

THE DETERMINANTS AND EFFICIENCY OF MAIZE CROPS MARKETING IN ILORIN METROPOLIS

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Abstract

The study examined the socioeconomic factors influencing marketing of maize by food traders in the metropolis, using Ilorin as a case study. The study makes a distinction between the marketing efficiencies and net marketing margins and shows how important is the current selling price in a dynamic economy. This study also tried to identify the problems militating against maize marketing in the study area. Data were obtained from 120 respondents. Relying on the dynamic theory of profit, we fit a model for the data collected and analyzed using descriptive statistics and Ordinary Least Square (OLS) technique. The study shows that maize crops get to the retailers at an estimated cost of ₦7550 per 100kg and get to the wholesalers at an average cost of ₦6203 per 100kg, which provided an average net marketing margin of ₦2766 per 100kg and ₦479 per 100kg respectively. Both retailers and wholesalers found the marketing of maize as a profitable venture but retailers (3.63) are more efficient than wholesalers (0.12). The current selling price, marketing experience and cooperative membership are positively significant at 5% and 1% to explain the variation in the marketing share of maize traders. Some of the major problems perceived by the maize traders in the study area are lack of credit, high cost of transportation, inadequate capital, which are liable to reduce marketing margin of maize traders. In order to enhance market infrastructure development, accessibility to loan and reduce transportation cost, the maize traders should always take the advantage of favourable selling price in dynamic settings and form a formidable cooperative group to undertake the task of enlightening the marketers with a low year of marketing experience.

Keywords: Marketing Margin, Maize Traders, Ordinary Least Square, Marketing Efficiency

1.0 Introduction

Maize (*Zea mays*) is the third most important cereal crop (Chete, 2013) and due to its various domestic uses, the domestic demand for the crop raised to 7.5 million metric tons which outstrip the supply by 0.5 million metric tons (Federal Ministry of Agriculture and Rural Development [FMARD], 2016). Maize has the potential in

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meeting poor people heterogeneous needs and this makes it predominantly cultivated globally. Maize is a staple food crop for most Sub-Saharan Africans of which Nigeria is inclusive with 40 per capita kg per year of maize consumption estimation according to Food and Agricultural Organization (FAO, 2003). It is widely used as feed and food in the diet of both livestock and man respectively. This is the reason for its vast in commercial and agro-industrial uses such as for production of corn flakes, flour, baby foods, confectioneries starch, livestock feeds, corn starch, maltodextrins, corn oil, corn syrup, products of fermentation and importantly biofuel production (Series of crop, n.d., Ismail et al., 2016). Among its contribution to food dietary, maize, like other cereals constitutes important sources of carbohydrates, proteins, vitamin B and minerals (Iken, Amusa & Obatolu, 2002).

However, the crop also serves as a source of income and employment for millions of farming families as well as food traders in Nigeria. According to Nweke, Spencer, Duntan & Lynam, (2002) and Nweke (2006), maize contributed about 43 percent of calorie intake and it also accounted for about 7.7 percent of total cash income of farm households. The possibility of these benefits derived from the maize is possible due to exhibitiv characteristics like low cost, high yield, significant investment return, ease of processing and its geographical adaptability across agro-ecological zones in the production and processing side of agricultural activities (International Institute of Tropical Agriculture IITA, 2001; Iken & Amusa, 2004). This features further increase the high productivity of farmer and traders, which has helped its spread in terms of cultivation and distribution across the world (Akanni, 2012).

In furtherance to the maize production increase, Nigeria's government initiated a number of programmes in the country. These intervention programmes and policies include: Farm Settlement Scheme, National Accelerated Food Production Programme (NAFPP), Agricultural Development Projects (ADPs), River Basin Development Authorities (RBDAs), National Seed Service (NSS), National Centre for Agricultural Mechanization (NCAM), Agricultural and Rural Management Training Institute (ARMTI) and Agricultural Credit Guarantee Scheme Fund (ACGSF). In the study of Babatunde & Oyatoye, (2005) and Chiazor (2015), the Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB), Agricultural Banks, Operation Feed the Nation (OFN), Green Revolution (GR), Directorate of Foods, Roads and Rural Infrastructure (DFRFRI), Nigerian Agricultural Insurance Company (NAIC), National Agricultural Land Development Authority (NALDA) and Specialized Universities for Agriculture were the popular programmes for agricultural development. These programmes are designed to boost production of crops, as well as enhancing farmers' income from agriculture. Most of the agricultural programmes and policies focused more on increasing output with little emphasis made on marketing strategies (Yisa, 2009; Akanni, 2012).

Markets offer households the opportunity to benefit from comparative advantage and thereby enhance their welfare gains from the embarked trade (Muhammad-Lawal, Ibrahim, Oloyede, & Abdulraheem, 2015). Marketing of maize involves business activities such as buying and selling, transportation, storage, grading, pricing, financing of trade and risk bearing. A chain of maize middlemen is getting ready to incur costs of marketing and take profits for the services they have rendered (Ahmed, 2014). Because of this inevitable profit stimulating operations, marketing of maize by farming households is affected by conditions such as the bulkiness, large number of small products, long distance from farm to market, pest and disease, the danger of weather and lack of good roads and storage facilities. According to Adenegan, Adepoju & Nwauwa, (2012), summarizes the hindrances for farmers to participate in maize market to be transaction cost and risk bearing. These situations affect the channel for transferring maize produce to reach potential final consumers (Akanni, 2012; Ahmed, 2014). One of the strategies used is a division of labour which identifies maize distributors as potential intermediaries to carry the cost burden of maize distribution to potential final consumers.

The distribution along marketing channels, preferable for agricultural commodities depends on the degree of marketing margin of the traders (Chirwa, 2009; Akanni, 2012). A higher marketing margin system is therefore, desired so as to promote the economic growth of the country. In order to analyze the factors influencing marketing margin, there is the need to estimate the market margins of the intermediaries, such as wholesalers and retailers. When maize is available for marketing, more people got involved in channeling maize product to the consumers and this reduces the wastage along the food chain.

The understanding of marketing of maize is important by examining the actual determinants and constraints to maize marketing margin. The study about the marketing of food grains, maize inclusive had been reported by Babtunde & Oyatoye, (2005); Chirwa, (2009); Akanni, (2012); Ayoola and Ayoola, (2015). Those studies basically look into marketing margin and marketing channels of food grain and prioritize in the farmers and middlemen relationship. Though Babatunde and Oyatoye, (2005) had provided information on marketing margin and marketing efficiency of maize in Kwara State. The variation in the marketing margin is not always stable with the changes in demand and supply conditions at different periods. Food grains remain a group of crops influenced by the unstable market conditions that appear at different time period. Minding the recent importation ban policy of Nigerian government on poultry products as well as the inflationary pressure due to the temporary economic recession in the country, the demand for maize might induce a pure marketing opportunity for the maize traders. Against this backdrop, there's need to:

- i. Describe the socio-economic characteristics of maize traders;
- ii. Estimate the status of marketing margin and marketing efficiency of maize traders;
- iii. Examine the socioeconomic determinants of marketing margin of maize traders; and
- iv. Identify the constraints to marketing margin of maize traders.

As a support to the current Nigeria government economic diversification agenda, this study provides relevant information to policy makers and market planners about what would enhance marketing margin of maize traders in the metropolis so as to design and implement appropriate policy measures that solve the socioeconomic problem relating to the marketing of food grains.

2.0 Review of Literature

The concept of agriculture marketing is gaining prominence among farmers, farm product-based businessmen and researchers. The concept contributes to rural development through incomes generation in both developed and developing countries. The production increase of maize due to technologies adoptions might not be sufficed for rural economic development until the effectiveness of marketing system be looked upon. In order for a country to provide food for its populace, it should consider the movement of the food products to the intermediate and final consumers. The literature on agricultural marketing in Nigeria is voluminous, emphasizing issues of commodity chains and trader-state relations (see Ariyo et al., 2001). Olayemi (1982) lamented the disproportionate attention placed by governments on policies directed at increasing food production and virtual neglect of the marketing side of the equation that close food product to the final consumers. Meanwhile, food security can be enhanced if the food marketing system is efficient (Ladele & Ayoola, 1997; Ahmed, 2014). The significant of effective maize marketing strategy would provide spillover effect to increase its production through investing more on technologies adoptions as well as enhancing farmers' standard of living (Akanni, 2012). The term marketing efficiency is an indicator to examine marketing activities. The concept refers to the efficient allocation of resources to achieve the greatest possible consumer satisfaction. Adegeye and Dittoh (1985) noted that the forces responsible for the effective efficiency of markets may include market control, externalities, and information (Olugbire et al., 2016). Market control is a term related to the structure, conduction and performance issues, while externalities is associated with pollution or education-non-market price nexus, incorporated costs, and benefits and imperfect information. The availability of market information includes price, supply, and demand and quality information. In terms of pricing efficiency, it is concerned with how effectively price reflects the costs of moving the output through the marketing system.

Clark's dynamic theory of profit believes that profit is liable to increase in the dynamic economy but not in a static economy (Dwivedi, 2002). This proposition expresses how the major function of an entrepreneur such as maize trader is to work in dynamic settings.

This is most especially, in taking the advantage of increase in population, improvement in production techniques, change and increase in the consumer demands, changes in the organizational forms, increase in capital, and change in monetary and international trade policies. These generic changes usually accommodated by the changes in the current price of goods to give "pure profit" in the market. The profits might persist for short period of time because, in the long run, the competitors are attracted to the high profit to enter the market. As a result, the demand for the factors of production increases, thereby increasing the factor prices and the overall cost of production. On the other hand, with an increase in the output, the price of a product declines for a given level of demand as a result of which the pure profits disappear. The ingredient for efficient marketing has a mutual advantage on both consumers and producers of goods and services. Considering the forms and effective service delivery, marketing and distribution services are usually granted at lower per unit cost (Food and Agriculture Organization (FAO), nd.). Normally, the cost of marketing services will be reflected in the marketing margin but selling price could have been compensated for the cost. With the innovation and price flexibility, market intermediaries are able to respond to the new opportunities in terms of location or product quality, and the national objectives of marketing. Marketing margin (MM) represents the difference in price paid to the seller and that paid by the buyer (Adegeye & Dittoh, 1985). The difference between the producer/seller price and the buyer price is a measure of the total value added in the marketing process. Marketing margins are mostly governed by the demand for, and supply of marketing services. If the margin is measured in monetary terms, the extent of it increase would be explained more by the selling price.

The empirical investigation about the marketing of food grains is very common in the literature. Babtunde & Oyatoye, (2005) examine the food security and marketing problems in Nigeria and emphasis on the case of maize marketing in Kwara State. The study tried to compare the returns of farmers and the shares of the middlemen putting all parametric instrument of agricultural marketing in place. The result of the study found that the farmers were being exploited as a little value is added by the middlemen to farmers' harvest. As a result, it was suggested that rural infrastructure should be broadened to encourage farmers in participating in the marketing of grain. Also, the determinants of marketing channels among smallholders' maize farmers in Malawi was assessed using multinomial logit by Chirwa (2009). The study explains that private traders ought to be an alternative market channel who assist in disposing of farmers' produce and save them the cost of food perishability and wastages.

According to the research work, education, repeated dealing, distance to day markets are positively associated with the choice of private traders while distance to the tarmac road and distance to the post office provide disincentives to the choice of private traders. The findings of the study upgraded the importance of developing trust and reputation and investment in infrastructure in order to support agricultural marketing liberalization policies in low-income economies. Akanni (2012), emphasize the relevance of marketing efficiency and marketing margin in analyzing marketing and distribution of food grain in his work titled "Economics of Marketing of Food Grains in South Western Nigeria". After analyzing the food grain such as rice, maize and cowpea across Osun, Ondo, Ekiti, and Oyo States in Nigeria, the study suggested that the marketers of these commodities should be more evenly distributed to improve marketing efficiency. Finally, the research study by Ayoola and Ayoola, (2015) on the assessment of factors influencing the use of information and communication technologies in maize marketing in North-Central Nigeria provides an insight. This insight reflects how the efficiency of marketers improved as a result of utilizing ICT. In these reviewed literature, emphasizes of marketing margin is deviated from considering the importance of current selling price and source of information like cooperatives.

Though indicators such as Marketing margins, consumer prices, availability of physical marketing facilities and market competition in measuring marketing efficiency are being mentioned by the previous studies but the relationship between selling price, cooperative factors and the marketing margin was neglected. The utility of information transfer system becomes efficient when the marketers are initially equipped with cooperative membership opportunity. The case of marketing margin might be improved if the dynamic position of this economy considers how selling price and cooperative membership accommodate the changes in the economy. This study wants to incorporate these conditions into the marketing of maize.

3.0 Methodology

Study Area

The study was carried out in Ilorin metropolis in Kwara State. The State, which is created on the 27th of May 1967 along with eleven other States. Major ethnics groups in the area are largely Yoruba with traces of Nupe, Fulani and Baruba. Annual rainfall ranges from 1000-1500mm and maximum temperature ranges from 30 degrees Celsius to 50 degrees Celsius, the state' capital is Ilorin, a big town with an average population of about 847,582 people (National Population Commission [NPC], 2009) which represents about 35% of the total population of the State. The State is predominantly Islamic though a considerable percentage of the population are

Christians. Ilorin is usually described as a metropolis due to its size and population density and consists of three Local Government Area, Ilorin West L.G.A, Ilorin South L.G.A, and Ilorin East L.G.A.; the people of the state are mostly traders, artisan, and farmers. The people of the town have no taboo believe for consuming food crops such as yam, maize, cassava, rice and some of the notable agricultural products of the region.

Method of Data Collection

Table 1: Proportion of Sample in the Selected Market Places

Market Place	Number of Retailers	Number of Wholesalers
Ipata market	22	6
Itaamon market	20	9
Ojatuntun	22	8
Ojaoba	26	7
Total	90	30

Source: Author Computation, 2016

The target population considers for the study are the maize traders in the study area. This study made use of two sampling techniques, the first stage comprised a random selection of four markets popularly known with the marketing of maize out of the 12 popular market places in Ilorin. Namely; Ojatuntun market, Ojaoba market, Ipata market, Itaamo market, Mandate market, Yoruba Road market, Kulende market, Alore market, Oja-gboro market, Kulende market, Oloje market and Oko-olowo market. The number of wholesalers is lesser compared to the number of retailers as their system of package and proportion of quantity sold were different in the study area. The selection of four marketplaces and the marketer's distinction are relied on consumers' perceptions gotten during the pilot survey. Even though the marketers do involve in group meetings but the records to signify their membership identity are not available. Thus, a sampling frame was constructed for each selected marketplace. Using sampling size formula prescribed by Kothari and Gaurav (2015), Table 1 shows the aggregate of ninety (90) maize retailers and thirty (30) wholesalers were randomly and proportionately selected and interviewed for the study. The formula specified Sample size (SS) as:

$$SS = (Z\text{-score})^2 * p * (1-p) / (\text{margin of error})^2 \dots\dots\dots(1)$$

Where Z-score = 1.96 for confidence level 95% with 3% precision (margin of error) of deviation from the mean of the marketing margin per unit for the p. When the proportion p is not known, it is common to use 0.5.

The proportion p used for this study is determined on the platform of the percentage

of the retail and wholesale response that sell at least 1 paint plastic container (2.76kg) and 1 bag (100kg) of maize per day respectively. After calculating for the sample size, we then corrected for the total population by using:

$$SS \text{ adjusted} = (SS) / (1 + [(SS - 1) / \text{population}]) \dots\dots\dots(2)$$

The outcome of this estimation is given in Table 1. The primary data were collected from the selected samples through structured questionnaire augmented with personal interview.

Method of Data Analysis

This study considers descriptive and inferential statistics as a basis for analysis. The descriptive statistics would make use of frequency, percentage, and mean to ascertain the socioeconomic characteristics and market margin of maize traders. The inferential aspect of the study would examine the determinants of market margin using Ordinary Least Square [OLS]. Market margin, according to Kohls (1985), represents the difference between the price paid by the buyer and the price paid to the first seller as shown in equation 3 and 4. The prices used in the computation are those provided by retailers and wholesalers.

$$\text{Marketing margin} = \text{Buyer's price} - \text{Seller's price} \dots\dots\dots(3)$$

$$\text{Net margin} = \text{Marketing Margin} - \text{Marketing cost} \dots\dots\dots(4)$$

Following the formulae used by Akanni (2012), Marketing Efficiency [ME] is indicated as:

$$ME = \frac{\text{Net marketing margin}}{\text{Marketing cost}} \dots\dots\dots(5)$$

The net margin accruing to the wholesaler or the retailer is the difference between the marketing margin and the marketing cost. The marketing cost is the sum of transport costs, storage cost, and other costs. If ME = 1 (moderately efficient), it implies that the market is said to be efficient. When ME >1 (highly efficient), it implies that abnormal profit is being made in the trade, and some elements are unduly reaping from the efforts of others. Again, when ME <1 (under efficient) implies that a sizeable loss is being recorded in the trade.

We model the marketing margin of maize traders based on the dynamic theory of profit. In a dynamic society, profits arise only due to the dynamic change that takes place in a society. The traders who take advantage of changing demand and supply conditions of a dynamic society makes a high marketing margin. In the static society, the parameters which influence an economy like population, technology, the desire of the individual, the available capital, etc., remain the same (Reddy et al., 2004). The dynamic feature of socioeconomic behavior is very important to influence the marketing margin of maize traders. OLS linear regression model was used to analyze

the socioeconomic determinants of marketing margin. The analysis was done using marketing margin function which is expressed as:

$$Y_i = f(X_1, X_2, X_3, X_4, X_5, X_6, \mu) \dots \dots \dots (6)$$

Explicitly:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \mu \dots \dots \dots (7)$$

Y= Net marketing margin (₦)

i= 120 respondents

X₁= Current selling price (₦/bag)

X₂= Gender (Male= 1, Female= 0)

X₃= Household size (Number)

X₄= Formal education (years)

X₅= Marketing experience (years)

X₆= Cooperative membership (accessed= 1, otherwise=0)

β₀= Constant

β_j= Coefficient of the vector (j = 1 to 6)

μ= error term

The collected data were fitted in the linear function forms expressed in equation 7 of the marketing margin model. The estimated function was evaluated in terms of the statistical significance of coefficients as given by the F-values and t-value prioritizing on the signs and magnitude of the coefficient.

4.0 Results and Discussion

Socioeconomic Characteristics of the Respondents

Table 2: Socio-economic Profiles of the Respondents

Variable	Wholesaler Freq	Percent (%)	Mean	Retailer Freq	Percent (%)	Mean
Gender						
Female	19	63.3		81	90	
Male	11	36.7		9	10	
AGE						
=30	2	6.7	45	16	17.8	42
31-50	19	63.6		54	60	
>50	9	30.3		20	22.2	
Marital Status						
Single	1	3.3		1.7	2.2	
Married	29	96.7		74.4	97.7	
Education Level						
No formal Education	2	6.7		25	27.8	
Formal Education	29	93.3		65	72.1	
Household Size						
=3	4	13.3	7.4	10	11.1	6.78
4-10	17	57.7		64	71.1	
>10	9	30		16	17.8	
Year of Experience						
=10	14	46.7		17	18.9	
11-20	14	46.7	9.6	59	65.5	15.2
>20	2	6.7		14	15.6	
Source of Capital						
Personal	13	43.3		58	64.4	
Savings	2	6.7		0	0	
Cooperative	3	10		6	6.7	
Money Lenders	12	40		25	27.8	
Friend	0			1	1.1	

Source: Field Survey, 2016

Table 2 reveals that most of the respondents (63.3% of the wholesalers and 90% of the retailers) were females. This indicates that females engage more in maize marketing than males. The dominance of females in maize marketing activities may be due to the fact it involves little stress compare to the uncertainty encountered during maize production (Afolabi, 2007). The majority of the respondents, both wholesalers (63.6%) and retailers (60%) were between 31 to 50 years of age. As a

result, the mean ages for firms in the study area remain 45 years and 42 years respectively. This implies that the respondents are active and ready in this age to withstand family responsibility. The majority of the respondents were married with 96.7% of the wholesalers and 97.7% of the retailers. This implies that maize traders would depend on the proceeds got from maize to carry out family responsibilities (Adeoye et al., 2011).

Also, from the Table 2, 93.3% and 72.7% of the wholesalers and retailers respectively, had formal education. This signifies that respondents recognized the importance of literacy in smoothening marketing activities (Adeola et al., 2011; Akanni, 2012; Chete, 2013). Both the wholesalers (57.7%) and retailers (71.1%) had a household size of 7 – 9 which supporting their preponderance with an average of 7 household size in the study area. This means that the household size could contribute to family labour which in turn, increases the return to maize marketing in the study area. This was also attained in the study of Chirwa (2009) where smallholder maize farmers often rely on family labour to commercialize their crops. To make emphasis on marketing experience, with an average of 9 to 15 years, the wholesalers (46.7%) and retailers (65.5%) respectively have been involved in maize marketing for almost 20 years. This was so, because of the proficiency saw in experience is the best teacher of marketing. It can also be observed in Table 2 that majority of the respondents (43.3% and 64.4% of the wholesalers and retailers respectively) got their capital through personal savings. This source of capital was followed by money lenders who accounted for 40% of the wholesalers and 27.8% of the retailers. Only 10.0% and 6.7% of wholesalers and retailers were sourcing credit from cooperative societies. This implies that majority of the respondents might be a non-member of cooperative and are therefore, not likely to enjoy the inherent dividend of cooperative as was a highlight to include broader market opportunities, collective purchase, easy access to credit facilities and reduced marketing costs/increased income (Omotesho et al., 2012).

Market Margin and Marketing Efficiency of Maize Traders in the Study Area

Table 3: Marketing Margin and Marketing Efficiency Estimates of the Respondents

Items	Retailers (Average ₦ /100kg)	Wholesalers (Average ₦ /100kg)
Purchase Price of Maize (W)	7550	6203
Transportation Cost	500	2520
Packaging Cost	247.30	-----
Loading and Offloading Cost	-----	1300
VAT	15.00	27.80
Total Marketing Cost (X)	762.3	3847.8
Selling Price (Y)	11078	10530
Gross Marketing Margin (Z) or (Y-W)	3528	4327
Net Marketing Margin (Z-X)	2765.70	479.20
Marketing Efficiency	3.63	0.12

Source: Field Survey, 2016

Table 3, on the average, the purchase price of maize charge by retailer and wholesaler are ₦ 7550 per bag and ₦6203 per bag respectively. The purchase price of maize by the wholesaler was lesser compared to the retailer. This is because the proximity of the retailers to the ultimate maize consumer is high. Despite the incentives deriving from buying produce at smaller price, the wholesaler was still not been able to meet the return received per bag by retailers. The wholesalers sometime overburden with certain transaction cost, such as cost of transportation (₦2520), loading and offloading (₦1300) and Value Added Tax (VAT) (₦27.8). These costs have influence in the net market margin of both retailers (₦2765.7) and the wholesalers (₦479.2) as well as the value of marketing efficiency as depicted in Table 3. The marketing efficiency of the retailer is greater than that of wholesalers.

This implied that the retailers are more efficient than the wholesale because of the margin in the marketing cost of the both firms. The result is in line with the findings of Babatunde and Oyatoye (2005).

The value of marketing efficiency of the wholesalers (0.12) is positive and less than 1. In spite of the fact that wholesalers used to buy and sell their maize produce in bulk and their marketing returns still not match the maximum revenue per bag.

Akanni (2012), got lower values of average gross marketing margin and regarded it to be desirable for marketers of maize to attain the high level of marketing efficiency. However, the high values of average net marketing margin would mean that the traders of maize are also highly efficient in the marketing of maize. In this study, we found a contrary case as the average value of gross marketing margin of the retailers is lesser than that of wholesalers with their average value of net marketing margin. It is reported that the inefficiency of the wholesalers in the commodity market is attributed to lack of competition, cost inefficiency and a greater degree of uncertainty (Harrison et al., 1987). However, Babatunde and Oyatoye (2005), determine the average share of both traders and concluded that the wholesalers have the largest share of margin compare to the retailers. This study examines maize trader based on aggregate shares rather than the share received per bag. This is not giving the clear picture the marketing margin and the efficiency of the maize traders. The escalated cost of the transaction is a factor behind the dwindling of profit level of the wholesaling system of the transaction in the maize markets.

Socioeconomic Factors Influencing the Marketing Margin of Maize Traders

Table 4: Regression Result for the Determinants of Marketing Margin of Maize Traders, ** and *** indicates Not Significant, significant at 5%, and 10% level respectively

Variable	Coeff.	Std. error	t-value	p-value
Constant	2.115***	0.353	5.996	0.000
X ₁	0.209**	0.09	2.316	0.022
X ₂	0.035 ^{ns}	0.033	1.052	0.295
X ₃	0.008 ^{ns}	0.035	0.243	0.809
X ₄	-0.033 ^{ns}	0.041	-0.822	0.413
X ₅	0.049**	0.027	1.843	0.014
X ₆	0.74***	0.113	6.516	0.000
F-value	2.546			
R-squared	0.51			

Source: Field Survey, (2016)

Table 4 revealed the existence of a relationship in the regression result by the higher value of F-test to reject the null hypothesis. The value of the coefficient of multiple determination (R-squared = 0.51) indicates the best fit of the regression model. This explains that the (R²) the total variation in the marketing margin of maize traders in the study area was explained by at least one of the explanatory variables. In Table 4, the value of the coefficient of current selling price (X₁) is statistically and positively significant at 5% level. This implied that rate of change of marketing margin got by maize traders to current selling price is less than 1. This estimate means that one unit increase in the price of maize will lead to 0.209 increase in the market margin of maize traders. The coefficient of marketing experience (X₅) is also significant positively at 5%. The estimate implies that one unit increase in marketing experience leads to 0.049 increase in marketing margin of the maize trader. The increase in

marketing experience of the respondents to adopt certain activities like advertisement and other pricing strategies to improve the marketing margin of the traders. Though Ayoola and Ayoola (2015) did not confirm the significance of marketing efficiency, the study captured the fact that a less vigour and an agility of the older marketers could cause a diminishing return to maize marketing. Likewise, at a tender age, the possibility of efficient marketing strategies might be slim. The case of the result of this study, marketing experience rather than the age of the trader displays a crucial role in the ascending of marketing margin.

The result of the data fit in marketing margin function also revealed the coefficient of cooperative membership (X₆) is statistically and positively significant at 1% level. The estimate signifies the rate of change of marketing margin to the cooperative membership is less than unity. This mean that one unit increase in cooperative membership of the traders would lead to 0.74 increase in the marketing margin of maize. According to Chirwa (2009), Agricultural Development and Marketing Cooperation (ADMARC), associations, cooperatives and large companies play a very crucial role in the marketing of maize. In conformity to this is the findings of Babatunde and Oyatoye (2005), who noted that cooperative membership would make the market actors not only to cost efficient but also to reduce the level of uncertainty.

Constraints to Maize Marketing in the Study Area

Table 5: Likert Estimates for the Constraints to Maize Marketing

Properties	VS (%)	S (%)	MS (%)	LS (%)	NS (%)	MEAN	RANK
Inadequate Capital	15(12.5)	33(27.5)	31 (25.8)	34 (28.3)	7 (5.8)	2.88	5
Poor Road Network	23(19.2)	31(25.8)	27 (22.5)	28 (23.3)	11 (9.2)	2.78	7
High Cost of Transportation	11 (9.2)	32(26.7)	30 (25.0)	35 (29.2)	12 (10.0)	3.04	3
Low Access to Credit	14(11.7)	29(24.2)	43 (35.8)	25 (20.8)	9 (7.5)	2.88	5
Lack of Cooperative Society	7 (5.8)	31(25.8)	30 (26.7)	30(25.0)	20 (16.7)	3.31	1
Poor Storage Facilities	18(15.0)	21(17.5)	30 (25.0)	35 (29.2)	16 (13.3)	3.08	2
Seasonal Variation	19(15.8)	23(19.2)	33 (27.5)	32 (26.7)	13 (10.8)	2.97	4
Bulkiness of goods	18(15.0)	34(28.3)	26 (21.7)	30 (25.0)	12 (10.0)	2.87	6

VS=very severe, S=severe, MS=moderately severe, LS= less severe, NS= not severe.

Source: Field Survey, 2016

In Table 5, the major problem faced by the respondents was a lack of cooperative society in the commodity market ($X=3.31$) followed by poor storage facilities ($X=3.08$). The advantage of joining a cooperative society is one way of reducing the cost of transportation and pricing. But the lack of cooperation and trust among traders would deter this socioeconomic benefit of cooperative society. The expectation of the high rate of spoilage of maize has been attached to the lack of efficient storage and preservative mechanism. The high cost of transportation (3.04) was ranked third according to the result from Table 5. This could be the preponderance response of wholesalers as their movement from the maize farmers to the retailer usually, involves high transportation cost. Ahmed (2014), emphasizes that the constraints due to high transportation cost that it always affects trader's profit. Other problems perceived by the respondents include lack of credit ($X=2.88$), inadequate capital ($X=2.78$), the bulkiness of goods (2.87) and poor road network (2.78). In agreement with the result from this study, Babatunde and Oyatoye, (2005) and Labaris et al. (2014), reported some of the major problems of food marketing and highlighted transportation problem, inadequate market infrastructure, inadequate funding, shortage of processing facilities, seasonality and perishability of food produce and lack of uniform measure and long chain of distributors. According to Ahmed (2014), traders found it difficult to take advantage of large-scale purchases due to lack of access to capital to expand their present business scale.

5.0 Conclusion and Recommendations

This study shows that the retailers are more efficient compared to the wholesalers in the marketing of maize. It can be inferred that both retailers and wholesalers from the study found the marketing of maize as a profitable venture with average values of net marketing margin of ₦2766 and ₦479 respectively. Even though the values of marketing efficiency of retailers and wholesalers are 3.63 and 0.12 respectively, the high values of average net marketing margin would mean that the traders of maize are also highly efficient in the marketing of maize. The socioeconomic factors such as current selling price, marketing experience, and cooperative membership play a significant role in increasing the marketing margin of maize traders. Some of the major problems perceived by the maize traders include lack of credit, the high cost of transportation, inadequate capital found to reduce the marketing efficiency in the study area.

Based on the findings, it is therefore suggested that:

- i. The synergy to create a formidable cooperative group that undertaken the task of enlightening low experience marketers on how to sell with favorable price of the commodity.
- ii. Traders should be encouraged to build storage infrastructures such as mini-

- crib, silos, warehouses that cater for the unfavorable price of the static economy which ultimately will reduce the activities of maize distribution.
- iii. Government or farmers group should embark on rehabilitating poor roads, creating water drainage along roadsides and providing credit facilities, especially to the traders managing family affair.

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