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PROFITABILITY ANALYSIS OF FRESH TOMATO MARKETING IN ABUJA MUNICIPAL AREA COUNCIL (AMAC), FEDERAL CAPITAL TERRITORY, ABUJA NIGERIA

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Abstract

This study examined the profitability of fresh tomato marketing in Abuja Municipal Area Council (AMAC), the Federal Capital Territory (F.C.T) Abuja Nigeria. The study analyzed the socio-economic characteristics of tomato marketers, identified existing marketing channels, estimated profitability, determined the factors influencing profitability and examined the major constraints facing marketers. Primary data was collected from 91 randomly and proportionally selected fresh tomato marketers using interviews and structured questionnaires administered across major markets within AMAC. Data was analyzed using descriptive statistics, gross margin analysis, and Ordinary Least Squares (OLS) regression techniques. The results revealed the existence of four major marketing channels, with the producer–wholesaler–retailer–consumer channel being the most dominant distribution pathway. Gross margin analysis indicated that fresh tomato marketing in AMAC is profitable. The regression results showed that quantity of tomatoes sold and years of marketing experience had positive and statistically significant effects on profitability at the 1% level, while cost of tomatoes had a negative and significant effect. Age and household size were not statistically significant determinants. The model exhibited a high explanatory power, with an adjusted $\bar{R}^2$ of approximately 0.91 indicating that is 91% of the variation in profitability was explained by the included variables. Major constraints identified included high transportation costs, post-harvest losses due to inadequate storage facilities, price volatility, poor road infrastructure, and limited access to affordable credit. These factors significantly reduced marketing efficiency and income stability. Improving market infrastructure, transportation, storage facilities and access to credit will scale up efficiency in the marketing system of fresh tomatoes in the study area.

Keywords: *Fresh Tomato, Marketing Channels, Gross Marketing margin, Profitability, Regression Determinants, Constraints, AMAC, Abuja, Nigeria.*

1.0 INTRODUCTION

1.1 Background of the Study

Agriculture remains a foundational sector in Nigeria's economy, contributing significantly to employment, income generation, and food security despite structural shifts toward oil dependence (World Bank, 2023; Food and Agriculture Organization, 2022). Historically, the sector accounted for a substantial share of the nation's Gross Domestic Product (GDP) and continues to employ a large proportion of the labour force, particularly in rural and peri-urban areas (Adegboye, 2004). Within the agricultural sector, horticultural crops especially vegetables, play a critical role in improving household nutrition, diversifying income sources, and enhancing market participation for small-scale entrepreneurs.

Agricultural marketing refers to all activities involved in the movement of agricultural products from the point of production to the final consumer. It encompasses assembling, grading, storage, transportation, processing, financing, risk

bearing, and information dissemination (Olukosi & Isitor, 1990). Efficient agricultural marketing systems are essential for ensuring food security, stabilizing prices, and improving income distribution among value chain actors.

In developing economies such as Nigeria, agricultural marketing systems are often characterized by fragmented markets, inadequate infrastructure, weak institutional support, and limited access to credit. These structural deficiencies increase transaction costs and reduce marketing efficiency (Adegboye, 2004). For perishable commodities like tomatoes, marketing efficiency becomes even more critical due to their short shelf life and susceptibility to spoilage.

Tomato (*Solanum lycopersicum*) is among the most important vegetable crops cultivated and consumed in Nigeria. It constitutes a major ingredient in household diets and serves as a raw material for food vendors and agro-processing enterprises. Nutritionally, tomatoes are rich in vitamins A and C and contain antioxidants such as lycopene, which contribute to disease prevention and overall health improvement (Ihekeonye et al., 1985). Rising urbanization, changing dietary patterns, and increasing population growth have intensified demand for fresh tomatoes in urban centers across Nigeria.

Despite its economic and nutritional significance, tomato marketing in Nigeria faces substantial structural and operational challenges. As a highly perishable commodity, fresh tomatoes are vulnerable to post-harvest losses, price volatility, and supply chain inefficiencies. Weak transportation infrastructure, inadequate storage facilities, and limited access to credit often reduce marketing efficiency and compress profit margins. Agricultural marketing, defined as the series of activities involved in moving farm produce from producers to final consumers, plays a central role in determining the distribution of returns among actors within the supply chain (Olukosi & Isitor, 1990). Inefficiencies within this system can therefore significantly affect both producer and marketer welfare.

Empirical studies on vegetable marketing in Nigeria have shown that profitability is influenced by scale of operation, marketing experience, cost structure, and market access (Oladejo & Sanusi, 2008; Adenegan & Adeoye, 2011). Larger sales volumes often generate higher returns due to economies of scale, while increased marketing experience enhances bargaining power and operational efficiency. Conversely, high purchase prices and transportation costs tend to reduce net margins. These findings are consistent with broader agricultural marketing literature, which emphasizes the importance of transaction costs, market structure, and operational efficiency in determining performance outcomes (Minot & Goletti, 2001).

Furthermore, the high perish-ability of tomatoes amplifies marketing risk, making profitability highly sensitive to handling practices, transportation conditions, and market timing. Without adequate storage facilities, traders are compelled to sell quickly, often at unfavorable prices, thereby reducing potential returns. Addressing these structural constraints is critical for strengthening urban food supply systems and enhancing the resilience of horticultural value chains.

However, much of the existing literatures focus on production efficiency, with limited attention given to urban marketing dynamics. Given the strategic importance of AMAC as a consumption center and redistribution hub for tomatoes and other vegetables, a comprehensive assessment of profitability and its determinants in this urban context is imperative. Understanding the factors that influence profitability will provide insights into market performance, income sustainability for traders, and potential policy interventions aimed at improving efficiency are also critical.

1.2 Statement of the Problem

Agricultural marketing systems in developing economies are often characterized by infrastructural deficiencies, weak market coordination, high transaction costs, and information asymmetry (Olukosi & Isitor, 1990). In the case of fresh tomatoes, these structural weaknesses are compounded by short shelf life, seasonal gluts and shortages, and poor storage facilities. As a result, substantial post-harvest losses occur during transportation and market handling, leading to reduced effective supply and income instability for marketers. Empirical evidence suggests that high marketing costs and inefficiencies significantly reduce profit margins in vegetable markets (Oladejo & Sanusi, 2008; Adenegan & Adeoye, 2011).

Nigeria is one of the leading tomato producers in Africa, with major production concentrated in northern states such as Kano, Kaduna, Plateau, and Katsina (FAO, 2022; National Bureau of Statistics, 2021). However, despite high production volumes, the country experiences significant post-harvest losses due to poor storage facilities, inadequate transportation systems, and weak market coordination. These losses reduce effective supply and increase price volatility in urban markets. Marketing of fresh tomatoes typically involves multiple intermediaries.

Fresh tomato marketing plays a vital role in Nigeria's food system by facilitating the movement of produce from production zones to urban consumption centers. Although agriculture remains a significant contributor to employment and livelihood sustenance in Nigeria (Adegboye, 2004), the efficiency and profitability of agricultural marketing systems particularly for perishable commodities remain a major concern. Tomatoes, due to their high perishability and sensitivity to handling conditions, present unique marketing challenges that directly affect incomes of traders and consumer price stability.

The tomatoes supply chains serving urban centres usually involve long-distance transportation from producing areas, multiple intermediaries, and limited cold storage infrastructure. These factors increase transaction costs and

spoilage risks, potentially eroding profitability. According to transaction cost theory, higher costs related to transportation, search, bargaining, and risk management directly reduces net returns (Minot & Goletti, 2001). In perishable commodities markets, such costs are particularly significant because delays or inefficiencies can result in irreversible losses.

Despite the importance of tomato marketing in urban food systems, limited empirical research has specifically examined profitability determinants in the study area. Existing studies in Nigeria have largely focused on production efficiency or rural marketing systems, with fewer analyses addressing the structural and operational realities of urban wholesale and retail markets (Oladejo & Sanusi, 2008; Adenegan & Adeoye, 2011). Consequently, there is insufficient evidence on factors that influence profitability in this specific context.

Furthermore, while previous research has established that marketing experience and sales volume positively influence profitability in vegetable marketing (Oladejo & Sanusi, 2008), it remains unclear whether these relationships hold consistently in highly urbanized markets, where structures and competitive dynamics cost may differ. The Structure–Conduct–Performance paradigm suggests that market structure influences trader conduct and ultimately determines market performance (Olukosi & Isitor, 1990). However, the extent to which market structure enhances or constrains profitability in the study area has not been rigorously quantified.

Seasonal supply fluctuations and inadequate storage facilities contribute to sharp price swings, affecting both marketers' income and consumer welfare. Without empirical assessment of profitability drivers, policy interventions aimed at improving market efficiency may lack precision and effectiveness. While fresh tomato marketing is a critical component of Nigeria's urban food economy, persistent structural inefficiencies, high transaction costs, and post-harvest losses threaten profitability. The absence of context-specific empirical evidence for the study area creates a knowledge gap that this study seeks to fill. Therefore, the central problem addressed by this study is the dearth of empirical data on the profitability of fresh tomato marketing in the study location.

1.3 Objective of the Study

The main objective of this study is to examine the profitability of fresh tomato marketing in Abuja Municipal Area Council (AMAC), Federal Capital Territory (FCT) Abuja, Nigeria.

The specific objectives seek to:

(i) describe the socio-economic characteristics of fresh tomato marketers in the study area;
(ii) examine the marketing channels for fresh tomatoes in the study area;
(iii) to estimate the costs and returns associated with fresh tomato marketing;
(iv) determine the profitability of fresh tomato marketing in the study area;
(v) Examine the factors that significantly influence profitability of fresh tomato marketing; and
(vi) identify the major constraints facing fresh tomato marketers in the study area and proffer possible Solutions

The null and alternative hypotheses are as stated below

H_0: Fresh tomato marketing in AMAC is not profitable

H_1: Fresh tomato marketing in AMAC is profitable

2.0 METHODOLOGY

2.1 Study Area

The study was conducted in Abuja Municipal Area Council (AMAC), one of the six Area Councils within the Federal Capital Territory (FCT), Nigeria. It is located between Latitudes 8º37'N and 9º9'N and Longitudes7º3'E and 7º34'E. AMAC serves as the commercial and administrative hub of the FCT and hosts major urban markets that distribute agricultural produce to a rapidly growing population. The area experiences a tropical savannah climate with distinct wet and dry seasons, which influences seasonal availability and pricing of fresh tomatoes.

The Abuja Municipal Area Council (AMAC) within the Federal Capital Territory (FCT) represents a major urban consumption hub for fresh agricultural produce. As Nigeria's administrative capital, Abuja has experienced rapid urban expansion and population growth, which have increased demand for fresh vegetables, including tomatoes. The city relies heavily on supplies transported from major tomato-producing northern Nigerian states such as Kano, Kaduna, Plateau, and Katsina. Consequently, tomato marketing in AMAC involves long-distance trade networks characterized by multiple intermediaries, significant transportation costs, and high exposure to spoilage risks.

AMAC was purposively selected because it represents a major consumption and redistribution center for fresh tomatoes supplied from northern production states such as Kano, Kaduna, Plateau, and Katsina. The high volume of trade activity in the area makes it suitable for analyzing marketing profitability and its determinants.

2.2 Population of the Study

The target population for this study comprised of over about 400 fresh tomato marketers operating within selected major markets in AMAC. From this, 91 traders were selected for the study. These included wholesalers and retailers actively engaged in the buying and selling of fresh tomatoes during the study period.

2.3 Research Design

The study employed a cross-sectional survey design. Primary data was collected from fresh tomato marketers at a single

point in time. The design was appropriate because it allowed for quantitative assessment of profitability and identification of factors influencing profit variation among marketers.

2.4 Sampling and sampling Technique

A multi-stage sampling technique was adopted:

1. **Stage One:** Purposive selection of major markets in AMAC known for high tomato trading activity.
2. **Stage Two:** Random selection of tomato marketers within the chosen markets.

A total of **91 fresh tomato marketers** were selected for the study. The sample size was considered adequate to provide reliable statistical inference and allow regression analysis.

2.5 Data Collection

The study relied on primary data collected directly from marketers. Data were collected using structured questionnaire and interview. The questionnaire was administered through face-to-face interviews to ensure clarity and completeness of responses.

Information collected included those on socio-economic characteristics (age, gender, marital status, education, household size, years of experience), inputs used, marketing channels, quantity of tomatoes purchased and sold and prices, cost of marketing, cost components (purchase cost, transportation, handling, market levies), revenue generated and constraints faced by marketers.

2.6 Data Analysis

The data collected were analyzed using a combination of descriptive, gross margin analysis and inferential statistical tools.

2.6.1 Descriptive Statistics

Descriptive statistics such as frequency distribution, percentages and means were used to describe socio-economic characteristics and marketing channels.

2.6.2 Gross Marketing Margin Analysis

The Gross Marketing margin analysis was used to determine profitability. It is appropriate for short-run agricultural marketing studies where fixed costs are minimal.

The gross marketing margin model is expressed as:

NMM = GMR - GMC

Where:
NMM = Net Marketing Margin (₦)
GMR = Gross marketing Returns (₦)
GMC = Gross Marketing Cost (₦)

Gross Marketing Returns (GMR) = SP x Q
SP = Selling Price per qty sold (₦)
Q = Quantity of tomatoes sold (kg)

Total Marketing Costs included: Cost of tomato purchased, transportation cost, handling/loading cost, market levies, packaging cost, among others, not including fixed cost.

2.6.3 Regression Analysis

To identify factors influencing profitability, a **multiple regression analysis** using the Ordinary Least Squares (OLS) method was employed.

The functional form of the model is specified as:

$$\Pi = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \mu$$

Where:

- Π = Profit (₦)
- β_0 = Intercept
- X_1 = Quantity sold (number of baskets)
- X_2 = Years in business (marketing experience)
- X_3 = Cost per 50kg basket (₦)
- X_4 = Age of marketer (years)
- X_5 = Household size (number of persons)
- μ = Error term
- $\beta_1 - \beta_5$ = Regression coefficients

The **II** in the model is the calculated net marketing margin (NMM), which is a measure of profitability

The a priori expectation of the signs of the regression coefficients were:

Variable	Expected Sign	Justification
Quantity Sold	Positive (+)	Higher sales volume increases revenue
Years in Business	Positive (+)	Experience improves profitability
Cost per Basket	Negative (–)	Higher cost reduces profit
Age	Indeterminate (+/–)	May affect risk behavior
Household Size	Indeterminate (+/–)	May influence labor and expenses

Model Evaluation Criteria

The regression results were evaluated using:

- Coefficient of determination (R^2)
- Adjusted R^2
- F-statistic (overall model significance)
- t-statistics (individual variable significance)
- Level of significance (1%, 5%, 10%)

2.6. 4 Limitations of the Study

- The study is limited to tomato marketers within AMAC, Abuja, and therefore its findings may not be generalized to other regions.
- The study relies on self-reported data, which may be subject to recall bias due to poor record-keeping among respondents.
- The cross-sectional design limits dynamic price trend analysis.
- Seasonal fluctuations in tomato prices and challenges in accurately measuring post-harvest losses may also affect the precision of profitability estimates.

3.0 RESULTS AND DISCUSSION

The results and discussion from the data analyzed are presented in this section. This starts with socioeconomic characteristics of the respondents, measure of profitability in the result of gross margin, estimates of the regression analysis and the constraints encountered by fresh tomatoes traders in the study location.

3.1 Socio-Economic Characteristics of Respondents

These results indicate there were more male tomatoes traders with 57.8% while there female traders were 42.8%. This shows that both male and female respondents participated in the business, though there were more male traders. The educational level of the traders indicates that 66.7% of the traders attained secondary education and 15.6% with diploma certificates, which is adequate for the trade. Respondents with higher educational level were fewer. Traders in the age range between 18 and 44 years of age were more with 87.7%. This implies that most of the respondents were within the active and productive ages. Married marketers were 63.3% while singles were 33.1%, implying probably that married persons needed to engage in the trade to fend for their families. Most of the respondents 48.9% had experience of between 6 to 10 years in the business, while those with 1 to 5 years of experience made up 38.9%. Respondents with household sizes of 6 to 10 members made up 63.3 % and 1 to 5 persons were 28.9%.

Table 1: Socio-economic characteristics of fresh tomato marketers in Abuja Municipal Area Council, Federal Capital Territory Abuja

Characteristics	Frequency	Percentage
Gender		
Male	52	57.8
Female	38	42.2
Total	90	100
Educational status		
Primary	6	6.7

Secondary	60	66.7
Diploma	14	15.6
Undergraduate	5	5.6
Degree/HND	5	5.6
Total	90	100
Age		
18 – 26	30	33.3
27 – 35	31	34.4
36 – 44	18	20.0
45 and Above	11	12.3
Total	90	100
Marital status		
Single	28	31.1
Married	57	63.3
Divorced	1	1.1
Widowed	4	4.4
Total	90	100
Years of marketing experience		
1 – 5	35	38.9
6 – 10	44	48.9
11 – 15	8	8.9
16- 20	2	2.2
20 and Above	1	1.1
Total	90	100
Household size		
1-5	26	28.9
6 –10	57	63.3
11 – 15	7	7.8
16 and Above	0	0
Total	90	100

Source: field survey, 2015

3.2 Marketing Channels Identified

Table 2 presents a summary of marketing channels for fresh tomatoes in the study area. The first channel begins from producers, mostly from producing regions, to wholesalers, to retailers and the consumers. This appears the longest chain. Longer chains increase price spread and wider marketing activities which is good for the economy. This is followed by channel II from producers to wholesales and to the consumers. Channel III from Producers to Retailers to the consumers. This is shorter and will more probably guarantee higher returns for the producers. The last is channel IV, from the producer direct to the consumer. This is the shortest. The producer earns more from his produce while the consumer pays less for the commodity.

Table 2: Summary of marketing channels for fresh tomatoes in AMAC

Channel No.	Marketing Channel	Dominance Level	Efficiency Implication
I	Producer → Wholesaler → Retailer → Consumer	Most dominant	Long chain increases price spread
II	Producer → Wholesaler → Consumer	Moderate	Reduces intermediary margin
III	Producer → Retailer → Consumer	Less common	Shorter chain improves margin
IV	Producer → Consumer	Least common	Highest potential margin but limited scale

Source: Field survey, 2015

3.3 Results of the Gross Marketing Margin Analysis

The gross marketing margin was of fresh tomatoes marketing in the Abuja Municipal Council comprising its major markets in a week. The result of the gross marketing analysis is presented on table 3.

The average cost per kg of fresh tomatoes bought for the 6 markets studied by traders was one hundred naira eighty eight kobo (₦100.88), while the marketing cost per Kg was three naira seven kobo (₦3.07), bringing the average purchase cost per kg to one hundred and three naira ninety four kobo (₦103.94). The average quantity handled by traders was 1258.33 kg per week, bringing the gross average marketing cost to ₦131, 017.88. The average selling price per kg of tomatoes was ₦150.85, and the gross marketing returns being ₦190278.91. The net marketing margin of fifty nine thousand two hundred and sixty one naira, eight kobo (₦59261.08) a 45.23% margin was realized per week. The results also show that average gross returns per naira invested of 1.43 was obtained. That is for every naira invested yields one naira forty three kobo.

This shows that tomatoes trade in the AMAC yields positive returns indicating that it is a profitable business activity, therefore rejecting the null hypothesis that it is not profitable.

The results shows that highest gross marketing cost was in Wuse market which is located in the city centre, while the lowest marketing cost was in Nyaya market, which is a suburb of AMAC. The highest net marketing return of ₦73416 00 was realized in Wuse market while the lowest margin of ₦53463.50 was obtained in Utako market in the AMAC. The traders also handled varieties of vegetables along with tomatoes in costs are shared in the handling process.

3. Profitability Analysis: Table 3 presents the result of gross margin analysis of selected markets per week in the study area.

Markets	Cost of tomatoes (₦/kg)	Marketing Cost(₦/kg)	Quantity sold (kg)	Purchase cost (₦ / kg)	Gross Marketing cost (₦)	Selling price (N/kg)	Gross Marketing Returns (₦)	Net-Marketing Return (₦) (%)	Gross Return/₦ Invested
Wuse Market	106.00	4.06	1400.00	110.06	154084.00	162.50	227500	73416.00 (47.65)	1.48
Garki Market	99.62	3.73	1350.00	103.35	139522.50	150.40	203040	63517.50 (45.53)	1.46
Utako Market	96.22	3.89	1150.00	100.11	115126.50	146.60	168590	53463.50 (46.44)	1.46
Nyanya Market	100.69	2.55	1050.00	103.24	108402.00	148.22	155631	47229.00 (46.44)	1.44
Kado Market	100.89	2.25	1275.00	103.14	131503.5	145.50	185512.5	54009.00 (41.07)	1.41
Jukwoi Market	101.84	1.91	1325.00	103.75	137468.75	152.00	201400	63931.50 (46.51)	1.47
Average	**100.88**	**3.07**	**1258.33**	**103.94**	**131017.88**	**150.85**	**190278.91**	**59261.08**	**1.43**

Source: Field survey, 2015

3.4 Regression results of determinants of profitability of tomatoes marketing in the study area.

The regression analysis examined factors significantly influencing profitability of tomatoes trade in the study area. The results show an adjusted R-square of 0.91 that 91% 0f the dependent variables accounted for the variation in the profit earned by the tomatoes marketers. The F-statistic was significant at 1% showing the goodness of the model for the analysis.

The quantity handled by marketers was significant at 1% level of significance (LOS) and positive coefficient. This means that the higher the quantity handled by marketers the higher the profit will be made. The cost per kg of tomatoes was also significant at 1% LOS but with negative coefficient, indicating that higher cost of purchases reduces profitability in the trade. This is plausible because higher costs reduce the quantity handled and hence lower profits. Years of experience were also significant at 1% LOS and positive, indicating that many years of experience in the tomato trade significantly improves the profit earned. House hold size and age were not significant, though they had some negative effects on the margin earned by marketers.

Table 4: Multiple Regression Estimates of Determinants of Profitability

Variable	Coefficient (β)	Std. Error	t-value	P-value	Level of Significance	Direction of Effect
Constant	49. 230	19,300	2.552	0.012	Significant (5%)	—
Age	-18.03	106.66	-0.169	0.866	Not Significant	Negative
Household Size	-152.72	444.10	-0.344	0.732	Not Significant	Negative
Years in Business	1,099.62	287.63	3.823	0.000	Significant (1%)	Positive
Quantity Sold (kg)	34,780	1,299.36	26.765	0.000	Highly Significant (1%)	Positive
Cost per kg Basket	-1.78	0.624	-2.851	0.005	Significant (1%)	Negative

Adjusted $R^2 = 0.91$ F – Statistic significant at 1%

Source: Field survey, 2015

3.5 Major Constraints Facing Tomato Marketers

The study identified several operational challenges that affect the marketers in their day-to-day running of their businesses Table: 5). Transportation cost was the most critical problem that affected the traders as it ranked the first. Delay in delivery orders to marketers due to poor transportation affected the traders' supplies. Perish ability/Post harvest losses caused losses due to dearth of facilities required for careful handling and storage of goods. The speed at which tomatoes deteriorated reduced traders' profits. Inadequate storage facilities also compounded the marketers' problem of spoilage and postharvest losses, which affected their profits negatively. This was exacerbated by high cost/poor electricity supply for cold storage facilities. Price fluctuations of tomatoes occasioned by seasonal production reduced supplies during the off season and hence profits. Limited access to credit facilities by traders and poor road infrastructure were some of the constraints identified by the traders and ranked fifth and sixth in that order.

Table 5: Major Constraints and Severity Ranking

Constraint	Severity Level	Rank	Effect on Profitability
High Transportation Cost	Very High	1st	Reduces net margin
Spoilage/Post-Harvest Loss	Very High	2nd	Direct financial loss
Inadequate Storage Facilities	High	3rd	Limits holding capacity
Price Fluctuation	High	4th	Income instability
Limited Access to Credit	Moderate	5th	Restricts scale expansion
Poor Road Infrastructure	Moderate	6th	Increases logistics cost

Source: Field survey, 2015

4.0 SUMMARY

4.1 Summary of the Study

This study examined the profitability of fresh tomato marketing in Abuja Municipal Area Council (AMAC), Federal Capital Territory (F.C.T) Abuja, Nigeria. The study analyzed the socio-economic characteristics of tomato marketers, identified existing marketing channels, estimated profitability, determined the factors influencing profitability and examined the major constraints facing marketers.

Primary data were collected from 91 fresh tomato marketers using structured questionnaires. Multi-stage sampling (purposive and random sampling) was used to collect data proportionately from 6 major markets of AMAC, namely Wuse, Garki, Utako, kado, Jikwoi and Nyaya markets.

Descriptive statistics, gross marketing margin analysis, and multiple regression analysis were employed to analyze the data from the selected markets.

The result of the socio-economic analysis revealed that there were more male tomatoes traders with 57.8%, and female traders were 42.8%. The educational level of the traders indicated that 66.7% of the traders attained secondary education which is adequate for the trade. Traders in the age range between 18 and 44 years of age were more with 87.7%. Married marketers were 63.3% and most (48.9%) of the respondents had experience of between 6 to 10 years in the business, while those with household sizes of 6 to 10 members made up 63.3 % of the respondents.

The major marketing channels were identified was from Producer → Wholesaler → Retailer → Consumer, while the shortest was from producer consumer which was not common. The dominance of multi-layered channels indicates the presence of intermediaries who facilitate aggregation and distribution of the commodity.

The results of the gross marketing margin analysis showed the average quantity handled by traders was 1258.33 kg per week, with gross average marketing cost of ₦131, 017.88. The gross marketing returns was ₦190278.91, and the net marketing margin was ₦59261.08 per week. Gross margin analysis confirmed that fresh tomato marketing in AMAC was economically viable.

The results of regression analysis show an adjusted R-square of 0.91 that is 91% 0f the dependent variables accounted for the variation in the profit earned by the tomatoes marketers. The F-statistic was significant at 1%.

The quantity handled by marketers was significant at 1% level of significance (LOS) with a positive coefficient. The cost per kg of tomatoes also significant at 1% LOS, years of experience was also significant at 1% LOS and positive, while house hold size and age were not significant. This implies that increased operational scale and accumulated market experience enhanced income generation. Conversely, cost per kilogramme had a negative and statistically significant effect, indicating that rising purchase and transaction costs reduced net profit.

The study also identified major constraints facing marketers to include, high transportation costs, post-harvest losses and spoilage, inadequate storage facilities, price fluctuations and limited access to credit.

Transportation cost and spoilage were ranked as the most severe challenges, directly affecting profit margins.

4.2 Conclusion

The study concludes that fresh tomato marketing in Abuja Municipal Area Council is economically viable and constitutes an important source of income and employment within the urban agricultural value chain.

The analysis also demonstrates that scale of operation (quantity sold) is a major driver of profitability, suggesting the importance of economies of scale in tomato marketing.

Marketing experience also plays a crucial role, reflecting the importance of accumulated knowledge, negotiation ability, and market intelligence in enhancing returns.

High purchase cost and transportation expenses significantly reduce profitability, emphasizing the critical role of transaction costs in perishable commodity markets, inadequacy of infrastructure and storage facilities contribute to spoilage, postharvest losses and price instability.

4.3 Recommendations

Based on the findings of this study, the following recommendations are proposed:

4.3.1 Investment in infrastructure: improving infrastructure as roads, electricity, storage facilities will reduce transaction costs, cut postharvest losses and enhance market efficiency while strengthening profitability and sustainability in fresh tomato marketing within AMAC. Government and private sector stakeholders should invest in modern cold storage facilities within major markets in AMAC. The availability of affordable storage would reduce post-harvest losses, stabilize supply, and enable marketers to sell at favorable prices rather than under distress conditions.

4.3.2 Improvement of Transportation and Road Infrastructure

Given that transportation cost was identified as the most severe constraint, improvements in road networks linking production zones to AMAC are essential. Efficient transport systems would reduce spoilage, lower transaction costs, and increase net margins.

4.3.3 Facilitation of Access to Credit

Financial institutions and microfinance organizations should develop tailored credit schemes for fresh produce marketers. Access to affordable credit would enable traders to expand scale of operation, benefit from bulk purchasing, and improve profitability.

4.3.4 Promotion of Cooperative Marketing

Encouraging marketers to form cooperative associations could enhance collective bargaining power, reduce transaction costs, and improve access to credit and market information.

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