Int. j. adv. multidisc. res. stud. 2026; 6(2):1825-1831

Received: 05-03-2026
Accepted: 15-04-2026

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Assessing the Socio-Economic and Structural Determinants of Perishable Food Accessibility Among Hostel Students: A Case Study of the University of Abuja, Nigeria

[1] Agbonika DA, [2] Unamba FC, [3] Olomu SA, [4] Istifanus SD, [5] Adedokun DA

[1, 2, 3, 4, 5] Department of Agricultural Economics, Faculty of Agriculture, The University of Abuja, PMB 117, Abuja, Federal Capital Territory, Nigeria

Corresponding Author: **Unamba FC**

Abstract

This study assessed the socio-economic and structural determinants of perishable food accessibility among hostel students at the University of Abuja, Nigeria. Employing a descriptive survey design, a total of 70 hostel students were purposively selected from hostels within the university. Structured questionnaires were administered to elicit responses on socio-economic characteristics, food quality perceptions, accessibility barriers, and temporal–logistical constraints. Data were analysed using descriptive statistics and binary logistic regression. Findings revealed that the majority of respondents were female (60.0%), aged 23–27 years (31.4%), and pursuing postgraduate studies (45.7%). A considerable proportion received monthly allowances of ₦80,000 and above (35.7%), yet food insecurity concerns persisted. Students' perceptions of the quality, safety, and freshness of perishable foods were moderately positive, though substantial proportions expressed neutrality or disagreement regarding hygienic handling and safety compliance. Logistic regression analysis identified price of perishable food (OR = 3.841, $p < 0.001$), distance to food vendors (OR = 2.617, $p = 0.004$), storage facility availability (OR = 2.184, $p = 0.012$), and monthly allowance level (OR = 1.963, $p = 0.021$) as significant determinants of perishable food accessibility. Temporal and logistical barriers, including restricted vendor operating hours, long distances to markets, and infrequent purchasing patterns, further compounded food accessibility challenges. Poor storage and preservation facilities emerged as the most reported constraint (67.1%). The study recommends that the university management invest in on-campus refrigeration infrastructure, regulate food vendor operating hours, and support student welfare initiatives that enhance financial access to nutritious perishable foods.

Keywords: Perishable Food, Hostel Students, Food Accessibility, Socio-Economic Determinants, University of Abuja

Introduction

Access to nutritious and safe food is a fundamental pillar of human health, cognitive functioning, and overall academic performance. Among the most nutritionally vulnerable groups within the Nigerian university system are hostel-dwelling students who are geographically detached from their primary households, financially dependent on periodic allowances, and exposed to the structural inadequacies of campus food environments (Food and Agriculture Organization [FAO], 2021; Adeleke & Omotayo, 2023) [3, 1]. Perishable foods — encompassing fresh fruits, vegetables, dairy products, meat, fish, and eggs — are indispensable for a nutritionally balanced diet and the prevention of micronutrient deficiencies. Yet, the consistent and adequate procurement of these food categories remains a formidable challenge for hostel-resident students in Nigerian federal universities, where campus food systems are underdeveloped and student purchasing power is often eroded by inflationary pressures (Ibrahim, Adeniyi & Salisu, 2022; Nwosu & Oladele, 2021) [7, 9].

The University of Abuja, a federal institution situated within the Municipal Area Council of Nigeria's Federal Capital Territory, accommodates a sizeable population of hostel-resident students across male, female, and private extension hostel categories. Although its urban location provides proximity to established commercial food markets in Abuja's metropolitan axis, hostel students continue to encounter considerable challenges in securing regular and affordable access to fresh perishable food items. These challenges stem from a complex interplay of socio-economic and structural factors: the volatility of monthly

allowances against the backdrop of rising urban food prices, considerable physical distances to fresh food retail outlets, limited refrigeration and cold storage infrastructure within hostel facilities, restricted vendor operating schedules that conflict with students' academic timetables, and persistent concerns regarding the quality and hygienic safety of perishable items sold on and around campus (Nwosu & Oladele, 2021; Osei, Aryeetey & Laar, 2020 [11]; Ukwuani-Sagay, 2022) [9, 11, 14].

Globally, food insecurity among tertiary-level students has emerged as a significant public health and academic welfare concern. Empirical studies across North America, Europe, and sub-Saharan Africa consistently document that a substantial proportion of university students experience moderate to severe food insecurity, which negatively impacts academic concentration, psychological wellbeing, and degree completion rates (Bruening *et al*., 2017; Nazmi *et al*., 2019) [2, 8]. In sub-Saharan Africa, including Nigeria, these challenges are intensified by high inflation rates, the absence of robust social protection mechanisms, limited campus nutrition services, and a cultural over-reliance on starchy, carbohydrate-dense foods at the expense of dietary diversity (Olumakaiye, 2020; Ukwuani-Sagay, 2022) [10, 14]. Despite this growing body of global evidence, the specific socio-economic and structural determinants that shape perishable food accessibility among hostel students in Nigerian federal universities remain remarkably understudied, creating a critical evidence gap for both institutional policy and campus health programming.

The literature affirms that socio-economic attributes — including gender, age cohort, academic level, and the adequacy of monthly allowances — significantly mediate students' food purchasing behaviour, dietary diversity, and nutritional status (Gaines *et al*., 2014; Sogari, Velez-Argumedo, Gómez & Mora, 2018) [5, 12]. Equally, structural determinants including the spatial proximity of food vendors to student accommodation, on-campus cold storage infrastructure, transportation costs and logistics, vendor operating hours, and seasonal fluctuations in food supply fundamentally condition the frequency and quality of perishable food purchases among hostel residents (Fram *et al*., 2011; Osei *et al*., 2020) [4, 11]. A nuanced, evidence-based understanding of how these socio-economic and structural variables interact to shape food accessibility outcomes is therefore critical for the formulation of targeted institutional responses and welfare policies that are both feasible and effective within the Nigerian university context.

Against this background, the general objective of this study was to assess the socio-economic and structural determinants of accessibility to perishable foods among hostel students at the University of Abuja, Nigeria. Specifically, the study sought to achieve the following objectives:

1. Describe the socio-economic characteristics of hostel students, including age, gender, academic level, and monthly allowance in the study area;
2. Examine students' perceptions of the quality, safety, and freshness of perishable foods available on and around campus in the study area;
3. Determine the factors influencing perishable food accessibility among hostel students in the study area using binary logistic regression; and
4. Assess temporal and logistical barriers associated with accessing perishable foods, including vendor operating hours, distance to markets, and frequency of purchases in the study area.

Literature Review

Food insecurity among university students is a growing global concern that has attracted considerable scholarly attention in recent decades. Bruening *et al*. (2017) [2] documented that approximately 36% of students across American universities experience some degree of food insecurity, with the challenge far more pronounced in low- and middle-income countries where social protection mechanisms are weak and campus food infrastructure is underdeveloped. Nwosu and Oladele (2021) [9] observed that Nigerian university students contend with compounded food vulnerabilities, including inadequate dietary diversity, over-reliance on carbohydrate-dense convenience foods, and near-total exclusion of fresh perishable items from regular consumption. These trends are consistent with the FAO (2021) [3], which linked deteriorating dietary quality among youth to systemic barriers embedded in local food systems rather than to individual behaviour alone. The specific challenge of accessing perishable foods — defined as items with short shelf-lives including fresh fruits, vegetables, dairy, meat, and eggs — is particularly acute in campus environments where cold chain infrastructure is minimal and vendor regulation is largely absent (Ibrahim, Adeniyi & Salisu, 2022; Ukwuani-Sagay, 2022) [7, 14].

Food accessibility, as distinguished from food availability, encompasses the physical, financial, and temporal ease with which individuals can procure adequate food (FAO, 2021) [3]. For hostel students, structural barriers — including distance to food markets, inadequate on-campus storage infrastructure, restricted vendor operating hours, and transportation costs — significantly impede consistent access to perishable foods (Osei, Aryeetey & Laar, 2020; Ibrahim *et al*., 2022) [11, 7]. Socio-economic dimensions, particularly monthly allowance adequacy and academic level, further mediate students' capacity to afford diverse, nutritious food of perishable categories (Gaines *et al*., 2014; Olumakaiye, 2020) [5, 10]. Student perceptions of campus food quality, freshness, and hygienic safety also serve as critical behavioural mediators: research confirms that students who perceive on-campus vendors as non-compliant with food safety standards are significantly more likely to seek costlier off-campus alternatives, thereby increasing temporal and financial burdens (Sogari, Velez-Argumedo, Gómez & Mora, 2018; Adeleke & Omotayo, 2023) [12, 1]. In the Nigerian campus context specifically, informal food vending — which constitutes the primary food service modality — is characterised by inconsistent quality standards and limited institutional oversight (Nwosu & Oladele, 2021) [9]. Binary logistic regression has been widely validated in food security literature as an appropriate analytical tool for modelling the determinants of food access outcomes when the dependent variable is dichotomous (Fram *et al*., 2011; Nazmi *et al*., 2019; Hosmer & Lemeshow, 2000) [4, 8, 6], and prior campus-based studies confirm its utility in identifying income, distance, and infrastructure as significant predictors of perishable food accessibility (Ibrahim *et al*., 2022; Osei *et al*., 2020) [7, 11].

Theoretical Framework

This study is anchored in the Food Systems Framework developed by the FAO (2021) [3], which conceptualises food

security as an outcome shaped by the interplay of food system activities — production, storage, processing, distribution, and consumption — and the enabling or constraining environment of economic, social, cultural, and governance factors. Within this framework, food accessibility is treated as a dynamic outcome mediated by both supply-side structural conditions and demand-side socio-economic capacities. For hostel students, the relevant food system is compressed into a campus-level micro-environment where structural factors such as vendor proximity, cold storage availability, and operating schedules interact with individual-level variables including income, academic workload, and food safety perceptions to determine actual food access outcomes. The framework is particularly germane to this study because it shifts analytical attention away from individual dietary choices in isolation toward the structural and systemic conditions that enable or constrain those choices.

Complementing this, the Social Ecological Model (SEM) of health behaviour (Bronfenbrenner, 1979; adapted by Gaines *et al*., 2014 [5]) provides a multilevel lens through which individual, interpersonal, institutional, and environmental factors are understood as nested determinants of food behaviour. Applied to the present study, the SEM positions monthly allowance and academic level as individual-level factors, campus hostel type and peer food norms as interpersonal factors, vendor operating regulations and university food policy as institutional factors, and market distance and power supply reliability as environmental factors. Together, these two frameworks situate the study's objectives within an integrated theoretical scaffold that justifies the use of both descriptive statistics — to profile socio-economic characteristics and perceptions across levels — and binary logistic regression, which simultaneously estimates the independent contribution of multiple determinants to perishable food accessibility outcomes.

Methodology

Study Area

The study was conducted at the University of Abuja, located in the Municipal Area Council of the Federal Capital Territory (FCT), Abuja, Nigeria. Established in 1988, the university is a federal university offering undergraduate, postgraduate, and professional programmes across multiple faculties. The university accommodates hostel students in male hostels, female hostels, and private/extension hostels situated within or adjacent to the campus. As a federal institution in Nigeria's capital city, the University of Abuja serves a diverse student population drawn from across the country's geopolitical zones, presenting a heterogeneous socio-economic profile among its hostel-dwelling students. The institution's urban-peri-urban setting provides access to off-campus markets, yet campus-based food infrastructure remains limited, making it a suitable study site for examining perishable food accessibility challenges.

Sampling Procedure and Sample Size

A purposive sampling technique was employed to select 70 hostel students who were resident in the university's hostels at the time of the survey. This sample size was informed by the manageable and bounded population of hostel residents, and is consistent with the approach adopted for small-scale surveys in campus-based food security studies (Olumakaiye, 2020; Ukwuani-Sagay, 2022) [10, 14]. Respondents were drawn from the three hostel categories: female hostel, male hostel, and private/extension hostels within campus. All selected respondents provided informed consent to participate in the study.

Data Collection Instrument

Data were collected using a structured questionnaire administered via Google Forms between January and February 2026. The questionnaire comprised 21 substantive items covering: (i) socio-economic characteristics (sex, age, academic level, hostel type, and monthly allowance); (ii) food-seeking behaviour (primary source of perishable food and purchase frequency); (iii) perceptions of food quality, safety, and freshness (five Likert-scale items); (iv) influence of structural factors on food accessibility (seven influence-rating items on a five-point scale: No influence, Low, Moderate, High, Very High); and (v) specific constraints to perishable food access (multiple-response item). The consent question was included as a filter, ensuring only willing participants were analysed.

Data Analysis

The data collected were analysed using descriptive statistics and inferential statistical techniques to address the four specific objectives. For Objectives 1, 2, and 4, descriptive statistics including frequencies, percentages, and means were computed to characterise socio-economic profiles, food quality perceptions, and logistical barriers. For Objective 3, binary logistic regression was applied to identify the socio-economic and structural determinants of perishable food accessibility among hostel students. The dependent variable was coded as 1 (adequate accessibility, defined as purchasing perishable food daily or 2–3 times per week) and 0 (inadequate accessibility, defined as once a week or occasional purchases). Independent variables included price influence, distance influence, storage facility availability, monthly allowance, vendor operating hours, transportation cost, and seasonality. Model fit was assessed using the Hosmer–Lemeshow test, Nagelkerke R^2, and overall classification accuracy. All analyses were conducted using IBM SPSS Statistics Version 26.

Results and Discussion

Socio-Economic Characteristics of Hostel Students

Table 1 presents the distribution of respondents by sex, age, academic level, hostel of residence, and monthly allowance. Out of 70 respondents, the majority were female (60.0%, n = 42) compared to male respondents (40.0%, n = 28). This gender distribution reflects the broader enrolment pattern at the University of Abuja where female participation in hostel residency has increased in recent years. The dominance of female respondents is consistent with the findings of Olumakaiye (2020) [10] and Ukwuani-Sagay (2022) [14], who similarly reported higher female representation in campus-based food security studies in Nigerian universities.

The age distribution reveals that the modal age bracket was 23–27 years (31.4%, n = 22), followed by 18–22 years (24.3%, n = 17) and 28–32 years (22.9%, n = 16). A small proportion were above 32 years (12.9%, n = 9) and below 18 years (8.6%, n = 6). The predominance of students in the 23–27 age cohort is consistent with the academic level distribution, which indicates that postgraduate students constituted the largest group (45.7%, n = 32), followed by 200 Level students (18.6%, n = 13), 500 Level students

(14.3%, n = 10), 100 Level students (11.4%, n = 8), and 400 Level students (10.0%, n = 7). The high representation of postgraduate students suggests that older, career-conscious students constitute a significant portion of on-campus hostel residents, possibly due to proximity-to-study motivations.

Regarding hostel of residence, the majority were accommodated in private/extension hostels within campus (47.1%, n = 33), followed by the female hostel (35.7%, n = 25) and male hostel (17.1%, n = 12). The monthly allowance distribution reveals that the largest group received ₦80,000 and above (35.7%, n = 25), with considerable proportions receiving ₦20,000–₦39,999 (22.9%, n = 16) and ₦40,000–₦59,999 (21.4%, n = 15). Only 12.9% (n = 9) received below ₦20,000 monthly, and 7.1% (n = 5) received ₦60,000–₦79,999. Despite seemingly high allowance levels among some students, prevailing inflation and elevated food prices in Abuja likely erode purchasing power, rendering even relatively higher allowances insufficient for consistent access to perishable foods (Nwosu & Oladele, 2021) [9].

Table 1: Distribution of Respondents by Socio-Economic Characteristics (n = 70)

Variable	Frequency (n)	Percentage (%)
Sex		
Male	28	40.0
Female	42	60.0
Age (Years)		
Below 18	6	8.6
18 – 22	17	24.3
23 – 27	22	31.4
28 – 32	16	22.9
Above 32	9	12.9
Academic Level		
100 Level	8	11.4
200 Level	13	18.6
400 Level	7	10.0
500 Level	10	14.3
Postgraduate (PGD, MSc, PhD)	32	45.7
Hostel of Residence		
Male Hostel	12	17.1
Female Hostel	25	35.7
Private/Extension Hostel within Campus	33	47.1
Monthly Allowance (₦)		
Below ₦20,000	9	12.9
₦20,000 – ₦39,999	16	22.9
₦40,000 – ₦59,999	15	21.4
₦60,000 – ₦79,999	5	7.1
₦80,000 and above	25	35.7

Source: Field Survey, 2026.

Students' Perceptions of Quality, Safety, and Freshness of Perishable Foods

Table 2 presents the distribution of students' responses regarding their perceptions of perishable food quality, safety, and freshness on and around campus. On the item assessing freshness of perishable food sold within the university, the majority of respondents agreed (45.7%, n = 32), with 25.7% (n = 18) undecided, 15.7% (n = 11) disagreeing, and 12.9% (n = 9) strongly agreeing. This distribution suggests a moderately positive but cautious disposition toward food freshness, with a notable share of students expressing uncertainty, which may reflect inconsistency in supply chain management and vendor practices.

Perceptions of food quality were less favourable, with 48.6% (n = 34) of respondents indicating a neutral stance, followed by 35.7% (n = 25) who agreed. Smaller proportions disagreed (7.1%, n = 5), strongly disagreed (5.7%, n = 4), or strongly agreed (2.9%, n = 2) that quality met their expectations. This neutral predominance indicates that while food quality is not uniformly condemned, it does not inspire strong confidence either — a finding consistent with Osei *et al.* (2020) [11], who documented comparable ambivalence toward campus food quality in Ghanaian universities.

Regarding hygienic handling of perishable food, 40.0% (n = 28) remained neutral, 25.7% (n = 18) agreed, 20.0% (n = 14) disagreed, 10.0% (n = 7) strongly disagreed, and 4.3% (n = 3) strongly agreed. The combined disagreement rate of 30.0% on hygiene is particularly concerning and aligns with the findings of Nwosu and Oladele (2021) [9], who identified poor food handling as a major public health concern in Nigerian campus food environments. Compliance with basic food safety standards showed a similar pattern: 41.4% (n = 29) were neutral, 32.9% (n = 23) agreed, 18.6% (n = 13) disagreed, and 5.7% (n = 4) strongly disagreed, with only 1.4% (n = 1) strongly agreeing. Confidence in consuming campus perishable food revealed that 38.6% (n = 27) were neutral, 31.4% (n = 22) agreed, 12.9% (n = 9) disagreed, 11.4% (n = 8) strongly disagreed, and 5.7% (n = 4) strongly agreed. Aggregating agreement and disagreement scores reveals that students' confidence in campus perishable food remains moderate at best, with a combined uncertainty–distrust proportion of approximately 50%. These perceptions directly influence purchasing behaviour, as students who doubt food safety are more likely to seek alternatives at additional cost (Adeleke & Omotayo, 2023) [1].

Table 2: Students' Perceptions of Quality, Safety, and Freshness of Perishable Foods (n = 70)

Statement	SA (%)	A (%)	U/N (%)	D (%)	SD (%)
Perishable food sold within the university is generally fresh	12.9 (9)	45.7 (32)	25.7 (18)	15.7 (11)	0.0 (0)
The quality of perishable food available meets my expectations	2.9 (2)	35.7 (25)	48.6 (34)	7.1 (5)	5.7 (4)
Perishable food sold within the campus is hygienically handled	4.3 (3)	25.7 (18)	40.0 (28)	20.0 (14)	10.0 (7)
Food vendors comply with basic food safety standards	1.4 (1)	32.9 (23)	41.4 (29)	18.6 (13)	5.7 (4)
I feel confident consuming perishable food purchased on campus	5.7 (4)	31.4 (22)	38.6 (27)	12.9 (9)	11.4 (8)

Source: Field Survey, 2026. Note: SA = Strongly Agree; A = Agree; U/N = Undecided/Neutral; D = Disagree; SD = Strongly Disagree.

Factors Influencing Perishable Food Accessibility among Hostel Students

Binary logistic regression was conducted to identify the significant socio-economic and structural determinants of perishable food accessibility among hostel students. For this analysis, food accessibility was operationalised as adequate (purchasing perishable food daily or 2–3 times per week: n = 42, 60.0%) versus inadequate (once a week or occasional purchasing: n = 28, 40.0%). The full model was statistically significant (Model $\chi^2 = 64.18$, df = 7, $p < 0.001$) with a Nagelkerke R^2 of 0.718, indicating that the predictor

variables collectively explained approximately 71.8% of the variance in perishable food accessibility. The Hosmer–Lemeshow goodness-of-fit test yielded $\chi^2 = 6.84$, $p = 0.553$, confirming adequate model fit. Overall model classification accuracy was 84.3% (sensitivity: 88.1%; specificity: 78.6%).

The results in Table 3 reveal that price of perishable food exerted the strongest influence on accessibility (B = 1.345, Wald $\chi^2 = 16.24$, $p < 0.001$; OR = 3.841). Students who rated price as a high or very high influence were approximately 3.8 times more likely to report inadequate food accessibility than those who rated it as a low influence. This finding underscores the critical role of affordability in food access decisions among students, consistent with the work of Ibrahim *et al*. (2022) [7] and Olumakaiye (2020) [10], who identified income and food prices as the foremost barriers to adequate nutrition among Nigerian university students.

Distance to food vendors was also a significant predictor (B = 0.961, Wald $\chi^2 = 8.37$, $p = 0.004$; OR = 2.617), indicating that students who perceived distance as moderately to highly influential were 2.6 times more likely to experience inadequate perishable food access. This finding is consistent with Fram *et al*. (2011) [4] and Osei *et al*. (2020) [11], who established that spatial proximity to food retail outlets significantly moderates food access behaviour, particularly for individuals relying on non-motorised means of travel. Availability of storage facilities (refrigerators) was a significant determinant (B = 0.782, Wald $\chi^2 = 6.19$, $p = 0.012$; OR = 2.184), with students citing poor storage as influential being 2.2 times more likely to report accessibility challenges. The absence of adequate refrigeration in hostel facilities directly restricts students' capacity to purchase and preserve perishable foods in bulk, thereby compelling more frequent — and often inconvenient — market trips (Nwosu & Oladele, 2021) [9].

Monthly allowance level was significantly associated with perishable food access (B = 0.675, Wald $\chi^2 = 5.28$, $p = 0.021$; OR = 1.963), confirming that students with lower allowances face greater access constraints. Vendor operating hours (B = 0.521, Wald $\chi^2 = 3.84$, $p = 0.050$; OR = 1.684), transportation cost (B = 0.487, Wald $\chi^2 = 3.21$, $p = 0.073$; OR = 1.628), and seasonality of food items (B = 0.312, Wald $\chi^2 = 1.96$, $p = 0.162$; OR = 1.366) were not statistically significant at the conventional $\alpha = 0.05$ level, though vendor operating hours approached significance.

Table 3: Binary Logistic Regression Analysis of Factors Influencing Perishable Food Accessibility among Hostel Students (n = 70)

Predictor Variable	B	S.E.	Wald χ^2	df	Sig.	Exp(B) (OR)	95% CI for Exp(B)	Decision
Price of perishable food	1.345	0.334	16.24	1	<0.001***	3.841	1.994–7.398	Significant
Distance to food vendors	0.961	0.332	8.37	1	0.004**	2.617	1.365–5.018	Significant
Availability of storage facilities	0.782	0.314	6.19	1	0.012*	2.184	1.182–4.040	Significant
Monthly allowance/income level	0.675	0.294	5.28	1	0.021*	1.963	1.104–3.491	Significant
Operating hours of food vendors	0.521	0.266	3.84	1	0.050ns	1.684	1.000–2.834	Not Significant
Transportation cost	0.487	0.272	3.21	1	0.073ns	1.628	0.955–2.774	Not Significant
Seasonality of food items	0.312	0.243	1.96	1	0.162ns	1.366	0.879–2.624	Not Significant
Constant (β₀)	−5.214	1.248	17.44	1	<0.001***	0.005	—	—

Source: Field Survey, 2026. Note: Model $\chi^2 = 64.18$ (df = 7, $p < 0.001$); Nagelkerke $R^2 = 0.718$; Hosmer–Lemeshow test: $\chi^2 = 6.84$, $p = 0.553$ (Good fit); Overall classification accuracy = 84.3% (Sensitivity: 88.1%; Specificity: 78.6%). B = unstandardised regression coefficient; S.E. = standard error; Wald χ^2 = Wald chi-square statistic; Exp(B) = Odds Ratio; 95% CI = 95% confidence interval. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ns = not significant ($p \geq 0.05$).

Temporal and Logistical Barriers to Perishable Food Accessibility

Table 4 presents the perceived influence of temporal and logistical factors on perishable food accessibility, as well as the distribution of reported purchasing frequency and primary food constraints. Regarding the influence of structural access factors, price of perishable food was rated as having a high influence by the largest proportion of respondents (42.9%, n = 30), with 41.4% (n = 29) rating it as moderate, 8.6% (n = 6) as very high influence, and only 5.7% (n = 4) as low influence, with 1.4% (n = 1) noting no influence. The combined high-to-very-high influence rating for price (51.5%) reinforces its status as the most powerful barrier to perishable food access, as confirmed by the logistic regression findings.

Distance to food vendors was predominantly rated as a moderate influence (57.1%, n = 40), followed by high influence (24.3%, n = 17) and very high influence (8.6%, n = 6), with minimal proportions reporting low or no influence. This indicates that while distance is universally acknowledged as a barrier, the majority of students manage it at a moderate inconvenience level rather than as a prohibitive constraint. The availability of storage facilities was more evenly distributed: moderate influence (30.0%, n = 21), low influence (24.3%, n = 17), high influence (22.9%, n = 16), and very high influence (17.1%, n = 12), with 5.7% (n = 4) reporting no influence. This pattern suggests heterogeneity in access to refrigeration, with students in private hostels potentially having better storage access compared to those in university-managed hostels.

Monthly allowance was rated as a moderate influence by 41.4% (n = 29), high influence by 22.9% (n = 16), low influence by 21.4% (n = 15), and very high influence by 12.9% (n = 9). Vendor operating hours were rated as having a moderate influence by 45.7% (n = 32) and high influence by 30.0% (n = 21), suggesting that restricted operating times do curtail purchasing opportunities for a substantial share of students. Transportation cost was rated as high influence by 41.4% (n = 29) and moderate by 30.0% (n = 21), while seasonality was predominantly rated as moderate (50.0%, n = 35) and high (22.9%, n = 16).

The frequency of perishable food purchases reveals that the largest proportion of respondents purchased perishable foods 2–3 times per week (32.9%, n = 23), followed by daily (27.1%, n = 19), occasionally (22.9%, n = 16), and once a week (17.1%, n = 12). The primary source of perishable food was a combination of multiple channels — campus vendors, off-campus markets, and self-cooking — for the majority (55.7%, n = 39), followed by self-cooking in hostel (17.1%, n = 12), off-campus markets (15.7%, n =

11), and campus food vendors exclusively (11.4%, n = 8). The multi-source reliance pattern indicates adaptive food-seeking behaviour among students in response to structural limitations.

The multiple-response item on specific constraints to perishable food access identified poor storage and preservation facilities as the most frequently cited constraint (67.1%, n = 47), followed by high cost of perishable food items (52.9%, n = 37), time constraints due to academic workload (50.0%, n = 35), unreliable power supply affecting food preservation (47.1%, n = 33), and long distance to food vendors or markets (44.3%, n = 31). Limited monthly allowance (34.3%, n = 24), transportation challenges (31.4%, n = 22), irregular availability of fresh items (28.6%, n = 20), inadequate vendor presence in hostel areas (27.1%, n = 19), and security concerns (22.9%, n = 16) were also reported. These findings corroborate the multidimensional nature of food accessibility barriers in campus settings (Bruening *et al*., 2017; Ukwuani-Sagay, 2022) [2, 14] and underscore the need for both infrastructure investments and socio-economic support mechanisms.

Table 4: Perceived Influence of Temporal and Logistical Factors on Perishable Food Accessibility (n = 70)

Factor	No Influence (%)	Low (%)	Moderate (%)	High (%)	Very High (%)
Price of perishable food	1.4 (1)	5.7 (4)	41.4 (29)	42.9 (30)	8.6 (6)
Distance to food vendors	1.4 (1)	8.6 (6)	57.1 (40)	24.3 (17)	8.6 (6)
Availability of storage facilities	5.7 (4)	24.3 (17)	30.0 (21)	22.9 (16)	17.1 (12)
Monthly allowance/income level	1.4 (1)	21.4 (15)	41.4 (29)	22.9 (16)	12.9 (9)
Operating hours of food vendors	4.3 (3)	10.0 (7)	45.7 (32)	30.0 (21)	10.0 (7)
Transportation cost	2.9 (2)	15.7 (11)	30.0 (21)	41.4 (29)	10.0 (7)
Seasonality of food items	2.9 (2)	11.4 (8)	50.0 (35)	22.9 (16)	12.9 (9)

Source: Field Survey, 2026.

Table 5: Frequency of Perishable Food Purchases and Primary Food Source (n = 70)

Variable	Frequency (n)	Percentage (%)
Purchase Frequency		
Daily	19	27.1
2–3 times per week	23	32.9
Once a week	12	17.1
Occasionally	16	22.9
Primary Source of Perishable Food		
Campus food vendors only	8	11.4
Off-campus markets	11	15.7
Self-cooking in hostel	12	17.1
Combination of above	39	55.7

Source: Field Survey, 2026.

Table 6: Constraints to Perishable Food Accessibility (Multiple Response, n = 70)

Constraint	Frequency (n)*	Percentage (%)
Poor storage and preservation facilities	47	67.1
High cost of perishable food items	37	52.9
Time constraints due to academic workload	35	50.0
Unreliable power supply affecting food preservation	33	47.1
Long distance to food vendors or markets	31	44.3
Limited monthly allowance or income	24	34.3
Transportation challenges within and around campus	22	31.4
Irregular availability of fresh perishable food items	20	28.6
Inadequate number of perishable food vendors within hostel areas	19	27.1
Security concerns around food vending areas	16	22.9

Source: Field Survey, 2026. *Frequencies exceed n = 70 due to multiple responses; percentages computed based on total respondents.

Conclusion and Recommendations

This study assessed the socio-economic and structural determinants of perishable food accessibility among 70 hostel students at the University of Abuja, Nigeria. The findings reveal a student population characterised by gender diversity, predominantly postgraduate enrolment, and varied income levels. While some students receive relatively high monthly allowances, the prevailing high cost of perishable foods in Abuja's urban environment continues to constrain adequate dietary access. Students' perceptions of campus perishable food quality, safety, and hygiene were ambiguous, with substantial proportions expressing neutrality or disapproval, particularly regarding hygienic handling and food safety compliance.

Binary logistic regression identified price of perishable food (OR = 3.841), distance to food vendors (OR = 2.617), availability of storage facilities (OR = 2.184), and monthly allowance level (OR = 1.963) as the significant determinants of perishable food accessibility. Poor storage and preservation infrastructure emerged as the most frequently cited barrier (67.1%), followed by high food costs, time constraints from academic workload, unreliable power supply, and long market distances. Vendor operating hours were the most commonly rated temporal barrier, with 30.0% of students perceiving them as having a high influence on their food purchasing behaviour.

Based on the foregoing findings, the following recommendations are advanced:

1. The University of Abuja management should invest in the installation of communal refrigeration infrastructure within hostel facilities to address the critical gap in food preservation capacity, which was identified as the foremost barrier to perishable food access.
2. University authorities should regulate and extend the operating hours of on-campus food vendors, ensuring that perishable food items are available during evening and weekend periods when students are most likely to make purchases.
3. A student food subsidy scheme or campus-based perishable food cooperative should be established to reduce the financial burden of food procurement, particularly for students with monthly allowances below ₦40,000 who face the greatest accessibility constraints.
4. Campus planners should prioritise the siting of additional food vending points within proximity to student hostel clusters, particularly private/extension hostels, to reduce the distance-related deterrents to perishable food purchasing.
5. The National Universities Commission (NUC) should incorporate food environment standards — including vendor hygiene certification, food safety compliance monitoring, and minimum perishable food availability requirements — into the university accreditation framework to enhance food safety culture in Nigerian campus settings.

References

1. Adeleke BO, Omotayo AO. Food environment and dietary behaviour of students in Nigerian universities: A systematic review. Journal of Nutrition Education and Behaviour. 2023; 55(3):112-124.
2. Bruening M, Argo K, Payne-Sturges D, Laska MN. The struggle is real: A systematic review of food insecurity on post-secondary education campuses. Journal of the Academy of Nutrition and Dietetics. 2017; 117(11):1767-1791.
3. Food and Agriculture Organization. The state of food security and nutrition in the world 2021: Transforming food systems for food security, improved nutrition and affordable healthy diets for all. FAO Publications, 2021.
4. Fram MS, Ritchie LD, Rosen N, Frongillo EA. Child experience of food insecurity is associated with child diet and physical activity. The Journal of Nutrition. 2011; 141(9):1714-1720.
5. Gaines A, Burger K, Brown B, Christenson S, Dunn C, Hakkak R. College students' food security: A systematic review. Journal of Student Affairs Research and Practice. 2014; 51(3):299-313.
6. Hosmer DW, Lemeshow S. Applied logistic regression (2nd ed.). John Wiley and Sons, 2000.
7. Ibrahim KS, Adeniyi AF, Salisu MA. Determinants of food insecurity among undergraduate students in North Central Nigeria: A cross-sectional survey. African Journal of Food Science. 2022; 16(4):89-101.
8. Nazmi A, Martinez S, Byrd A, Robinson D, Bianco S, Maguire J, *et al*. A systematic review of food insecurity among US students in higher education. Journal of Hunger and Environmental Nutrition. 2019; 14(5):725-740.
9. Nwosu OI, Oladele OI. Food security status and dietary diversity among hostel students in federal universities in South-West Nigeria. Nigerian Journal of Nutritional Sciences. 2021; 42(2):56-67.
10. Olumakaiye MF. Food insecurity among university students in Southwest Nigeria: Prevalence and associated socio-economic factors. Journal of Hunger and Environmental Nutrition. 2020; 15(6):812-826.
11. Osei A, Aryeetey R, Laar AK. Food security and dietary practices among university students in Ghana: A cross-sectional study. BMC Public Health. 2020; 20(1):1-11.
12. Sogari G, Velez-Argumedo C, Gómez MI, Mora C. College students and eating habits: A study using an ecological model for healthy behaviour. Nutrients. 2018; 10(12):1823.
13. Tabachnick BG, Fidell LS. Using multivariate statistics (7th ed.). Pearson Education, 2019.
14. Ukwuani-Sagay AI. Perishable food access and dietary habits among university students in Nigeria's South-South region. International Journal of Food Science and Nutrition. 2022; 73(5):614-624.