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DETERMINANTS OF FAST FOOD CONSUMPTION AND PREFERENCES AMONG UNDERGRADUATE STUDENTS OF AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA

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Abstract
The study was carried out to determine the factors affecting fast food consumption among Ahmadu Bello University, Zaria students. Primary Data from 240 students from four faculties collected through a multi-stage sampling procedure using a structured interview schedule were used for data analysis. The data was analyzed using descriptive statistics and a double hurdle regression model. The result shows that 52% of student expenditure per semester was allotted to fast food and lunch constituted 36.9% of total fast food expenditure. Snacks, noodles (popularly known as Indomie) and fried rice were the mostly consumed fast food with the value of 29.9%, 24.2%, and 12.8% respectively. The pooled results indicates that the factors that influence the students' decision to consume fast food shows slight variation from those influencing level of consumption and where it does, not by the same magnitude and direction. For instance, age ($p<0.01$), education ($p<0.01$), sex ($p<0.01$), Time Spent Away From Hostels (TSAF) ($p<0.05$) and distance trekked to eat out ($p<0.01$) were found to significantly influence the student's decision. In contrary, age ($p<0.10$), education ($p<0.05$), allowance ($p<0.05$), TSAF ($p<0.10$), distance ($p<0.10$) influenced the level of fast food consumption significantly. The study also identified reasons for consuming fast food products were loaded on economic, social and academic factors with time constraints, peer group and convenience as the most cogent reasons for consuming fast food. There should be an appropriate policy by the Ahmadu Bello University administration to ensure the establishment of more standard fast food restaurants, and to monitor the preparation of food and its safety. The student representatives should make sure that the price of the food is affordable enough that the students can afford.

Keywords: *Budget share, double hurdle, expenditure, fast foo*

Introduction

Food is the most basic necessity of life needed for existence and a balance diet to maintain sound health. Students' food consumption pattern in Nigeria has been undergoing remarkable changes over the last few years. Back in the 80s, most Nigerian students in tertiary institutions eat in school owned cafeteria, a system where meal tickets were sold at a subsidized rate to all registered students. Scrapping of the cafeteria and meal tickets led to the option of either preparing their meals or eat out in cafeteria and restaurants. This led to proliferated private cafeteria, restaurants and fast food joints in University campuses and its environs (Oladimeji and Abdulsalam, 2016). Fast foods are processed foods that can be prepared quickly and available within a short time on demand. This includes all food purchased and consumed away from home usually in bistro, eatery, cafe and restaurant (Ogunniyi *et al.,* 2013, Oladimeji and Abdulsalam, 2016). Fast food can also be requested as take away without waiter service from eatery to schools, hospitals and other places of work. Numerous factors can affect student and youth consumption of fast food. They can be economical (e.g., students' monthly allowance), social (e.g., changes in dietary culture due to peer group influences), academic (e.g., student class attendance, hostel rules and regulations, and sometimes course been studied also pays a vital role in the students allocation of time for preparing their meals), seasonal variations which makes some food available and some not available, price of food items, and health concerns that lead to the preference towards, or deliberate avoidance of some foods (Oladimeji *et al*., 2017). Among these factors, however, the size of the student's stipend is seen to be the most influential factor that is likely to play a large role in the choice of food to consume (Bipasha and Goon, (2013). Though most of the young people consume fast food in campus and social gathering (Broccia *et al*., 2008), to save both time and money, due to its easy accessibility and availability (Jaworowaska *et al*., 2013). It is increasingly becoming habit due to peer group influence.

Oladimeji and Abdulsalam, (2016); Bipasha and Goon, (2013) opined that consumption of fast food is widespread in developed and developing countries among young people most especially when they are away from home. It has been researched that regular eating of fast food can increase the risk of weight gain and obesity because of having a high energy density with the presence of high levels of fat and sugar in the meal, and a correspondingly low level of fiber and protein (Currie *et al*., 2010; Yahya *et al*. 2013; Kremmyda *et al*., 2008; El-ansari *et al*., 2012; Jaworowaska *et al*., 2013). A study conducted among urban private medical students in Bangladesh showed that a quarter of respondents were overweight which is higher than the national average (Rasul *et al*., 2013). According to Ayo *et al*. (2012), the fast-food industry in Uganda had grown in the past despite the growing concern on consumer health.

Furthermore, fast foods are commonly recognized to have poor nutritional quality. They tend to be low in iron, calcium, riboflavin, and vitamin A and C. In addition, consumption of high-fat fast foods contributes to higher energy and fat intake and lower intake of healthful nutrients (Paeratakul *et al*., 2003).It is also notable that changes in eating pattern such as increase in meals eaten away from home, portion sizes, meal-skipping and fast foods consumption may be involved in this trend (Young and Nestle,2002).

Review of Literature

Ogunniyi *et al*. (2013) opined that that 90% of sampled youth with average age of 24 years consumed fast food in Ogbomoso metropolis of Oyo State, Nigeria. Bamiro, (2012), also observed that about 61% sample young folks with modal age of 31- 40 years in Lagos metropolis of Nigeria consume fast food. The results from Bamiro, (2012) also showed that males (60%) consume more fast food than their female counterparts (40%). Food had been one of the major components of a student's consumption expenditure while in school. Other components include purchase of handouts, clothing, health, transportation, school fees, faculty registration and other miscellaneous. However, the allowance received by students is limited, yet students spend a sizable amount of their stipend on fast food. These will definitely have effect on the stipend received by students from their parents as well as putting an additional economic pressure on parents as these food may be costly. This is coupled with the recent economic situation which has led to the doubling of the prices of food items. Therefore, it is imperative to look critically at factors affecting fast food consumption among undergraduate students of Ahmadu Bello University, Zaria. The study intends to answer the following research questions:

(i) What are the types of fast food consumed by students?
(ii) What is the share of fast food consumption on total expenditure of students?
(iii) What are the factors affecting decision and level of fast food consumption?
(iv) What factors determine the students' perception on selected components of reasons for preference for fast food consumption?

Theoretical Framework

A simplified conceptual model that leads to our empirical specification follows the spirit of the theoretical models such as Keynes, (1936). Consumption function, that is, a functional relationship between total consumption and income introduced by Keynes is based on his statement of a fundamental psychological law that consumers, on the average, tend to increase their consumption as their income increases, but not as much as the increase in their income. This relationship is based on the *ceteris paribus* assumption, other possible influences are held constant. Symbolically, the relationship is represented as:

$$C = f(Y), \quad (1)$$

Where: C is consumption and Y is income. Although, Keynes listed a number of factors affecting consumption, he indicated that the income variable, especially disposable income is the most important one. A simplified consumption function can be represented as:

$$C = a + bY \quad (2)$$

Where: $a > 0$and $b < 1$. The coefficient "b" is the Marginal Propensity to Consume (MPC). Keynes further assumed that the short-run MPC is less than the long-run MPC, since over the longer period of time a consumer's living standard is more flexible.This study considered other factors determining fast food consumption including the one held constant by Sir Keynes (Oladimeji *et al*., 2016).

Similarly, according to the Duesenberry's theory, known as the relative-income hypothesis, which assumes that an individual's consumption does not depend on his absolute income, but rather on his percentile position in the income distribution. Further, an individual has the habit of persistence in his consumption pattern, so that he will continue to base his consumption pattern partially on higher previous levels of income if his current income falls. Therefore, Duesenberry's hypothesis can be formulated as:

$$\frac{C_t}{Y_t} = a + b\left(\frac{Y_t}{Y^0}\right) \quad (3)$$

Where$C_t$and$Y_t$are current consumption and income respectively and$Y^0$is the peak previous income. Individual theory proposed by Duesenberry's, purchases of certain items being consumed by individuals (such as students) like food are influenced by traditional factors like prices, income, demographic characteristics, as well as non-traditional influences like time constraints faced by students. This extension of the neo-classical theory can also be adopted in the determinant of analysis of fast food consumption by representing the associated demand function (either amount consumed or budget share) of FAFH (fast food consumption) as a function of the usual demand determinants plus other factors considered by Rufino, (2015) and Oladimeji *et al.* (2016 & 2017).

Materials and Methods

Ahmadu Bello University is a public owned University located in Samaru, Zaria and Kaduna State Nigeria. It was established in June 1962 in the Northern Region of Nigeria. It located in latitude 11°03'69.00''N and longitude 7°14'59.99"E and with a land size of 7,000 hectares. It has a total land area of 70 km^2 and about 85,000 students including postgraduate with average students' population density of about 1,214 student km^{-2} (ABU MIS, 2015). The university has an academic staffs of about 2,500 distributed in twelve faculties and three major centers as well as affiliated research institutes and colleges of agriculture and legal studies.

A pre-test survey was done from November to December 2016 to correct possible mistakes during data collection before administering the questionnaire. For the purpose of this study, a multistage random sampling procedure was used to select the respondents from the target population. The advantage of this technique is that it gives equal chances for all the students to participate in the study (Abdulrahman *et al*., 2015). Four faculties (art, medicine, pharmaceutical science and social science) were randomly chosen from the 12 faculties. Thereafter, twelve departments were randomly selected from the four faculties. However, 100 level and 200 levels students were not included in the study due to their relatively short duration of residency in the University as at the time of the study. The list of 300 level students and above in each Department through the class representatives and Departmental secretary were collated as sampling frame for the study (Table 1).

The Slovian formula adopted by Oladimeji *et al.* (2017) was used to determine the required sample size for the study. The formula was expressed as follows:

$$n_0 = \frac{N}{1+N(e^2)} \quad (4)$$

Where: n_0 is the sample size without considering the finite population correction factor; e = 0.05; N = total number of respondents (601 students).

Table 1: Determination of sample size (n_o)

Faculties	Sample frame	Sample size (n_o)
Art	237	
Medicine	78	
Pharmaceutical	69	
Social science	197	
Total	601	240

Source: Reconnaissance survey, 2016

Primary data were collected from 240 randomly selected respondents using the balloting method. A structured questionnaire was used for data collection by trained enumerators. Data collection was carried out between February and May, 2017. It is pertinent to note that data on fast food for two semesters of 2015/2016 academic session were sought from respondents. However, analysis was done on per semester basis (average of two semesters were calculated where appropriate) to accommodate respondents that spent one semester in the campus especially pharmaceutical students that went for industrial training.

Empirical Specification and Estimation

The data obtained were analyzed using descriptive statistics, Principal Component Analysis (PCA) and a double hurdle regression model. Double hurdle model is a two-stage decision process: viz. decision to consume fast food, and level of consumption. The main reason for separating this decision was due to social-demographic or psychological drives, some students may not consume fast food as a result of the prevailing allowance, distance to fast food restaurants, pressure from academic activities, and many other possible factors. In addition, one disadvantage of using one step Tobit model is that all zero observations on level of decision to consume fast food are interpreted as corner solutions.

It is reasonable to assume that the first decision whether or not to consume fast food (or participation hurdle) by the respondent is not only an economic decision, but also influenced by socio-economic factors which are independent of the level of consumption referred to as the level of expenditure (or consumption hurdle). Following Jensen and Yen, (1996), Ogunniyi *et al*. (2013), Oladimeji *et al*. (2016 & 2017), the decision to consume fast food was addressed by fitting a Probit Model while its expenditure on fast food (level of expenditure) was addressed by fitting Tobit regression model.

Therefore, the underlying response, variable y* in the case of binary choice was specified (implicitly) by the multivariate Probit regression relation below:

The first hurdle is a consumer decision equation estimated with a Probit model given as:

$$Y_i^* = aZ_i + u_i \quad (5)$$

$$Y_i = 1 \; if Y_i^* > 1 \quad (6)$$

$$Y_i = 0 \; if Y_i^* \leq 1 \quad (7)$$

Where,

Y_i^* = latent variable that takes the value of 1 if the students consume fast food and 0 otherwise, Z_i = vector of explanatory variables (socio-economic and institutional characteristics) that influences probability of fast food consumption among A. B. U. students; a= vector of parameter estimates; u_i = independently distributed error term.

The underlying assumption under the two-stage model is that the error terms of the two-equations are jointly normally distributed (Heckman, 1979) and thus should be estimated with some explanatory variables omitted or appearing only in the binary response equation (the Probit) to improve the identification of the model (Baslevent, 2010). It suffices to note that theory provides no guidance as to which explanatory variables are included in the first and second equations, thus exclusive restrictions were imposed (Oladimeji *et al*., 2016). Therefore, continuous variables either with correlations due to the spurious effect (Ayo *et al*., 2012) or detected to exhibit multi-collinearity were dropped from the second equation This was achieved through both Farrar glauber test and method of Variance Inflation Factor in checking the correlation matrix and finding a matrix of pairwise coefficient of all independent variables (Oladimeji *et al*., 2016).

The second hurdle (expenditure level) involved the use of Tobit model, thus:

$$Y_i^* = \sum X_i \beta + \mu_i \quad (8)$$

Where: $Y_i^*$is the vector of variables indicating the share of expenditure on fast food from total expenditure on food. β is a vector of unknown co-efficient and μi is an independently distributed error term. Xi is a vector of explanatory variables. The model was estimated using maximum likelihood estimation procedures. Table 1 shows the description and measurement of variables employed in the double-hurdle model estimation.

Table 1: Measurement of variables and *a priori* expectations of fast food consumption

Variables	Description and *a priori* expectations
Decision to participate	1 = If a student patronize any fast food joint and 0, otherwise
Level of expenditure on Fast Food (₦/semester)	Students fast food consumption is left censored at zero for respondents who did not consumed fast food as determined by independent variables stated below. Measured by budget share of expenditure on fast food or the share of expenditure on fast food from total expenditure on food (₦/semester).
Age	Age of the students in years; *negative*
Education	Years spent in a formal education by the students; *positive*
Family size	No. of dependents per family size of the parents' respondents ; *negative*
DLL Sex	UUU Male=2, female=1 (positive)
Allowance	Total disposable income of the student (₦/semester); *positive*
Marital Status	Marital status of respondents, 2 if married and 1, if otherwise (negative)
Time	Time spent away from hostels by respondents (hours); (positive)
Distance	Distance from classroom/hostel to restaurant (km); (negative)
FAH expenditure	Food expenditure at hostel (₦/semester) (negative)

Budget share on the three meals, amount spent on fast food and food component as a whole per semester was verified using equation below:

$$w_i = {Exp_i}/{TSE_a} \times 100 \quad (9)$$

w_i = budget share of total food, fast food and each fast meal per semester, ;

Exp_i = expenditure on each component and

TSE_a = total students' expenditure on fast food per semester.

Principal Component Analysis (PCA) through SPSS package was used in naming the factors that were strongly loaded (important) on reasons for fast food consumption. This was based on the application of Kaiser Normalization using rotation method. A rotation method unlike extraction method gets factors that are as different from each other as possible, and helps you interpret the factors by putting each variable primarily on one of the factors (Abdi and Williams, 2010). In SPSS a convenient option to factor principal component is Kaiser-Meyer-Olkin measure of sampling adequacy (KMO-test). Kaiser developed a rule of thumb, that the sample is adequate if the value of KMO is greater than 0.5, that is a minimum loading weight or cut-off value, and a desirable value of 0.8 or higher which a factor can have before it can be isolated as being positive to the attribute in question.

The factor model was expressed mathematically as:

$$\tilde{y} = \lambda_0 + \lambda_{i1}F_1 + \lambda_{i2}F_2 + \lambda_{i3}F_3 + u_i \quad (10)$$

Where: λ_i= parameters or loadings, $\lambda_{i1} to \lambda_{i3}$ were the loading of variable $\tilde{y}$ on factors $F_1 to F_3$. $F_1 = Economic factor$, F_2=Social factor, and $F_3 = Time\ factor$

Results and Discussion

Socio-economic Characteristics of Ahmadu Bello University Students

The result in Table 2 shows the age of the students range from 16 to 45 years, with a mean age of 24 years. However, that majority 35.4% of the respondents were between 26-30 years. Generally, the majority (about 83%) are below 30 years.

Fast food consumption among young people and adolescents was also reported in Oyo State (Ogunniyi *et al.,* 2013), Lagos State (Bamiro, 2012) and other countries (Broccia *et al*., 2008; Bipasha and Goon, 2013; Jaworowaska *et al*., 2013). Results also reveal that 55% male respondents and 45% female patronized fast food and, that 91.66% of the respondents are single. This implies that fast food outlets were more patronized by male and mostly unmarried respondents largely because, it is more convenient. The study is in sharp contrast with findings of Bowen and Vinyard, (2004); Ogunniyi *et al*. (2013) who reported that female student consumed more fast food than their male counterparts.

Table 2: Fast food consumption pattern and students' socio-economic status

Variables	Distribution	F	%	Mean	Min.	Max.	Stdev.
Age (years)	16-20	38	15.8	24	18	45	0.78
	21-25	76	31.7				
	26-30	85	35.4				
	>30	41	17.1				
Household size	1-5	112	46.7	6	2	17	1.08
	6-10	98	40.8				
	11 and above	30	12.5				
Sex	Female	108	45				
	Male	132	55				
Marital status	Married	20	8.3				
	Single	220	91.7				
Time	1-6	69	28.8	9.3	5	15	1.1
	7-12	132	55.0				
	>12	39	16.2				
Distance (km)	0.001-0.500	143	59.6	380.4	50.0	6.0	106.5
	0.501-1.000	61	25.4				
	>1.0	36	15.0				
Fast food consumption disaggregate by gender				Male	Female		
Fast food	Yes	211	87.9	117(55)	94(45)		
	No	29	12.1	-	-		
Daily consumption *	once	37	17.5	22(59)	15(41)		
	twice	123	58.3	71(58)	52(42)		
	thrice	51	24.2	24(47)	27(53)		
Reasons for fast food consumption*	Convenience	89	42.2	51 (57)	38(43)		
	Peer group	58	27.5	32(55)	26(45)		
	Habit	31	14.7	15(48)	16(52)		
	Cost	19	9.0	11(58)	8(42)		
	Others e.g. culture	14	6.6	8(57)	6(43)		

** computed for only respondents that consumed fast food; figure in parenthesis are %; Source: Field survey, 2017*

The result reveals that 87.9% of respondents patronized fast food and 58.3% of them eat out twice per day. The finding also indicates that eating away from hostel is becoming more common, and the number of visits to fast food restaurants is growing even more rapidly. About 42.2% of the respondents' patronized fast food for convenience as 60% of them trek maximum of ½ km to eat in fast food restaurants. This is coupled with their busy schedule as 55% of the students stayed in academic environment for 7-12 hours per day. This finding is in line with a work carried out by Bipasha and Goon, (2013) on private universities in Bangladesh that observed that between 70-80% of sampled students consume fast food for variety of reasons

Types of Fast Food Consumed

This study observed that noodles, snacks and fried rice were the mostly consumed fast food with values of 33.3%, 19.2%, and 14.2% respectively (Figure 1). It could be deduced from the result that male respondents had preference for certain variety of fast food such as noodles (17.2%), fried rice (7.6%) and local dishes (6.2%) among others compared to their female counterpart with 7%, 5.2% and 3% respectively. In contrary, female respondents consumed more of snacks (20.1%) compared to their male colleagues (9.8%). This result is comparable with studies of Bamiro, (2012); Oladimeji and Abdulsalam, (2016); Oladimeji *et al.* (2017) that observed prevalence of fried rice, snacks, toasted bread and noodles among their respondents in Lagos and Kwara respectively.

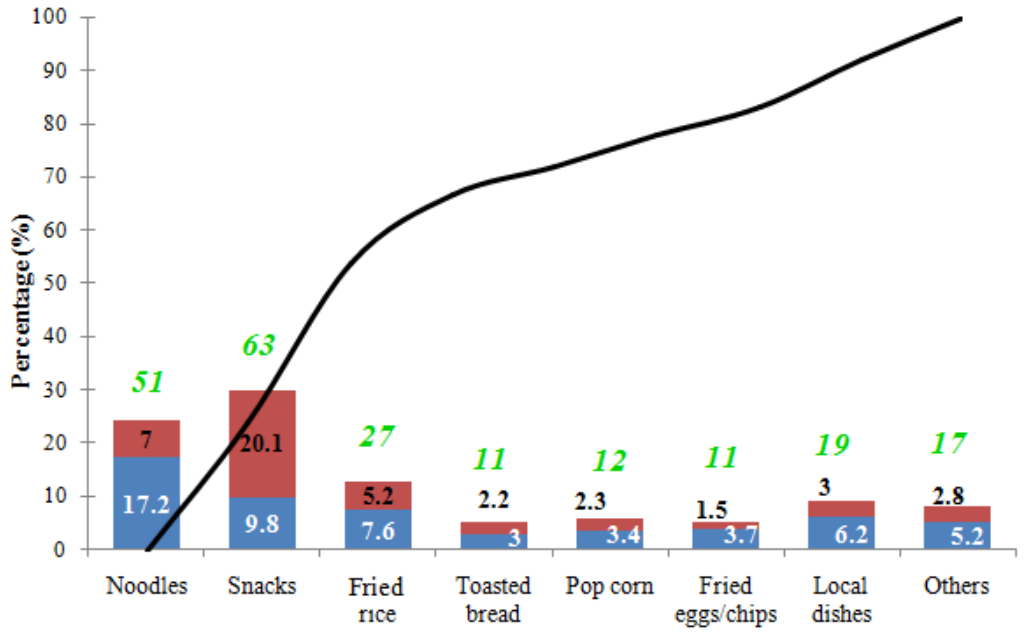

Figure 1: Type of fast food mainly consumed by the students in the study area

Share of Fast Food on the Students' Total Expenditure

Table 3 shows students' expenditure pattern per semester. The total student expenditure value per semester was aggregated into food consumption, educational materials, transportation, clothing, health/ miscellaneous expenditures. The result shows that the students spend more on food consumption which accounted for more than 58.9%followed by clothing (18.7%), academic materials (11.9%), transportation (7.5%), and health expenditures (3.1%) which is the least students' expenditure per semester from their monthly allowances. The fast food expenditure was disaggregated into three meals namely breakfast, lunch and dinner in Table 4. The result reveals that lunch constituted the highest (about 37%) of total fast food expenditure and breakfast had the least value, about 31%. This result established the view of Obayelu *et al*. (2009) and Oladimeji *et al*. (2015) who posited that analysis of expenditure pattern identifies and deepens the understanding of the composition of food and non-food components of an individuals and households.

Table 3: Distribution of mean expenditure components (₦) per semester per student

Item	Amount (₦/month)	(₦/semester)	% expenditure	Rank
Food Expenditure	4996.3	19985.3	58.9	1st
Clothing	1588.9	6355.7	18.7	2nd
Academic material	1008.6	4034.2	11.9	3rd
Transportation	637.0	2548.0	7.5	4th
Health/miscellaneous	260.7	1042.9	3.1	5th
Total	8491.6	33966.1	100	

Table 4: Disaggregation of mean FAH and FAFH expenditure pattern (₦)/semester/student

Item	Amount (₦/month)	₦/semester (%)	% expenditure	Rank
FAH Expenditure	1528.5	6114	30.6	2nd
FAFH Breakfast	1075	4300 (31)	21.5	-
FAFH Lunch	1283.1	5132.4(37)	25.7	-
FAFH Supper	1109.7	4438.8(32)	22.2	-
FAFH Expenditure	3467.8	13871.3(100)	69.4	1st
FAH + FAFH	4996.3	19985.3	100	

Source: Data analysis, 2017; FAH& FAFH denote Food at Hostel & Food Away from Hostel respectively

4.4 Factors affecting Fast Food Consumption

From the maximum livelihood estimates (MLE) of the double hurdle model in Table 5, the results indicate that the factors that influence a student decision to consume fast food shows slight variation from those influencing level of consumption and where it does, not by the same magnitude and direction. For instance, age ($p<0.01$), education ($p<0.01$), sex ($p<0.01$), time spent away from hostels ($p<0.05$) and distance trekked to eat away ($p<0.01$) were found to significantly influence the student's decision. Similarly, age ($p<0.10$), education

(p<0.05), allowance ((p<0.05), time spent away from hostel (p<0.10), distance (p<0.10) influenced the level of fast food consumption significantly. The level of fast food expenditure (involvement model) were disaggregated into breakfast, lunch and supper and independently estimated in Table 5.

The results show that allowance was statistically significant in pooled and all the three meal types. This implies that level of fast food consumption depends on the amount of stipend *ceteris paribus*. However, more variables were found to determine lunch FAFH expenditure and these include: age (p<0.01), TSAF (p<0.01) as well as education (p<0.10) and distance (p<0.10). The result was in line with Stewart and Yen, (2004); Akbay *et al*. (2007) but contrary to studies by Fanning *et al*. (2002)

Table 5: Double-hurdle results for decision and level of expenditures by pooled and by meal type

Probit model: Decision result		**Tobit model: FAFH expenditure by pooled and meal types**			
Variables	**Coefficient**	**Total FAFH**	**Breakfast (β)**	**Lunch (β)**	**Supper (β)**
Age (years)	0.23(5.8 ***)	0.06(1.9 *)	0.01(1.0)	0.45(3.1 ***)	0.12(1.8*)
Education (years)	0.20(2.4 ***)	0.09(2.1 **)	0.21(1.9 *)	0.13(1.7 *)	0.20(1.1)
Family size (number)	-0.01(-1.2)	-	-	-	-
Sex	0.11(2.1 ***)	-	-	-	-
Allowance (₦)	0.02(1.9)	0.21(2.1 **)	0.19(2.3**)	0.02(3.0***)	0.3(2.1**)
Marital status	-0.01(-0.7)	-	-	-	-
TSAF hostels (hours)	0.06(2.1 **)	0.05(1.7**)	0.11(1.0)	0.44(4.0 ***)	0.2(1.4)
Distance (km)	0.04(2.5 ***)	0.01(1.9*)	0.08(1.7*)	0.26(1.9*)	0.09(1.5)
FAH (₦/month)	0.09(0.8)	-	-	-	-
Constant	1.05(0.7)	0.02(1.7*)	0.10(1.1)	0.28(2.1**)	0.1(1.0)
No of observation		211	211	211	211
Log likelihood		-33	-21.3	-112.5	-19.8
LR Chi^2	7.9	18.7	11.9	73.3	8.7
Prob. (chi-sq>value)					
ANOVA based fit	0.15				
DECOMP based fit	0.13				

*Source: Data analysis, 2017; Figure in parenthesis are t-value; ***; **; * indicates 1% (P<0.01); 5% (P<0.05) & 10% (P<0.10) level of significant; TSAF denote Time Spent Away from Hostels; FAH Food prepared at Hostels*

Ayo *et al*. (2012) observed that the significant effect of time spent away from hostels (TSAF) implies that as people spend more hours away from home, they are more likely to dine out on fast food so as to save time. An increase in time spent away from home by one hour increases the likelihood of consumption of fast food by corresponding cost. This is expected considering enormous task faced by students who came early to school and return home mostly towards evening. This result established the view of Huang *et al*. (2007) and Oladimeji *et al*. (2016 & 2017) who reported a positive and significant effect of time spent away from home on the participation and expenditure level of FAFH.

The elasticity of the total FAFH and type of meals expenditure were computed in Table 6 based on the Tobit equation estimates. The estimates for all types of meals and total FAFH are all less than unity except lunch which implies that the FAFH expenditure by sampled students is income inelastic. The implication was that a unit increase in income will increase the FAFH expenditure by less than one percent. Many other studies (Byrne *et al*., 1996; mark *et al*., 2001; Ma *et al*., 2006; Oladimeji *et al*., 2016) have found FAFH consumption has an inelastic income response.

Table 6: Distribution of income elasticity of Food Away From Hostels

Meal types	Breakfast	Lunch	Dinner	Total FAFH
Income elasticity	0.469	1.284	0.120	0.413

Source: Data analysis, 2017

Determinants of Preference of Fast Food by Ahmadu Bello University Students

The analysis on the determinants of fast food preference nexus reasons for consuming fast food products is depict in Table 7. Price and affordability motive (PCA=O.621), quality and tasty menu (PCA=0.699) were loaded on economic factor shown that the respondents had financial wherewithal to consume fast food. Peer group influence (0.752) and, attending occasions and events (0.521) were loaded on social component factor which implies that some respondents hinged their fast food consumption on events and occasions in and outside the campus. Results further shows that time constraint (o.824) and convenience (o.643) were strongly loaded on education.

Table 7: PCA Varimax Rotation with Kaiser Normalization component transformation matrix of reasons for fast food consumption

Reasons	Factors loaded component			
	Economic	Social	Educational	Background
Peer group influence	0.109	0.752	0.417	0.102
Time constraint	0.197	0.177	0.824	0.271
Price and affordable	0.621	0.215	0.120	0.489
Convenience	0.390	0.312	0.643	0.199
Quality and tasty menu	0.655	0.241	0.106	0.074
Occasions and events	0.101	0.521	0.220	0.552
Cultural value	0.102	0.320	0.176	0.428
Prestige	0.007	0.511	0.055	0.512

Source: Data analysis, 2017

Conclusion and Reccomendations

The pooled double hurdle results revealed that the factors that influence the students' decision to consume fast food shows slight variation from those influencing level of consumption and where it does, not by the same magnitude and direction. The results also showed that students expenditure on total fast food and by types of meals were significantly influenced by some socio-economic variables such as allowance, time spent away from hostel and distance. The estimated income elasticity for all types of meals except lunch of sampled students was inelastic. The study also identified that fast food preference and reasons for consuming fast food products were loaded on economic, social and academic factors with time constraints, peer group and convenience as the most cogent reasons for consuming fast food.

There should be an appropriate policy by Ahmadu Bello University administration to ensure the establishment of more standardized fast food restaurants for students and to monitor the preparation of food and its safety. This would take care of shift in demand from FAH to fast food restaurants. These restaurants should be aware of the types of food the students consume so as to meet their needs and render better services to them. The student representatives should make sure that the price of the food is within the students' means show that the students can afford

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