




From kitchen to canteen: What drives away-from-home food consumption in Ghana? A double-hurdle analysis

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ABSTRACT

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Away-from-home food consumption (AFHFC) has become an increasingly important feature of contemporary food systems, reflecting broader shifts in household lifestyles, urbanization, labor market participation, and income dynamics. In Ghana, however, empirical evidence on the drivers of AFHFC remains limited, particularly at the national level. This study employs descriptive statistics and a double-hurdle model to examine the participation rate, expenditure patterns, and determinants of AFHFC among Ghanaian households, using data from the 2016/2017 Ghana Living Standards Survey. The results show that AFHFC is widespread, with 80% of households reporting some expenditure on food prepared outside the home. Among participating households, AFHFC accounts for 17% of total food expenditure, indicating that it is an important but still complementary component of household food consumption. The double-hurdle model distinguishes between the decision to participate in AFHFC and the level of expenditure conditional on participation. The results establish that income significantly increases AFHFC expenditure, while urban residence raises both the probability of participation and spending intensity. Male-headed households and informal-sector workers are more likely to engage in AFHFC, whereas married household heads, larger households, and homeowners are less likely to participate and spend less. The study concludes that AFHFC is an increasingly important feature of Ghana's food system and should be more explicitly incorporated into food policy, urban planning, and nutrition interventions.

Contribution/Originality: This study contributes to the existing literature by exploring the determinants of away-from-home food consumption among Ghanaian households. It offers new insights into the factors influencing participation and expenditure, and enhances understanding of implications for food policy, nutrition planning, and urban development in Ghana.

1. INTRODUCTION

Global food consumption habits have shifted markedly over the past two decades, reflecting broader changes in urbanization, labor patterns, and food systems (Landais et al., 2023; Popkin & Reardon, 2018). One piece of evidence of this transition is the growing consumption of food prepared outside the home, commonly termed food away from home or away-from-home food consumption (AFHFC) (Fiedler & Yadav, 2017; Landais et al., 2023). This includes meals, snacks, and beverages obtained from restaurants, cafeterias, food vendors, street outlets, schools, workplaces, and other non-home sources, whether consumed at the place of purchase or elsewhere (Fiedler & Yadav, 2017; Landais et al., 2023). What was once an occasional practice has increasingly become part of routine household food behavior across both developed and developing contexts (Popkin & Reardon, 2018; Smith, Ng, & Popkin, 2013).

In low- and middle-income countries, these changes are closely associated with rapid urbanization, rising incomes, women's labor force participation, and shifting social and time-use patterns (Cockx, Colen, & De Weerd, 2018; Colozza & Avendano, 2019; Landais et al., 2023). As households juggle paid work, commuting, and domestic responsibilities, traditional home cooking is increasingly supplemented by commercially prepared foods and other convenient options (Landais et al., 2023; Reardon et al., 2021).

Ghana offers a striking example of these trends. Over the past decade, its urban population has grown significantly from 50.9% in 2010 to about 56.7% in 2021 (Ghana Statistical Service (GSS), 2021). With this growth have come longer commutes, more women entering the workforce, and a proliferation of both formal and informal food vendors. As a result, the traditional norm of three home-cooked meals per day is increasingly less common, especially in urban and peri-urban communities. AFHFC in Ghana takes many forms: from street foods and fast-food joints to workplace canteens, school meal programs, restaurants, and vendors operating in transport stations and markets. The Food and Agriculture Organization (Food and Agriculture Organization of the United Nations (FAO), 1995) defines street foods as "ready-to-eat foods and beverages prepared and sold by vendors in streets and other public places," a category that plays a central role in Ghana's urban food supply.

Urbanization, income growth, and modern lifestyles continue to fuel the rise in demand for food prepared outside the home (Cockx et al., 2018; Kushitor et al., 2025). Research shows that as incomes grow and the cost of time increases, households begin to substitute home-cooked meals with ready-made ones (Cockx et al., 2018). Ghana's growing number of restaurants, chop bars, fast-food outlets, and institutional caterers illustrates this shift. Additionally, labor market shifts, particularly the rise in women working for pay, have significantly shaped AFHFC. While boosting household earnings, this trend has also raised the time cost of cooking at home (Amporfui, Sakyi, Frimpong, Arthur, & Novignon, 2018; Kushitor et al., 2025). In Ghana, where women traditionally take charge of meal preparation, this change has major effects on food choices. Lengthy commutes, traffic congestion, and irregular work hours make home cooking less practical, increasing reliance on food prepared elsewhere (Carmichael et al., 2025; Carmichael et al., 2024).

Beyond convenience, AFHFC has economic importance. Spending on food outside the home supports job creation and adds value across the wider agri-food system, including foodservice and related downstream activities (Barrett, Reardon, Swinnen, & Zilberman, 2022; Reardon et al., 2021). In Ghana, street food and small-scale food businesses are vital sources of livelihood within the informal urban economy, particularly for women (Ashaley-Nikoi & Abbey, 2023; Baah-Boateng & Vanek, 2020). Evidence from Kumasi shows that women engaged in the street food sector can earn substantial incomes, underscoring AFHFC's contribution to household welfare and local livelihoods (Otoo, Fulton, Ibro, & Lowenberg-DeBoer, 2011). Studying AFHFC is essential to understanding consumer habits and its role in transforming the broader food system and economic livelihoods (Ashaley-Nikoi & Abbey, 2023; Barrett et al., 2022).

Yet, the growing popularity of AFHFC raises health and nutrition concerns. Studies suggest that foods consumed away from home are often more calorie-rich and higher in fats, sugars, and sodium, but lower in essential nutrients, compared to home-cooked meals (Lachat et al., 2012; Todd, Mancino, & Lin, 2010). Regular consumption has been associated with weight gain, poorer nutritional status, and adverse health outcomes, including increased obesity risk, although the strength of these relationships varies across contexts (Bezerra, Curioni, & Sichieri, 2012; Landais et al., 2023). Food safety is another major concern, especially in settings where hygiene regulation and infrastructure are weak. Street-vended foods may be exposed to microbial contamination, unsafe handling, environmental pollutants, and poor storage conditions (Alimi, 2016; Food and Agriculture Organization of the United Nations (FAO), 2009; Rane, 2011). In Ghana, research has documented unsafe hygiene and handling practices among some food vendors, including poor environmental sanitation, inadequate handwashing, and microbiological contamination, all of which may increase consumers' risk of foodborne illness (Ababio & Lovatt, 2015; Mensah, Yeboah-Manu, Owusu-Darko, & Ablordey, 2002; Nortey, Amu, Senu, & Effah, 2024; Yakubu, Gaa, Kalog, & Mogre, 2023).

Despite its significance, research on away-from-home food consumption in Ghana remains limited and piecemeal. Existing studies are mainly concentrated on street foods in large urban centers, particularly Accra and Kumasi (Maxwell, 2000; Mensah, Aidoo, & Teye, 2013). These studies have provided useful insights into household spending patterns, food safety concerns, and consumer motivations, with convenience repeatedly identified as a major reason for patronage (Hiamey, Amuquandoh, & Boison, 2013; Hiamey & Hiamey, 2018). However, this narrow focus pays less attention to other expanding domains of AFHFC, including workplace meals, restaurants, and institutional foodservice. Additionally, much of the Ghanaian evidence remains localized and descriptive, limiting broader generalization (Akparibo et al., 2021). Although national household expenditure data are increasingly available and recent analyses have begun to map food expenditure patterns in Ghana, AFHFC-specific national evidence remains sparse (Gersten, Baylin, Jansen, Sarpong, & Jones, 2025). There is a strong need for national-level, data-driven studies that examine participation in AFHFC, household expenditure levels, and heterogeneity and non-participation. Such evidence is vital for designing effective food policies, nutrition interventions, and urban planning strategies.

This study, therefore, aims to fill this gap by advancing a detailed analysis of AFHFC among Ghanaian households. It has two main objectives. First, it explores how AFHFC patterns vary by income, family structure, employment, and location. Second, it uses a double-hurdle model to examine both the decision to consume food away from home and the amount spent, allowing for a more nuanced look at AFHFC behavior. This approach addresses earlier research gaps and sheds light on the complex factors driving Ghana's shifting food landscape.

2. MATERIALS AND METHODS

The Ghana Statistical Service (GSS) collected datasets for the seventh round of the Ghana Living Standard Survey (GLSS7) between October 2016 and October 2017 (Ghana Statistical Service (GSS), 2018). These datasets were used to estimate the factors influencing the intake of food away from home. They include a wide range of statistics and indicators to gauge the population's living standards and well-being. GLSS7 has been hailed as one of Ghana's richest datasets. The data was gathered using five primary questionnaires from GLSS7. Included in the data are household characteristics, governance, safety and security, and non-farm activities (Ghana Statistical Service (GSS), 2018). The GLSS7 employs a two-stage stratified sampling technique. In the first stage, 1,200 Enumeration Areas were selected from all ten regions of Ghana. The second stage involved selecting 18,000 households from these areas. However, only 14,009 households were fully interviewed (Ghana Statistical Service (GSS), 2018). The main focus of this study is the consumption of food away from home. Therefore, out of the 14,009 households, 2,559 observations were dropped due to missing data and outliers, which could have led to inaccurate results. The final sample consists of 7,469 observations.

The expenditure patterns of eating away from home food were analyzed based on the participation rate, share of away-from-home food expenditure to total food expenditure, and the average monthly away-from-home food expenditure. This same criterion was used to analyze the away-from-home food expenditure patterns in Slovakia by Cupák, Pokrivčák, and Rizov (2016). This was conducted using Stata version 6.

2.1. Empirical Specification

The data used for the analysis of this study are censored in nature. That is, a significant number of households report zero expenditure on away-from-home foods. If this censoring problem is not addressed, using standard estimation models, the analysis would yield biased and inconsistent estimates (Amemiya, 1984). To overcome this problem, several econometric models dealing with limited dependent variables have been developed, including double-hurdle and Tobit regression.

To analyze the determinants of away-from-home food expenditure, this study employed the double-hurdle model. The double-hurdle model was developed by Cragg (1971) and has been applied by various researchers in our empirical literature to analyze factors affecting expenditure on away-from-home food. Generally, the double-hurdle model is

applied when consumers have two decisions to make: participation and consumption decisions. Each decision process is modeled using a different latent variable. To observe a positive level of expenditure, these two hurdles or decisions must be passed. A Probit model is used to estimate participation decisions, while the Tobit model estimates the expenditure or consumption level. The participation decision of the double-hurdle model is defined as:

$$di^* = zi\alpha + vi$$

$$di = \begin{cases} 1 & \text{if } di^* > 0 \\ 0 & \text{if } di^* \leq 0 \end{cases} \quad (1)$$

From the above equation, di^* is an observed variable which represents the participation hurdle, and di is the observed variable, that is, the household participates in food away-from-home if $di = 1$ and does not participate if $di = 0$. Zi represents an explanatory variable that affects the decision to participate, or otherwise, and vi is the error term and is assumed to be distributed as $vi \sim (0, 1)$.

With respect to the expenditure level, the equation is given as.

$$yi^* = xi\beta + ui$$

$$yi = yi^* \text{ if } di = 1 \text{ and } yi^* > 0 \quad (2)$$

$$yi = 0 \text{ otherwise}$$

Where yi^* is a latent variable describing the expenditure of households on foods away-from-home, xi is a vector of variables explaining the amount of expenditure on foods away-from-home, and ui is the error term and assumed to be normally distributed as $ui \sim (0, \sigma^2)$. As indicated in the above equations, the participation and expenditure stages in the double-hurdle model can be ascertained by a separate set of explanatory variables zi and xi with corresponding parameters α and β to be estimated. The double-hurdle model is therefore estimated by maximizing the log-likelihood function below.

$$L(\alpha, \beta, \theta) = 1[yi = 0] \log[1 - \Phi(zi\alpha)] + 1[yi > 0] \log[\Phi(zi\alpha)] \times 1(yi > 0) \left\{ -\log \left[\Phi \left(\frac{xi\beta}{\sigma} \right) \right] + \log \left[\phi \left(\frac{xi\beta}{\sigma} \right) \right] - \log(\sigma) \right\} \quad (3)$$

The probability that expenditure on food away from home will be positive for a particular household is given by:

$$P(yi > 0 | zi) = \Phi(zi\alpha) \quad (4)$$

Whereas the probability that food-away-from-home expenditure will be zero is given as:

$$P(yi = 0 | zi) = 1 - \Phi(zi\alpha) \quad (5)$$

The expected value of food away-from-home expenditure y , conditional on positive participation, is:

$$E(yi | yi > 0, xi) = xi\beta + \sigma \times \lambda \left(\frac{xi\beta}{\sigma} \right) \quad (6)$$

Where $\lambda(w)$ is the inverse Mills ratio given as:

$$\lambda(w) = \phi(w) / \Phi(w) \quad (7)$$

Where Φ is the standard normal cumulative distribution function and ϕ is the standard normal density function. Finally, the unconditional expected value of away-from-home food expenditure is given as:

$$E(yi | zi, xi) = \Phi(zi\alpha) \left\{ xi\beta + \sigma \lambda \left(\frac{xi\beta}{\sigma} \right) \right\} \quad (8)$$

If the same variables are included in both the participation stage and the expenditure stage of the double-hurdle model, the parameters of the model will not be identified and hence are difficult to estimate (Jones, 1992). Due to this, some restrictions must be imposed regarding the exclusion of certain variables in at least one of the stages of the double-hurdle model. The logarithm of household income is excluded from the first equation due to the underlying assumption of the double-hurdle model that non-economic factors affect the participation decision, while economic factors affect the expenditure decision (Keelan, Henschion, & Newman, 2009). Taking the same assumption into consideration, the sector of employment, which is measured as a dummy variable, is excluded from the second equation. Level of significance is denoted by (*) where ***, **, and * represent significance at 1%, 5%, and 10%,

respectively. The variables used in the econometric models, their descriptions, and measurements are presented in Table 1.

Table 1. Descriptions and measurements of variables.

Variables	Descriptions	Measurements
EXP_FAFH	Logarithm of household expenditure on food away from home	In GHS
INCOME	Logarithm of total household net income	In GHS
HHMARST	Marital status of household head	1 = if married 0 = otherwise
HHSEX	Gender of household head	1 = if male 0 = otherwise
HHLOC	Location of household	1 = if urban 0 = otherwise
HHSIZE	Logarithm of household size	Number of people
EDYEARS	Logarithm of the educational level of the household head	Years
OWNERSHIP_TYPE	House ownership type	1 = if owned 0 = otherwise
EMP_SECTOR	Sector of employment of the household head	1 = if informal 0 = otherwise

3. RESULTS AND DISCUSSION

3.1. Expenditure Patterns of Away-from-Home Food Consumption

In this subsection, we examine the expenditure patterns of away-from-home food consumption (AFHFC) in Ghana using three descriptive indicators: the participation rate in AFHFC, the share of away-from-home food expenditure in total household food expenditure, and the mean monthly expenditure on away-from-home food conditional on participation. These indicators are used to assess how AFHFC varies across selected socioeconomic characteristics, specifically region, rural–urban location, educational attainment, and marital status of the household head, as presented in Table 2.

Table 2. Expenditure patterns of away-from-home food consumption.

Variables	Participation rate	AFHF share in total food expenditure per month	AFHF expenditure per month (GHS)
Ghana	0.80	0.17	93.8
Region			
Ashanti	0.87	0.25	130.8
Brong-Ahafo	0.86	0.25	80.7
Central	0.87	0.14	82.0
Eastern	0.86	0.13	68.1
Greater Accra	0.93	0.24	167.8
Northern	0.64	0.14	77.0
Upper East	0.65	0.09	41.2
Upper West	0.40	0.09	41.2
Volta	0.84	0.13	55.0
Western	0.72	0.12	58.8
Location			
Rural	0.74	0.12	58.8
Urban	0.87	0.21	122.0
Marital Status			
Married	0.77	0.13	81.3
Divorced	0.86	0.20	90.8
Widowed	0.80	0.14	67.5
Never Married	0.90	0.40	141.5
Level of Education			
Basic	0.80	0.14	66.8
Secondary	0.82	0.18	96.7
Tertiary	0.79	0.17	109.8
No Formal Education	0.76	0.18	86.7

Note: AFHF is away-from-home food.

Source: Ghana Statistical Service, 2017; authors' calculations.

The results show that AFHFC has become an important feature of household food consumption in Ghana. Nationally, 80% of households reported some expenditure on food prepared outside the home during the 2016/2017 survey period. Among participating households, the average monthly expenditure on AFHFC was GHS 93.8, representing 17% of total household food expenditure. These figures suggest that food prepared outside the home is widely consumed but still functions largely as a complement to home-prepared meals rather than a complete substitute. This pattern is consistent with broader evidence from low- and middle-income countries showing that food away from home is becoming increasingly embedded in everyday diets, although its relative budget share remains lower than in many high-income settings and continues to be shaped by income, urbanization, labor-market participation, and the structure of local food environments (Landais et al., 2023). In a cross-sectional study in Ghana, Aidoo, Ohene-Yankyera, and Abankwah (2012) found that 27% of urban household food budgets are spent on food away from home, suggesting a higher expenditure. More recent national evidence further identifies food away from home as a distinct and increasingly important component of Ghana's changing food expenditure profile (Gersten et al., 2025).

In a comparative perspective, the 17% share of total food expenditure devoted to AFHFC in Ghana remains below levels reported in some high-income countries. For example, food-away-from-home expenditure accounted for about 50% of total food spending in the United States in 2014 (U.S. Department of Agriculture Economic Research Service, 2014), while Cupák et al. (2016) reported an average share of 21% in Slovakia over the period 2006–2012, alongside a participation rate of 62%. These comparisons suggest that although Ghana's national AFHFC share is still modest relative to advanced economies, the phenomenon is already substantial and aligns more closely with the transitional patterns observed in developing and middle-income contexts, where eating outside the home is expanding but has not yet overtaken home-based food preparation.

The results also show considerable differences in AFHFC patterns across regions. Greater Accra records the highest participation rate (93%), the highest average monthly expenditure (GHS 167.8), and one of the highest expenditure shares (24%). This is unsurprising, given that Greater Accra is the most urbanized and economically dynamic region in the country, with a dense concentration of employment opportunities, commercial food outlets, transport flows, and time-constrained consumers. In such settings, the demand for convenience foods and commercially prepared meals is likely to be relatively high.

Ashanti and Central regions both record high participation rates in AFHFC (87%), yet their expenditure patterns differ markedly. In Ashanti, households allocate 25% of total food expenditure to AFHFC, whereas in the Central region, the corresponding figure is only 14%. This indicates that participation in AFHFC does not necessarily imply an equivalent expenditure intensity. Households may report consuming food away from home, but the frequency of purchase, type of outlet patronized, quality of food purchased, and value of each transaction may vary considerably across regions. In this regard, participation and expenditure capture different dimensions of dietary commercialization. For instance, Aidoo et al. (2012) show that urban household expenditure on food away from home is shaped not merely by whether households participate but also by the socioeconomic conditions under which that participation occurs. At the other end of the spectrum, the Upper West and Upper East regions record the lowest participation and expenditure intensity. In both regions, AFHFC accounts for only 9% of total food expenditure, while participation is 40% in Upper West and 65% in Upper East. Average monthly expenditure is also low, at GHS 41.2 in both regions, according to Table 2. These patterns likely reflect the relatively low levels of urbanization and greater dependence on home-prepared or self-provisioned food in the northern parts of the country.

A clear rural–urban divide is also evident. Urban households are more likely to participate in AFHFC than rural households (87% compared with 74%), spend substantially more in absolute terms (GHS 122.0 versus GHS 58.8), and allocate a larger share of their food budget to AFHFC (21% compared with 12%). This pattern aligns closely with the wider African and low- and middle-income countries literature. Urbanization tends to increase dependence on purchased food, intensify the opportunity cost of time, and expose households to a denser network of vendors,

restaurants, and workplace food options. Evidence from Tanzania shows that food away from home is especially prominent in large cities and smaller urban centers, although it is also spreading gradually into rural food systems (Cockx et al., 2018). Landais et al. (2023) similarly identify urban residence as one of the most consistent correlations of AFHFC across low- and middle-income countries. In Ghana, Aidoo et al. (2012) reinforce this interpretation by showing that urban household AFHFC expenditure varies significantly with household socioeconomic and demographic characteristics, suggesting that urban location not only increases exposure to food markets but also interacts with income and household structure to shape consumption behavior.

The results further indicate that educational attainment influences AFHFC, albeit in a non-linear manner. Households headed by persons with secondary education record the highest participation rate (82%), while the highest average monthly expenditure is observed among households headed by those with tertiary education (GHS 109.8). Households headed by persons with no formal education exhibit the lowest participation rate (76%), although their expenditure share (18%) is comparable to that of households with secondary education. These findings suggest that education may influence not only whether households consume food away from home but also the nature and value of the food purchased. More educated households may be more likely to consume higher-value meals, rely on more formal outlets, or incur higher spending in institutional or workplace food settings.

Marital status reveals substantial variation in AFHFC behavior. Household heads who have never married exhibit the highest participation rate (90%), the highest average monthly AFHFC expenditure (GHS 141.5), and the largest expenditure share (40%). By contrast, married household heads record the lowest participation rate (77%) and devote only 13% of total food expenditure to AFHFC. Divorced household heads also display relatively high participation (86%) and expenditure intensity (20%), while widowed household heads occupy an intermediate position with 80% participation and a 14% expenditure share. These differences likely reflect variation in household structure, size, and the organization of domestic food preparation. Never-married household heads may reside in smaller or less family-based households and therefore face weaker economies of scale in home cooking, increasing reliance on purchased meals. Married households, by contrast, may be better able to spread the fixed costs of meal preparation across several members, thereby making home-prepared meals relatively more economical. Notably, marital status has received limited direct attention in the AFHFC literature.

These results show that AFHFC is neither a marginal phenomenon nor a socially uniform one in Ghana. Rather, it has become a widespread but differentiated component of household food consumption, with particularly high prevalence and expenditure intensity in urbanized and economically dynamic regions, among never-married household heads, and among more educated households in expenditure terms.

At the same time, the results demonstrate that participation and expenditure should not be conflated. Households may enter the away-from-home food market for reasons that differ from those determining how much they eventually spend. This observation provides strong justification for the double-hurdle modeling strategy employed in the next stage of the analysis, since that framework allows the determinants of participation and the determinants of expenditure intensity to be examined separately. This analytical distinction is supported by prior empirical work from Bangladesh and South Africa, both of which show that food-away-from-home behavior involves related but distinct consumption decisions (Blick, Abidoye, & Kirsten, 2018; Lefophane, Elsie Legong, & Mbulaheni Mmbengwa, 2025; Mottaleb, Rahut, & Mishra, 2017).

3.2. Determinants of Away-from-Home Food Consumption

To identify the determinants of AFHFC, we estimated a double-hurdle model, which allows the participation decision and the expenditure decision to be analyzed separately. This is appropriate because the factors that induce a household to consume food prepared outside the home may not be identical to those that determine how much the household spends once it participates. The dependent variable is household expenditure on AFHFC measured in Ghana cedis (GHS), while the explanatory variables include income, household location, sex, marital status, age,

household size, education, housing tenure, and employment sector. The model (Table 3) is jointly significant at the 1% level, indicating that the included variables explain a substantial share of the observed variation in AFHFC behavior.

Table 3. Determinants of away-from-home food consumption (Double Hurdle).

Variables	Participation Stage		Consumption Stage		Elasticities and marginal effects	
	Coef.	Std. Err.	Coef.	Std. Err.	Probability	Expenditure
INCOME			0.013***	0.002		0.081***
HHLOC	0.231***	0.038	0.114***	0.006	1.263***	0.717***
HHSEX	0.174***	0.044	0.085***	0.007	0.712***	0.537***
HHMARST	-0.372***	0.042	-0.060***	0.006	-0.895***	-0.379***
HHAGE	0.001	0.001	-0.001**	0.000	-0.001	-0.003**
HHSIZE	-0.030***	0.008	-0.006***	0.001	-0.080***	-0.040***
EDYEARS	0.002	0.005	0.001	0.001	0.008	0.006
OWNER_TYPE	-0.236***	0.039	-0.044***	0.006	-0.599***	-0.279***
EMP_SECTOR	0.254***	0.054			0.400***	
Constant	0.718***	0.101	1.673***	0.017		
LR chi2	1567.17***					
Pseudo R2	0.090					
Observations	7,469					

Note: Probability: Effect on the probability of participation, Expenditure: Effect on the level of expenditure. Level of significance is denoted by where *** and ** represent significance at 1% and 5% respectively.

Income has a strong positive effect on expenditure on AFHFC. The estimated elasticity indicates that a 1% increase in income raises AFHFC expenditure by about 8.1%, suggesting that food prepared outside the home is highly responsive to improvements in household purchasing power.

While this finding is contrary to studies such as Aidoo et al. (2012) and Mottaleb, Rahut, and Mishra (2017), which found that lower-income households spend more on away-from-home foods, it is intuitive. As incomes rise, households are better able to pay for convenience, variety, and the time-saving attributes of commercially prepared meals. This aligns with Landais et al. (2023), who report that income significantly increases food-away-from-home expenditure among urban households in lower- and middle-income countries. It also broadly agrees with the African food-systems literature, which shows that income growth is a key driver of demand for processed and prepared foods, including meals consumed away from home (Blick et al., 2018; Lefophane et al., 2025). Reardon et al. (2021) argue that rising incomes, urbanization, and employment change have been central to the surge in demand for convenience-oriented food in Africa.

Household location also has a significant and positive effect on both stages of the model. Urban households are more likely to participate in AFHFC and, conditional on participation, spend more than their rural counterparts. The marginal effects indicate that urban residence increases both the probability of participation and the level of expenditure. This is consistent with the descriptive results and with prior literature showing that urban residence intensifies dependence on purchased food through longer commutes, denser food retail networks, greater exposure to street and restaurant food, and higher opportunity costs of home meal preparation. (Landais et al., 2023) and Liu (2009) identify urban residence as one of the most consistent correlations of AFHFC across low- and middle-income countries, while show that meals away from home are substantially more important in Tanzania's urban areas than in rural settings. In Ghana, Aidoo et al. (2012) similarly found that urban household food-away-from-home expenditure varies significantly across socioeconomic groups, reinforcing the role of urban food environments in shaping demand.

The sex of the household head is also significant in both hurdles. Male-headed households are more likely to participate in AFHFC and spend more once they do. One plausible explanation is that gendered divisions of labor continue to influence household food behavior. In many contexts, women retain primary responsibility for meal preparation, which may make female-headed households relatively more oriented toward home cooking or more

constrained in allocating resources to purchased meals. Aidoo et al. (2012) found that gender significantly shapes food-away-from-home expenditure among Ghanaian urban households, lending direct local support to this result. More broadly, the African literature links rising demand for prepared food to changing work patterns and the opportunity cost of time for both women and men, although the magnitude and direction of household-level gender effects may vary across contexts (Lefophane et al., 2025).

Marital status has a strong negative effect in both stages. Contrary to the findings of Lefophane et al. (2025), married household heads are less likely to participate in AFHFC and spend less when they do. This finding suggests that marriage is associated with greater reliance on home-prepared food, possibly because married households are more likely to benefit from economies of scale in cooking and from more stable domestic food arrangements. By contrast, non-married households may depend more heavily on purchased meals because they face tighter time constraints or more individualized living arrangements. Although the AFHFC literature pays less direct attention to marital status than to income or urbanization, the result is consistent with the broader logic of household production theory and with Ghanaian evidence showing that household demographic characteristics matter for food-away-from-home expenditure patterns. It also aligns with the broader two-stage AFHFC literature, which shows that household structure can shape both the decision to participate and the subsequent level of spending.

Age is not statistically significant in the participation stage, but it is negative and significant in the expenditure stage, implying that younger household heads tend to spend more on AFHFC once they participate, which is consistent with previous studies (Blick et al., 2018; Landais et al., 2023). This points to an important generational gradient in food behavior. Younger adults are often more exposed to convenience-oriented food environments, more likely to combine employment with mobility and irregular schedules, and may also be more open to commercially prepared meals as part of everyday consumption.

Household size is negative and significant in both hurdles. Larger households are less likely to participate in AFHFC and spend less, conditional on participation. This is one of the most theoretically consistent findings in the model (Blick et al., 2018; Landais et al., 2023). As household size increases, the fixed costs of home meal preparation can be spread across more members, making home cooking relatively more economical than purchasing prepared food individually. Larger households may therefore have stronger incentives to rely on home-prepared meals, especially in contexts where budget constraints remain binding.

Education is not statistically significant in either stage once the other covariates are controlled for. This suggests that the effect of education may operate indirectly through correlated factors such as income, occupation, place of residence, and exposure to formal labor markets, rather than through an independent effect on preferences. This result is actually plausible in light of the comparative literature. Consistent with this study, in South Africa, Lefophane et al. (2025) found that education had no significant effect on participation. In the present study, the insignificance of education implies that schooling alone does not independently drive AFHFC behavior in Ghana once urban residence, income, and other household characteristics are taken into account.

House ownership also matters. The negative coefficient on owner-occupation indicates that homeowners are less likely to participate in AFHFC and spend less than non-owners, implying that renters are relatively more engaged in food-away-from-home consumption. This is a plausible life-course and livelihood effect. Renters are often younger, more mobile, and more concentrated in urban labor markets, where time constraints and reliance on purchased food are stronger. While this specific variable has received limited direct attention in the AFHFC literature, its sign is consistent with the broader pattern in which urban mobility, flexible living arrangements, and labor-market pressures increase demand for convenience foods and prepared meals. In this sense, housing tenure can be interpreted as a proxy for a wider bundle of urban lifestyle characteristics associated with higher AFHFC.

Employment is significant in the participation stage, with informal-sector household heads more likely to purchase food outside the home, consistent with Lefophane et al. (2025). This is especially important in the Ghanaian

context. Informal work often involves irregular schedules, mobile workplaces, limited opportunities to return home for meals, and close dependence on street foods and other prepared-food vendors.

In summary, the results show that AFHFC in Ghana is shaped by a combination of economic capacity, household structure, and spatial location. Income, urban residence, male headship, and informal-sector work all increase the likelihood of participation or the intensity of expenditure, whereas marriage, larger household size, and homeownership reduce it. The findings also confirm the analytical value of distinguishing between the two hurdles. Some variables, such as age and employment sector, do not operate identically across the participation and expenditure stages, which would have been obscured in a single-equation model. This pattern closely mirrors prior double-hurdle evidence from Bangladesh and South Africa, where food-away-from-home behavior emerges as a sequential decision shaped by overlapping but non-identical determinants.

4. CONCLUSION AND POLICY IMPLICATIONS

This study examined the expenditure patterns and determinants of away-from-home food consumption (AFHFC) among Ghanaian households using nationally representative data and a double-hurdle modeling approach. The results show that AFHFC is already a significant component of household food behavior in Ghana. A large majority of households reported some expenditure on food prepared outside the home, although AFHFC still accounts for a moderate share of total food expenditure, indicating that it continues to complement rather than fully replace home-prepared meals. The descriptive analysis further revealed substantial heterogeneity across regions and household characteristics, with stronger participation and higher expenditure intensity in urban and economically dynamic regions, among never-married household heads, and among households with higher socioeconomic positioning.

The econometric results confirm that AFHFC is shaped by income, urban residence, household demographic structure, housing tenure, and employment conditions. Higher income increases expenditure on AFHFC, while urban location significantly raises both the probability of participation and the level of spending. Male-headed households and informal-sector workers are more likely to engage in AFHFC, whereas married household heads, larger households, and homeowners show lower participation and expenditure. These findings underscore that AFHFC in Ghana is not driven solely by consumer preference but also by broader structural changes in livelihoods, mobility, and household organization. They also justify the use of the double-hurdle framework, as the determinants of participation are not identical to those of expenditure intensity.

The policy implication is that AFHFC should be treated as an integral part of Ghana's food system rather than as a marginal consumption practice. As demand for prepared food outside the home continues to rise with urbanization and income growth, food policy must pay greater attention to the quality, safety, affordability, and nutritional implications of this sector. Urban food planning should better recognize the role of food vendors, workplace meals, and prepared-food markets in meeting the needs of time-constrained households, while supportive regulation should strengthen sanitation, food safety training, and basic infrastructure for small-scale operators. More broadly, future food and nutrition strategies in Ghana need to incorporate AFHFC more explicitly into national data systems and policy design, given its growing importance for household welfare, urban food access, and food system transformation.

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