty level but short of the wealth class (World Bank, 2021). They are in the middle rung of urban development in Nigeria, holding different job levels and contributing to the growth of their nation. Knowing their distinctive features, needs, and vulnerabilities is important in examining how economic policy changes, such as the withdrawal of subsidies, affect their residential choices (Oloyede and Adeyemi, 2023).

2.3 Residential Location Preferences

Residential location preference refers to the decisions people or households make on where to reside, based on diverse socioeconomic determinants. It is particularly significant in urban areas such as Abuja, where there exists a diverse array of neighborhoods (Owoeye, 2022). Choice-influencing housing conditions are housing cost, travel to work, fuel cost, and proximity to social facilities (Ademiluyi and Fadeyi, 2023). Housing location is linked directly for the middle class with commuting behavior, determined by operating expenses in terms of fuel prices and transport.

2.4 Proximity and Accessibility

Proximity principle denotes that individuals are likely to prefer living closer to their place of work or main services in a quest to reduce transport time and cost (Ilesanmi and Taiwo, 2020). The removal of fuel subsidies and, hence, higher transport prices, middle-income groups might seek housing areas with improved access to public transport networks or proximate work hubs. This transformation might create an increased housing demand for more central locations, with wider implications for metropolitan spatial organization.

2.5 Affordability and Economic Viable

Residential choice has affordability as its main motivator. As fuel prices rise in the wake of subsidy removal, middle-income earners' disposable earnings will be pressured, leading them to seek out cheaper forms of housing (Nwokofire and Igbokwe, 2021). The theme of

economic viability supports the necessity for housing schemes that are economically feasible in the long term. The affected people might therefore look for areas with low transportation costs and improved fiscal equity between expenditure and income.

2.6 Contribution of Transportation Cost to Choice of Housing

The interaction of the cost of transportation and the choice of housing is well defined in urban planning literature. Higher transportation costs typically prompt individuals to modify their housing preference, leaning towards regions with lower commuting expense or enhanced public transport facilities (Badoe and Miller, 2000). Withdrawal of subsidies may witness middle-class families shifting towards cheaper suburbs or peri-urban regions, but with proper connectivity of public transport to city centers.

2.7 Quality of Life Considerations

Quality of life is a complex construct that includes economic security, health, social relationships, and the environment (Sirgy, 2010). The elimination of fuel subsidies and the resulting changes in residential choice can have a profound impact on the quality of life of middle-income residents in Abuja. As they reconsider their residence, it is important to know how changes in residence can influence their access to basic infrastructure, social services, and overall well-being.

This theoretical overview sets the context for how fuel subsidy removal affects middle-income earners' residential location choice in Abuja. By linking theories that encircle economic policies, socio-economic status, residential choice, and quality of life, this research seeks to offer an integrated analysis of the interrelated variables that affect housing choice in response to policy reform.

3. METHODOLOGY

The following explains the methodology used in the study of fuel subsidy removal effects on housing location choice for middle-income families in targeted locations of Abuja, Nigeria. The research utilizes a mixed-methods approach that employs quantitative and qualitative methods of data collection for purposes of developing a balanced picture of the phenomenon under study.

3.1 Research Design

A cross-sectional study design was employed to collect data at one point in time from the targeted neighborhoods. The design is suitable to determine the dominant attitudes, preferences, and housing choice of Abuja's middle-class earners after the fuel subsidy removal.

3.2 Study Population

The population of this study comprised middle-income earners living within the targeted areas of Abuja: Wuse, Jabi, Gwarinpa, Kubwa, and Durumi. Middle-income earners refer to individuals or households whose monthly income is in the middle-income group of the nation, according to pertinent socio-economic research.

3.3 Sampling Technique

A stratified random sampling was used to ensure representation from all the sample neighborhoods. Neighborhoods were divided into strata by socio-economic status and

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respondents were randomly sampled in each stratum. A target sample of 300 participants of middle-income were selected Wuse, Jabi, Gwarinpa, Kubwa, and Durum to provide enough data for statistical analysis.

Examination of the effect of the removal of fuel subsidy on the decision of middle-income individuals regarding where to reside in Abuja, Nigeria is an important concern with extensive ramifications for the health of the population. The researcher administered 300 questionnaires at random to residents of Wuse, Jabi, Gwarinpa, Kubwa, and Durumi. Through social media and personal email networks in Abuja. Follow-up attempt was made subsequently, collecting 208 copies of completed questionnaires from respondents. In Wuse, 54 out of the 60 questionnaire sent to them were completed and returned in full, Jabi returned 42 out of the 60, Gwarinpa returned 38, Kubwa returned 41 and Durumi returned 33 respectively.

3.4 Data Collection Instruments

a) **Questionnaire:** A structured questionnaire was drawn up in an effort to elicit quantitative data, e.g.:
   - i) **Demographic Data:** Age, sex, level of education, employment, and family income.
   - ii) **Housing Preference:** Present dwelling, reason for place, and most desirable attributes of a dwelling place after-withdrawal of subsidy.
   - iii) **Transport Expenditure:** Median monthly transport expenditure and perception regarding availability of transport.
   - iv) **Housing Affordability:** Awareness regarding house cost and access to general amenities.

3.5 Data Collection Procedures: The data collection was carried out within a span of four weeks:
Week 1: Ethical clearance and stakeholder consent were obtained, followed by training of the enumerators for the purpose of data collection.

Weeks 2-3: Copies of questionnaire were administered to the respondents in the sampled neighborhood, after which the completed copies were retrieved and utilized for data analysis.

4. DATA ANALYSIS

4.1 Quantitative Data Analysis

Quantitative data gathered from the questionnaires were processed using statistics software (e.g., SPSS or STATA). Descriptive statistics (percentages, frequencies) was used to present the demographic data and residential preferences. Inferential statistics (chi-square tests, t-tests, or regression analysis) was used to establish the correlations between variables, e.g., level of income, and residential location preferences.

4.2 Ethical Considerations

Ethical approval was obtained from the concerned Institutional Review Board. Consent was obtained from all the participants, and confidentiality was ensured at every stage of research. Participants were ensured of their right to withdraw from the study at any moment without incurring any penalty.

4.3 Explanation of Tables and Their Implications for the Study

The results presented in the tables provide crucial insights into the demographic profile of the respondents and the contextual framework for analyzing the effects of fuel subsidy removal on residential location preferences among middle-income earners in Abuja, Nigeria. Here's a breakdown of each table and its implications for the study:

Table 1: Gender Status of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**Male**	128	61.5	61.5	61.5
	Female	80	38.5	38.5	100.0
	Total	**208**	**100.0**	**100.0**	

Source: Author's Field Work, 2025.

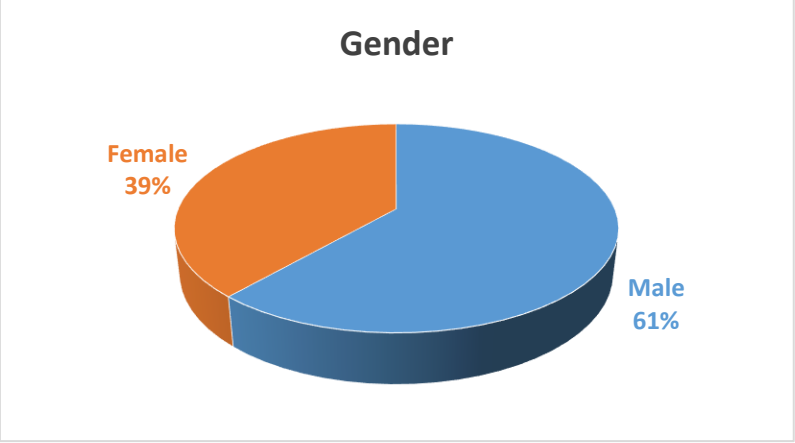

Fig 1: Gender of Respondents

This table and the pie chart outline the gender distribution of the respondents. Out of the 208 participants, 128 (61.5%) identified as male and 80 (38.5%) identified as female. The gender balance reflects a predominance of male respondents in the study. Understanding gender dynamics can be pertinent when examining how fuel subsidy removal affects residential preferences; male and female earners may have different commuting needs or priorities in housing that align with their respective roles within the household.

Table 2: Age of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**18-24**	22	10.6	10.6	10.6
	25-34	37	17.8	17.8	28.4
	35-44	38	18.3	18.3	48.7

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	45-54	57	27.4	27.4	74.1
	55 and above	54	25.9	25.9	100.0
	Total	**208**	**100.0**	**100.0**	

Source: Author's Field Work, 2025.

This table presents the age distribution across five categories. The age groups with the highest representation were 45-54 years (27.4%) and 55 and above (25.9%). The age distribution indicates that a significant portion of the respondents are likely to have established careers and families, influencing their residential choices based on job stability, family needs, and proximity to essential services. Analyzing preferences across different age groups may reveal varying sensitivities to fuel price fluctuations and transportation costs.

Table 3: Area of Resident of the Respondents

Frequency			Percent	Valid Percent	Cumulative Percent
	Wuse	54	25.9	25.9	25.9
	Jabi	42	20.2	20.2	45.8
	Gwarinpa	38	18.3	18.3	64.1
	Kubwa	41	19.7	19.7	83.8
	Durumi	33	15.9	15.9	100.0
	Total	**208**	**100.0**	**100.0**	

Source: Author's Field Work, 2025.

Respondents lived in various areas, with Wuse leading at 54 (25.9%), followed by Jabi, Gwarinpa, Kubwa, and Durumi. The area of residence is crucial for understanding the spatial impact of fuel subsidy removal; neighborhoods with lower returns may indicate potential shifts in housing demand as residents seek cost-effective living arrangements in response to rising transportation costs. This exploration might help delineate patterns emerging within specific neighborhoods and terrain types in relation to their socio-economic profiles.

Table 4: Educational Level of the Respondents

Frequency			Percent	Valid Percent	Cumulative Percent
Valid	**College/University**	143	68.8	68.8	68.8
	Postgraduate	59	28.4	28.4	97.2
	Secondary School	6	2.8	2.8	100.0
	Total	**208**	**100.0**	**100.0**	

Source: Author's Field Work, 2025.

This table shows that the majority of respondents (68.8%) possess a college/university degree, while 28.4% hold postgraduate degrees. A highly educated respondent group may possess different employment opportunities and income capabilities, which can directly influence how sensitive these individuals are to changes in fuel prices. The education level

can inform on the types of jobs respondents hold, their commuting habits, and potential residential preferences for areas with better employment opportunities.

Table 5: Employment Status of the Respondents

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	Employed (Full-time)	76	36.6	36.6	36.6
	Employed (Part-time)	39	18.8	18.8	55.4
	Retired	14	6.7	6.7	62.1
	Self-employed	68	32.6	32.6	94.7
	Unemployed	11	5.3	5.3	100.0
	Total	**208**	**100.0**	**100.0**	

Source: Author's Field Work, 2025.

This table indicates that 36.6% of respondents are employed full-time, and another 32.6% are self-employed. The employment data illustrates the economic structure of the respondents. Full-time employees and self-employed individuals face different commuting dynamics; for example, self-employed individuals may have more flexible living preferences based on their work hours. The employment situation plays a significant role in the influence of fuel subsidy removal on residential choices, particularly concerning commuting times and costs.

Table 6: Monthly Household Income of the Respondents

	Frequency		Percent	Valid Percent	Cumulative Percent
Valid	Above N500,000	82	39.4	39.4	39.4
	N300,000 – N500,000	60	28.8	28.8	68.2
	N100,000 – N299,000	38	18.3	18.3	86.5
	N50,000 – N99,000	19	9.2	9.2	95.7
	Below N50,000	9	4.3	4.3	100.0
	Total	**208**	**100.0**	**100.0**	

Source: Author's Field Work, 2025.

The table indicates that 39.4% of respondents report a household income above N500,000, while 4.3% fall below N50,000. The distribution of household income is particularly significant, as it sets the stage for how fuel subsidy removal can impact disposable income and affect residential location choices. Higher income earners may have more options regarding where to live, including more expensive areas, whereas lower income earners may be forced to reconsider their residing locations based on affordability. Insights drawn from

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this data help in understanding potential housing market dynamics as changing prices impact different income brackets variably.

These results collectively highlight the socio-demographic factors that influence residential location preferences among middle-income earners in Abuja. Understanding these variables their interaction with the context of fuel subsidy removal enables policymakers and urban planners to consider the implications for housing policies, accessibility, public transportation development, and infrastructural improvements as they respond to the emergent needs of the population in a changing economic landscape. Given the variations in residential preferences across different neighborhoods, a targeted approach considering these demographics can lead to more sustainable urban

4.4 Test of Hypotheses on the Effect of Subsidy Removal on Residential Location Preferences of Respondents

The data obtained from the field were presented and analyzed with descriptive statistics to provide answers for the research questions while the corresponding hypotheses were tested with Simple linear regression at 0.05 alpha level.

Table 7: Coded Responses on subsidy removal and Residential Location Preference

S/N	Questionnaire Items	S.Agree/ Agree	S.Disagree/ Disagree	Total
		Freq.	Freq.	
1	Removal of fuel subsidies has affected your decision to choose your current residential location	198	10	208
2	Commuting patterns and costs since the removal of fuel subsidies has this influenced your choice of residence	201	07	208
3	Other factors, aside from fuel subsidy removal have played a role in influencing your residential location preferences	205	03	208
Total		**604**	**20**	**624**

Source: Author's Field Work, 2025.

4.4,1 Hypothesis 1

Fuel Subsidy Removal Significantly Influences Residential Location Preferences among middle income earners in Abuja

Null Hypothesis (H0): Fuel subsidy removal does not significantly influence the residential location preferences of middle-income earners in Abuja.

Alternative Hypothesis (H1): Fuel subsidy removal significantly influences the residential location preferences of middle-income earners in Abuja.

Table 8a Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.847[a]	.718	.717	.55434	.20

a. Predictors: (Constant), subsidy removal
b. Dependent Variable: Residential Location Preference

Table 8b ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	236.904	1	236.904	770.943	.000[b]
	Residual	93.109	303	.307		
	Total	330.013	304			

a. Dependent Variable: Residential Location Preference
b. Predictors: (Constant), subsidy removal

Table 8c Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.233	.069		-3.376	.001
	subsidy removal	1.257	.045	.847	27.766	.000

a. Dependent Variable: Residential Location Preference

R = 0.847
R^2 = 0. 718
F = 770.904
T = 27.766
DW = 0. 111

4,4,2 Interpretation

The regression sum of squares (236.904) is higher than the residual sum of squares (93.109), and that means there is more variation in the dependent variable left unexplained by the model. The significance value of the F statistics (0.000) is lower than 0.05, and that means the variation explained by the model is not random. R, the correlation coefficient of 0.847, signifies that the correlation between subsidy removal and Residential Location Preference is negative (implying a negative effect). R square, or the coefficient of determination, displays that 71.8% of the food items variation can be explained through the model is based on the linear regression model, estimation error is lowest at about.55434 Durbin Watson figures of 0.111, less than 2, tell us there is no autocorrelation. Subsidy removal coefficient value 0.847 shows that there is negative significance between Residential Location Preference and subsidy removal that is statistically significant (with t = 27.766). Hence, the null hypothesis was rejected and the alternative hypothesis accordingly accepted. Hence subsidy removal has significant effect on Residential Location Preference. The farther a residential location is from workplaces or city centers, the less attractive it becomes to households.

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Table 9: Coded Response on Subsidy Removal and Socio-Demographic Factors

s/no	Questionnaire items	Strongly Agree /Agree	Disagree Strongly Disagree	Total
		Frequency	Frequency	
1	Age, gender, education level, income level, household size and employment status influenced your choice of residential location after the removal of fuel subsidies	187	21	**208**
2	Socio-demographic factors create differences in residential preferences among people in your community following the subsidy removal	156	52	**208**
3	Specific socio-demographic factors (such as your own) have made you reconsider your chosen residential area post-fuel subsidy removal	200	8	**208**
TOTAL		**443**	**81**	**624**

Source: Author's Field Work, 2025.

4.4.3 Hypothesis 2

Socio-Demographic Factors Moderate Residential Location Choices Post-Fuel Subsidy Removal

Null Hypothesis (H0): Socio-demographic factors (such as gender, age, education level, income level, household size and employment status) do not significantly moderate residential location choices of middle-income earners in Abuja after the removal of fuel subsidies.

Alternative Hypothesis (H1): Socio-demographic factors such as gender, age, education level, income level, household size and employment status) significantly moderate residential location choices of middle-income earners in Abuja after the removal of fuel subsidies.

Table 2 shows that 780 (85%) of the respondents indicated **Strongly Agree/ Agree,** while 135 (15%) indicated **Disagree/Strongly Disagree**. Based on responds from percentage analysis it was concluded that there is a significant negative relationship between subsidy removal on standard of living.

Table 10a Descriptive Statistics

	Mean	Std. Deviation	N
Subsidy removal	1.3934	.70893	208
Standard of living	1.5213	1.04836	208

Table (10a) shows the descriptive statistics of removal of subsidy and socio-demographic determinants with mean response of 1.3934 and std. deviation of.70893 for subsidy and

mean response of 1.5213 and std. deviation of 1.04836 for Standard of living and number of respondents (305). On careful observation of standard deviation values, there is minimal variation in terms of standard deviation scores. This means that there is roughly the same number of data points between the independent and dependent variables.

Table 10b Correlations

		subsidy removal	Standard of living
subsidy removal	Pearson Correlation	1	.816**
	Sig. (2-tailed)		.000
	N	208	208
Standard of living	Pearson Correlation	.816**	1
	Sig. (2-tailed)	.000	
	N	208	208

**. Correlation is significant at the 0.01 level (2-tailed).

Table (10b) is Pearson correlation coefficient of subsidy removal and Standard of living. The correlation coefficient is 0.816. Correlation is significant at 0.05 level (2tailed) and it shows that there is a significant negative correlation between subsidy removal and socio-demographic factors (r = .816). The calculated value of correlation coefficient is higher than the table value of r =.195 at df = 503 (df. = n-2) at alpha level for a two-tailed test (r =.816, p<.05). But since calculated r =.816 is larger than table value of.195 we reject null hypothesis and conclude that there is significant negative correlation between removal of subsidy and socio-demographic variables (r =.816, P<.05).

Table 11: Coded Responses on subsidy removal and High Fuel Cost.

s/no	Questionnaire items	Strongly Agree /Agree	Disagree /Strongly Disagree	Total
		Frequency	Frequency	
1	Rising fuel costs influenced your decision to consider more affordable residential areas	173	35	**208**
2	Higher fuel costs have altered your residential choices or preferences compared to before the subsidy removal	201	7	**208**
3	Long-term implications of higher fuel costs on housing	197	11	**208**
TOTAL		**571**	**53**	**624**

Source: Author's Field Work, 2025.

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4.4.4 Hypothesis 3

Higher Fuel Costs Lead to a Shift in Residential Preferences Towards More Affordable Areas

Null Hypothesis (H0): Higher fuel costs do not lead to a shift in residential preferences of middle-income earners in Abuja towards more affordable areas.

Alternative Hypothesis (H1): Higher fuel costs lead to a shift in residential preferences of middle-income earners in Abuja towards more affordable areas.

Table 12a Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson
1	.758[a]	.574	.573	.67965	.180

a. Predictors: (Constant), subsidy removal
b. Dependent Variable: High Fuel Cost

Table 12b ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	188.639	1	188.639	408.373	.000[b]
	Residual	139.964	303	.462		
	Total	328.603	304			

a. Dependent Variable: High Fuel Cost
b. Predictors: (Constant), subsidy removal

Table12c Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.014	.090		-.154	.878
	subsidy removal	1.099	.054	.758	20.208	.000

a. Dependent Variable: High Fuel Cost

R = 0.758
R^2 = 0. 574
F = 408.373
T = 20.208
DW = 0. 180

3.4.5 Interpretation

Regression sum of squares (188.639) is greater than residual sum of squares (139.964), indicating that the model has left more of the variation in the dependent variable unexplained. The significance value of the F statistics (0.000) is less than 0.05, which implies that explained variation is not a result of chance. R, the correlation coefficient of 0.758, indicates that there is negative relationship (negative Effect) between subsidy removal and High Fuel Cost. R square, the coefficient of determination, indicates that the

model accounts for 57.4% of variation in High Fuel Cost. Using the linear regression model, the error of estimate is minimal with an estimate of approximately. 67965 Using Durbin Watson statistics of 0.180, less than 2, this shows there's no autocorrelation. Subsidy removal coefficient of 0. 758 shows the negative effect of subsidy removal on High Fuel Cost, which is statistically significant (with t = 20.208). Therefore, the null hypothesis is rejected and the alternative hypothesis accepted accordingly. By implication, subsidy removal significantly led to high fuel cost and this in turns resulted to very high cost of transportation. The high cost of transportation compelled most middle income earners to relocate to proximate residential areas in order to reduce commuting expenses and improve accessibility to their workplaces

4.5 Discussion

The study on the effect of fuel subsidy removal on residential location preferences among middle-income earners in Abuja, Nigeria provides insightful findings that can be contextualized within the broader literature on institutional policy reform as well as the socioeconomic factors affecting housing decisions. The analysis of the collected data reveals significant relationships between fuel subsidy removal, socio-demographic factors, and residential location choices, which have implications for policymakers, urban planners, and social scientists.

5. Findings and Their Implications

a) Effect of Fuel Subsidy Removal on Household Location Decisions

Statistical results indicate that fuel subsidy removal has a very high negative effect on household location decisions (Table 8), illustrating that higher fuel prices caused by removal of subsidy force middle-income earners to reconsider their residential location decisions. This is underpinned by other researches in other developing nations, whose populations are affected by economic challenges and high oil prices (Smit and Aarts, 2018; Mbanga et al., 2021). Offering affordable housing as a consequence of economic challenges is key to the urban planning policies. Policymakers need to consider measures to facilitate affordable housing facilities in convenient areas, upholding social equity.

b) Role of Socio-Demographic Factors

The overall impact of socio-demographic variables on residential preferences after the subsidy withdrawal indicates sophisticated interaction between personal traits and economic choices (Table 10). The results verify Appiah and Chan (2019), who underscore that the demographic variables of age, education and employment status are causative variables describing differences in residential preferences during times of economic transformation. In this, urban planners need to be aware that diversity of population requires specialized transport and housing policy solutions. Community outreach programs and education can also help low-income households disproportionately hit by inflation and reduced quality housing availability.

c) Relocation to Less Expensive Neighborhoods

The study's finding that increased fuel prices influence a change in residential choice towards less expensive neighborhoods is noteworthy (Table 12). The trend has been reported across the world, with the implication being that issues of proximity override those of affordability (Anderson, 2020). The evidence points towards the need for local authorities to improve connectivity between transport networks to promote access to basic services

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irrespective of residential location. Secondly, as urban sprawl continues in low-cost areas, investment in minimum infrastructure like schools, health facilities, and public transport will be critical in driving sustainable urban growth (Tchouakeu, 2021).

5.1 Conclusion

The analysis identifies that removal of fuel subsidies not only directly affects housing choice decisions at the household level but also complements with socio-demographic forces to influence Abuja's middle-income group's housing decisions. Such being the case, policymakers are faced with tremendous pressure to follow a balanced approach dealing with economic, social, and infrastructural developments simultaneously. Long-term implications of such changes must be researched by future studies keeping in mind changing trends in urban population, jobs, and transportation as key considerations in the redesigning of cities.

5.2 Recommendations

Based on the findings of this study, the following recommendations are proposed to guide policy makers and Urban Planners in mitigating the effects of fuel subsidy removal on residential location preferences in Abuja:

a) Provision of Affordable Formal Housing.

There is the need for the governments and city planners to prioritize constructing affordable housing units in places currently experiencing growing demand with the rise in fuel prices. Furthermore, provision of additional housing units at reasonable prices to middle-income earners will alleviate their struggle, enabling them to stay in good neighborhoods that promote quality of life without working themselves to exhaustion.

b) Improvement of Public Transport Infrastructure

Government should expand reliable and affordable public transport options in Abuja to mitigate the effect of the rising fuel cost and influence on residential choices towards more sustainable locations. Investment in public transport is crucial. Increased and accessible public transport networks would lower the use of private transport and the cost of travel. Improving taxi services, ride-sharing programs, and BRT (Bus Rapid Transit) system improvement are a few of the potential additions so that the people can travel more economically and efficiently, thus contributing to residential decisions.

c) Strategic Subsidy Policy Alternatives

Policymakers should explore alternative subsidy approaches such as fuel targeted support for low and middle income earners, cash transfers or incentives for public transport use instead of straight-up removal of fuel subsidies without any cushioning effect. Such measures can reduce the financial burden of commuting, influence residential locations positively and promote more equitable and sustainable urban development.

d) Evidence based Policy and planning with Demographic Consideration.

There is the need to consider socio-demographic composition of the population, i.e., gender, age, education, household size and employment in Urban planning and policy formulation. Tailoring housing and transport policies to the needs of different population groups ensures equitable access, reduces commuting pressures and supports sustainable growth.

e) Promoting Public Awareness Campaigns

Education campaigns to inform residents about fuel policy changes, commuting costs and available transport alternatives are necessary. Increasing awareness can inform residential travel choices, reduce the economic burden on households and support the adoption of sustainable urban practices.

f) Encouragement of Flexible Work Arrangements

Government should promote policies that allow for remote work, staggered schedules or flexible work hours and encourage businesses to embrace them as flexible work practices can help ease some of the pressures of commuting. Telecommuting options, flexible work arrangements, or combinations of work at home can provide workers with greater control over where they live, so they can select homes that don't necessarily need to be conveniently located near the workplace.

Area of Further Investigation: More studies need to be carried out to examine the longer-term impacts of removing fuel subsidy and other determinants of residential location choice. This work will move research towards a better understanding of urban dynamics shift and support policymakers in the formulation of appropriate policy interventions.

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