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FRUIT CONSUMPTION AMONG UNIVERSITY OF IBADAN STUDENTS, NIGERIA

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ABSTRACT

Fruit consumption among undergraduate students was assessed in Ibadan, Oyo State, Southwest, Nigeria. The objectives of the study were to determine the proportion of students' income spent on fresh fruits and processed fruits; determine the level of acceptability of processed fruits by students and the factors affecting the consumption of fresh and processed fruits. One hundred students were selected for the study using random sampling technique and data collected using well structured questionnaires. Data obtained was subjected to descriptive and regression analysis. The results of the study show that out of N6487.09 earned by students on the average, 4.58%, 4.4% and 9.29% of it were spent on fresh, processed and both kinds of fruits. respectively. Majority of students made their choice on fruit consumption based on the prices in the market. Also, more than 60% of the respondents preferred the fresh fruits to processed fruits. Students income and taste were significant determinants of the amount spent on fresh fruits by students ($P<0.05$). On the other hand, only students income ($P<0.05$) had significant effect on the quantity of processed fruit consumed. Based on the findings of this study, stakeholders should be encouraged to employ technique of preserving fresh fruits due to the preference shown for fresh fruits over processed product.

Keywords: consumption, fruits, university students, Nigeria.

INTRODUCTION

Fruits and vegetables are of great nutritional value. They are important sources of vitamins and minerals, thus, essential components of human diet. They play a significant role in human nutrition, especially as sources of vitamins C (ascorbic acid), A, thiamine (B_1), niacin (B_3), pyridoxine (B_6), Folacin (also known as folic acid or folate) (B_9), E, minerals, and dietary fiber (Craig and Beck, 1999; Quebedeaux and Eisa, 1990).

In spite of their importance in the diet, per capita consumption of vegetables and fruits in the developing world is only 100g compared with 220g in the more advanced countries (Messiaen 1992). The low intake of fruits made world health organization (WHO) place the low intake of fruits 6th among its 20 risk factors for global human mortality just behind other killer's indicators such as tobacco use and high cholesterol diets (FAO, 2006). Developing countries account for about 98 percent of total fruit production. while the developed countries account for 80 percent of world import trade (FAO, 2004).

Nigeria is credited with production of large quantity of fruits such as mangoes. watermelon, guava, pineapples, pawpaw, oranges, tomatoes, tangerines, and many other indigenous fruits. Over 50% are lost due to perishable nature of fruits occasioned by high moisture content, poor post harvest handling and marketing strategies (Olukunle et al., 2007). Fruit juice is the next best thing to fresh fruit, and can be packaged in aseptic, easily transportable containers that are less susceptible to damage and have a relatively long storage life (Olukunle et al., 2007).

According to Nandi and Bhattacharjee, (2005), Goldberg (2003); Hyson (2002); Prior and Cao (2000) diets high in vegetables and fruits contribute to anti oxidants which are associated with a reduced cancer and cardiovascular risk. It was further reported that eating plenty of fruits and vegetables can help to ward off heart disease and stroke, control blood pressure and cholesterol, prevent some types of cancer, avoid diverticulitis as well as guard against cataract one of the major cause of vision loss. This study therefore:

a) Determine the proportion of student's income spent on fresh fruits and processed fruits.

b) Determine the level of acceptability of processed fruits by students.

c) Determine the factors affecting the consumption of fresh and processed fruits.

Study area

The University of Ibadan is situated in Ibadan North Local Government areas of Oyo State. The University of Ibadan is the oldest Nigerian university and is located five miles (8 kilometres) from the centre of the major city of Ibadan in Western Nigeria. The study was conducted in Halls of residence namely. India. Queen, Tedder, Kuti and Zik hall in university of Ibadan campus in Nigeria between June to August. 2009.

Methods of data collection

Primary data was used in this study, directly from the students, with the use of questionnaire. 100 students (male and female) were randomly selected from the halls of residence.

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Method of data analysis

Both descriptive analysis and regression were used in analyzing the data collected.

The four functional forms were fitted,

Linear

$$Ct = bo + bX1 + bX2 + bX3 + bX4 \ldots + bXn + e \ldots \ldots (1)$$

Where

C_t = Denotes the naira value of average money spent on fruits

X_1 = Denotes students income (allowance)

X_2 = Age of respondents (in years)

X_3 = Amount spent on food consumption

X_4 = Dummy variable for sex (Male, Female)

X_5 = Dummy variable for marital status

X_6 = Taste (fresh or processed fruits)

b = Coefficient of the independent variable

e = Error term

Semi log

$$Ct = lnbo + blnX1 + blnX2 + \ldots + e \ldots \ldots (2)$$

Exponential function

$$lnCt = bo + bX1 + bX2 + \ldots + e \ldots \ldots (3)$$

Double log

$$lnCt = lnbo + blnX1 + blnX2 + \ldots + e \ldots \ldots (4)$$

RESULTS AND DISCUSSIONS

The income (allowance) of a student's goes a long way in determining what goods and services they can afford/consume. The percentage of student's income that is spent on food consumption will also determine the amount spent on fruits consumption.

The minimum income of respondents was N2000 while the maximum was found to be N10, 000 and they are found to engage in other activities to raise fund. This brought the mean income to N6. 487.08. Thirty three percent of the students had less than N2000 to be spent on food monthly, 43% of them spent between N2, 5000 and

Regression

The linear function was chosen:

(a) Fresh fruits

$C_t = -92.848 + 3.013E\text{-}03X_1 - 127 X_2 + 5.882E\text{-}02X_3 + 20.603X_4 + 163.965X_5 + 127.597X_6$
  (980.429) (61.914) (135.859) (66.186) ** (170.282) (534.940) (232.609)
$R^2 = 0.430; F = 2.140$
  *Significant at 1%   **Significant at 5%   ***significant at 10%

Values in parenthesis are the standard error.

The coefficient of determination (R^2) shows that 43% of the total variability on the consumption of fresh fruits by students had been explained by the variables (Table-2). Student's income and taste were significant determinants of the amount spent on fresh fruits by

N3, 500 on food in a month, only 4% of the students spent over N5, 500 and others spent between N4. 000 and N5, 000 bringing the mean of food expenditure of the students to N3, 086.02. Over 50% of the students could not afford to save any money at all. The result in Table-1 shows that out of N6487.09 earned by students on the average, 4.58%, 4.4% and 9.29% of it was spent on fresh, processed and both kinds of fruits by some students, respectively.

Table-1. Proportion of income spent on fresh and processed fruits.

Type of fruits	Proportion of income spent (%)
Fresh	4.85
Processed	4.44
Both	9.29

Acceptability of Processed fruits

Students had factors to consider in the choice of fruits as follow in the order shown below:

- price of fruits
- taste/preference
- easy/ acquisition
- allergy/health

Majority of students make their choice on fruit consumption based on the prices in the market. Fresh fruit is usually cheaper. Most of them do not have any reason not to take it, not even their culture would prevent them from consuming fruits. Easy acquisition of these fruits makes majority of students consume the fruits.

More than 60% of the respondents preferred the fresh fruits to the processed fruits. Similar trend was also observed by Adeoye *et al.*, 2009 in their study of socioeconomic factors influencing consumer preference for whole and processed fruits in Oyo state. Nigeria. They also reported that the respondents preferred whole fruits to processed fruits.

students. Therefore, if their allowances are increased then the amount spent on fruits will also increase. This also agrees with the findings of Adeoye *et al.* 2009 in their study. Income was also found to influence consumers' preference for fruits. Other variables like Age, Sex,

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Marital status and food expenditure by students did not affect the amount spent on fresh fruits every month.

Table-2. Consumption of fresh fruits.

Functional form	Constant	X_1	X_2	X_3	X_4	X_5	X_6	R^2	Adj R^2	F value
Linear	-92.848	3.013E-03	-127	5.882E-02	20.603	163.965	127.597	.430	.609	2.140
Exponential	1837	-1.93E-05	5.529E-03	9.109E.05	-6.31E-03	.174	.125	.106	.043	1.692
Semi log	-1702.106	282.888	12.949	223.896	23.515	128.47	124.439	.150	.091	2.532

Source: field survey

(b) Processed fruit

The lead equation was the linear function. The equation is as follows:

$$C_t = 228.670 + 3608X_1 + - 5.978X_2 - 3.95X_3 + 76.445X_4 + 34.155X_5 + 95.267X_6$$
$$(258.460) \quad (0.005)^* \quad (8.486) \quad (.025) \quad (56.215) \quad (125.417) \quad (60.091)$$

*Significant at 1%   **Significant at 5% ***significant at 10%

For the consumption of processed fruits among the university of Ibadan students, 38% of the variation was explained by the independent variables. However, only student's income is significant at 1%. Age and monthly expenditure are negative though significant while sex and other variables had no effect at all on consumption.

Table-3. Consumption of processed fruits.

Functional form	Constant	X_1	X_2	X_3	X_4	X_5	X_6	R^2	Adj R^2	F value
Linear	228.670	3.608E-02	-5.978	-3.95E-20	76.445	34.155	95.267	.380	.337	8.786
Exponential	3.080	3.1713E-05	-4.81E-05	-7.48E-05	8.033-02	-3.76E-02	.366	.080	.015	1.241
Double log	4.321	.683	-2.918	-279	7.254E-02	-9.69E-03	.321	.072	.007	1.106
Semi log	-1101.907	766.788	-420.016	-273.210	74.826	8.950	50.163	.256	.205	1.943

Source: field survey

CONCLUSIONS

This study had been able to determine factors that encourage fresh and processed fruit consumption. About 96% of the sampled population consumed fruits. Taste, cost and seasonality affected the consumption of any kind of processed fruits.

The results from regression showed that income was statistically significant for the consumption of processed fruits as well as fresh fruit intake. Income and preference were significant; as it increases consumption also increases.

The study also established the fact that various products can be produced from fresh fruits to processed form to avoid excessive loss of fruits during the on season or at its peak season.

From the study the average income of the students interviewed is N6487.09 while 4.85% and 4.44% of the monthly income was spent on fruits consumption.

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