

## DETERMINANTS OF FRUITS AND VEGETABLES CONSUMPTION AMONG HOUSEHOLDS IN OLORUNDA LOCAL GOVERNMENT AREA, OSUN STATE

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### ABSTRACT

*This study examined the factors that determine fruits and vegetables consumption among selected households in Olorunda Local Government Area of Osun State. A total of sixty (60) households were randomly sampled for the study. Relevant data were collected from the respondents via interview schedule and same were analyzed using both descriptive and inferential statistics. Results showed that the mean age of respondents was 39.9 years, 68.3% were females, 76.7% were married and 96.7 % had varying degrees of formal education while means of household size and monthly income were found as 4 persons and ₦57,500 respectively. Findings further revealed that onion is the most frequently consumed vegetable with the mean weekly consumption of 3.12kg. This is followed by tomatoes (3.10kg), mango (2.34kg), Amaranthus (2.29kg), waterleaf (2.28kg) and citrus (2.24kg). Apple (0.52kg) is the least consumed fruit while celosia (1.39kg) is the least consumed vegetable. Results of regression analysis revealed that price of fruit and vegetable is negatively related to consumption at 5% level of significance ( $r = -3.116$ ). The study concluded that the frequency of fruit and vegetable consumption among the respondents is not appreciable and recommended strategic awareness campaign in the study area to bring about increased knowledge of the nutritional values of fruits and vegetables and improved consumption behavior.*

**Keywords:** *Determinants, fruits, vegetables, consumption, nutrition value*

### INTRODUCTION

The consumption of fruits and vegetables is crucial to the availability of micronutrients to the body. They are rich in vitamins and minerals which are required for normal functioning of human body. Fruits and vegetables also provide dietary fibers which are very vital for the optimal functioning of the gastro-intestinal tract and also enable the body to use other nutrients required for its normal functioning. Low fruits and vegetables consumption is among the top 20 risk factors contributing to attributable mortality and up to 2.7 million lives could be saved each year with sufficient global fruit and vegetable consumption (WHO, 2007). This excludes, however, vitamin A deficiency (VAD), iodine deficiency disease (IDD) and iron deficiency

anemia (IDA). Abundant intake of fruits and vegetables is clearly a positive solution to problems of poor diet quality in the developing world (World Health Organisation, 2007). They are relatively cheap sources of essential micronutrients and are therefore a cost effective way to prevent micronutrient deficiencies and protection against main killers associated with micronutrient deficiencies in the world today (WHO, 2011).

World Health Organization (2003b) estimated that low intake of fruits and vegetable caused about 19% gastro-intestinal cancers, about 31% of ischemic heart disease and 11% of stroke. Of the global burden attributable to low fruit and vegetable consumption, about 85% was from Cardiovascular Disease (CVD) and 15% from cancers. The study further asserted that estimated 2.7million deaths were recorded yearly arising from these chronic diseases meaning that 2.7 million lives could be saved each year with sufficient global fruit and vegetable consumption. According to the WHO (2003a), the set population nutrient goals and recommended daily intake was put at a minimum of 400g for fruits and vegetables for the prevention of chronic heart diseases, cancer, diabetes and obesity. The estimated levels of current fruit and vegetable intake vary considerably around the world ranging from less than 100g/day in less developed countries, to about 450 g/day in Western Europe. Poor dietary quality (in particular, high salt intake, high saturated and trans-fatty acid intake, and low fruit and vegetable consumption) and insufficient physical activity are key risk factors for NCD development (Cecchini, Sassi, Lauer, Lee & Guajardo-Barron, 2010) and mortality worldwide (Lim, Vos, Flaxman, Danaei, & Shibuya, 2012), and are considered priority areas for international action (Beaglehole, Bonita, Horton, Adams & Alleyne, 2011).

The risks of disease and death due to malnutrition and non-communicable diseases (NCDs) are higher in households with low consumption of fruits and vegetables (Ihucha, 2011). Given the WHO and FAO conclusions, Lock, Pomerleau, Causer, Altmann and McKee (2005) affirmed that increased fruits and vegetables consumption can significantly reduce the incidence of malnutrition and NCDs. In Nigeria, micronutrient malnutrition has been identified as a wide spread problem with serious economic consequences including cognitive losses, work losses, low productivity, ill-health among others (Adish, 1999). World Health Organization (2003) found that only 3 (Israel, Spain and Italy) out of the 21 studied developed countries, had acceptable national average intake of fruits and vegetables consumption of at least 400g/day at 5 or more servings which were within the recommended values. The study also noted that the intake of fruits and vegetables is lower among African-American than Caucasian. To encourage meaningful fruits and vegetables consumption, it is very pertinent to identify the factors influencing consumption. Therefore, this study examined the determinants of fruits and vegetables consumption among households in Olorunda Local Government Area of Osun State. Specifically, the study:

- i. described the socioeconomic characteristics of the respondents;
- ii. examined the quantity of fruits and vegetables consumption among respondent
- iii. analyzed the frequency of fruits and vegetables consumption among respondents

## **HYPOTHESIS OF THE STUDY**

There is no significant relationship between selected explanatory variables and fruits and vegetables consumption.

## **MATERIALS AND METHOD**

This study was carried out in Olorunda Local Government Area of Osun State. Data used in the study were obtained from primary sources. Purposive sampling technique was used to select three (3) prominent markets (Akindeko, Igbonna and Ota-Efun ) having high concentration of fruits and vegetables sellers within the study area while first twenty (20) households were randomly selected from the clusters of households around each of the three selected markets giving a total of sixty (60) households which constituted the study sample. Data were collected with the aid of well-structured interview schedule administered to households heads both men and women. The quantities (exact numbers) of fruits and bundles of vegetables were converted to their kilogram (kg) equivalent. Data collected were aggregated and analyzed with the aid of descriptive and inferential statistics. The descriptive statistics employed included frequencies, percentages, mean and standard deviation while regression analysis was used to determine the factors affecting fruits and vegetables consumption.

## **RESULTS AND DISCUSSION**

### **Socio-economic characteristics of the respondents**

Table I presents the results of the socioeconomic characteristics of respondents. Majority (60.0%) were found in the age range of 20-40 years while mean age was found as 39.87years. This implies that most of the respondents are middle aged and still in their active years and are therefore expected to be well informed about the significance of fruits and vegetables in human diet. Majority (68.3%) of the respondents are females, 31.7% are males and 76.7% were married, A few (3.3%) of the sampled respondents had no formal education, 31.7% are OND/NCE holders, 25.0% are secondary school certificate holders, 21.7% hold HND/B.Sc certificates, 15.0% are primary school leavers while 3.3% hold postgraduate degrees. This implies that the sampled respondents had fair share of formal education. Half (50%) of the respondents were Muslims, 46.7% were Christians while 3.3% practiced traditional religion. Most (86.6%) of the respondents had household size ranging between 1 – 6 persons while 13.3% had 7 – 9 persons in their households. The mean household size was found as 4 persons. This result is a true reflection of the mean age and educational status of the respondents. Results further revealed that 35.0% of the sampled respondents were primarily engaged as civil servants, 38.3% were traders, 23.3% are artisans, and 3.3% are engaged in other vocations. Majority (60.0%) of the respondents earn between ₦1,000 and ₦50,000 on monthly basis, 40.0% earn between ₦51,000 and ₦150,000 per month while mean monthly income was found as ₦57,500. This implies that most of the respondents are average income earners when their mean income is compared with the national minimum wage. Therefore, they should be able to afford decent and healthy meals, fortified with fruits and vegetables.

**Table I: Socioeconomic characteristics of sampled household heads**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age (Years)</b>		
20 – 30	12	20.0
31 – 40	24	40.0
41 – 50	18	30.0
51 – 60	06	10.0
Mean = <b>39.87</b> years		
<b>Gender</b>		
Male	19	31.7
Female	41	68.3
<b>Marital Status</b>		
Single	7	11.7
Married	46	76.7
Separated	03	5.0
Divorced	04	6.7
<b>Educational Qualification</b>		
No Formal education	2	3.3
Primary education	9	15.0
Secondary education	15	25.0
OND/NCE	19	31.7
HND/BSC	13	21.7
<b>Religion</b>		
Islam	30	50.00
Christianity	28	46.7
Traditionalist	02	3.3
<b>Household size</b>		
1 – 3	20	33.3
4 – 6	32	53.3
7 – 9	08	13.3
Mean = 4 persons		
<b>Occupation</b>		
Civil Servants	21	35.0
Trader	23	38.3
Artisans	14	23.3
Others	02	3.3
<b>Monthly income ('000 Naira)</b>		
1 – 50	36	60
51 – 100	18	30
101 - 150	06	10.0
Mean = ₦57,500		
<b>Total</b>	<b>60</b>	<b>100.0</b>

**Source:** Field survey, 2017.

### Quantity of fruits and vegetables consumed by respondents on weekly basis

Table II shows the distribution of the respondents according to the quantity of household fruits and vegetables consumption per week. The table reveals the mean weekly consumption of cashew, onion, tomato, mango, amaranths, citrus, pawpaw, jute mallow and banana/plantain among 9.71%, 58.3%, 53.3%, 5.07%, 4.96%, 4.85%, 4.66 and 4.77% of the sampled respondents as 4.48kg, 3.12kg, 3.10kg, 2.34kg, 2.29kg, 2.24kg, 2.20kg, 2.15kg and 2.14kg respectively. The least consumed fruit and vegetable is apple with a mean consumption of 0.52kg per week by very few (3.3%) of the sampled respondents. This may be due to the high cost of apple since it is mainly imported and is relatively costlier than the other locally grown fruits and vegetables. In a related study, Alshaikh *et al.* (2018) found out that almost all (97.0%) of their sampled respondents who were mainly females half of which had low educational level, mostly below high school, consumed 3 servings of fruits and vegetables per day while only 1.4% consumed the recommend 5 or more servings per day. In the same vein, Alzeidan *et al.* (2016) measured the CVD risk among the university employees and their families and reported that more than 87.0% of their sampled respondents consumed less than the recommended 5 servings of fruits and vegetables per day.

**Table II:** Distribution of households based on quantity of fruits and vegetables consumed/week

Fruits/vegetables	Mean (Kg)	Percentage
Citrus	2.24	5.0
Mango	2.34	13.3
Banana/plantain	2.14	5.0
Pawpaw	2.20	6.7
Garden Eggs	1.62	5.0
Carrot	1.68	8.3
Cucumber	1.33	3.3
Waterleaf	2.28	6.7
Onion	3.12	46.7
Tomato	3.10	38.3
Jute Mallow	2.15	5.0
Amaranthus	2.29	11.7
Telfeira	1.70	6.7
Bitterleaf	1.62	3.3
Cashew	4.48	10.0
Celocia	1.39	3.3
Apple	0.52	3.3

Source: Field Survey, 2017.

Multiple Response Table n=60

### Frequency of fruits and vegetables consumption by respondents per month

Table III reveals that the most frequently consumed fruits and vegetables are onions and tomatoes which are both consumed over eleven times in a month by 58.3% and 53.3% of sampled respondents respectively, on the average. This is followed by citrus, mango, Amaranthus, and waterleaf, each of which were consumed for 7.93, 7.52, 7.31 and 7.04 mean numbers of times per month respectively, by 6.67% respondents. Jute mallow, banana/plantain and carrot were consumed by 5.0% for 6.39, 6.28 and 5.82 times per month. Each of bitter leaf, cashew, Telfeira, garden eggs, cucumber and celosia were consumed by 3.3% of the respondents for 6.04, 4.67, 4.51, 4.20, 3.56, and 3.29 average numbers of times per month. However, apple being the least frequently consumed fruit was taken for 1.89 times in a month by a few (3.33%) of the respondents.

**Table III: Distribution of the respondent according to frequency of fruit and vegetables consumption**

Fruits/vegetables	Mean (No of times purchased/month)	Percentage
Citrus	7.93	6.67
Mango	7.52	6.67
Banana/plantain	6.28	5.00
Pawpaw	2.31	1.67
Garden Eggs	4.20	3.33
Carrot	5.82	5.00
Cucumber	3.56	3.33
Waterleaf	7.04	6.67
Onion	11.42	58.30
Tomato	11.37	53.30
Jute Mallow	6.39	5.00
Amaranthus	7.31	6.67
Celosia	3.29	3.33
Telferia	4.51	3.33
Bitter leaf	6.04	3.33
Cashew	4.67	3.33
Apple	1.89	3.33

**Source:** Field Survey, 2017. **MRT:** n=60

### Factors affecting consumption of fruits and vegetables

Table IV indicates that the coefficient of price ( $X_4$ ) is negative and statistically significant at 10%. This implies as the unit price of fruits and vegetables increases, the level of consumption decreases. This suggests that price has a negative influence and is the major determinant of fruits and vegetables consumption. To buttress this finding, Lee (2016) submitted that nutrition education alone cannot increase fruits and vegetables consumption hence advocated for policy actions to increase affordability of fruits and vegetables which are essential to tackle global malnutrition in all its forms.

**Table IV: Results of regression analysis for tested hypothesis**

Variables	Coefficient	Std.Err	t-value	P> t
Household size (X <sub>1</sub> )	0.389	0.385	1.010	0.317
Fruits and vegetables expenditure (X <sub>2</sub> )	0.001	0.000	0.360	0.720
Source of Fruit and vegetables (X <sub>3</sub> )	1.117	1.020	1.100	0.278
Price (X <sub>4</sub> )	-3.116*	1.655	1.880	0.065
Availability (X <sub>5</sub> )	0.599	1.426	0.420	0.676
Constant	5.854**	2.303	2.54	0.014

\*P ≤ 0.10  
R<sup>2</sup> = 0.4950, Adjusted R<sup>2</sup> = 0.4626

**Source:** Field survey, 2017. \*\*P ≤ 0.05

## CONCLUSION AND RECOMMENDATIONS

The study concluded that the level of fruits and vegetables consumption is very low in the study area. Onions and tomatoes are the most frequently consumed fruits and vegetables, being regular cooking ingredients. Apple is the least frequently consumed due to its high cost when compared with the other locally grown fruits. Result of regression analysis established a negative relationship between price and consumption of fruits and vegetables in the study area. Hence, strategic awareness campaigns should be organized in the study area to inform respondents and the general public about the nutrition and health benefits of fruits and vegetables consumption. Respondents should also be encouraged to consume the cheap, affordable and locally produced fruits and vegetables in adequate quantity to meet up with the recommended daily allowance, on a regularly basis.

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