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ANALYSIS OF FRUIT WASTAGE AMONG FRUIT MARKETERS IN AKURE METROPOLIS, ONDO STATE, NIGERIA

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ABSTRACT

The study analyzed the level of food wastage among fruit marketers in Akure metropolis, Ondo State. It ascertained the socio-economic characteristics of fruit marketers, ascertained level of fruit wastage, determined the factors affecting fruit marketers and identified problems encountered in fruit marketing. Fifty fruit sellers were purposively selected from three main markets in Akure metropolis, these are; Oja-Oba market, NEPA market and Isinkan market which makes a total of one hundred and fifty fruit sellers for the study. Analyzed data were obtained with the aid of structured questionnaire and subjected to descriptive and inferential statistics. Findings shows that 50% of fruit marketers were between 20-30 years with mean of 28.6 years, 76% had between 2-4 persons as household size with mean of 3.90, 32% had above ₦58,000 as monthly Income with a mean monthly Income of ₦24,366.67, 44% had between 5-10 years with mean marketing experience of 6.9, 52% were females, 62% were married, 50% had tertiary education, 40% recorded fruit wastage weekly and the level of fruit wastage is high (82%). Banana/plantain ranked 1st in degree of wastage with mean score of 1.32 and pineapple 2nd with mean score of 1.3, Fruit marketers were faced with problems of seasonality, storage facilities and high transport cost (40%). Chi-Square result showed that Marital status ($\chi 2=27.160$), Household size ($\chi 2=20.000$) and highest level of education ($\chi 2=26.320$) were significant with the level of fruit wastage. The study concluded that fruit wastage could impair food security if not nipped in the bud especially among fruit marketers.

1. INTRODUCTION

The wastage of edible food due to a blemished size or colour, the current market situation, a general over production an error in packaging weight or a poor management of food in households has been recognized as an important issue in numerous countries. During recent years some projects have been carried out to receive figures to estimate the amount of wasted food for specific levels of the value-added chain such as households or retailers or even economies as well as reasons for that behaviour [1].

Food loss refers to a decrease in mass (dry matter) or nutritional value (quality) of food that was originally intended for human consumption. These losses are mainly caused by inefficiencies in the food supply chains, such as poor infrastructure and logistics, lack of technology, insufficient skills, knowledge and management. “Food waste” refers to food appropriate for human consumption being discarded, whether or not after it is kept beyond its expiry date or left spoil. “Food Wastage” refers to any food lost by deterioration or waste. Thus, the term “wastage” encompasses both food loss and food wastage.

In 2011, FAO published a first report assessing global food losses and food waste [2]. This study estimated that each year one-third of all food produced for human consumption in the world is lost or wasted. Grown but uneaten food has significant environmental and economical costs. Obviously this food wastage represents missed opportunity to improve global food security and to mitigate environmental impacts generated by agriculture. Food wastage along the supply chain has a variety of causes such as spillage or breakage, degradation during the handling or transportation, and waste occurring during the distribution phase. Then later a product is lost or wasted along the supply chain, the higher the environmental cost, as

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impacts arising for instance, during processing, transport or cooking will be added to initial production impact. In this study, this mechanism is taken into account in the quantification of climate impacts.

Losses after harvest of both quantity (weight losses) and quality deprive farmers of the full benefits of their labor. Food losses do not merely reduce food available for human consumption but also cause negative externalities to the society through costs of waste management, greenhouse gas production, and loss of scarce resources used in production [2]. Food losses contribute to high food prices by removing part of the food supply from the market. Postharvest food losses significantly endanger the livelihoods of stakeholders across the Losses after harvest of both quantity (weight losses) and quality deprive farmers of the full benefits of their labor.

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Objectives of the Study

The objectives of the study are as follows:

i. ascertain the socio-economic characteristics of fruit marketers in Akure metropolis;
ii. ascertain the level of fruit wastage among fruit marketers in the study area;
iii. determine the factors affecting fruit marketers in the study area; and
iv. identify problems encountered in fruit marketing in the study

2. METHODS

The study was carried out in Akure metropolis. Purposive sampling technique was used to select three markets within Akure metropolis. These are Oja-oba, NEPA market and Isinkan market. Twenty fruit marketers were purposively selected at Oja-oba and NEPA market while ten fruit marketers were also purposively selected at Isinkan market. This makes a total of fifty fruit marketers used for the study. Data were collected by the use of a questionnaire which includes questions on the socio-economic characteristics and other issues that relate to fruit marketing and wastage in the sampled markets. The analytical techniques used to analyze the data were descriptive statistics which includes the use of tables, frequency counts, percentages and means.

3. RESULTS AND DISCUSSION

Table 1 shows the socio-economic characteristics of respondents. 50% of the respondents were aged between 20 and 30 years of age with a mean of 31.6 years. This indicates that the respondents are young and still in their active stage and are able to run around for their fruit marketing business. This is in agreement with the findings of [3] who found that youth are characterized with strength and vigour and are very relevant in business activities. Most (52%) of the respondents are females as expected because females are more involved in marketing activities than the males. This is in line with the findings of [4] and [5] who stated that men are less involved in the agricultural value chain than the women. This will help the women to also be financially stable and also be able to contribute to the family purse. Most (62%) of the respondents are married and this implies that the respondents have responsibilities to shoulder and the income realized from fruit marketing is usually meant to cater for their family needs. Majority (66%) of the respondents had between 2 and 4 persons in their household with a mean of 3.9. This implies that household sizes of respondents are relatively low among the respondents and respondents have few mouths to feed.

Half (50%) of the respondents had attained tertiary education. This result is an indication that fruit marketers have some literate level which could help in marketing transaction, calculation and numeracy. This supports the findings of [6] who documented that education aids the adoption of marketing innovations. The average literacy level of the respondents in this study will positively affect their hygiene and quality maintenance practices. Few (44%) of the respondents had 5–10 years marketing experience with a mean of 6.9 years and few (30%) of the respondents earned ₦58,000 and above monthly with a mean of ₦24,366.67 from fruit marketing.

Table 1. Socio-Economic Characteristics of Respondents (N=150)

Socio-Economic characteristics	F (%)	Mean Score
Age		
Less than 20 years	30 (20.0)	31.6
Between 20-30years	75 (50.0)	
Between 31-40years	42 (28.0)	
41 years and above	3 (2.0)	
Household Size		
2 – 4 persons	99 (66.0)	3.9
5 – 7 persons	45 (30.0)	
8 persons and above	6 (4.0)	
Monthly Income		
Less ₦10,000	45 (30.0)	
₦12,000-₦25,000	42 (28.0)	
₦26,000 - ₦50,000	15 (10.0)	₦24,366.67
₦58,000 and above	48 (32.0)	
Year of Marketing Experience		
Less than 4 years	51 (34.0)	
5 - 10 years	66 (44.0)	
11 – 15 years	27 (18.0)	6.9
20 years and above	6 (4.0)	
Gender		
Male	72 (48.0)	
Female	78 (52.0)	
Marital Status		
Single	48(32.0)	
Married	93(62.0)	
Widowed	9(6.0)	
Level of Education		
Primary Education	18 (12.0)	
Secondary Education	51(34.0)	
Tertiary Education	75(50.0)	
No former Education	6(4.0)	

Source: Field Survey, (2019)

Table 2 shows that majority (76%) of the respondents started selling fruits between 2007 and 2016. This proliferation of the fruit marketing industry in recent years may be due to its appeal. According to [7], postharvest activities such as marketing and agro processing are regarded by African youth as modern and not as laborious as the primary production activities. Few (36%) sold pineapple only. Most (48%) of the respondents indicated that they experienced fruit wastage on a weekly basis. Also, most (42%) of them obtained their fruits from wholesalers. This is in agreement with the submission of [8] who found that wholesalers are the bulk buyers of fruits and they in turn sell to retailers and even consumers. Half (50%) of the respondents indicated that they experienced low fruit wastage while transporting the fruits while few (46%) of the respondents sold to final consumers. The display of fruits by roadsides was employed by about 38% of fruit marketers. Majority (60%) of the respondents could not afford to store the fruits to prolong their shelf-life because there is no access to storage facilities in the study area. This is in line with the findings of [5] who opined that in Nigeria; poor electricity supply makes storage an expensive venture for fruit marketer.

Table 2. Distribution of Respondent Based on Fruit Wastages (N=150)

Respondent Based on Fruit Wastages	**F (%)**
Frequency of Fruit Wastages	
Daily	30 (20.0)
Every other day	12 (8.0)
Weekly	60 (40.0)
Forth night	39 (26.0)
Monthly	9 (6.0)
Level of Fruit Wastage during Transportation	
High	3 (2.0)
Moderate	45 (30.0)
Low	102 (68.0)
Level of Damage of Fruit during Transportation	
High	3 (2.0)
Moderate	45 (30.0)
Low	102 (68.0)
Method of Storage of Fruits	
Refrigerator	24 (16.0)
Basket	51 (34.0)
Shelves	12 (8.0)
Racks	63 (42.0)

Source: Field Survey, (2019)

Table 3 shows the distribution of respondent on level of wastage of selected fruits. It was discovered that plantain and Banana had a high level of perishability with a mean of 1.32 and ranked first than pineapple with a mean of 1.30 (2nd), orange with a mean of 1.24 and ranked third and Others (Apple and watermelon) with a mean of 0.38 and ranked fourth.

This could imply that more fruit marketers would like to venture into the marketing of Apple and Water Melon due to the fruit's low perishability nature.

Table 3. Distribution of Respondent on Level of Wastage of Selected Fruits (N=150)

Level wastage of fruit	High F(%)	Medium F(%)	Low F(%)	None F (%)	Mean Score	Rank
Orange	36 (8.0)	54 (36.0)	42 (28.0)	42 (28.0)	1.24	3rd
Plantain/ Banana	18 (12.0)	63 (42.0)	18 (12.0)	51 (34.0)	1.32	1st
Pineapple	6 (12.0)	19 (38.0)	9 (18.0)	16 (32.0)	1.3	2nd
Others (Apple, watermelon)	1 (2.0)	5 (10.0)	6 (12.0)	44(12.0)	0.38	4th

Source; Field Survey, 2019

Table 4 shows the distribution of respondents according to major problems affecting fruit marketing. Transportation problem ranked first (40%) followed by physical damages of fruits (18.0%) and seasonality of the fruits (16.0%). Fruit marketers are particularly faced with the issue of high transport cost in the study area; this could be as a result of the bad state of the vehicle used in transporting fruits. The result also implies that fruit marketers don't have enough facilities and quality materials to transport their product to the intended markets, hence fruit damages occur. This is in agreement with the findings of [9] who found that conveying fruits in specialized vehicles with the right equipment in order to preserve their quality will help to reduce fruit damage during transport [9].

Table 4: Distribution of Respondents According to Major Problems Affecting Fruit Marketing (N=150)

Problems Affecting Fruit Marketing	F (%)	Rank
Fruit Damages	27 (18.0)	2nd
Bad Pricing	9 (6.0)	6th
Seasonality of Fruits	24 (16.0)	3rd
Low level of Demand	3 (2.0)	7th
Storage Facilities	12(8.0)	4th
High Transport Cost	12 (8.0)	4th
Seasonality, Storage Facilities and High Transport Cost.	60 (40.0)	1st
Inadequate Capital	3(2.0)	7th

Source: Field Survey, 2019.

Table 5 shows the chi-square result of socio-economic characteristics and level of fruit wastage among respondents in the study area; Findings showed that marital status of respondents (P=0.000), household size of respondents (P=0.003) and highest level of education of respondents (P=0.000) were all significant with the level of fruit wastage

Table 5: Chi Square Result of Socio-Economic Characteristics and Level of Fruit Wastage.

Relationship	**Chi Square Calculated (χ^2)**	**Degree of Freedom (df)**	**P-Value**	**Decision**
Age vs Level of Fruit Wastage	23.04	21	0.342	NS
Marital Status vs Level of Fruit Wastage	27.160	2	*0.000	S
Gender vs Level of Fruit Wastage	0.080	1	0.777	NS
House Hold Size vs Level of Fruit Wastage	20.000	6	*0.003	S
Highest Level of Education Attained vs Level of Fruit Wastage	26.320	3	*0.000	S
Monthly Income vs Level of Fruit Wastage	29.308	23	0.170	NS
Years of Marketing Experience vs Level of Fruit Wastage	24.880	15	0.052	NS

Source: Field Survey, 2019

This could imply that married respondent could consume the fruit in order to avoid wastages; also, household members of respondents could help to reduce fruit wastages in the study area. Respondent's educational level is a boost in curbing fruit wastages because fruit marketers could, as a result of their exposure and education will be proactive in reducing fruit wastages. This could be done by being inquisitive and the ability to learn from other well educated fruit marketers. On the other hand, Age of respondents (P=0.342), Gender of respondents (P=0.777), Monthly income of the respondents (P=0.170) and years of marketing experience of respondents (P=0.052) were not significant with the level of fruit wastage.

4. CONCLUSIONS AND RECOMMENDATION

Reducing fruit wastages among fruit marketers is a clarion call to all stakeholders to help in the fight for post-harvest losses especially for highly perishable agricultural products in Nigeria. This will bring a relief to farmers, middlemen, marketers and consumers in the fruit production value chain in Nigeria and enhance performance and effectiveness of all stakeholders. The study concludes that if fruit spoilage is avoided, fruit marketers will have more profits and Ondo state will be more food secured.

The study recommended that fruit marketers should be conscious of the state of the vehicles used in transportation of harvested fruits so as to reduce fruit damages and wastage and enhance marketing capacity of fruit marketers.

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