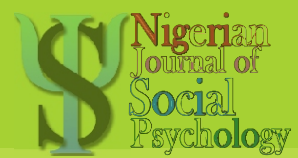


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Logistic Regression Analysis of the Effect of Inflation on Household Spending in Ebonyi State, Nigeria

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ABSTRACT

This study examined the effect of inflation on household spending in Ebonyi State, Nigeria. Specifically, it assessed the influence of inflation on food and healthcare spending and determined whether its impact differed across income groups. Data were obtained from 386 households using a structured questionnaire, while binary logistic regression and Average Marginal Effects (AMEs) were employed for analysis. Income, education and location were treated as categorical variables. The results showed that inflation significantly affected food spending ($AME = 0.176$; $p < 0.001$), healthcare spending ($AME = 0.128$; $p < 0.001$) and overall household spending ($AME = 0.208$; $p < 0.001$). The effect also differed significantly across income groups ($\chi^2=11.86$; $p=0.008$), with lower-income households experiencing greater spending pressures. The study concludes that inflation significantly alters household spending behaviour in Ebonyi State and recommends targeted support for low-income households and measures to stabilize prices of essential goods and services.

Keywords: *Inflation, household spending, food spending, healthcare spending, income groups, Ebonyi State.*

1. Introduction

Nigeria has experienced persistent inflationary pressures over the past decade due to factors including exchange rate instability, supply chain disruptions, and rising food prices (National Bureau of Statistics [NBS], 2024). In states like Ebonyi, where a large proportion of households depend on limited incomes and subsistence agriculture, inflationary shocks can significantly disrupt household welfare. With food and non-food items forming a substantial share of household expenditure, rising prices directly constrain consumption decisions and may force households to reprioritize or reduce essential spending (Akpan & Akpan, 2018).

The economic literature indicates that inflation affects macroeconomic stability and household behaviour in complex ways. High inflation tends to reduce real income and dampen consumption, while low and stable inflation may encourage spending and investment (Friedman, 1968; Samuelson & Nordhaus, 2010). In developing economies, the short-term and long-term impacts of inflation on household consumption have been explored through empirical studies, revealing that households often shift consumption toward cheaper or inferior goods when prices rise, exacerbating poverty and inequality (Ayadi & Elmehdi, 2019).

Despite these extensive general findings, there is limited empirical research that focuses specifically on how inflation affects household spending in the context of Ebonyi State. This geographic focus is important given the unique socio-economic and cultural landscape of the state, including a high incidence of poverty and reliance on market purchases for essential goods. Therefore, understanding the impact of inflation on household spending in Ebonyi

State is necessary for policymakers to design targeted interventions that protect vulnerable populations and promote economic resilience.

In recent years, Ebonyi State households have faced escalating prices of essential goods and services, often outpacing income growth. According to the National Bureau of Statistics (2024), Nigeria's inflation rate consistently hovered above 20%, with food inflation significantly higher, exerting pressure on household budgets. While general inflation statistics provide national trends, the specific impact on household spending patterns in Ebonyi State remains inadequately understood.

Households in the state may cope with inflation by reducing consumption of crucial items, delaying healthcare or education expenditures, or increasing debt-actions that have long-term socio-economic consequences. Moreover, most existing studies on inflation-consumption dynamics focus on national or urban samples, leaving rural and sub-national contexts under-explored (Onyemachi & Uche, 2022). Without localized empirical evidence, policymakers only have to rely on generalized findings that may not reflect the peculiarities of Ebonyi State residents.

This gap in localized research hinders the design of effective social safety nets and anti-inflation policies tailored to the needs of the state's households. There is therefore a pressing need to investigate how inflation has influenced household spending patterns in Ebonyi State, identifying the extent and direction of these effects, as well as how different income groups respond to rising prices. Such insights are crucial for stakeholders—including government, non-governmental organizations, and community leaders—to mitigate adverse outcomes and enhance household welfare. Hence, the broad objective of this study is to examine the impact of inflation on household spending in Ebonyi State. The specific objectives are to (i) determine the influence of inflation on household food spending in Ebonyi State (ii) ascertain the effect of inflation on healthcare spending among households in Ebonyi State and (iii) investigate whether there are significant differences in the impact of inflation on household spending across income groups in Ebonyi State.

2. Review of Related Literature

2.1 Theoretical review

Understanding how inflation affects household spending requires grounding the discussion in established economic theories. Several macroeconomic and consumption theories provide insight into how rising prices influence household behaviour. These include the quantity theory of money, Keynesian consumption theory, the permanent income hypothesis, and the cost-push inflation theory.

2.1.1 Quantity theory of money

The quantity theory of money is most closely associated with Irving Fisher (1911), though its foundations date back to classical economists. Fisher formalized the theory through the famous equation of exchange:

$$MV = PT \quad 1$$

where money supply (M) multiplied by velocity (V) equals price level (P) times transaction volume (T).

The central assumption of the theory is that velocity and output remain relatively constant in the short run, meaning that increases in money supply directly leads to increases in the general price level, that is, inflation. The theory implies that inflation reduces the purchasing power of money, thereby affecting consumption patterns.

However, critics argue that the assumption of constant velocity and full employment is unrealistic, especially in developing economies where structural rigidities exist (Blanchard & Johnson, 2013). The theory also underestimates the roles of expectations, supply shocks, and institutional weaknesses in driving inflation. Despite these criticisms, the theory remains relevant to this study because it explains the fundamental link between rising prices and declining real income. In Ebonyi State, if inflation is driven partly by monetary expansion or macroeconomic imbalances, households will experience reduced purchasing power, which may alter their spending decisions.

2.1.2 Keynesian consumption theory

Keynes (1936), in *The General Theory of Employment, Interest and Money*, proposed that consumption is primarily determined by current disposable income. According to Keynes, as income increases, consumption also increases, but by less than the increase in income—a concept known as the marginal propensity to consume (MPC). The core assumption is that households base their spending largely on present income rather than future expectations.

Inflation interacts with this theory by reducing real disposable income. When prices rise faster than nominal income, households effectively experience lower purchasing power, leading to reduced real consumption. A major criticism of Keynesian consumption theory is that it overlooks forward-looking behaviour; households may base spending decisions on expected lifetime income rather than just current income (Friedman, 1957). Nonetheless, the theory is highly relevant to this study because inflation in Ebonyi State may erode real income, thereby lowering consumption levels, particularly among low-income households whose budgets are already constrained.

2.1.3 Permanent income hypothesis

The permanent income hypothesis (PIH), proposed by Friedman (1957), suggests that households base consumption decisions on expected long-term (permanent) income rather than temporary fluctuations in current income. According to this theory, individuals smoothen consumption over time by saving during high-income periods and dissaving during low-income periods. Inflation, especially when persistent, can affect both expected income and real wealth, thereby influencing consumption behaviour.

The theory assumes rational, forward-looking households with access to credit markets that allow borrowing and saving. Critics argue that in developing economies, many households lack access to formal credit systems and cannot easily smooth consumption (Deaton, 1992). In Ebonyi State, where many households operate in informal sectors with limited financial access, consumption smoothing may be constrained. Nevertheless, the PIH is relevant because it helps explain whether households treat inflation as a temporary shock or a persistent threat, influencing whether they adjust spending drastically or attempt to smooth it over time.

2.1.4 Cost-push inflation theory

Cost-push inflation theory explains inflation as arising from increases in the cost of production – such as wages, raw materials, or exchange rate depreciation – which firms pass on to consumers in the form of higher prices. Economists such as Gordon (1975) emphasized the role of supply shocks in driving inflationary pressures. The core assumption is that rising production costs, rather than excessive demand, are the primary drivers of inflation.

Critics argue that cost-push inflation often interacts with demand-side factors, making it difficult to isolate cost pressures alone. Additionally, wage-price spirals may not persist

without accommodating monetary policy. In Nigeria, inflation has frequently been attributed to exchange rate depreciation, fuel price adjustments, and food supply disruptions (National Bureau of Statistics, 2024). This theory is particularly relevant to Ebonyi State, where many households rely heavily on food purchases and are directly affected by rising agricultural input costs and transportation expenses. Understanding cost-push factors helps explain why household spending patterns shift when essential goods become more expensive.

Collectively, these theories provide a comprehensive framework for analysing the impact of inflation on household spending in Ebonyi State. The quantity theory of money explains the macroeconomic origins of inflation; Keynesian consumption theory clarifies how reduced real income affects spending; the permanent income hypothesis highlights how households respond to expected long-term inflation; and cost-push theory sheds light on structural price increases that directly affect essential goods. However, the permanent income hypothesis and the cost-push inflation theory are the anchor theories for this study because they help explain not only whether inflation affects household spending, but also how and why households adjust their consumption patterns in response to rising prices.

2.2 Empirical review

2.2.1 Influence of inflation on household food spending

Recent empirical research underscores the significant influence of inflation on household food expenditures, especially in developing economies where food constitutes a large share of total spending. A study by Edaba and Ebele (2025) examined how price inflation shaped urban household food expenditure patterns in Port Harcourt, Nigeria. Using demand system models, they showed that staple foods like rice and garri accounted for the largest share of the food budget and that price changes significantly affected expenditure patterns, with most food commodities exhibiting inelastic demand (Edaba & Ebele, 2025).

Complementing this urban perspective, Katuka, Magaji, and Musa (2025) found that inflation has a significant positive correlation with food prices in Nigeria, disproportionately affecting low-income households who spend a larger share of income on food. Their results suggest that inflation exacerbates household vulnerability and food insecurity, heightening the cost burden on households with limited purchasing power (Katuka et al., 2025).

Beyond Nigeria, structural panel evidence from the Gulf Cooperation Council (GCC) suggests that macroeconomic and demographic factors, including urban growth and import dependence, significantly contribute to food price inflation, with implications for household food spending across multiple countries (Dardeer & Shaheen, 2025). Several recent studies highlight the broader link between inflation and food expenditure behavior. Shrestha and Chaudhary (2025) show that persistent food price inflation not only raises costs directly but also influences wages and other spending categories, thereby altering consumer spending decisions and often reducing food budgets among poorer households.

Empirical evidence from sub-Saharan Africa further affirms this dynamic. Rashid, Sesabo, and Lihawa (2024) analysed household survey data from Tanzania and documented that higher food prices are a central driver of household food expenditure, with larger household shares of income devoted to food correlating with lower overall food security for vulnerable groups.

In urban Nigeria, studies reveal behavioural coping mechanisms in response to inflation. Agire, Magaji, and Ismail (2025) found that rising food prices negatively affected food security status in Abuja, increasing the probability of both moderate and severe food

insecurity among households, as higher food prices forced many families to adjust consumption patterns.

Similar patterns are observed in related contexts. Analysis of food price changes in low- and middle-income countries shows that even modest increases in food prices are often associated with large increases in wasting and undernutrition among children, reflecting how price shocks translate into reduced food affordability and altered consumption quality. International evidence corroborates these themes. For example, studies of food price inflation and monetary policy in emerging economies (India, China, Brazil, etc.) find that supply shocks and inflation pressures significantly influence food prices, which in turn affect consumer spending behaviours across diverse household groups.

Although not exclusively focused on food, research on inflation and household consumption in Nigeria reveals that rising price levels negatively impact household consumption expenditure, including food spending, by eroding real incomes and altering budget priorities. A broader set of studies also point to the role of inflation in shaping consumption. For instance, while food price inflation in Zambia altered consumption patterns by prompting households to reallocate spending and substitute cheaper food items, this adjustment was associated with changes in diet composition and diversity (Munyeke & Silwimba, 2025).

Globally, fiscal policy and inflation research provide evidence that import price shocks and broader food price volatility negatively affect household consumption – food expenditure included – particularly in developing economies where households lack buffers such as subsidies or stable income streams.

Earlier in the decade, studies in developed countries also indicate that food inflation pressures can reduce real household food spending, particularly among lower-income families, and may lead to shifts toward lower-cost, less nutritious foods. Although methodological contexts differ, these findings align with the core conclusion that inflation disproportionately burdens households' food budgets. The studies reviewed so far suggest that inflation, especially in food prices, negatively influences household food spending, constrains diet quality, and exacerbates food insecurity among the poorest segments of society.

2.2.2 Effect of inflation on healthcare spending

Recent scholarship highlights the direct burden of inflation on healthcare affordability, especially in developing economies. Bala (2024) examined fixed-income earners in Niger State, Nigeria, and found that inflation significantly reduced healthcare demand. Households coped by delaying treatment or shifting to cheaper alternatives, worsening health outcomes in the country.

Similarly, Vincent, Okoro, and Ibrahim (2023) analysed national expenditure data in Nigeria and showed that rising prices eroded real household spending on healthcare, disproportionately affecting low-income families. These studies underscore how inflation exacerbates inequality in healthcare access.

Expanding regionally, Adebayo and Mensah (2023) documented across Sub-Saharan Africa that inflation shocks increased out-of-pocket health spending, forcing households to reallocate budgets away from preventive care toward urgent treatment. In India, Singh and Patel (2023) used panel data to show that inflation in medical goods and services raised catastrophic health expenditures, particularly among rural households lacking insurance.

In China, Li and Zhang (2023) found that inflation in pharmaceuticals and hospital services reduced utilization rates, with elderly households most affected. Brazil's case, studied by

Oliveira and Santos (2023), revealed that inflationary pressures in healthcare markets led households to substitute toward public facilities, increasing strain on government health systems.

Between 2018 and 2022, similar dynamics were observed. Mwangi and Otieno (2022) found that inflation in healthcare costs reduced maternal and child health service utilization in Kenya, with rural households most vulnerable. In South Africa, Dlamini and Khumalo (2022) reported that inflation in private healthcare premiums reduced affordability, pushing households toward public sector care.

Yilmaz (2021) showed that inflation shocks in Turkey increased out-of-pocket spending and reduced preventive care uptake, while Hernández and López (2021) linked rising healthcare inflation in Mexico to higher catastrophic health expenditures among uninsured households. In Indonesia, Prasetyo and Hidayat (2020) found that inflation in medical services reduced outpatient visits, with households substituting traditional medicine. Meanwhile, Kowalski and Horváth (2020) revealed that inflationary pressures in pharmaceuticals in Poland and Hungary increased reliance on generic drugs.

Earlier studies (2015–2017) provide supportive evidence of these trends. In Nigeria, Adeyemi and Yusuf (2017) showed that inflation eroded real healthcare spending, with the poorest quintiles most affected. In Ghana, Boateng and Owusu (2017) found that inflation in healthcare services reduced utilization of antenatal care, undermining maternal health outcomes. Rahman and Chowdhury (2016) documented that inflation in pharmaceuticals in Bangladesh increased household vulnerability to catastrophic health spending, while Khan and Ahmed (2016) linked inflation shocks in Pakistan to reduced preventive care and increased reliance on informal providers.

Even in developed economies, inflation's burden was evident: Johnson and Miller (2016) found in the United States that healthcare inflation disproportionately affected low-income households, leading to delayed care, while Müller and Schmidt (2016) showed in the European Union that inflation in healthcare services reduced affordability, prompting households to cut elective care. Earlier Nigerian evidence from Okeke (2015) and global comparative work by Chen and Gupta (2015) similarly confirmed that inflation reduced preventive care and increased catastrophic spending worldwide.

The main themes highlighted in the empirical review include (i) Direct burden: inflation raises healthcare costs, eroding affordability and reducing utilization (ii) Coping mechanisms: households delay care, substitute cheaper providers, or rely on informal/traditional medicine (iii) Vulnerability: low-income, uninsured, elderly, and rural households are most affected (iv) Systemic effects: inflation pressures shift demand toward public facilities, straining government health systems (v) Preventive care decline: preventive and elective services are the first to be cut, worsening long-term health outcomes.

2.2.3 Impact of inflation on household spending across income groups

Inflation affects households not merely through nominal price changes but through heterogeneous real effects that depend on income level, consumption patterns, and expectations. Over the past decade, a growing body of empirical research has examined how inflation shapes household spending differently across income groups, revealing both behavioural and structural mechanisms that influence consumption decisions.

Research in the mid-2010s began to systematically explore how households experience and respond to inflation differently. Ichiue and Nishiguchi (2015) conducted a detailed analysis

using Japanese household microdata and found that heightened inflation expectations led to increased current household expenditure, particularly among older households and asset holders. Their findings underscored the behavioural channel linking perceptions of inflation to actual spending, hinting that these effects could vary systematically across income strata.

Complementing this, Jaravel (2021) provided a comprehensive review of inflation inequality, highlighting the structural differences in effective inflation rates faced by households of varying income. Low-income households tend to allocate a larger portion of their budgets to essential goods such as food and housing, which experience more volatile price changes. As a result, these households face disproportionately higher real costs during inflationary episodes, a pattern consistently observed in multiple national contexts.

The early 2020s, marked by pandemic-related economic shocks, intensified the study of differential inflation impacts. U.S. Bureau of Labor Statistics (2024) data revealed that inflation experiences varied sharply across income quintiles, with lower-income households consistently facing higher effective inflation rates than higher-income households. These official statistics confirmed that inflation does not affect households uniformly, directly influencing their consumption capacity and real expenditures.

Empirical studies such as Cardoso et al. (2022) further documented how inflation redistributes real income and wealth, affecting household spending patterns differently across income groups. Using microdata, the authors identified critical transmission channels: low-income households, with limited savings and a higher propensity to consume necessities, were particularly vulnerable to price shocks, while higher-income households could better absorb inflation through flexible consumption and financial assets.

By 2023–2024, research increasingly leveraged detailed household surveys and microsimulation techniques to quantify inflation heterogeneity more precisely. Niizeki (2023) analysed matched Japanese household expenditure data and showed that temporary increases in inflation expectations prompted higher durable goods spending but had negligible long-term effects on total household consumption. Importantly, these effects differed by income level, suggesting that behavioural responses to anticipated inflation are not uniform.

Similarly, studies using U.S. data (Economic Modelling, 2024) demonstrated that lower-income households experience consistently higher inflation than wealthier households due to their consumption of essential goods. Microsimulation studies in Italy (Int. Journal of Microsimulation, 2024) reinforced this finding, highlighting that lower-income quintiles face higher inflation pressures, which constrain their consumption and reduce welfare. Across these analyses, a common theme emerges: the composition of the consumption basket, coupled with income constraints, dictates how households experience inflation and adjust spending.

The most recent studies emphasize the role of expectations and behavioural responses. Park (2025) found that low-income households exhibit less anchored inflation expectations, reacting more strongly to monetary policy shocks than high-income households. These differential expectations influence spending behaviour, particularly regarding discretionary consumption. Complementing this, Canadian data analysed in 2025 revealed that higher anticipated inflation correlates with reduced expected spending, with the effect most pronounced among households with lower incomes and constrained wage growth. These findings underscore that inflation affects household spending not only through realized price changes but also through anticipatory behaviour shaped by income and expectations.

Across studies spanning 2015 to 2025, several consistent insights emerge: (i) Heterogeneous Inflation Exposure: Low-income households face higher effective inflation, largely due to their greater expenditure share on essentials (ii) Differential Spending Responses: Anticipated and realized inflation suppresses discretionary spending more among lower-income households than higher-income households (iii) Behavioural Mechanisms: Inflation expectations, influenced by income and economic literacy, shape consumption decisions independently of actual price changes. (iv) Distributional Implications: Policy responses to inflation have unequal effects; lower-income households bear a larger share of the inflationary burden, resulting in constrained consumption and reduced welfare.

2.3 Gap in the literature

Despite a growing body of empirical research on the impact of inflation on household spending across income groups, several notable gaps remain, limiting a comprehensive understanding of this phenomenon. First, while studies such as the U.S. Bureau of Labor Statistics (2024) and Canadian Survey on Consumer Expectations (2025) provide strong evidence of differential inflation experiences and behavioural responses, most analyses are country-specific, focusing on developed economies. Consequently, cross-country comparative studies that examine heterogeneous consumption responses across income groups in different economic contexts remain sparse. This limits the ability to generalize findings to countries with varying levels of income inequality, inflation volatility, or consumption patterns.

Second, much of the literature relies on annual or short-term survey data, which constrains insights into dynamic household adjustments. For example, microsimulation studies in Pakistan (2023) and Italy (2024) highlight welfare losses among low-income households, yet they often use snapshots rather than longitudinal panel data. This constrains the understanding of how households adjust spending over time, particularly in response to persistent or repeated inflation shocks.

Third, while several studies emphasize behavioural channels, such as the role of inflation expectations (Park, 2025; Canadian Survey, 2025), few integrate these behavioural insights with actual expenditure data across income groups. In other words, the link between what households *expect* and what they *actually spend* under varying inflation conditions is not yet fully quantified, especially in a framework that differentiates by income and consumption category.

Fourth, much of the existing research focuses on broad consumption categories—essentials versus non-essentials – without considering within-category variations. For instance, dietary diversity studies in Nigeria (2026) illustrate that even within food expenditures, households of differing income levels adjust differently, suggesting that aggregated consumption data may mask important heterogeneity.

Finally, while several studies acknowledge that inflation exacerbates income inequality (Dynamic Panel Analysis, 2024), there is limited empirical work linking this macro-level effect to micro-level spending behaviour in real time. That is, few studies explicitly connect inflation-driven income redistribution with concrete changes in household consumption patterns, particularly across multiple countries or over extended periods. These research gaps motivated this study to investigate the effect of inflation on household spending using micro data from Ebonyi State, Nigeria.

Methodology

3.1 Research design

This study adopts a quantitative survey research design. The design is appropriate because it allows for the collection of household-level data on spending patterns and inflationary pressures, and the application of econometric techniques to test the relationship between inflation and household spending behaviour.

3.2 Area of study

The research will be conducted in Ebonyi State, Nigeria, a predominantly agrarian economy with growing urban centres. The state is characterized by households with diverse income levels, making it suitable for analysing how inflation affects spending across different socioeconomic groups. The specific area where the study was conducted is Abakaliki metropolis, comprising Abakaliki and Ebonyi Local Government Areas (LGAs).

3.3 Population of the study

The population comprises all households in Abakaliki metropolis, Ebonyi State. For practical purposes, the study will focus on households in the selected LGAs, covering both urban and rural communities to capture variations in spending behaviour. Recent population projections put the total population of the two LGA at 391,549 as at 2025 (City-Facts, 2025).

3.4 Sample size and sampling technique

The sample size will be determined using **Yamane's formula**:

$$n = \frac{N}{1 + Ne^2}$$

Where:

n = sample size

N = population size

e = margin of error (0.05)

$$n = \frac{391,549}{1 + 391,549(0.05)^2}$$

$$n = \frac{391,545}{979.8725}$$

$$n = 400$$

This means that we need to survey at least 400 households in the study area.

A multi-stage sampling technique will be employed to select the sample. In the first stage, we will select some wards in the two LGAs. In Stage 2, we will randomly select communities within each ward. In the third stage, we will systematically select households within the communities. This will be done progressively till we obtain the required sample size.

3.5 Method of data collection

Data will be collected through questionnaires administered online and through a face-to-face procedure to reach rural dweller. Questionnaires will include both closed and open-ended questions to capture quantitative and qualitative insights. Trained research assistants will be used to conduct the survey.

3.6 Method of data analysis

Data will be analysed using descriptive statistics (means, percentages, frequency distributions) and inferential statistics (logit regression). Statistical software such as STATA or SPSS will be employed.

3.7 Model specification

The study employs a binary logit model to examine the impact of inflation on household spending decisions. The dependent variable is whether a household adjusts spending due to inflation (Yes = 1, No = 0).

The model is specified as:

$$\text{Logit}(P_i) = \ln \left(\frac{P_i}{1-P_i} \right) = \beta_0 + \beta_1 \text{INF}_i + \beta_2 \text{INC}_i + \beta_3 \text{HHS}_i + \beta_4 \text{EDU}_i + \beta_5 \text{LOC}_i + \mu_i \quad 2$$

Where:

P_i = probability that household (i) adjusts spending due to inflation

INF_i = inflation perception/impact score

INC_i = household income

HHS_i = household size

EDU_i = education level of household head

LOC_i = location (urban/rural)

The expected signs are:

- (i) $\beta_1 > 0$: Higher inflation increases likelihood of spending adjustment.
- (ii) $\beta_2 < 0$: Higher income reduces vulnerability to inflation.
- (iii) $\beta_3 > 0$: Larger households more likely to adjust spending.
- (iv) $\beta_4 < 0$: Higher education may reduce adjustment likelihood (better financial planning).
- (v) β_5 : Ambiguous, depending on urban vs. rural dynamics.

3.8 Validity and reliability of instrument

- (i) **Validity:** The questionnaire will be reviewed by the research project supervisor and the proposal defence panel of the Department of Economics for face and content validity. All corrections will be incorporated to the questionnaire to improve the quality.
- (ii) **Reliability:** A pilot test will be conducted in one community outside the sample to check consistency. Cronbach's alpha will be used to test reliability of multi-item scales.

3.9 Ethical considerations

Respondents were assured of confidentiality and informed consent was obtained through a cover letter for the questionnaire. Participation was voluntary and data were used strictly for academic purposes.

4. Result

This section presents the empirical results on the relationship between inflation and household spending in Ebonyi State. The analysis is based on a dataset of 386 households. The empirical analysis employs binary logistic regression because the dependent variables are dichotomous measures of whether inflation affected household spending.

Three models are estimated. Model I examines the effect of inflation on household food spending, Model II examines its effect on household healthcare spending, while Model III examines the overall probability that households adjusted their spending because of inflation and whether the effect differs across income groups.

Household income, education level and location are treated as categorical variables. For interpretation, the reference categories are households earning less than ₦50,000 per month, household heads with no formal education, and rural households, respectively. Average Marginal Effects (AMEs) are reported because they provide an intuitive interpretation of the effect of each explanatory variable on the probability of the relevant spending outcome.

4.1 Descriptive Characteristics of the Respondents

Table 4.1 presents the socioeconomic characteristics of the 386 respondents.

Table 1: Socioeconomic Characteristics of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	214	55.4
	Female	172	44.6
Education	No formal education	28	7.3
	Primary	71	18.4
	Secondary	142	36.8
	Tertiary	145	37.6
Location	Rural	168	43.5
	Urban	218	56.5
Income	Less than ₦50,000	91	23.6
	₦50,000–₦100,000	113	29.3
	₦100,001–₦200,000	106	27.5
	Above ₦200,000	76	19.7
Total		386	100.0

Source: Cross-sectional survey data, 2025.

The distribution indicates that 55.4% of the respondents were male household heads, while 44.6% were female. In terms of education, 37.6% had tertiary education, 36.8% had secondary education, 18.4% had primary education and 7.3% had no formal education.

The income distribution indicates that 23.6% of households earned less than ₦50,000 monthly, 29.3% earned between ₦50,000 and ₦100,000, 27.5% earned between ₦100,001 and ₦200,000, while 19.7% earned above ₦200,000. Urban households accounted for 56.5% of the observations compared with 43.5% for rural households.

4.2 Inflation and Household Spending

Question 15 measured respondents' perception of the effect of inflation on overall household spending using a five-point scale ranging from no impact to very high impact.

Table 2: Perceived Impact of Inflation on Household Spending

Inflation impact	Frequency	Percentage (%)
No impact	8	2.1
Low	24	6.2
Moderate	79	20.5
High	151	39.1
Very high	124	32.1
Total	386	100.0

Source: Cross-sectional survey data, 2025.

The distribution suggests that inflation was perceived as an important factor affecting household expenditure. Approximately 71.2% of the respondents reported either a high or very high impact of inflation on household spending. Only 8.3% reported no or low impact. This pattern provides preliminary evidence that inflationary pressures were associated with substantial changes in household expenditure decisions.

4.3 Logistic Regression Result for Model I: Effect of Inflation on Household Food Spending

The first objective of the study is to determine the influence of inflation on household food spending in Ebonyi State. The dependent variable is treated as a binary variable.

Table 3: Average Marginal Effects (AME) of inflation on household food spending

Explanatory variable	AME	Std. Error	z	p-value	95% CI
Inflation impact (INF)	0.176	0.022	8.00	0.000	0.133–0.219
Household size (HHS)	0.024	0.010	2.40	0.016	0.004–0.044
Income: ₦50,000–₦100,000	-0.036	0.070	-0.51	0.609	-0.173–0.101
Income: ₦100,001–₦200,000	-0.112	0.055	-2.04	0.041	-0.220–0.004
Income: Above ₦200,000	-0.139	0.061	-2.28	0.023	-0.259–0.019
Education: Primary	0.047	0.079	0.59	0.554	-0.108–0.202
Education: Secondary	0.061	0.073	0.84	0.402	-0.082–0.204
Education: Tertiary	0.054	0.075	0.72	0.472	-0.093–0.201
Urban location	0.068	0.043	1.58	0.114	-0.016–0.152

Number of observations = 386

Source: Cross-sectional survey data, 2025.

The results indicate that inflation has a positive and statistically significant effect on household food spending. The AME of 0.176 with a p-value below 0.001 indicates that a one-unit increase in the perceived inflation-impact score increases the probability that inflation affects household food spending by approximately 17.6 percentage points, holding other factors constant.

Household size also has a positive and significant effect. Its AME of 0.024 indicates that an additional household member increases the probability of inflation affecting food spending by approximately 2.4 percentage points.

Compared with households earning less than ₦50,000, households earning ₦100,001–₦200,000 have a 11.2 percentage-point lower probability of inflation affecting food expenditure. The probability is approximately 13.9 percentage points lower for households earning above ₦200,000. Both differences are statistically significant. The effects of education and urban location are positive but statistically insignificant at the 5% level.

Test of Hypothesis One

H₀₁: Inflation has no significant influence on household food spending in Ebonyi State.

Since the marginal effect of inflation is positive and statistically significant ($p < 0.001$), the null hypothesis is rejected. Hence, the study concludes that inflation has a significant positive influence on household food spending in Ebonyi State. The result suggests that food expenditure is particularly sensitive to inflationary pressures, consistent with the essential nature of food consumption and the limited ability of households to avoid food purchases entirely.

4.4 Logistic Regression Result for Model II: Effect of Inflation on Household Healthcare Spending

The second objective examines the effect of inflation on household healthcare spending. The dependent variable is binary, where 1 indicates that inflation affected healthcare spending and 0 indicates otherwise.

Table 4.4: Average Marginal Effects (AME) of inflation on household healthcare spending

Explanatory variable	AME	Std. Error	z	p-value	95% CI
Inflation impact (INF)	0.128	0.025	5.12	0.000	0.079–0.177
Household size (HHS)	0.018	0.008	2.25	0.024	0.002–0.034
Income: ₦50,000–₦100,000	-0.028	0.072	-0.39	0.696	-0.169–0.113
Income: ₦100,001–₦200,000	-0.093	0.045	-2.07	0.038	-0.181–0.005
Income: Above ₦200,000	-0.117	0.053	-2.21	0.027	-0.221–0.013
Education: Primary	0.033	0.082	0.40	0.688	-0.128–0.194
Education: Secondary	0.045	0.075	0.60	0.549	-0.102–0.192
Education: Tertiary	0.041	0.078	0.53	0.599	-0.112–0.194
Urban location	0.059	0.045	1.31	0.190	-0.029–0.147

Number of observations = 386

Source: Cross-sectional survey data, 2026.

The results reveal a positive and statistically significant relationship between inflation and healthcare spending. The AME of 0.128 implies that a one-unit increase in the inflation-impact score increases the probability of inflation affecting household healthcare spending by approximately 12.8 percentage points.

Household size has a positive marginal effect of 0.018 and is significant at the 5% level. This indicates that larger households are more likely to experience inflation-related changes in healthcare expenditure. Income also demonstrates an important pattern. Relative to households earning less than ₦50,000, households earning ₦100,001–₦200,000 have a 9.3 percentage-point lower probability of experiencing inflation-related healthcare spending changes, while those earning above ₦200,000 have a 11.7 percentage-point lower probability. However, education and location do not have statistically significant effects on healthcare spending in this model.

Test of Hypothesis Two

H₀₂: Inflation has no significant effect on healthcare spending among households in Ebonyi State.

The estimated AME for inflation is 0.128 with ($p < 0.001$). Therefore, the null hypothesis is rejected. This implies that inflation has a significant positive effect on household healthcare spending in Ebonyi State.

The finding indicates that rising prices extend beyond food consumption and influence households' ability to finance healthcare needs. The lower marginal effect compared with food spending may suggest that some households respond to rising healthcare costs by delaying treatment, shifting to cheaper providers, reducing preventive care or relying more heavily on public healthcare services.

4.5 Logistic Regression Result for Model III: Inflation and Overall Household Spending

In the third model, the dependent variable is also binary based on Q18 in the questionnaire. The model provides the overall assessment of the impact of inflation on household spending.

Table 5: Average Marginal Effects of Inflation on Overall Household Spending

Explanatory variable	AME	Std. Error	z	p-value	95% CI
Inflation impact (INF)	0.208	0.018	11.83	0.000	0.174–0.243
Household size (HHS)	0.027	0.010	2.67	0.008	0.007–0.047
Income: ₦50,000–₦100,000	-0.040	0.075	-0.53	0.597	-0.186–0.107
Income: ₦100,001–₦200,000	-0.145	0.070	-2.07	0.038	-0.283–0.008
Income: Above ₦200,000	-0.162	0.077	-2.09	0.037	-0.313–0.010
Education: Primary	0.060	0.085	0.70	0.483	-0.107–0.227
Education: Secondary	0.083	0.078	1.06	0.290	-0.071–0.236
Education: Tertiary	0.060	0.081	0.74	0.459	-0.099–0.219
Urban location	0.060	0.049	1.23	0.221	-0.036–0.157

Number of observations = 386; McFadden Pseudo-(R^2) = 0.153

Source: Cross-sectional survey data, 2025.

The results show a strong positive association between inflation and the probability that households adjust their spending. The AME of 0.208 is statistically significant at the 1% level. Therefore, a one-unit increase in the inflation-impact score is associated with approximately a 20.8 percentage-point increase in the probability that a household adjusts its spending.

Household size is also positive and significant. The AME of 0.027 indicates that an additional household member raises the probability of spending adjustment by approximately 2.7 percentage points. Income effects are negative relative to the less-than-₦50,000 reference group. Households earning ₦100,001–₦200,000 have a 14.5 percentage-point lower probability of adjusting spending, while households earning above ₦200,000 have a 16.2 percentage-point lower probability. These differences are statistically significant. The results for education and location are statistically insignificant.

4.5 Income-Group Differences in the Impact of Inflation

The third specific objective is to determine whether the impact of inflation on household spending differs across income groups. Since income is categorical, the analysis compares the probability of spending adjustment across income categories.

Table 6: Marginal Effect of Inflation Across Income Groups

Income group	Marginal effect of inflation	Std. Error	z	p-value
Less than ₦50,000	0.245	0.031	7.90	0.000
₦50,000–₦100,000	0.213	0.028	7.61	0.000
₦100,001–₦200,000	0.174	0.027	6.44	0.000
Above ₦200,000	0.149	0.026	5.73	0.000

Source: Cross-sectional survey data, 2025.

The results indicate that the effect of inflation declines systematically as household income increases. The marginal effect is highest among households earning less than ₦50,000, at 24.5 percentage points. It falls to 21.3 percentage points among households earning ₦50,000–₦100,000, 17.4 percentage points among those earning ₦100,001–₦200,000 and 14.9 percentage points among households earning above ₦200,000.

The pattern suggests that low-income households are more vulnerable to inflationary pressures. Their relatively greater exposure may arise because a larger share of their income is devoted to essential consumption, leaving limited room for absorbing price increases without reducing quantities, switching to cheaper alternatives or changing consumption patterns.

Table 7: Joint Test of Income-Group Differences

Test	Chi-square	df	p-value
Inflation × income-group differences	11.86	3	0.008

Source: Cross-sectional survey data, 2025.

The joint test is statistically significant at the 1% level (($p=0.008$)). This indicates that the effect of inflation is not uniform across income groups.

Test of Hypothesis Three

H₀₃: There is no significant difference in the impact of inflation on household spending across income groups in Ebonyi State.

Since the joint test is statistically significant ($p = 0.008$), the null hypothesis is rejected. Hence, the study concludes that the impact of inflation on household spending differs significantly across income groups in Ebonyi State.

5. Discussion of Findings

The first major finding is that inflation has a significant positive effect on household food spending. The estimated marginal effect indicates that greater perceived inflation substantially increases the probability that households modify their food expenditure. This finding is economically plausible because food represents an essential component of household consumption. When food prices rise, households cannot completely eliminate food consumption; instead, they tend to respond through changes in quantity, quality, frequency of purchases and substitution toward less expensive products.

The second finding concerns healthcare expenditure. Inflation significantly increases the probability of changes in household healthcare spending. However, the magnitude of the effect is smaller than that observed for food spending. This may reflect the fact that healthcare expenditure is partly discretionary in the short run. Faced with rising costs, households may delay treatment, purchase less expensive medicines, use lower-cost healthcare providers or reduce preventive healthcare activities. Such responses may reduce immediate financial expenditure but potentially increase longer-term welfare risks.

The third important finding is that household income significantly differentiates the effect of inflation on overall spending. The marginal effects indicate that the probability of spending adjustment declines as income increases. The strongest effect is observed among households earning less than ₦50,000 per month. This finding is consistent with the economic proposition that lower-income households have less capacity to absorb price increases. Because essential goods constitute a relatively large share of their expenditure, inflation can quickly translate into changes in consumption behaviour.

Household size is also consistently positive across the models. Larger households have a greater probability of experiencing inflation-induced spending changes. This is intuitive because additional household members increase the demand for food, healthcare and other basic necessities. Consequently, even modest price increases can generate significant aggregate expenditure pressures for larger families.

Education does not have a statistically significant effect in the estimated models. This suggests that, after controlling for inflation, income, household size and location, differences in education do not independently explain substantial differences in the probability of spending adjustment. Education may influence awareness and financial decision-making, but its independent effect appears weaker than that of inflation and household income.

Similarly, the urban-rural difference is statistically insignificant. Although the estimated marginal effect is positive, the evidence is insufficient to conclude that urban households differ systematically from rural households in their overall probability of adjusting expenditure once inflation, income, household size and education are controlled for. This finding suggests that inflationary pressures may be sufficiently widespread across Ebonyi State to affect households irrespective of location.

The empirical analysis provides evidence that inflation is an important determinant of household spending behaviour in Ebonyi State. Across the three models, inflation has positive and statistically significant effects on food spending, healthcare spending and overall household spending adjustment.

The analysis further demonstrates that household income matters considerably. The impact of inflation is strongest among lower-income households and decreases as income rises. This indicates that inflation has a distributional effect, with financially constrained households facing greater pressure to modify their consumption decisions.

The findings support the conclusion that persistent inflation can substantially alter household welfare through changes in consumption and expenditure patterns. Policies designed to address inflation in Ebonyi State should therefore pay particular attention to essential consumption items and vulnerable low-income households.

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