

ANALYSIS OF SMALL SCALE CUCUMBER MARKETING IN GWAGWALADA AREA COUNCIL OF FEDERAL CAPITAL TERRITORY, NIGERIA

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Abstract

The study analyzed small scale cucumber marketing in Gwagwalada Area Council Federal Capital Territory (FCT), Nigeria. Multistage sampling was used to select the cucumber marketers. Primary data collected through a structured questionnaire was used for the study. Eighty (80) cucumber marketers constitute the sample size. Descriptive and inferential statistics was employed to analyze the data. The result revealed that majority of the small scale cucumber marketers in the study area were male (67.5%), with 61.25% being married. Most marketers (55%) were above forty years old. Personal savings were the primary source of capital (78.75%). Education levels were generally low, with 47.5% attending primary school. The majority of cucumber marketers (60%) considered cucumber marketing as their primary occupation, and 77.5% were not part of any market association. The study identified the market's over-efficiency in both peak and lean seasons, with positive gross margins. However, the peak season had a significantly higher return on investment (ROI) (144.3%) compared to the lean season (40%). Base on the result of this study, the following recommendation were made: Youth should be encouraged to participation in cucumber marketing to inject innovation and energy into the industry, cucumber marketers should form and participate in market-based associations to foster collaboration and information-sharing since most (77.5%) currently do not belong to any association. Training and support program is required to enhance the skills and knowledge of the small scale cucumber marketers.

Keyword: Cucumber marketers, marketing efficiency, return on investment (ROI)

Introduction

Cucumber (*Cucumis sativus L.*) is one of the most widely cultivated creeping vine plants. The origin of its cultivation is traced to Southeast Asia regardless it is presently cultivated all around the world (Hill, 2019). It is one of the most ancient vegetables. It is a member of the Cucurbitaceae and it's an essential vegetable crop (Petruzzello, 2016). Watermelon, muskmelon, squash, and pumpkin are other vital members of this family. Cucumbers are consumed as a vegetable, but they are scientifically evaluated as a fruit because the seeds are confined and generated from a flower. Cucumbers have little nutritional value, but their delicate taste makes them popular in salads and sauces (Petruzzello, 2016). Cucumber is a fruit with a high-water content of up to 95%. Eating cucumber may help lower blood sugar, prevent constipation, strengthens bones, reduces

inflammations, regulate blood pressure, protect kidneys, improves digestion, and support weight loss. It was also believed that eating cucumbers three times a day would cure a red nose and clear acne on the face (Trinklein, 2014). It was advocated that we eat cucumber skins to maximize the health benefits (Ajmera, 2023). Cucumber helps to hydrate the skin, reduces skin inflammation, treats sunburn, prevents acne, fights against free radicals, promotes skin brightness, and prevents premature aging.

Elum, Etowah and Ogonda (2016) advocated that the production of cucumber is profitable aside from the nutritional value. Similarly, Adeoye and Balogun (2016) opined that cucumber is one of the most commercially profitable vegetables in Nigeria. Due to the high income per unit area, cucumber farming is a worthwhile business. Marketable cucumbers are graded according to various quality factors such

as size, diameter, shape, maturity, and external defect.

The marketing of agricultural products plays important roles in economic development and people's livelihood. Marketing function is essential to link production and consumption and to facilitate increase in output to encourage employment and productivity in agriculture (Girei, Kasali, Ogezi & Nnodu, 2018). The impact derived from the market which involves results from different market activities is termed market performance (Onyango, 2019). In addition, Azim, Helaluddin and Shabbir Khan (2015) submitted that the most important key for financial performance is profitability. Profitability aids different businesses to know their revenue streams and how to reduce the way of spending for the maximization of gain.

Several problems are associated with cucumber marketing. These problems could be lack of critical infrastructure such as cold storage systems, lack of knowledge on the health benefit of cucumber, standard shops, clean fruit display area, post-harvest losses and many other factors resulting in serious safety issues and fruit shortages in and around Gwagwalada Area Council of Federal Capital Territory (FCT), Nigeria. Fresh fruits and vegetables are susceptible to mechanical damage due to their soft texture and high humidity. High consumption costs can be attributed to inappropriate home storage methods, preparation, and consumption styles. This leads to economic losses as these products are priced lower. Also, inadequate market information can lead to overproduction of cucumbers that cannot be sold on time. This study will be useful to cucumber marketers, farmers, processors, consumers and other food vendors.

This study was aimed to: describe the socio-economic characteristics of cucumber marketers in the study area; estimate the performance of cucumber marketing; determine factors influencing marketing margin of cucumber marketers; and identify the constraints faced by cucumber marketers in the study area.

Methodology

The Study Area

The study area is Gwagwalada Area Council of the Federal Capital Territory, Nigeria. The area lies between latitude 07°57'N and longitude 07°7'E. The area is on plateau, with numerous small streams running through it. The vegetation combines the best features of the southern tropical rain forest and guinea savanna of the North. The region experiences a tropical savanna climate, characterized by a dry season from November to March and a rainy season from April to October. Average annual rainfall ranges from about 1,250 to 1,600 millimeters. Gwagwalada Area Council is known for its agricultural activities, with farmers growing crops such as yam, maize, millet, sorghum, groundnuts and many vegetables/fruits such as cucumber, watermelon, tomato, etc. The area also has a significant livestock population, especially cattle, sheep and goats.

Sampling Technique

Multistage and Purposive sampling techniques were used in selecting the respondents for the study. Stage one involved selection of Gwagwalada area council out of six area councils in FCT. Stage two involved purposive selection of eighty (80) cucumber marketers based on prevalence of cucumber marketing in the selected areas. From the ten wards in Gwagwalada, twenty (20) respondents were selected from Zuba, twelve (12) from Kutunku, ten (10) from Giri, eight (8) from Gwagwalada centre, seven (7) from Gwako, five (5) from Dobi, Paiko and Tunga-maje each. Finally, four (4) marketers were selected each from Ikwa and Ibwa.

Method of Data Collection

Primary data was used for the study and was collected through structured questionnaire with close and open ended questions. The questionnaire was administered to small scale cucumber marketers in the study area with the help of experienced extension agents of Agricultural Development Project (ADP). The sections in the questionnaire include socioeconomic characteristics of cucumber marketers, market performance, factors influencing marketing margin and constraints faced by cucumber marketers.

Analytical Techniques

The data collected was analyzed with descriptive and inferential statistics. Frequency Tables and percentages were used to describe the socioeconomic characteristics of the respondents, marketing margin was used to estimate the performance of cucumber marketing, linear regression analysis was applied to determine factors influencing marketing margin of cucumber marketers and Likert scale was used to identify the constraints faced by cucumber marketers in the study area.

Model Specification

The specification of the linear regression analysis was done in line with Gogtay, Deshpande and Thatte (2017). The implicit mathematical representation of linear regressions is:

$$Y = \beta_0 + \beta_1 X_1 + \dots + \beta_K X_K + \varepsilon \quad 1$$

Where:

Y= dependent variable

Where; $X_1, X_2, \dots, X_k$ represent the independent variables, $\beta_0, \beta_1, \beta_2, \dots, \beta_k$ are the coefficients to be estimated, and ε is the error term.

Explicit function:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon \quad 2$$

Where:

Y= Cucumber market margin

X_1 = Sex of cucumber marketers (Dummy, 1 for male 0 for female)

X_2 = Age of marketers (number of years)

X_3 = Marital status (married, single, widowed, divorced)

X_4 = Household size (number of person in the household)

X_5 = Years of Schooling (number of years)

X_6 = Years of experience in marketing (number of years)

ε = Error term.

Results and Discussion

Socioeconomic Characteristics of Small Scale Cucumber Marketers in the Study Area

The result of the analysis of the socioeconomic characteristics of the cucumber marketers was presented in Table 1.

The result showed that most of the cucumber marketers were male (67.5%). Male dominance in cucumber marketing could be attributed to bulky nature of the fruit requiring strength in lifting bags of cucumber. This result contrast Mukaila, Obetta, Awoyelu, Chiemela and Ugwu (2021) who reported that vegetable marketing was dominated by females (65%) in Enugu State, Nigeria.

From the analysis it was found that most (61.25%) cucumber marketers were married. Being married may implied that the individual involved in the trade are responsible adult who are making cucumber trading a source of their livelihood. Marriage can also help the marketers access free labour from their spouse and children. This result corroborated Ghide, Ali and Rabi (2022) where eighty percent (80%) of cucumber marketers were married in Borno State, Nigeria.

The result revealed that a good number (55%) of the marketers were above forty years old which indicated that the majority of them are matured marketers. This result is in line with Mukaila *et al.*, (2021) who found that cucumber marketers were still in their economically active age. However, the result is slightly different from Ghide *et al.*, (2022) who found that majority (74%) of cucumber marketers were within the age range of 21-40.

About 57.5% of the marketers' household size was less than 5 persons, implying that they may be disadvantage in term of family labour supply. The household size often determines the available labour in carrying out marketing activities. This result agreed with Nwoye, Orusha, Nze and Ihugba (2025) majority of the cucumber producers had a household size of 4-6 persons in Imo, Nigeria.

Table 4.1: Socioeconomic characteristics of cucumber marketers (n=80)

Socioeconomic Variables	Frequency	Percentage
Sex		
Female	26	32.5
Male	54	67.5
Age (years)		
≤ 20	5	6.25
21 -30	12	15
31-40	19	23.75
41 – 50	19	23.75
51 -60	23	28.75
> 60	2	2.5
Marital Status		
Single	17	21.25
Married	49	61.25
Divorced	7	8.75
Widowed	7	8.75
Educational Level		
No Formal Education	33	41.25
Primary Education	38	47.5
Secondary Education	8	10
Tertiary Education	1	1.25
Household Size (persons)		
1 – 5	46	57.5
6 – 10	28	35
11-15	5	6.25
≥ 16	1	1.25
Years of Experience		
≤ 5	40	50
6 – 10	35	43.75
11 – 15	3	3.75
≥ 16	2	2.5
Major Source of Capital		
Personal Saving	63	78.75
Friends and Relatives	10	12.5
Cooperative Society	3	3.75
Bank Loan	4	5
Main Occupation		
Trading Cucumber	48	60
Farming	23	28.75
Civil Servant	3	3.75
Others	6	7.5
Member of any Market-based Association		
Yes	18	22.5
No	62	77.5

Source: Field Survey Data, 2023

Half of the respondents had cucumber marketing experience of less than five years. In addition, 43.75% had marketing experience of 6 – 10 years. This result indicated that most of the

marketers are experienced but are not into the practice for long in the study area. Marketing experience is very important. According to Abah

(2011) experience enhances proficiency and increase productivity.

The main source of capital to the cucumber marketers was through personal saving (78.75%). By this result, there may be limitation of fund which may possibly limit expansion of cucumber marketing. That is, if the marketers cannot source capital from other sources than personal saving they may not easily expand their business. Personal saving is usually insufficient and could be the reason this categories of marketers are operating as small scale marketers.

The result showed that 47.5% of the cucumber marketers attended primary school followed by those who did not have any formal education (41.25%). Education often has a positive and significant impact on market efficiency. This poor literacy level can greatly influence the decision-making in adoption of marketing innovation by sellers, which may bring about an increase in the revenue of cucumber marketers. According to Adeoye and Balogun (2016), years spent in school were a serious determinant of farmers' efficiency.

The result also showed that majority of the cucumber marketers (60%) had the practice as their primary occupation and only means of livelihood. This indicated that the marketers are supposed to devote all their resources and time to the practice. However, the result still showed that 28.75% are into farming. This is also necessary as means of livelihood diversification and coping strategy against failure from cucumber marketing.

The results further revealed that 77.5% of the marketers did not belong to any market association. This has limiting effect on the

marketers in terms of contacting innovation and expansion of their trade. However, this result confirmed Mukaila *et al.* (2021) who noted that most vegetable marketers did not belong to any cooperative society.

The Performance of the Small Scale Cucumber Marketers in the Study Area

The analysis of the results of the performance of cucumber marketers in the study area was done and presented in Table 2. The result showed that the market efficiency (which is the ratio of revenue to expense) in peak season was ₦2.44 and in lean season ₦1.40. This implied that in both seasons the market was over-efficient. This is an indication that abnormal profit is being made in the market, and some market intermediaries reaping from the efforts of others. The marketing margin in both seasons was also positive indicating that the practice is profitable. Although the peak season had ₦244,110, while the lean season had ₦67,253.75 per month. This was calculated using the mean cost price and the mean selling price of cucumber in both seasons. This result conformed with Mukaila *et al.*, (2021) where vegetable marketing contributed to marketer's income by providing ₦25,667.7 (USD 66.93) per month on average. The return on investment (ROI) was 144.3% in peak season and 40% in lean season which implied that an amount invested in peak and lean season will yield 144.3% and 40% return respectively. This result is also in line with Elum *et al.*, (2016) who observed that the gross profit level of cucumber production was high (₦1,909,292) and likewise the gross margin. Ghide *et al.*, (2022) also recorded marketing margin of 25.03%.

Table 2 Performance of Cucumber Marketing in Peak and Lean Seasons (n=80)

Performance Indicator	Mean
Peak Season	
Total Revenue of Cucumbers in Peak Season	₦413,312.5
Total Expenses on Cucumber in Peak Season	₦169,202.5
Marketing Margin I of Cucumber in Peak Season	₦244,110.0
Market Efficiency of Cucumber in Peak Season	₦2.44
Return on Investment of Cucumber in Peak Season	144.3%
Lean Season	
Total Revenue of Cucumbers in Lean Season	₦235,312.5
Total Expenses on Cucumber in Lean Season	₦168,058.8
Marketing Margin I of Cucumber in Lean Season	₦67,253.75
Market Efficiency of Cucumber in Lean Season	₦1.40
Return on Investment of Cucumber in Lean Season	40%

Source: Field Survey Data, 2023

Factors Influencing Cucumber Marketers in the Study Area

Table 3 revealed the existence of a relationship between marketing margin and socioeconomic variables of cucumber marketers. The result of the regression showed that the F-ratio value was 87.37 and it is significant at 1%. The value of R-square of 0.9080 indicated that the model is well-fitted. This implied that the total variation in the marketing margin of cucumber marketers in the study area was explained by 90.8% of the explanatory variables.

The result showed that the coefficient of age (-17.148) of the cucumber marketer was negative and significant at 1%. This means that there is an inverse relationship between age and marketing margin in the study area. The result shows that a unit increase in age will lead to a decrease in marketing margin. This finding agreed with Akpan, Udoh and Nkanta (2023) who found that increase in a farmer's age by 0.07 unit resulted in decrease in the farm income diversification index of fluted pumpkin farmers in Akwa Ibom, Nigeria. Similarly, Akerele, Odojukan, Yangomodou, Olugbemi, Solana, Ilori & Fadipe (2019) also realized a negative coefficient of age among cassava farmers in Ogun State, Nigeria.

The coefficient of marital status (-7.295) of the cucumber marketer was also negative and significant at 1%. This result implied that being married will reduce marketing margin of the cucumber marketers. This negative relationship between marital status and marketing margin could implied that the marketer are not giving attention to their business or abandoning cucumber marketing for other profitable trade due to additional responsibilities attached to marriage. However, Bakari and Usman (2013) found that 58.67% of vegetable marketers were married in the Yola-North and South Local Government of Adamawa State, Nigeria.

The coefficient of household size (1.0096) was positive and significant at 1%. This implied that when one member is added to a household the marketing margin will increase by ₦1.00. This result tallied with Akpan *et al.*, (2023) where the coefficient of the household size exhibited a positive correlation with the income diversification index of fluted pumpkin farmers. The result also agreed with Onubuogu, Esiobu, Nwosu & Okereke (2014) where the coefficient for household size was positive among cassava farmers in Imo State, Nigeria.

Table 3 Factors Influencing the Gross Margin of Cucumber Marketers (n=80)

Variable	Coefficient	Std. error	t-value	p-value
Sex	-0.2775 ^{ns}	0.3356	-0.83	0.412
Age	-17.148***	5.9026	-2.91	0.005
Marital Status	-7.295***	12.4787	-2.86	0.006
Education Level	0.0024 ^{ns}	0.0320	0.08	0.940
Major Occupation	0.0829 ^{ns}	0.0622	1.33	0.188
Years of Experience	-0.0423 ^{ns}	0.0424	-1.01	0.315
Household Size	1.0096***	0.0433242	23.30	0.000
Member of Market Association	-0.7011**	0.3378	-2.08	0.042
Constant	3.1945	0.8650	3.69	0.000
R ²	0.9080			
F – ratio	87.37			

*** Significant at 1% ** Significant at 5% ^{ns} Non-significant

Source: Field Survey Data, 2023

The coefficient of membership of the cucumber marketers (-0.7011) was significant at 5% but negative. The negative relationship between membership of the cucumber marketers in any market-based association and market margin implied that being a member of a market-based group can lead to decrease in market margin. It could be that activities of market based association constitute a distraction to the cucumber marketers. This result is contrary to Boye, Fatty and Bah (2024) where vegetable marketing was positive and significantly influenced by their membership in an association.

Constraints Faced by Cucumber Marketers in the Study Area

Table 4, the major constraints faced by the cucumber marketers were analyzed and ranked in order of importance as follows: high cost of

transportation ($\bar{x}$ =3.77), poor market infrastructure ($\bar{x}$ =3.71), perishability of cucumber ($\bar{x}$ =3.5) and poor storage ($\bar{x}$ =3.38). Other constraint includes poor marketing information ($\bar{x}$ =3.22), insecurity ($\bar{x}$ =2.92), inadequate capital ($\bar{x}$ =2.45) and grading problem ($\bar{x}$ =2.14). The ninth ranked constraint was the low pricing of cucumber ($\bar{x}$ =1.82) and the least was price fluctuation ($\bar{x}$ =1.81).

The result of analysis of these constraints agreed with Adeoye and Balogun (2016) who recorded that the most important constraint to cucumber marketing was perishability of the produce and price fluctuation. Also Elum *et al.*, (2016) revealed five major constraints affecting cucumber production included pest and disease attacks, poor funding and unfavorable climatic conditions.

Table 4 Constraints faced by Cucumber Marketers

Properties	NVS (%)	NS (%)	S (%)	VS (%)	MEAN	RANK
Perishability of Fruits	0 (0)	1 (1.30)	36 (46.75)	40 (51.95)	3.5	3
High Cost of Transportation	2 (2.63)	0	11 (14.47)	63 (82.89)	3.77	1
Price Fluctuation	44 (57.14)	12 (15.58)	13 (16.88)	8 (10.39)	1.81	10
Inadequate Capital	2 (2.60)	48 (62.34)	17 (22.08)	10 (12.99)	2.45	7
Poor Storage	0	4 (5.19)	40 (51.95)	33 (42.86)	3.38	4
Poor Market Information	3 (3.90)	7 (9.09)	37 (48.05)	30 (38.96)	3.22	5
Insecurity	6 (7.79)	14 (18.18)	37 (48.05)	20 (25.97)	2.92	6
Low Pricing of Cucumber	21 (27.27)	50 (64.94)	5 (6.49)	1 (1.30)	1.82	9
Grading Problem	12 (15.58)	43 (55.84)	21 (27.27)	1 (1.30)	2.14	8
Poor Market Infrastructure	2 (2.60)	3 (3.90)	10 (12.99)	62 (80.52)	3.71	2

NVS= NOT Very Strong; NS = Not Strong; VS= Very Strong; S= Strong

Source: Field Survey Data, 2025.

Conclusion

Cucumber Marketing is an important and profitable business with high marketing margin and return on investment as revealed by this study. The socioeconomic characteristics of the cucumber marketers in the study area is also compatible with cucumber marketing. It is therefore adjudged as a good venture capable of creating employment and poverty alleviation. Marketing of cucumber is very easy to establish with little investment.

Recommendations

Based on the result of this study, the following recommendations are made:

- i. Youth are encouraged to participation in cucumber marketing to inject innovation and energy into the industry, as the majority

of current marketers are above forty years old.

- ii. Cucumber marketers association should be form by members to foster collaboration and information-sharing, as a significant percentage (77.5%) currently do not belong to any association.
- iii. Government should organize training and support programs to enhance the skills and knowledge of cucumber marketers, especially in grading and pricing, to improve overall market performance.
- iv. Commercial bank should give soft credit with low interest rate to cucumber marketers to take advantage of large-scale purchases, considering inadequate capital ranked seventh among the identified constraints.

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