CHAPTER 9

ANALYSIS OF CAUSES OF POST HARVEST LOSSES OF AGRICULTURAL COMMODITY DEALERS IN IMO STATE

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ABSTRACT

The study was on Analysis of causes of post-harvest losses of Agricultural commodity dealers in Imo State, Nigeria. Across Nigeria, and mainly, in Imo State, A large amount of perishable agricultural commodities are not reaching the consumer particularly due to damaging in the process of marketing. Empirical studies to systematically assess the causes of these losses of the dealers are relatively scarce. It was against these backdrops that the study was carefully undertaken. Specifically, the study was guided by the following objectives; describing the socioeconomic characteristics of perishable agricultural commodity dealers in Imo State; identifying perishable agricultural commodities sold by commodity dealers; identifying types of post-harvest losses experienced by the commodity dealers; ascertaining causes of post-harvest losses of commodity dealers. A Multistage sampling procedure was used in the selection of one-hundred and eighty (180) perishable agricultural commodity dealers. Structured questionnaire was the main tool for data collection. Data collected were analyzed using descriptive statistical tools and Ordinary Least Square (OLS) regression analysis. The socio-economic characteristics result shows that approximately 65.56% were female, with a mean age of 40.00 years. Most (67.78%) were married with an average household size of 7 persons. Average marketing experience and monthly income were 24.00years, and ? 65,000.00 respectively. About (70.56%) had secondary education. Most of the dealers were involved in banana (98.89%), watermelon (96.11%) and

pineapple (97.78%) among other perishable agricultural commodities they are involved-in, in the area. The dealers identified quality losses (altered physical condition or characteristics) (97.22%) as the most losses they experienced among other losses in the area. Poor transportation facilities (road; rickety vehicles) (98.33%) and poor handling skill (95.56%) were among the causes of post-harvest losses the dealers identified. It was therefore recommended that dealers through their various cooperative societies should collectively and judiciously pool resources together to acquire modern storage and processing facilities to help reduce post-harvest losses as these would significantly improve their sales, income and standard of living significantly in the area.

***Key wo**rds:* post-harvest, agricultural commodities, losses, causes, dealers

INTRODUCTION

The challenges of meeting the rapidly growing food needs of Nigeria's teeming population, with particular focus on Imo State cannot be effectively overcome without harnessing available food resources in the State by ensuring minimal post-harvest losses due to physical or chemical spoilage (Akabuo, 2021). This is important considering that while population of the country is increasing food supplies continues on a downward trend due to loss of farmland to infrastructural development and urban migration of active rural population. Thus, Negedu and Habib (2016) considered the preservation of agricultural commodities as a major step in the fight against food insecurity. However, food losses are as a result of post-harvest losses.

The Federal Ministry of Agriculture and Rural Development (FMARD) (2016) defined agricultural commodity dealers as active stakeholders involved in the agricultural commodity marketing, from the point of primary production to the end users. Namely, farmers, produce merchants, produce off-takers, produce aggregators, agro processors, commodity transporters, road side commodity sellers and hawkers, bear the brunt of post-harvest losses vis-à-vis physical or chemical deterioration of their agricultural commodities.

This deterioration of agricultural commodities is often compounded by lack of mobility which slows down their transportation of the commodities from location to location or results in outright loss of the commodities (Ndirika, 2011). The status of “Perishability” of agricultural commodities according to Anjorinet al.,(2015) involve any of the following, whether or not frozen or packed in ice; fresh fruits, and fresh vegetables of every kind and character.

In other words, perishable agricultural commodities are commodities that slip into gradual deterioration from the time they have been harvested or detached from their natural biological process to the time they are consumed.

In the light of this, preservation of agricultural commodities to ensure minimal post-harvest losses becomes inadvertent. Preservation entails ensuring from primary production that materials and practices associated with the production of plants and animals including their management practices, processing and marketing activities are in tandem with standard operating procedures (Habib et al., 2015). Such as using the right dose of agrochemicals, storing harvested crops under the right temperature and pressure, packaging the products with the right material, harvesting at the right time, sorting the produce in the right order, transporting the produce under the right physical and chemical conditions, harvesting quantity of crops that be used at once, ensuring quality control in the manufacturing and distribution of agricultural inputs, cultivation of crops and breeding of farm animals, management of the crops and animals; harvesting, processing and marketing of farm produce to the ultimate users.

The purpose of this study is to:

- Describe the socio-economic characteristics of agricultural commodity dealers in Imo state,
- Identify perishable agricultural commodities sold by commodity dealers,
- Identify types of post -harvest losses experienced by the commodity dealers and,
- Ascertain causes of post – harvest losses of commodity dealers

METHODOLOGY

The study was carried out in Imo state of Nigeria. Imo State is located in the South Eastern zone of Nigeria and lies between latitudes 5^{o} 45´N and 6^{0} 35´N of the equator and longitude 6^{0} 35´E and 7^{0} 28´ E of the Greenwich Meridian (Nigerian Meteorological Agency (NiMET), 2016). The State is bordered by Abia State on the East and Northeast, Rivers State on the South, Anambra State to the North and Rivers State to the South. Imo State is divided into three agricultural zones of Owerri, Orlu and Okigwe and 27 Local Government Areas. With a total land area of 5,530 Km^2, the State has an estimated population of about 4.8 million people and an annual growth rate of 3.35 percent (Nigeria Populations Commission (NPC), 2006).

The population of the study included all arable crop and fruit perishable commodity dealers in Imo State. Multistage sampling procedure was used to select 180 respondents for the study. The first stage involves the selection of the three agricultural zones in the area. In the second stage, four (4) Local Government Areas (LGAs) with high perishable commodity markets were purposively selected from each zone to give twelve (12) LGAs. From each of the twelve (12) LGA, three (3) community markets also with high perishable commodity were purposively sampled in the third stage which gave thirty-six (36) communities, while one village market with high activities of perishable commodity marketing was selected from each community to give thirty-six (36) villages. Finally, five (5) perishable commodity dealers were purposively selected to give a total sample size of one-hundred and eighty (180) respondents for the study. The study used primary data collected through using validated questionnaire administers through face-to-face interview schedule. Descriptive and inferential statistical tools were used in analyzing data for the study.

RESULTS AND DISCUSSION

Socio-economic characteristics of the agricultural commodity dealers:

Findings of agricultural commodity dealers according to age is presented in Table 1. Result showed that majority (51.11%) of the dealers were within the age bracket of 31-40 years. The average age was 40.00 years. The dealers are still relatively young and still in their economically active years. According to distribution based on sex as shown in the Table, it indicates that greater proportion (65.56%) of the agricultural commodity dealers were females while about 34.44% were males. The finding implies that both sexes were involved in agricultural commodity marketing but females were more in number than males in the area. Outcome of the perishable agricultural commodity dealer's distribution based on education level as displayed in the Table revealed that greater number (70.56%) had secondary education, approximately 25.00% had primary education, about 25.00% had tertiary education while the remaining percentage (1.67%) had no formal education. The finding indicates that approximately 98.33% of the commodity dealers had trainings in formal educational institutions which no doubt increases their literacy levels in understanding the various ways of reducing spoilage of agricultural commodity.

Result of the agricultural commodity dealer's distribution based on marital status shows that larger percentage (67.78%) of the dealers were married and approximately 23.89% were single. This could be as a result of the fact the married people tend to have more access to shop outlets, capital from the spouse and labour from the households. Findings from Experience in

Agricultural marketing shows that higher proportion (56. 11 %) of the dealers had between 20-30 years of experience in Agricultural commodity marketing while the least is (2.22%) which had 40- 41 years experience in Agricultural commodity marketing. The mean marketing experience was 24 years This implies that the dealers were experienced in Agricultural commodity marketing and have been involved in it for over two decades . The mean household size was 7.0 persons. This shows the dealers had large households and it is significant advantage in agricultural commodity dealers considering the nature of the enterprise.

Larger proportion (78.33%) of the dealers in the area belong to one form of cooperative society or the other, while about 21.67% of the dealers did not belong to any cooperative society. Dealers that belong to cooperative society have access to relevant and up-to-date information on agricultural commodity marketing, credit and exchange of labour. Dealers' distribution based on access to marketing credit as shown in Table 1. It shows that greater proportion (76.67%) of dealers in the area had access to market credit. Access to credit is a practical necessity in agricultural commodity marketing. Agricultural commodity dealers without credit access have fewer choices of the method to practice in reducing spoilage and post – harvest losses. The mean monthly income was ? 61,438.00. This is relatively higher and above the Nigeria Monthly National Minimum wage of ? 30,000.00. This relatively high income could be attributed to dealers practice of improved control measure of preventing spoilage and post-harvest losses of agricultural commodity in the area. The study of Iorzua et al.,(2020) reported that dealers with higher market income will make better decision, use necessary productive inputs and method to reduce post-harvest losses so as to have increased sales, income and standard of living.

Table 1: The socioeconomic characteristics of agricultural commodity dealers

VARIABLES	FREQUENCY (F)	PERCENTAGE (%)	MEAN
Age (Years)			
31-40	92	51.11	40.00
61-70	3	1.67	
Sex			
Male	62	34.44	
Female	118	65.56	
Marital Status			
Married	122	67.78	
Single	43	23.89	
Educational Qualifications			
No formal education	5	2.78	
Primary	45	25.00	
Secondary	127	70.56	98.33
Tertiary	3	1.67	
Household size			
7-2	2	1.11	
7-8	82	45.56	7 persons
Marketing experience			
20-30	101	56.11	
41-50	4	2.22	24.00
Membership of cooperative			
Member	141	78.33	
Non-member	39	21.67	
Monthly Income			
10,000 – 20,000	4	2.22	N61,438.00
60,000 – 70,000	77	42.78	
Access to marketing credit			
Access	138	76.67	
Non – access	42	23.33	

Source: Field Survey Data, 2022

Perishable Agricultural Commodities Sold by Dealers

Result of perishable agricultural commodities sold by commodity dealers is displayed in Table 4.10. It indicates that about 98.89%, 96.11%, 94.44%, 97.78% and 96.67% were involved in banana, watermelon, avocado pear, pineapple and African pear (Ube) respectively agricultural commodities selling in the area. Finding also indicates that the dealers were also involved in orange (94.44%), mangoes (92.78%), cucumber (91.67%) and apple (88.89%) agricultural commodities selling in the area. In addition, the dealers identified fluted pumpkin (87.22%), tomatoes (86.11%), peppers (83.33%), eggplants (81.11%), lettuce (77.78%), carrot (76.11%) and onion (75.00%) as the agricultural commodities they sell in the area.

On the other hand, approximately, 72.22%, 68.89% and 66.67% of the dealers were involved in spinach, waterleaves and scent leaf respectively, finding shows that the dealers were involved in more than one agricultural commodity, this could also be a way of enterprise diversification since perishable agricultural commodities are prone to uncertainty.

Table 2: Perishable Agricultural Commodities Sold by Dealers n=180

S/No	Items	Frequency	Percentage (%)
A	**Fruits**		
1	Banana	178	98.89
2	Watermelon	173	96.11
3	Avocado Pear	170	94.44
4	Pineapple	176	97.78
5	African Pear (*Ube*)	174	96.67
6	Orange	170	94.44
7	Mangoes	167	92.78
8	Cucumber	165	91.67
9	Apple	160	88.89
B	**Vegetables**	**Frequency**	**Percentage (%)**
1	Fluted pumpkin	157	87.22
2	Tomatoes	155	86.11
3	Peppers	150	83.33
4	Eggplants	146	81.11
5	Lettuce	140	77.78
6	Carrot	137	76.11
7	Onion	135	75.00
8	Spinach	130	72.22
9	Waterleaves	124	68.89
10	Scent leaf	120	66.67

Multiple Response; Source: Field Survey Data, 2022

Types of Post-Harvest Losses Experienced by the Commodity Dealers

Outcome of types of post-harvest losses experienced by the commodity dealers is shown in Table 4.11. It reveals that about 97.22% of the dealers identified quality loss (altered physical condition or characteristics) as one of the post-harvest losses they experienced in selling of agricultural commodity. This is true and could be attributed to poor road network during transportation, poor handing, pest and diseases attack and poor storage. Most agricultural commodity is bound to be physically damaged if there is poor storage, handling, pests and disease infestation amongst other. The result shares view with the findings of Ellah and Onyinyechika (2020) who found the most losses in agricultural commodities come first as a result of quality loss which eventually leads to other losses. Additionally, approximately 92.78% stated losses of quantity (weight or volume) were among the types of post-harvest losses they experienced in the area.

Also, about 57.22% of the agricultural commodity dealers identified commercial/economic loss (both quantity and quality) as among the types of post-harvest losses they experience. The combination of quality and quantity losses results to commercial losses which decrease dealer's sales, income and standard of living. The study becomes evident that there are various post-harvest losses of agricultural commodity dealers in the area. However, improving post-harvest management practices will be reduced post-harvest losses, increase sales, income and standard of living of the dealers. Minimizing this loss (quality, quantity and economic) has a great significance for food security, economic growth and welfare of the society.

Table 3: Types of Post -Harvest Losses Experienced by the Commodity Dealers n =180

S/No	Items	Frequency	Percentage (%)
1	Quality loss (altered physical condition or characteristics)	175	97.22
2	Losses of quantity (weight)	167	92.78
3	Commercial/Economic loss (both quantity and quality)	103	57.22

Multiple Response; Source: Field Survey Data, 2022

Causes of Post-Harvest Losses of Commodity Dealers

Findings of causes of post-harvest losses of commodity dealers is compiled in Table 4.12. It shows that approximately 98.33% of the dealers identified poor transportation facilities (road; rickety vehicles) while about 95.56% highlighted poor handling skills as among the causes of post-harvest losses they face in the area. Poor transportation road network, bad condition of some transport vehicles which is predominate in the study area and poor handling of agricultural commodity left most of the dealers with huge losses. The result is in parity with the study of Olayemiet al., (2012); Fungisaiet al., (2018) who found the poor road network and poor handling skills were among the cause of post-harvest losses of commodity dealers.

Additionally, inadequate storage facilities (93.33%), pest and diseases infestation (91.67%), poor market patronage that leads to too much storage of commodity (87.22%), physical damage during harvest (86.11%) and excessive exposure of commodity to sunlight (82.78%) were identified by the commodity dealers as among the causes of post-harvest losses in the area. This result corroborates with that of Kasso and Bekele (2018); Onuket al., (2018), who posited that the more a perishable agricultural commodity stays in the market, being exposure to sunshine and exceeding its time of purchase, its deterioration time also increases thereby reducing dealers' sales rate, income and standard of living. Therefore, urgent intervention to the existing causes identified is highly required to increase dealer's sales, income and standard of living significantly.

Table 4: Causes of Post-Harvest Losses of Commodity Dealers **n =180**

S/No	Items	Frequency	Percentage (%)
1	Poor transportation facilities (road; rickety vehicles)	177	98.33
2	Poor handling skill	172	95.56
3	Inadequate storage facilities	168	93.33
4	Pest and diseases infestation	165	91.67
5	Poor market patronage that leads to too much storage of commodity	157	87.22
6	Physical damage during harvest	155	86.11
7	Excessive exposure of commodity to sunlight	149	82.78
8	Inadequate processing facilities	143	79.44

Multiple Response; Source: Field Survey Data 2022

CONCLUSION AND RECOMMENDATION

The study showed evidence of post harvest losses in the area , dealers faces quality , quantity , and economic losses , poor road network and inadequate storage facilities and processing facilities were highlighted as among the causes of post harvest loses in the area. The study therefore recommends that dealers through their various cooperative societies should collectively and judiciously pool resources together to acquire modern storage and processing facilities to help reduce post-harvest losses as these would significantly improve their sales , income and standard of living , also the federal and state government should work on the rural roads so that the roads will be motorable .

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