**CAUSES AND REMEDIES OF PRICING CHANGES IN THE MARKET FOR COCOA YAMS IN CAMEROON AGRI-FOOD SECTOR: CASE STUDY OF FAKO DIVISION**

 **AUTHOR: Oscar Ebanja Monono (PhD.Fin, PhD.BA, PhD.Ed)**

 **Associate Professor in the School of Business**

 **Rudolph Kwanue University, Monrovia, Liberia**

 **EMAIL:** **oscarmonono30@gmail.com**

**ABSTRACT**

*The main objective of the study was to investigate the causes of changes in prices for cocoa-yams marketing in the major urban markets of Fako Division of Cameroon. there were four specific objectives such as; to assess the effects of income changes on price changes for cocoa-yams, to evaluate the impact of demand and supply on prices changes for cocoa-yams, to determine the impact of consumer preferences on price changes for cocoa-yams and to assess the effect of inflation on price changes for cocoa-yams in the urban markets of Fako Division. Both null and alternate hypothesis were made. It was stated that there is no significant effect of income changes, demand and supply, consumer preferences and inflation on price changes for cocoa-yams in the markets. On the contrary, it was assumed that there are significant effects of the above mentioned variables on price changes. The study used quantitative research method where data that was collected via questionnaires were numerically expressed. The data was primarily collected via closed-ended questionnaires on a sample size of 4000 respondents, being selected randomly. Statistical packages were used to collect, present and analyzed data. A multi-variated regression analysis was done. The findings show that income level, consumer preferences, demand and supply and inflation have significant effects on prices changes for cocoa-yams in the markets. Recommendations were made.*

***Key words:*** *price variations, consumer preferences, market forces, inflation, income level.*

**1.1. Introduction**

Cocoa yam cultivation is not a major cultivating food in Cameroon. But, it is a very significant crop in the country’s agricultural sector. History informs us that cocoa-yam cultivation in Cameroon was introduced by the Portuguese who came to Cameroon in the early 14th century(Ojong,2003). At the time when there was population migration in the 18th century, the Bakweri people who migrated from Equitorial Guinea and settled under the root of mount Fako ate cocoa-yams and made kwacocoa as their traditional meal(Bate,2005). Kwacocoa is grinded cocoa-yams tied in banana leaf and cooked with other local ingredients added to it. Cocoa-yams is not only consumed by Bakweri people but all over the southwest region of Cameroon. About twenty-four tribes in the southWest region eat cocoa-yams as their traditional meal. Cocoa-yams is equally cultivated and consumed in the West region, South region, Littoral region and Centre region of Cameroon. More than seven regions of Cameroon widely plant and cultivate cocoa-yams(Nbide,2002). Cocoa-yams was initially cultivated for household consumption, though it was locally traded in some areas of the regions of Cameroon. Traditional techniques were used in planting cocoa-yams until in the 21st century that cocoa-yams became a widely commercialized food crop in Cameroon. Many farmers export cocoa-yams into central Africa, Nigeria, chad and even to Asia and Europe(Ndile,2005). Despite these great importance of cocoa-yams, we observed a consistent variation in prices in the Cameroon food markets for the past three years. The prices of cocoa-yams have constantly fluctuated over the years. This research observed the changes from 2021 to 2023 in some major markets of Buea, Limbe, Muyuka, Ekona, Muea, Mutengene and Tiko. This research observed the short term price changes and long term price changes which indicate the trends in the agricultural industry. The table below is an illustration of the average pricing changes that were noted in the three years’ period.

**Table 1.1: Presentation of the Price Changes of Cocoa-yams in Fako Division of Cameroon (2021)**

|  |  |  |
| --- | --- | --- |
| **No** | **Qty(Kg)** | **Average price(xaf)** |
| 1 | 1-3 | 1750 |
| 2 | 4-6 | 2300 |
| 3 | 7-9 | 3650 |
| 4 | 10-12 | 4400 |
| 5 | 13-15 | 5100 |
| 6 | 16-18 | 6050 |
| 7 | 19-21 | 7000 |

**Source: feasibility,2021.**

**Table 1.2: Presentation of Price Changes for Cocoa-yams in Fako Division of Cameroon (2022)**

|  |  |  |
| --- | --- | --- |
| **No** |  **Qty(kg)** | **Average price(xaf)** |
|  1 |  1-3 | 1900 |
| 2 |  4-6 | 2500 |
| 3 |  7-9 | 3900 |
| 4 |  10-12 | 4750 |
| 5 |  13-15 |  5800 |
| 6 |  16-18 |  6650 |
| 7 |  19-21 |  8400 |

**Source: feasibility,2022**

**Table 1.3: Presentation of price changes for Cocoa-yams in Fako Division of Cameroon**

|  |  |  |
| --- | --- | --- |
| **No** | **Qty(kg)** | **Average Price(xaf)** |
|  1 |  1-3 |  1850 |
|  2 |  4-6 |  2100 |
|  3 |  7-9 |  3500 |
|  4 | 10-12 |  4200 |
|  5 | 13-15 |  5150 |
|  6 | 16-18 |  5900 |
|  **7** | **19-21** |  **6700** |

**Source: feasibility,2023**

In 2021 to 2022, we observed percentage changes in 1kg to 3kg of 8.57% and in 2022 to 2023 of -2.63%. the changes indicated a drop of price from a higher price to a lower price in the following year. We also observed that prices went up in 2022 but reduced in 2023. This fluctuation is caused by certain factors.

**1.2. Research Questions**

**The main Research Question:**

What are the **causes of market pricing variations** of cocoa-yams in major urban markets of Fako Division of Cameroon?

**Specific Research Questions**

-What is the significant effect of **income level** on price changes of cocoa-yams in the major markets of Fako Division?

-What is the impact of **demand and supply** on price variations for cocoa-yams in major urban markets of Fako division?

-What is the effect of **inflation** on price variation for cocoa-yams in major urban markets of Fako division?

-What is the significant effect of **consumer preferences** on pricing variations for cocoa-yams in major urban markets of Fako division?

**1.3. Research Objectives**

**-**To assess the effects of **income level** on pricing variations for cocoa-yams in major urban markets of Fako Division

-To evaluate the impact of **demand and supply** on pricing variations for cocoa-yams in major urban markets of Fako Division

-To determine the effect of **inflation** on pricing variations for cocoa-yams in major urban markets of Fako Division

**-**To assess the impact of **consumer preferences** on price variations for cocoa-yams in major urban markets of Fako Division

**1.4. Hypothesis of the study**

-There are no significant effects of income level, demand and supply, inflation and consumer preferences on price variations for cocoa-yams in major urban markets in Fako Divisionof Cameroon.

-There are significant effects of income level, demand and supply, inflation and consumer preferences on price variations for cocoa-yams in major urban markets in Fako Division of Cameroon.

**1.5. Significance of the study**

The study exposes three significances. Firstly, it adds to the body of knowledge in the research of cocoa-yams. Cocoa-yams is a rare research area especially in countrieswhere cocoa-yams **is** not cultivated. Research on cocoa-yams is very important to drive changes in food policy and security. This research addresses research gabs that required attention in terms innovations in cocoa-yams cultivation, cocoa-yam security and sustainability, pricing stability and marketing approaches for coco-yams in the major urban markets of Cameroon. secondly, the study provides unique techniques for cocoa-yam marketers to make profit without necessarily changing prices. Thirdly, the study provides solutions that would help improve cocoa-yam production and as well helping farmers to mitigate cocoa-yam production risks.

**1.6. Organization of the study**

The study is organized into eight main areas of research. These areas include introduction, literature review, research methodology, research data presentation and analysis, findings, summaries and recommendations.

**1.7. scope of the study**

The study focuses on pricing variations for cocoa-yams in the major urban markets of Fako Division of Cameroon. the research is nothing but limited to agribusiness marketing. Pricing is one of the marketing mix or marketing strategies. The research focuses on communication mix rather than the economic analysis of the concept.

**1.8. Definition of major term**

**1.pricing variations:** According to D Grewal (1994), pricing variations is the difference between estimated price and actual price of goods in the market**.** According to Howard Marmorstein(1994), price variations are changes in prices in the market caused by quantitative and qualitative factors**.**

**2. Consumer preference:** According to Samah Umah(2003), consumer preferences refers to choices of goods to consume at a given period**.** Consumer preferences are build up to get the best result.

3.**Income variation:** This refers to changes in actual income and expected income in the income flow diagram (Charles, Abiola,2009).

**4.Inflation**: Tthis refers to persistent price increase of basic commodities in the market(D Gwen,2002).

**2.1 Conceptual Literature**

Discussing on pricing changes for crops in Cameroon is something we cannot leave out in agribusiness research. Prices for agricultural products in Cameroon are not constant. They keep changing which affect the industry negatively(Molua,2015). From vegetables to cash crops to food crops, the instability in prices are recorded which makes decision making difficulty. Food policies in Cameroon are not monitored to the local level which makes implementation difficult. A review by food and agricultural organization noted that countries within the regions should ensure market stability through grants, subsidies and technical supports to farmers(FAO,2010). But these decisions hardly get to the local farmers which increases cost of production and pricing in the market(Herbeit,2011). On all the marketing mix strategies, pricing constitute the force behind changes in agricultural production in sub-Saharan Africa. In many circumstances, farmers who cultivate the crops becomes marketers. The irony is that many of the farmers are peasants, uneducated, unskilled in modern agribusiness. This makes policies on food marketing difficult.

Marketing of agricultural products seems challenging especially in Africa where farmers are illiterate and do not understand the trends in marketing agro-products(Nkoge,2001). In the hinterlands where volume of agriculture exists, the technology of marketing crops is very low. Those who relate with the farmers from the farm, do not provide accurate information that could improve quality(Chidi,2009).

Similarly, grants that supposed to reduce cost of production are not allocated to farmers which makes production very low. The economic analysis of this action is the effect this would have on market price. When production falls, prices goes up. This is because supply is very low against high demand(Samah,2003). On the contrary, increase in production against demand, could lead to fall in prices. However, price determinants are not only based on supply and demand. There are other factors which includes income level of consumers, consumer preferences, inflation, employment level, political and legal issues, government policies and others.

Let us look at income level of consumers as a factor. Income level of consumers can increase or fall depending on job availability, the circulation of money, government fiscal and monetary policies. Once income increases, consumers become less sensitive to changes in prices of food in the market(Serge,2012). At this point, the demand curve shifts forward showing that there is expansion. In a situation of high income, price elasticity of demand becomes inelastic. This makes farmers more stable and comfortable to raise price the next time. However, they might not understand that income level changes in future. This makes them still raising price without investigation of the current situation. They would be disappointed that price has falling. Falling in price is the consumer reaction to their fall in income(Adeleke,2011).

Consumer preferences change due to meal changes, income changes and other factors raging from quality, to cost of living and spending behavior(Adeleke,2011). The changes in preferences could lead to consumers consuming other products than cocoa-yams. Otherwise, consuming cocoa-yams than other agricultural products.

For the past ten years, Cameroon has experienced hyper-inflation. This is as a result of the crisis causing instability for farmers to plant crops. In most parts of cocoa-yams cultivation, there was instability that hindered farming activities. Agricultural production including yam cultivation was very low. Unlike the situation we have now, cocoa-yams were produced in thousands of tons and exported in nearby countries like Nigeria, chad and so on(Ahmed,2016). Since then, inflation is very high, coupled with unemployment. The cost of living is very high which reduces the standard of living. The inflation causes high prices of crops production. Today, Cameroon experiences falling in output in agricultural sector. Cocoa-yams production is very low due to certain factors such as, high cost of production, low storage facilities, risk of unsold stocks, theft, and in access to urban markets for sales(Njie,2016).

**2.2. Empirical Reviews**

Joshua et al(2002), carried out a study on effects of cost on cocoa-yams production in Uganda. The study collected data from 1200 cocoa-yam farmers in two regions of Uganda. The study used regression analysis and alpha coefficient to test significant level. It was discovered that cost of production had insignificant effect on cocoa-yam prices in the urban markets. They recommended marketing mix package as techniques to increase sales and profit.

Yousef et al(2004), carried out a study on effects of consumer preferences on cocoa-yams production in Uganda. The study collected data from 900 cocoa-yam farmers in three regions of Uganda. The study used regression analysis and alpha coefficient to test significant level. It was discovered that consumer preferences and income level had significant effect on cocoa-yam prices in the urban markets. They recommended marketing mix package as techniques to increase sales and profit.

Njie Paul (2012), carried out a study on impacts of inflation on cocoa-yams production in meme Division of Cameroon. The study collected data from 700 cocoa-yam farmers in the division of Cameroon. The study used regression analysis and alpha coefficient to test significant level. It was discovered that inflation had significant effect on cocoa-yam prices in the urban markets. He recommended marketing mix package as techniques to increase sales and profit.

Efeti Pauline (2015), carried out a study on effects of cost on cocoa-yams production in Fako Division. The study collected data from 100 cocoa-yam farmers in division. The study used regression analysis and alpha coefficient to test significant level. It was discovered that cost of production had insignificant effect on cocoa-yam prices in the urban markets. They recommended marketing mix package as techniques to increase sales and profit.

**2.3. Research Gab**

The study sought to address gabs in the area of cocoa-yams production in the country. Past research addressed techniques to increase production and distribution of cocoa-yams, cocoa-yam sustainability and security. But few of the studies address the causes behind the variation of prices in cocoa-yam production and remedies for it.

**3.0. Research methodology**

-**Research method**: The study makes use of quantitative research method by collecting data numerically from the field through closed-ended questionnaires.

-**Sources of data collection**: The study uses both primary and secondary data collection. Secondary data from books, articles, published and unpublished materials. Primary data was collected from questionnaires.

-**Sample technique:** Purpose Random sampling was used in the study. By this, farmers, consumers, were randomly selected among the urban markets of the Division.

-**Sample size** of **4000** respondents was considered via social media platforms and physically administered. Neil(2010), stated that in a population of 10,000, a sample size of 1000 should be considered. That’s 10% of the population.

**-Targeted population** was 20,000 of number of indigenes of the area.

**-Data presentation** through frequency distribution tables

-**Analysis:** Data was analyzed through multiple regression analysis and the use of alpha coefficient of 0.05 to determine significant effects.

-**Likert scale** of Agree(A), Disagree(D) and Neutral(N) were used. A=3, D=1, N=0

-**Ethical considerations**. All data was collected for academic purpose and would be handled with confidentiality.

**4.1. Data presentation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **variables** | **Agree %** | **Disagree %** | **Neutral %** | **Total %** |
| **There is effect of income level on price variations** |   2800 70 | 1000 25 | 200 5 | 4000 100 |
| **There is impact of market forces on price variation** |  3000 75 | 1000 25 | 0 0 | 4000 100 |
| **There is effect of consumer preference on price changes** |  2000 50 |  1200 30 | 800 20 | 4000 100 |
| **There is impact of inflation on price changes** |  2800 70 |  600 15 | 600 15 | 4000 100 |
| **Total**  |  **4000 100** |  **4000 100**  |  **4000 100** | **4000 100** |

**Source: Questionnaire,2024.**

The data presented above shows the collection of data from respondents through questionnaires. Closed ended questionnaires were used where by respondents make choices on the alternatives on the questionnaires.

The demographic data is important but it was voluntarily omitted in the presentation. We observe that all four variables were considered in the questionnaire. Our intention was clear to investigate the causes of prices changes in coco-yams in the urban markets of Fako Division.

In statement 1, there is an effect of income level of prices changes of cocoa-yams, we had three response scale. Out of 4000 respondents, 2800 agree to the statement, 1000 respondents disagreed and 200 of them were neutral. This gives 70%, 25% and 5% in respective responses. The majority of the respondents agreed to the statement that income level has effect on price changes of coco-yams in the markets. Unlikely, only 1000 disagreed. The 200 respondents who did not answer the question were also included in the presentation.

In statement 2, there is an impact of demand and supply on prices changes of cocoa-yams, we had three response scale. Out of 4000 respondents, 3000 agree to the statement, 1000 respondents disagreed and zero of them were neutral. This gives 75%, 25% and 0% in respective responses. The majority of the respondents agreed to the statement that market forces has significant impact on price changes of coco-yams in the markets. Unlikely, only 1000 disagreed. The zero respondents who did not answer the question were also included in the presentation.

In statement 3, there is an effect of consumer preferences of prices changes of cocoa-yams, we had three response scale. Out of 4000 respondents, 2000 agree to the statement, 1200 respondents disagreed and 800 of them were neutral. This gives 50%, 30% and 20% in respective responses. The majority of the respondents agreed to the statement that consumer preferences has effect on price changes of coco-yams in the markets. Unlikely, only 1200 disagreed. The 800 respondents who did not answer the question were also included in the presentation.

In statement 4, there is an effect of inflation on prices changes of cocoa-yams, we had three response scale. Out of 4000 respondents, 2800 agree to the statement, 600 respondents disagreed and 600 of them were neutral. This gives 70%, 15% and 15% in respective responses. The majority of the respondents agreed to the statement that inflation has effect on price changes of coco-yams in the markets. Unlikely, only 600 disagreed. The 600 respondents who did not answer the question were also included in the presentation.

**4.2. Testing of hypothesis**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  **Model**  | **Unstd coef(B)** | **Std Error** | **Std coef(B)** |  **t-test** |  **sig** |
| **P constant** | -21.234 | -82.901 |  |  0.1 |  0.05 |
|  **Y** | -7.09 | 0.752 | 0.552 | 0.156 |  0.047 |
|  **MF** | 0.56 | 5.678 | 0.367 | 0.148 | 0.050 |
|  **CP** | 0.47 | 11.23 | 0.566 | 0.144 | 0.046 |
|  **I** | 0.567 | 0.809 | 0.235 | 0.156 | 0.048 |
|  |  |  |  |  |  |

 **Source: online Pearson calculator,2024**

The alpha coefficient was 0.05 significant level. This means that the data must have a significant of 0.04 and above to be significant. Below 0.04 test of significant is considered insignificant.

The dependent variable(price) is constant at t-test of 0.1 and alpha coefficient of 0.05. This means that the independent variable is considered significant when it is closer to 0.05. above 0.05 is considered insignificant as well.

The data above shows that income level has a t-test of 0.156 and a significant level of 0.047 meaning that income level has significant effect on the price changes of coco-yams in the urban market of Cameroon.

The data above shows that market forces has a t-test of 0.148 and a significant level of 0.050 meaning that market forces has significant effect on the price changes of coco-yams in the urban market of Cameroon.

The data above shows that consumer preferences has a t-test of 0.144 and a significant level of 0.046 meaning that consumer preferences has significant effect on the price changes of coco-yams in the urban market of Cameroon.

The data above shows that inflation has a t-test of 0.156 and a significant level of 0.048 meaning that inflation has significant effect on the price changes of coco-yams in the urban market of Cameroon.

**4.3. Discussion of findings**

The hypothesis tested shows that the independent variables such as income level, market forces of demand and supply, consumer preferences and inflation have significant effects on the price changes of coco-yams in the urban markets of Fako Division.

Just as Ahmed(2004), noted that price changes in Ugandan food market has considerably being affected by income changes, changes in consumer preferences and buying behavior and inflation. However, his research did not find market forces having significance effects on price changes of agro-food stuff in Uganda. Amokere(2009), investigated the effects of pricing variations of food supply and found that changes in income has significant effect on consumer buying behavior and demand for coco-yam food in the market. Other factors include food policies, farmers’ motivation and training, storage system and medical and cargo insurance. These factors have proven to have changed prices for cocoa-yams in Africa and Cameroon in particular.

**5.1. conclusion**

This research has been carried out with the main objective to investigate the causes of price changes for cocoa-yams in the major urban markets of Fako Division. Four specific variables were considered. These variables are; change in income, consumer preferences, demand and supply and inflation. This research collected data from primary methods and analyzed them using multiple regression and the use of alpha coefficient to test significant levels. Therefore, it is concluded that the independent variables have significant effects on price changes for cocoa-yams in the major urban markets of Fako Division of Cameroon.

**5.2. Recommendations**

Haven concluded that income changes, inflation, consumer preference, market forces have significant effects on price changes for cocoa-yams in the urban areas of Fako Division, it is essential to make these recommendations. These recommendations are made to improve cocoa-yam production, mitigating cocoa-yam risks in the form of proper farm management, cocoa-yam pesticide control, farm weeding, and farming insurance.

Since most of these factors are spread through economic, marketing, and human resource issues, the recommendations would cover these areas.

Cocoa-yam cultivation requires proper management in the areas of disease treatment, pesticide administration and control, regular farm weeding and supervision.

Risk mitigation is very important to boost high productivity in the sector. Risk control must be regular due to the high risk involved in cocoa-yam production especially in the dry season.

Farming agencies should regularly comply with farm and marketing policies in the areas of food price regulations in order to avoid price increase. Private farmers could sell directly to government agencies. This agencies subsidies costs which lead to low prices.

Forecasting future market trends for cocoa-yams and adjusting to supply.

Applying for agricultural credits to mitigate high cost of production. Using modern technology for cocoa-yam production to increase supply and reducing waste of resources.

Application of enterprise resources in cocoa-yam production in well-defined agencies. This reduces risks, faster production, reducing cost in production and supply chain.

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**Suggestions for further Research**

1.Marketing challenges for tomatoes and cabbage production in the southwest region of Cameroon. Reviewingpolicies, ensuring sustainability and security in the agro-food sector.

2.Mitigating poor performances for farmers in the banana sector of the Cameroon development cooperation.

3.Developing marketing techniques for soya beans in the urban markets of littoral region of Cameroon.