Comparative Study of Fruits' Post Harvest Losses and the Socio-Economic Level of Fruits' Marketers in Osogbo Metropolis of Osun State, Nigeria

Wahab Munir Jamiu, Durodola Oludare Sunday, Ibikunle Damilola Rashidat

Department of Agricultural Economics and Extension, Osun State University, Osogbo, Nigeria
Department of Agricultural Engineering, Ladoke Akintola University of Technology, Ogbomoso, Nigeria
Corresponding Author: *wahabfudma095@gmail.com, durodolaoludare@gmail.com*

Abstract

This study was carried out to compare the relationship between Fruits' post harvest losses and the socio-economic level of fruits' marketers in Osogbo metropolis of Osun state. Simple random sampling was then used to select sixty (60) fruit marketers, fifteen each from the four selected communities to constitute sample for the study. Primary data were collected from the fruit marketers using a structured interview schedule. Data from the study was analyzed using descriptive analysis. Most of the fruit marketers are females, middle aged, married women, with no formal education. 27.0% of the respondents earn between ₦300,000-₦434,000 per annum from fruit marketing; the result revealed that 38.3% of the fruit marketers incur losses of between ₦600- ₦6,500 per annum.There is a significant relationship between the socio-economic characteristics and the level of post-harvest losses incurred in fruit marketing in the study area. This study recommended that Fruit marketers should be encouraged to join various cooperative societies for easy accessibility to credit facilities and education on better marketing strategies.

Keywords: Post-harvest, Losses, Fruit, Marketing, Metropolis.

Introduction

Agriculture is a major sector of the Nigerian economy and it contributes more than 30% of the total annual Gross Domestic Product, it also employs about 70% of the labour force and accounts for over 70% of the non-oil exports. Most importantly, it provides over 80% of the food needs of the country (Adegboye, 2004). Global efforts in the fight against hunger to raise farmers' income and improve food security especially in the World's poorest countries should give priority to the issue of crop losses (FAO, 2010). About one-third of the food produced for human consumption is lost and wasted globally which amounts to 1.3 billion tons per year (FAO, 2011). Fruits form about 25% of the major food crops cultivated in the tropics, hence making it a source of livelihood for a considerable section of the population (Kra and Bani, 1988). Fruits also contribute to economic growth by increasing the nations GDP through continuous marketing of fruit. It provides employment to people directly e.g. fruit farmers, marketers, transporters and indirectly such as fruit processors and fruit packaging. It can be used to feed animals such as goat, cattle, sheep etc. which feed of the fruits directly or on the chaff of the fruits after juice extraction has taken place. It can also be used in both medical and academic research. The world is faced with the problem of food shortage. Ayandiji and Omotoso (2009) reported that majority of the people in West Africa lack adequate food that are

rich in nutrients needed by man for health and productivity. Hence increased productivity, marketing and consumption of horticultural crops including fruits were recommended for the increased productivity of people leading to economic growth. These losses are caused by a lot of factors like low demand of fruit by consumers, poor storage facilities of fruit, poor infrastructural facilities like good roads which affect transportation of the fruits and also certain environmental factors. The main objective of this study is to determine the effects of post harvest losses in Osogbo metropolis of Osun state, specific objectives are: To examine the socio economic characteristics of fruit marketers in the study area and to estimate the monetary loss incurred from fruit marketing among the respondents in the study area, and to examine the relationship between socio-economic characteristics of fruit marketers and post-harvest losses in the study area.

Methodology

The research was carried out in Osogbo metropolis in southwestern Nigeria. Osogbo town, the capital of Osun state is situated about 96 kilometers north-east of Ibadan and about 240 kilometers away from Lagos. The choice of Osogbo as the study area was premised on availability of many fruit marketers in the study area. Purposive sampling technique was used to select Olorunda local government from the two local governments in the capital. Cluster sampling was used to select four communities which included Igbona, Testing ground, Oja-oba and Alekuwodo where fruit marketers are commonly found in the Local Government Area. Simple random sampling was then used to select sixty (60) fruit marketers, fifteen each from the four selected communities to constitute sample for the study. Primary data were collected from the fruit marketers using a structured interview schedule. Data from the study was analyzed using descriptive and regression analysis.

Hypothesis to be tested:

Ho$_0$: U$_1$=0

Ho$_1$: U$_1$≠0

Ho$_0$: There is no significant relationship between socio economic characteristics and Post-harvest losses incurred by respondents in the study area.

Results and Discussion

Table1: Socio-economic characteristics of fruit marketers

As revealed in table 1 below, 61.6% of the fruit marketers are between the ages of 39-58 years with the highest concentration, while 1.7% each were found in the age range of 19-28 years and 79-88 years respectively. Meanwhile the respondents mean age was found to be 48.00 years. All the sampled fruit marketers were females indicating that there are more female fruit marketers in the study area. Majority (73.3%)of the respondents were married and 1.7% of the fruit marketers was found single. The results revealed 66.7% of the respondents have a family size of 6-10 people, 23.3% were within the range of 1-5 while 10% had a family size of 11-15 people. The mean family size is 7 people. The study indicates that 36.7% of the study population had no formal education, while 1.7% had post-secondary qualification. This implies that there are more illiterates in the study area. The proportion of respondents who were literates was mainly primary school certificate holders. However the mean year of formal education is 4 years. This finding complies with the common findings in the literature. The results revealed that, 30% of the respondents had a fruit marketing experience of 30-39 years, while 1.7% of the respondents had a fruit marketing experience of 50 years and above. However the mean year of fruit marketing experience is 21 years. 12 shows that, 25.0% of the fruit marketers are located in Alekuwodo, 25.0% market their fruits in Igbona, 25.0% market their fruit at Oja-Oba while the remaining 25.0% market their fruit in testing ground. All of these communities are located within Osogbo metropolis.

Table 1: Distribution of Socio economics characteristics of fruit marketers n=60

Variables	Frequency	Percentages (%)
Gender		
Male	0	0
Female	60	100
Age		
19-28	1	1.7
29-38	12	20.0
39-48	20	13.3
49-58	17	28.3
59-68	5	8.3
69-78	4	6.7
79-89	1	1.7
Marital status		
Single	1	1.7
Married	44	73.3
Widowed	12	20.0
Others	3	5.0
House size		
1-5	14	23.3
6-10	40	66.7
11-15	6	10.0
Years of education		
None	22	36.6
1-6	19	31.7
7-12	18	30.0
13-18	1	1.7
Fruit Marketing Experience	17	28.3
1-9	9	15.0
10-19	14	23.0
20-29	1	1.7
30-39	1	1.7
Above 39		
Location(fruit marketers)	15	25.0
	15	25.0
Alekuwodu	15	25.0
Igbona	15	25.0
Oja-Oba	**60**	**100**
Testing ground.		
Total		

Annual income

27.0% of the respondents earn between ₦300,000-₦434,000 per annum from fruit marketing, while 3.3% earn between ₦570,000 - ₦704,000 per annum. Meanwhile, the mean annual income gotten from fruit marketing is ₦324,078.43.

Table 2: Annual income from fruit marketing n=60

Annual income(₦)	Frequency	Percentage
30,000-164,000	14	23.3
165,000-299,000	13	21.7
300,000-434,000	16	26.7
435,000-569,000	10	16.7
570,000-704,000	2	3.3
705,000 and above	5	8.3
Total	**60**	**100.0**
Mean	**₦324,078.43**	

Source: Field Survey, 2016

Annual cost of fruit

36.7% of the respondents invest between ₦24,000 - ₦139,000 in fruit marketing per annum, while 3.3% of the respondents invest between ₦604,000 and above in fruit marketing per annum. However the mean amount of money invested on fruit marketing per annum is ₦242,215.69.

Table 3: Annual cost incurred in fruit marketing n=60

Annual cost of fruit(₦)	Frequency	Percentage
24,000-139,000	22	36.7
140,000-255,000	16	26.7
256,000-371,000	9	15.0
372,000-487,000	5	8.3
488,000-603,000	6	10.0
604,000 and above	2	3.3
Total	**60**	**100.0**
Mean	**₦242,215.70**	

Source: Field Survey, 2016

Transportation cost

Half (50%) of the fruit marketers spend ₦1800-₦11,400 on transportation per annum, while 11.7% of the respondents spend ₦11,500-₦21,100 on transportation per annum. However, the mean transportation cost is ₦17,495.88.

Table 4: Annual transportation cost of respondent n=60

Annual transportation cost (₦)	Frequency	Percentage
1800-11,400	30	50.0
11,500-21,100	7	11.7
21,200-30,800	12	20.0
30,900-40,500	11	18.3
Total	**60**	**100.0**
Mean	**₦17,495.90**	

Source: Field Survey, 2016

Monetary Value of Fruit Losses in Fruit Marketing

The table below shows that 38.3% of the fruit marketers incur losses of between ₦600- ₦6,500 per annum, 31.7% incur fruit losses of between ₦6,600-₦12,500, 16.7% incur losses of ₦12,600-₦18,500 per annum, 10% lose within ₦18,600-₦24,500 per annum and 3.3% of the fruit marketers incur an annual loss of ₦24,600 and above. However the mean annual monetary value of losses is ₦10,066.67. The monetary value of fruit loss is the amount of money that the fruit marketers lose on the fruit bought per annum. The monetary value varies among fruit marketers as a result of the respective amount invested in marketing, their fruit marketing experience, their income from fruit marketing per annum, years of formal education, transportation cost and constraints faced in fruit marketing.

Table 5: Monetary value of fruit losses by fruit marketers n=60

Monetary value of fruit losses (₦)	Frequency	Percentage	Cumulative Percentage
600-6,500	23	38.3	38.3
6,600-12,500	19	31.7	70.0
12,600-18,500	10	16.7	86.7
18,600-24,500	6	10.0	96.7
24,600 and above	2	3.3	100.0
Total	**60**	**100.0**	
Mean	**₦10,066.70**		

Source: Field Survey, 2016

Result of Regression Analysis for the Tested Hypothesis

The result of the regression analysis is presented in table 3 below. The coefficient of family size of respondents (X_3) has a negative relationship with the level of post-harvest losses and it is statistically significant at 1% level. This suggests that as the family size of the respondents increase, the level of post-harvest losses decreases. It explains that the fruit marketers with a higher house hold size have more labour advantage as they can send their children to market (hawk) the fruits for them thereby reducing the level of post-harvest losses. The coefficient of years of formal education (X_4) is negative and statistically significant at 1% level; this implies that the level of formal education increases, the level of post-harvest losses in fruit marketing reduces. This suggests the more educated fruit marketers, have more versatile knowledge on the handling, storage and processing of fruits and this in turn reduces the level of post-harvest losses. The coefficient of years of fruit marketing experience (X_5) is negatively related to fruit marketing and is statistically significant at 1% level. This result implies that, the years of marketing experience has a negative influence on the level of post-harvest losses, as the fruit marketers spend more years in fruit marketing, their experience increases thereby lowering the post-harvest losses incurred. The coefficient of annual income (X_6) is positive and it is statistically significant at 1% level which corroborates with the findings of (Lawal in 2012). This signifies that the annual income of fruit marketers is directly dependent on the level of post-harvest losses meaning that as the annual income increases the level of post-harvest losses also increases. The coefficient of transportation cost (X_7) is negative and is statistically significant at 5% level, this signifies that the higher the transportation cost, the lower the level of post-harvest losses which suggests that the fruit marketers are likely to incur a higher transportation cost when they have a good transportation system and this in turn will reduce the level of post-harvest losses. The t-value calculated is 3.95 and is greater than the tabulated t-value for each of the socio-economic characteristics. Hence, the null hypothesis is rejected meaning that there is a significant relationship between the socio economic characteristics and the level of post-harvest losses incurred in fruit marketing.

Table 6: Result of Multiple Linear Regression Analysis n=60

Variable	Coefficient	Std. Error	t-value	Probability
Age (X_1)	0.174	0.079	1.851	0.070
Marital Status(X_2)	-0.100	0.162	-0.288	0.774
Family size(X_3)	-0.517*	0.171	-2.797	0.007
Years of formal education(X_4)	-0.351*	0.110	-2.759	0.008
Fruit marketing experience(X_5)	-0.287*	0.071	-3.776	0.000
Annual income(X_6)	0.415*	0.095	4.024	0.000
Annual transportation cost(X_7)	-0.144**	0.087	-2.177	0.034
Annual cost of fruit(X_8)	-0.085	0.081	-0.761	0.450
C	3.227	0.510	6.235	0.000
R^2	0.716			
Adjusted R^2	0.672			
F (8, 51)	16.100			
Prob> F	0.000			

> * **P<0.01 Coefficient significant at 1% level**
>
> ** **P<0.05 Coefficient significant at 5% level**

Source: Data Analysis, 2016.

Conclusion and recommendation

Based on the findings of this study, it was concluded that most of the fruit marketers are middle aged married women with no formal education. Significant variables related to the level of post-harvest losses include family size, years of formal education, fruit marketing experience, annual income and annual transportation cost incurred in fruit marketing. This study recommended that Fruit marketers should be encouraged to join various cooperative societies for easy accessibility to credit facilities and education on better marketing strategies. Fruit marketers should be adequately trained in the areas of fruit handling, storage and transportation by extension agents.

References

1. Adegboye, R.O. (2004) Land, Agriculture and food security in Nigeria, 3rd faculty lecture, Faculty of Agriculture University of Ilorin 25/2004.
2. Ayandiji Adebamiji and Omotoso Omotola (2009): Economic analysis of consumption of fresh and processed fruit in Bowen University Iwo, Osun State, Nigeria. International NGO Journal Vol. 4 (6), pp. 318-323, June, 2009
3. F.A.O./UNIDO,(2010). Global food losses and food waste: Extent, causes and prevention, by J.Gustavsson, C. Cederbeg, U. Sonnesson, R. Van Otterdijk, and A. Meybeck, Rome. www.foa.org/docrep/014/mbo60e0.
4. Food and Agriculture Organization (2011) Global Food losses and Food Waste – Extent, Causes and Prevention. Rome: UN Food and Agriculture Organization.
5. Kra, E. and Bani, R.J(1988) Handling and Transportation of vegetable in Ghana Agricultural Mechanization in Asia, Africa and Latin America. Ama 9 (2): 52:54.
6. Busari Ahmed O, Idris-Adeniyi K.M. and Lawal A.O (2015). Food Security and Post-Harvest Losses In Fruit Marketing In Lagos Metropolis, Nigeria. Discourse Journal of Agriculture and Food Sciences Vol. 3(3): 52-58, March, 2015