EFFECTS OF MARKETING STRATEGIES ON PRODUCT LINE MARGINS AMONG THE CASSAVA MICROENTERPRISES IN MIGORI COUNTY, KENYA

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A Thesis Submitted to the Graduate School in Partial Fulfillment of the Requirements for the Master of Science Degree in Agri-Enterprise Development of Egerton University

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DECLARATION AND RECOMMENDATION

Declaration

This thesis is my original work and has not been presented in this university or any other for the award of a degree.

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Recommendation

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DEDICATION

I dedicate this Thesis to my beloved wife Caren Chepngetich, son Godwin Kiptoo, siblings, parents Priscilla Cherono Maritim and the late Joseph Kipngenoh Maritim.

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ABSTRACT

Cassava (*Manihot esculenta* L.) micropreneurs ought to be strategic in marketing their products for relatively better marketing margins. Cassava production, utilisation, and marketing in Kenya is low compared with the other starchy food crops mainly maize, potatoes, and wheat. This is due to the presence of cyanide content in cassava which is lethal, when roots are mishandled, leading to avoidance of the crop by potential consumers. This has affected its marketing and consumption in the country. However, cassava microenterprises have begun to co mmercialize it due to support from the development partners in the country. Therefore, to achieve the purpose of this study, three objectives were addressed: To identify product lines and the marketing strategies; to determine relationships between marketing strategies and the product lines; to establish the determinants of choice and the effects of marketing strategies on product line margins among cassava microenterprises. Theories of Market Orientation and Strategic Management guided the study. This study was conducted in Migori County (Kuria West, Suna East, Suna West, and Uriri Sub-counties) in Kenya using a semi-structured questionnaire, administered to a sample of 267 cassava microenterprises, which was obtained using simple random sampling technique. The data was analysed using descriptive and inferential statistics. Results showed that the main cassava product lines prevailing in the area of study included fermented dried pellets (63.99%), raw tubers (19.94%), and unfermented dried cassava pellets (15.79%). Other cassava-based product (local brew) was involved the least (0.28%). The most used marketing strategies respectively were the pricing, product promotion, value addition and the formation of marketing alliance mutually inclusive. Multivariate Probit results showed that age, gender, years of schooling, household size, major occupation (trading) marketing experience, seed money, entrepreneurial training, marketing information, market distance, group membership, farm gate and open-air marketing outlets significantly ($p<0.05$) influenced the choice of marketing strategies. Such choices led to the following marketing margins per product lines as follows: Fermented pellets (KSh. 50), unfermented pellets (Ksh. 45), raw tubers (KSh. 30), and other cassava-based products as (Ksh. 15). The study recommends that cassava microenterprises to combine marketing strategies (Pricing, promotion and product improvement) that give maximum marketing margins on highly demanded cassava products (fermented and and unfermented pellets) hence better performance. The findings of the study would be useful to scholars, agripreneurs, development partners, and governments (National and the County) in poli cy-making and implementation towards promotion of the underutilised and potential food and cash crops in the country.

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LIST OF ABBREVIATIONS AND ACRONYMS

CBSD	Cassava Brown Streak Disease
CIDP	County Integrated Development Plan
CME	Cassava Microenterprise
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GOK	Government of Kenya
IFAD	International Fund for Agricultural Development
KNBS	Kenya National Bureau of Statistics
KSh.	Kenya Shillings
MOA	Ministry of Agriculture, (2007)
MOALF	Ministry of Agriculture, Livestock and Fisheries, (2015)
NACOSTI	National Commission for Science, Technology and Innovation
Pers.comm	Personal Communication
PVC	Polyvinyl Chloride
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
SCAO	Sub-county Agricultural Officer
SML	Simulated Maximum Likelihood
SMO	Strategic Management Orientation
SPSS	Statistical Package for the Social Science
SSA	Sub-Saharan Africa
TAGDev	Transforming African Agricultural Universities to Meaningfully Contribute to Africa's Growth and Development through Science, Technology, Innovation and Business
VIF	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Cassava crop, *Manihot esculenta* L. (Plate 1.1), is a 21st Century crop of interest to many development partners, agencies and scholars due to its sustainable economic importance to rural livelihoods. As a tropical crop, it originated from the Amazon of South America alongside with potato and sweet potato, which together were known as the three major tubers of the World. It was introduced to African continent by the Portuguese traders; during the 16th and 17th centuries near the mouth of River Congo. From there it diffused through the uptake by Africans to many parts of Sub-Saharan Africa (SSA) over a period of two to three hundred years. African Continent is the World's leader in cassava production: Nigeria being the global largest producer of the crop. It has an annual output of 45 million Metric Tons (Audu Ogbeh, *pers.comm*. 2016), Minister of Agriculture and Rural Development in Nigeria. African Nations remain the most dependent on roots and tuber crops like cassava, sweet potatoes, and yams. In the past decade, it was projected that by the year 2020, over 60% of global cassava production will be in SSA. The region will be recording high and fast population growth but slow economic growth (FAO & IFAD, 2005).

Plate 1.1: Cassava crops

Source: Survey 2019

Production and marketing of cassava in Kenya is highly done in Nyanza, Western and Coastal regions with few farmers in Eastern and Rift Valley regions. It is estimated that 75-80% of Kenya's population are found in rural areas and directly and indirectly engage and benefit from agriculture. Agriculture is the major contributor of the country's economy by 27% on Gross Domestic Products (MOALF, 2015). In areas producing cassava, both smallholder cassava agripreneurs and vendors mutually process and sell products as cassava microenterprises. As a strategic development, the Government of Kenya embarked on promotion of the neglected and underutilised crops such as cassava, in order to enhance the food base for the resource-poor people and increase their incomes to mitigate poverty among rural communities (FAO, 2010; Migori CIDP, 2018; MOA, 2007).

Smallholder agri-enterprising in Kenya is currently gaining more attention and support from various stakeholders across the country. The main concern is how they can improve their activities and performance (profitability). This has called for application of different marketing strategies to enable them achieve their agri-entrepreneurial goals. Agri-enterprising is categorized as micro, small, and large-scale enterprises, which are formed to address specific niches among the agricultural value chains. Small and micro-enterprises in Kenya are increasingly mushrooming, taking their core businesses beyond the normality towards the achievement of the blue print economic strategies of the country currently termed as the *Big 4 Agenda* of 2018. To ignite further development in Kenya, smallholder agripreneurs have been encouraged to turn their focus towards the orphaned crops with high potential to curb the threatening livelihood challenges such as adverse climate changes, hunger, and unemployment.

Cassava is a crop of strategic importance in Kenya, with the ability to withstand adverse climatic conditions (Lagat & Maina, 2017). This is, besides its abilities to improve the country's economy through relatively lower production costs compared to other starchy staple food crops such as maize, Irish potatoes and rice. Thus, cassava is regarded as a highly attractive and 'poverty aversion' crop in Kenya. As a strategic development, the Government of Kenya has embarked on promoting cassava as one of neglected and underutilised crops, in order to enhance the food base for the resource-poor people; and increase their incomes to mitigate poverty among the rural communities (Migori CIDP, 2018; MOA, 2007).

Strategic marketing among the cassava microenterprises is something inherent to their actual performance; as they must seek continuous growth with the aim of maintaining their sales and

profit levels, for them to survive commercially. Commercialisation among them helps them to alleviate poverty in their households (Collier & Dercon, 2014; Lawal et al. 2014). An enterprise's product positioning and services delivery depend on the performance and implementation of intellectual and good strategic plans. Thus, marketing has strong connection with financial performance (Jaakkola et al., 2006). Sales volume has direct effects on the performance of a microenterprise hence the key concern is how they can expand their value chain activities for profits. An enterprise must go for a continuous growth with an aim of increasing or simply maintaining their sales and profits to guarantee their survival in the market (Rosario & Quer, 2006). Marketing strategies that cassava microenterprises are using in the County are not limited to pricing strategy, product (sales) promotions, improved products (commonly known as value addition) and formation of strategic marketing alliances.

Marketing strategy is further narrowed into market penetration strategy, which refers to efforts to increase the sales of an enterprise (market share) through the application of ideal marketing strategies that include pricing, product promotion, value addition and marketing partnership. Market penetration strategy seeks to increase the sales of present products and services in present markets (Mwiti, 2009). In cassava microenterprises, market penetration is both a measure and a strategy. As a measure, it helps them quantify market percentage captured by their products. Moreover, as a strategy leads into capturing large market shares quickly relative to otherwise and it transforms into growth in the microenterprises having their main goal of making profits achieved. However, there are other parameters used in measuring growth of agricultural enterprises including use of revenue collected, net profits and other financial data. Addition to these parameters, the study intended to capture growth of cassava microenterprises in Migori County in terms of sales turn over, number of employees engaged in, success of a product line, physical expansion of the enterprises and eventually increase in the market shares in cassava industry.

According to Jaakkola et al. (2006), marketing strategy is a plan used by any enterprise in business to achieve its marketing goals by focusing on a particular market segment. This leads to the achievement of its general objective of making profits. Potential value-added cassava products that could be traded on include cassava flours, chips, crisps, animal feeds, boiled and roasted tubers,

snacks, and chopped and dried cassava pellets. Some microenterprises might decide to sell tubers without any value addition. This product diversification is one of the market penetration strategies used by cassava microenterprises in commercialising the crop since it prompts the use of other marketing strategies that yield maximum profits to cassava microenterprises. For example pricing, promotion and marketing alliances that eases long distant marketing for the products.

Modern farmers (agripreneurs) are expected to offer high-quality commodities fetching high prices for better farming returns. This however are faced with both strategic and operational decisions, which has resulted in an overlap between strategic farming and marketing. Cassava agripreneurs in Migori County have realised the increasing importance for them to develop and apply marketing strategies. This would enable them commercialise cassava farming and compete effectively as the cassava industry in Kenya presents huge market opportunities which resulted from the 2018 food policy on processed flour fortification.

Following to the 2018 food policy, food security and poverty alleviation are part of the key and most important development milestones popularly termed as the "*Big 4 Agenda*". This is a blue print and a turnaround strategy, which the country ought to address as an avenue of success in achieving vision 2030 and African Agenda 2063. With cassava commercialisation, households will be generating incomes that contribute in improving their commodity purchasing capacities. Cassava microenterprises in Migori County have been obliged to look for a continuous growth with the aim of increasing their sales and profits levels to guarantee their survivals. Marketing and growth strategies are common areas that cassava microenterprises have to consider for their excellent performance.

1.2 Statement of the problem

Marketing is one of the key activities in any enterprising entity; thus, in making effective marketing decisions to sell and outperform competitors, each enterprise requires good knowledge in strategic marketing. One of the challenges faced by cassava agripreneurs in Migori County while handling commodities is failure to use appropriate marketing strategies that would better their market positions and margins. Appropriate marketing strategies helps to offset the poor positioning of cassava products in the markets while giving them comparative advantages through relatively

higher returns for the sustainable livelihoods on cassava. However, there is limited information about marketing strategies and marketing margins to cassava product lines hence their economic significance not well known. There is need to identify and improve on potential and profitable marketing strategies and product lines for the better performance amongst cassava microenterprises. Without such information, cassava microenterprises will remain unattractive to both present and future generations. This study sought to bridge the gaps through the establishment of the effects of marketing strategies on the margins of product lines among cassava microenterprises in Migori County. These justifications are useful during the identification of investment niches towards sustainable growth among cassava enterprises in Migori County, Kenya.

1.3 Objectives of the study

This Study was carried out under the guidance of both the general and specific objectives formulated.

1.3.1 General objective

To contribute to improved and sustainable growth in cassava product line margins through employment of effective and efficient marketing strategies among the cassava microenterprises in Migori County, Kenya.

1.3.2 Specific objectives

i. To identify marketing strategies and product lines involved in amongst the cassava microenterprises in Migori County, Kenya.
ii. To determine relationships between marketing strategies and product lines involved in amongst the cassava microenterprises in Migori County, Kenya.
iii. To establish the determinants of choice and the effects of marketing strategies on the product line margins among cassava microenterprises in Migori County, Kenya.

1.3.3 Research hypotheses and questions

i. What are the marketing strategies and product lines involved in amongst the cassava microenterprises in Migori County, Kenya?

ii. What are the relationships between marketing strategies and product lines involved in amongst the cassava microenterprises in Migori County, Kenya?

iii. What are the determinants of choice and effects of marketing strategies on the product line margins among the cassava microenterprises in Migori County, Kenya?

1.4 Justification of the study

Cassava is an important multipurpose crop in Kenya though its growth has remained unsupported ever in the hands of smallholder farmers whom have been facing myriads of challenges since 1990s. Its tubers are very rich in starch: Suitable for industrial use though its production capacity remains low. Access and use of commercial channels remains important to microenterprises in conversion of their subsistence farming into agribusiness ventures. This potentially can improve their livelihoods through the positive margins obtained. This would be accomplished through employing appropriate marketing strategies that ease disposal of cassava products. These enable cassava microenterprises fetch better prices from the markets which translates to better margins; thus, contributing to improved livelihoods towards the achievement of the *Big 4 Agenda* of Kenya, Vision 2030 and the Africa's Agenda 2063. The findings of this Study are resourceful to potential and current cassava agripreneurs, development partners, policy makers as well as other scholars in further knowledge development.

1.5 Scope and limitations of the study

Marketing strategies, product lines and marketing margins obtained from different product lines were the key interests to the study. Household characteristics, marketing, institutional and technical factors were empirically identified and analysed as factors that determine the choice of marketing strategies among cassava microenterprises in Migori County. The study was conducted during the month of August 2019 in four Sub-counties of Migori County with the relatively high trade on cassava: Kuria West, Suna East, Suna West, and Uriri. They are centrally located in the County and bordering each other hence were selected to avoid information mismatch, as information tends to change with distance. This highly helped in minimizing biasness in the study.

Only cassava microenterprises with potential to trade 100 kilograms and above of cassava products annually were considered of significance to the study. Finally, the study engaged only 267 cassava

microenterprises proportionally drawn from the four areas of study based on geographical sizes of Sub-counties respectively. These were influenced by the limitations on human resources (workforce), funds and timeframe available for the study. Selected cassava agripreneurs, cassava microenterprises coordinator and Ward agribusiness officers from respective areas were the key informants and leaders during the study.

The great challenge encountered was the language barrier in the area of the study. Some of the respondents preferred speaking their local language to either English or Swahili. To overcome the challenge, local coordinators and enumerators were engaged for the interviews and interpretations.

1.6 Operational definition of terms

Big 4 Agenda – refers to Kenya's government blue print aimed achievement of affordable healthcare, affordable housing, food security and manufacturing pillars by 2022.

Cassava microenterprise - in this study refers to both smallholder cassava farmer and a crops vendor trading on one or more cassava products for their livelihood. Also referred to as cassava agripreneur.

Commercialisation – According to this study, it is the attribute of increased cassava outputs and products diversification as a result of value addition, which enable microenterprises to participate in high-value markets.

Household – In this study refers to a group of people living together within the same farm with their one head person making decisions for them. They jointly participate in agripreneurship and consumption of the outputs.

Market outlet – in this study refers to a given or place where cassava microenterprises sell off their products. Also operationalised as market place.

Marketing – in this study refers to all activities involving cassava microenterprises with an aim to promote and sell cassava products.

Marketing channel – in this study refers to cassava microenterprises (marketers) and their activities enabling them publicise and sell cassava products to consumers (end users).

Marketing margins – in this study refers to the difference in prices paid by two marketing participants for cassava products. Participants could be at different or same levels. Also refers to product line margins.

Marketing strategy – in this study refers to the overall timely marketing arrangements and planning by cassava microenterprises to have their products reach consumers (market). In addition, it is a goal of increasing sales and achieving a sustainable and competitive advantage.

Product line – in this study refers to different consumable form of cassava products that marketed by cassava microenterprises.

Product line margin – in this study refers to the difference between the price given by the consumer and that received by cassava microenterprise for a given cassava product. The study also refers it as marketing margins: performance indicator for cassava microenterprise.

Seed Money – In this study refers to the money used by an agripreneur to start up and support cassava micro enterprise. Also referred to as credit or cash capital.

CHAPTER TWO
LITERATURE REVIEW

This chapter highlights a review of literature related to the study. It includes theoretical and empirical literature, theoretical framework of the study. The Chapter concludes with a conceptual framework.

2.1 Cassava production, marketing and utilisation levels in Kenya

Cassava is an important staple food crop for marginal and semi-arid areas of Kenya with high potential to be a cash crop. This gives it a higher edge of consideration by the government especially to marginalised arid and semi-arid areas as it acts as an equalisation factor in the country. Semi-arid agro-ecological zones of Kenya, which constitute 80% of the country's land mass, are supporting 95% of the disadvantaged population struggling to meet their basic needs (Westby, 2008). This makes cassava an ideal crop to such areas. The scale of cassava production acreage has risen over a period of time to approximately over 61,573Ha with an annual estimated production outputs between 323,389 tons and 858,461 Tons (FAO, 2010); with an average yield of 7-10 Ton/Ha against a potential of 35-50 Ton/Ha (MOALF, 2015). Cassava is a tuber crop and the most utilised parts are its roots, which have potential for the provision of wide array of food products. Though relatively not grown commercially grown, it is the best-known industrial crop in alcohol production due to its high starch content per unit compared with other starchy crops (Otieno, 2012).

In Kenya, the campaign for the development and marketing of high quality cassava products has gained tremendous support from different agencies, with the lead of *Self Help Africa Project*, as a way of transforming household livelihoods among potential smallholder agripreneurs. Cassava products diversification poses high significance towards economic empowerment among the smallholder farmers who in turn become agripreneurs transacting on value-added products (Odunaya, 2013). It is one of the elements in cassava commercialisation among the cassava-growing households. In spite of crop production and marketing efforts and mobilisation, most of the cassava microenterprises are still producing on small parcels of lands as a side-grown crop, with little or no value addition on tubers during marketing and consumption. However, cassava outputs value addition would help in creating more marketing niches, making it more attractive

for microenterprises to invest in and consequently improving livelihoods through relatively increased incomes (Ogendo et al., 2016).

In Migori County, cassava crops are mainly grown alongside other crops. The County is unique: Characterised by an inland equatorial climate modified by the effects of altitude, relief and the influence of large water body, which is Lake Victoria. Most parts of the County have relatively 'acidic' parent rock, which resulted to granitic soil covers in most farms found there. The soil cover favours the growth of cassava since it does well in well-drained soils. Moreover, the County undulates towards Lake Victoria with average diurnal temperatures of up to 31°C, which is ideal for the growth of cassava. The main cash crops within the County are tobacco, sugarcane, potatoes and maize. In addition, maize, sorghum, cassava, finger millet and sweet potatoes are the main sources for food (Migori CIDP, 2018).

In the last decade, Kenyan government has been on the mark-time towards supporting the growing, processing, marketing and consumption of cassava products. With the imminent government support, a National Policy on cassava industry was developed; to contribute in supporting the farming of cassava among the smallholder farmers in potential areas (MOA, 2007). The key matters that the Policy aimed to address were those pertaining production, marketing, regulation and promotion of the cassava industry in Kenya. In 2018, the government made a food and industrial policy that effected cassava policy in that, all flour millers will be mandated incorporate cassava flour in their products as fortified flour. This opened up large market for cassava because of the huge demand created hence cassava microenterprises are on the advantageous edge as the Policy outcomes.

2.2 Concept of market participation, penetration and growth strategy for cassava microenterprises

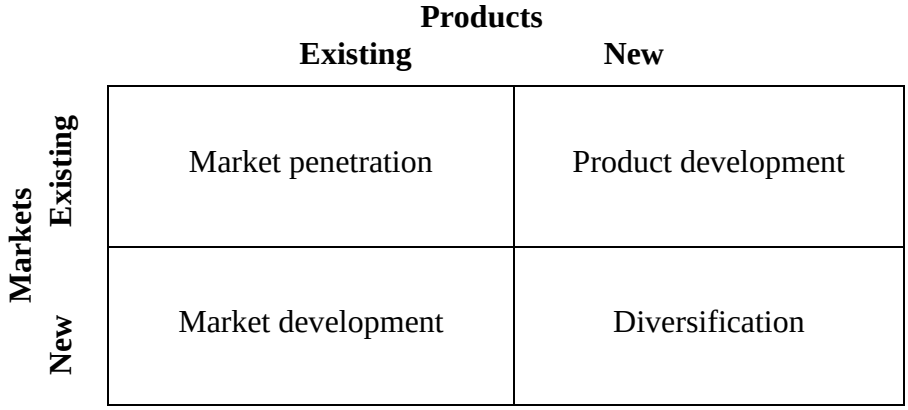
Cassava microenterprises in Migori County have a wide range of strategies to adopt which best suit them depending on their growth levels. Following dynamism in marketing, the Product-Market Growth Matrix was developed by Igor Ansoff to help enterprises grow by using new and existing products in new or otherwise existing markets (Ansoff, 1965). The matrix has four main growth strategies in which an enterprise can choose from; and it includes the following: market

development, product development, market penetration and finally product diversification. Among the four growth strategies, market penetration is the least risky though it has some disadvantages.

Rosario and Quer (2006) explained that an enterprise must go for a continuous growth with an aim of increasing or simply maintaining their sales and profits to guarantee their survival in the market. However, due to the features of the current competitive marketing environment, most of the agricultural microenterprises find it difficult to attain the required growth rates. Some specific environments could not render the possibility of growth in the product-market contexts difficult, forcing those operating in those markets to opt for diversification strategies through activities that see them in different business directions as their growth strategies. Rosario and Quer (2006) further categorised broadly the corporate growth strategies as those involving diversification, vertical integration (forward or backward), and finally internationalisation.

Further disaggregation of diversification to greater extent results into market penetration, forward vertical integration, backward vertical integration, horizontal diversification, related diversification, unrelated diversification and eventually internationalisation (Rosario & Quer, 2006). In simplification and understanding growth strategies of an enterprise, Ansoff (1965), developed a matrix that matches the enterprises' potential and present products and the consumers (markets). Ansoff developed four possible combinations based on existing and new products and in existing markets and new markets as ways considered by cassava agripreneurs for their growth in market shares and profits (Table 2.1).

Table 2.1: Product-Market Opportunity Matrix



Source: Adopted from Ansoff 1965

2.2.1 Market penetration

The study had interest in market penetration strategy among cassava microenterprises of Migori County. Market penetration is normally used by enterprises operating in existing market using existing products with the aim to increase their market share consumptions for their products translating to increased market share in their industry. It is the least risky growth strategy as it utilise existing resources of the enterprise. Ansoff (1965) ascertained that in a growing market, maintaining market share simply will result in growth, and there may exist opportunities to increase market share if competitors reach capacity limits. However, market penetration has limits, and once the market approaches saturation, another strategy ought to be employed if a microenterprise is to continually grow.

2.2.2 Market development

According to Ansoff (1965), market development options include the pursuit of additional market segments or expansion into new geographical regions. Pursuance of new markets for the product might be a good strategy if an enterprise's core competencies are related more than to specific product than to its experience with a specific market segment. Market development strategy has more risks than a market penetration strategy.

2.2.3 Product development

Strategy of product development might be appropriate if an enterprise's strengths are related to its specific customers rather than to the specific product itself. Cassava microenterprises can leverage

their strengths by developing new products targeted to existing customers. Similar to the case of new market development, new product development carries more risks than simply to increase market share (Ansoff, 1965).

2.2.4 Market diversification

Relative to the three growth strategies discussed above, diversification is the most risky growth strategy since it requires both product and market developments and might be outside the core competencies of an enterprise. Some of the previous scholars have referred to this quadrant as the "suicidal cell" in their studies. However, diversification might be a reasonable choice if the high risk is compensated by the chance of a high rate of returns. Besides, there would be a potential to gain a foothold in an attractive industry and the overall reduction of risks in a business portfolio (Ansoff, 1965). This will give cassava microenterprises leeway to market various products in different markets in the country and other regions.

2.3 Value addition and its influence on marketing by cassava microenterprises (Output commercialisation)

Value addition of cassava through various techniques results into diversified products, which is ultimately important in enhancing market participation (Onya et al., 2016). Products diversification offers better marketing opportunities to cassava microenterprises. The achievement of this strategy is through the processing of various value-added cassava products. Value addition is a strategy that has the potential capability of transforming an unprofitable enterprise into a profitable venture (Fleming, 2005), which promotes commercialisation of cassava crop. This success is largely depending on better linkages among producers, processors, and consumers through capacity building in marketing and enterprise development; and improved policy strategies that would encourage and facilitate the development and transfer of innovations in cassava industry (Migori CIDP, 2018; MOA, 2007).

Commercialisation of agriculture has potentials in alleviating poverty levels among the smallholder agripreneurs. Reducing poverty among them through commercialising agricultural produce, they must consider adding value their produce and sell to earn income (Ebata & Hernandez, 2017). Limited scale of production and perishability of cassava tubers have potentially

negative influence on capabilities and opportunities to value addition and marketing respectively among cassava-growing microenterprises. The bulk of cassava products are marketed with little value addition mainly within the production areas (Munga et al., 2012). With the advancement of the technology, cassava value addition is inevitable and it will offer a wide array of cassava products hence expanding its markets and marketability. Cassava crop could become a cash crop through its market expansion, besides being a food security crop for the rural and urban communities as its growth has been increasing and uninterrupted for the last two decades (FAO, 2018).

Plates 2.1: Raw tubers **2.2: Boiled tubers** **2.3: Packaged cassava flour**

Sources: *https://depositphotos.com and The Exchange Company- exchange.co.tz*

Martey et al. (2012) affirmed that marketing opportunities are there for cassava products in Ghana and made recommendation on the adoption of strategies such as cassava commercialisation, which can both enhance market competiveness and integrate the smallholder farmers into market participation. It is the determining factor and a gateway to market participation by cassava microenterprises as it encourages product diversification. Cassava tubers are very perishable and of low value when sold in raw forms (Plate 2.1). Majority of the smallholder farmers in SSA do not engage adequately in value addition. Commercialisation of agricultural activities by microenterprises is an important avenue to economic growth and stabilisation through income generation to the rural households (Dannson et al., 2004).

According to MOA (2013), there are significant factors that would promote cassava commercialisation in Kenya. Urban consumers are now turning onto the underutilised crops as their safe and favourite foods; trying to escape from lifestyle diseases resulting from eating chunk foods. High yielding varieties that adapt suitably to the prevailing climate of a given area favours

cassava production hence high productivity. This would results to surplus produce that will be processed in the readily established cottages. They are complemented by the availability of the well-trained extension officers who in turn offer trainings to smallholder farmers (MOA, 2013). This will contribute to increased households wealthy among the cassava-products marketers (cassava microenterprises). Value addition leads to the transformation of raw cassava tubers into various, attractive and usable products that can sell at a higher price relative to otherwise (Onya et al., 2016). Since cassava is among the highly perishable crops, there is a need to arrest its perishability to enable long distance marketing and diverse utilisation as opposed to immediate consumption mainly as boiled tubers (Plate 2.2) within the areas of production by the households. Cassava flour is notably the most widely used product from cassava tubers (Plate 2.3).

Market participation by microenterprises is influenced by the bargaining power of an agripreneur. Bargaining power being the ability to access and control resources, exercise choice, influence and power over others, based on individual interests. The assumption is that they bargain and negotiate or even conflict over different outcomes including consumption, production, labour allocation and asset ownership (Doss, 2011). There is a need to improve their capacities in marketing of cassava crop, which is currently unattractive in the market.

2.4 Aspects of market penetration and growth factors in cassava microenterprises

Market penetration among cassava microenterprises involves selling more of their products and services to their target customers hence a growth strategy (Gerald & Elisifa, 2013). This presents them a great opportunity to increase both sales turnover and profits. In addition, market penetration sometimes used as a measure in knowing whether a given product introduced in the market is doing well or not. According to Mwiti (2009), there are four key objectives which market penetration tries to achieve in every enterprise as a business. They include the following: Securing dominance of growth markets; increasing and maintenance of market share for the current products achieved through a combination of strategies including competitive pricing, advertising, sales promotion and strengthening of sales personnel. Restructuring a mature market through driving out competitors is the third objective. An enterprise will have to launch aggressive promotional campaigns supported by pricing strategy solely designed to make markets unattractive for competitors. Lastly among the four key objectives is the increment in product usage by the existing

customers. This is accomplished through the introduction of loyalty schemes among them. In market penetration strategy, microenterprises have to operate "*not as usual*" for them to be successful.

Growth factors that are most likely to influence growth of cassava microenterprises are mainly experienced agripreneurs, skills enhancement and entrepreneurial capitals (social, human and financial capitals). Their contributions into cassava microenterprise performance are measured in terms of market orientation and innovation orientations. Cassava agripreneurs are the leaders in their microenterprises. According to Asikhia (2010), there was an observation that in determining the relationship between strategic managerial orientation (SMO) and performance of banks, revelation was that SMO relates positively and significantly with bank performance variables. Marketing competence has significant influence on business performance. Extensive and technical skills guide cassava agripreneurs in designing strategic directive that helps deliver better and quality products to the customers and maintain competitive advantage. This study contributes into knowledge development by identifying respective marketing strategies appropriate to the cassava microenterprises and researchers can use to better their enterprise performance and in further research respectively.

Heads of cassava microenterprises (cassava agripreneurs) should be keen in provision of good performance, which requires consideration of most crucial strategic marketing activities. Verhees et al. (2011) revealed the consequence of entrepreneurial productivity and 'market orientation on business performance' that there is an important connection between market orientation and 'entrepreneurial productivity' in achieving high business performance. Therefore, owners of cassava microenterprises have to know that 'they are in businesses for their microenterprises to excel in capturing new markets in addition to satisfying existing markets translating to their growth. According to the study by Tang et al. (2007) about marketing strategy and business performance of small firms in China, 'the long term differentiation marketing strategy' has positive effect on small firm's business performance. With market and innovation orientation, cassava microenterprises will have to offer a wide array of cassava products attractive to the existing and potential customers. This will lead to relatively high sales turnover equated to growth of their microenterprises.

As an external factor, government through the 2018 food policy contributes to the growth of cassava microenterprises through encouragement of tubers value addition and the marketing. Cassava value addition would help create more markets, making it more attractive for microenterprises to invest in growing and marketing the crop (MOA, 2007). Value chain development has high potential to help microenterprises upgrade their production, access secured markets while increasing their eligibility to entering into formal market contracts. Such contracts are platforms used to access seed money, share information among partners, thus helping resource-poor agripreneurs access information better than those operating in spot markets. Besides, contracts can consolidate production while minimizing transaction costs, improve bargaining power of microenterprises and contribute to farm produce value-addition hence accessing high-value markets resulting to relatively high profits (Baloyi, 2010).

2.5 Linkage between Cassava-Microenterprises Marketing Strategies and Margins

Market penetration strategies involve increasing sales of present products and services in present market. Cassava microenterprises apply some of the strategies to push their products into the market since cassava industry is now growing because of 2018 food policy. These microenterprises are ought to attract new consumers of cassava products as well as conversion of non-users to consume their products. Aggressive promotional campaigns will be inevitable to increase awareness on cassava products in the country. This leads to increased consumption of cassava products translating into increased sales turnover and revenues among cassava microenterprises. Their marketing margin is one of the aspects that reflects their performance in cassava industry.

Marketing strategies among cassava microenterprises are aimed to increase market shares thus improved microenterprise performance (growth in sales and increased profits). According to Jaakkola et al. (2006), marketing strategy is a plan used by an enterprise in achieving its marketing goals by focusing on a particular market segment. This contributes to achievement of its general objective of making profits. Pricing strategy has a significant relationship with cassava microenterprise performance in Kenya and in line with the study of Owomoyela et al. (2013). Price of a product contributes largely and significantly to its marketability. Since cassava products are not relatively common in the Kenyan markets, pricing will be inelastic as the unit sales will not

change in relation to change in prices offered in the market (Jones, 2007). However, cassava microenterprises in Kenya rely relatively more on this strategy to increase their market shares (turnovers) and profits. This is largely influenced by the perfectly competitive markets they are operating in; where prices are set to suit the enterprise hence the need to employ the pricing strategy for the better performance.

Augmented promotion is another key strategy to cassava microenterprises, since the crop is one of the underutilised and less promoted compared with the other staple food crops in Kenya. Product promotion activities include but not limited to product display, advertising, customised selling schemes and decent packaging of cassava products to customers. These enable microenterprises to create products awareness among the potential consumers in the market leading to increment in their market turnovers. This is in line with the study by Kotler (2007) who contended that promotion is a critical factor in product marketing mixes consisting a blend of advertising, public relations, personal selling, sales promotion and direct marketing tools used in pursuing sales and marketing objectives of a given industry. Cassava microenterprises will have to use this strategy (promotion) heavily to gain product awareness from the public.

Packaging of purchased cassava products will also contributes to the increased uptake of cassava products among the consumers, as it is crucial in product marketing mix. According to the study by Sajuyigbe et al. (2013), packaging is the 'least expensive form of advertisement' and is of particular benefits at the points of sales since it is the last chance of the seller to convince a customer to purchase a product. The study further pointed out that packaging is one of the inevitable communication tools that influence buying behaviour and enhance business performance. Attractive and appealing packaging will lead to sales increment hence improved profits for the microenterprises.

To appeal to the consumers, cassava microenterprises will have to improve the quality of their products through value addition, which is key to marketing of cassava crop. Cassava agripreneurs are required to educate consumers on the importance of consuming cassava products, widen the distribution networks and finally change product designs (forms in which cassava can be consumed) to make them attractive and user friendly to consumers. Cassava value addition leads to product diversifications and the following are potential cassava products that could be marketed:

Cassava flours, chips, crisps, animal feeds, boiled and roasted tubers, snacks, and chopped and dried cassava pellets. This is however, some microenterprises specialises in selling tubers without any form of value addition. Product diversification (value addition) is one of the marketing strategies used by cassava microenterprises in commercialising the crop in Kenya. By so doing, there will be an increment in sales for a given product line which result from stimulation on consumers to purchase more of the product. This will translates to positively significant business performance as acknowledged by Owomoyela (2013) in a study on the impacts of marketing mix to the brewery businesses.

Cassava microenterprises also have an option of marketing the products through strategic alliances in pursuance of new and existing markets effectively. Convincing new potential customers to consume cassava products is relatively uneasy. However, gaining their wills of consuming cassava products, cassava microenterprises have to collaborate with other groceries as their marketing outlets (joint ventures) in which each partnering business will have equity position. This eases products marketing and movement among cassava microenterprises. Appropriate use of strategic marketing alliances as marketing channels for product distribution channels is one of the constructive marketing strategies to increase their sales turnovers.

The use of multiple marketing channels comprise the conventional marketing channels and modern channels such as online marketing, telemarketing, contracting supermarkets among other retailers and even selling during events such as trade fairs. Kotler and Armstrong (2006) operationalised distribution strategy as a set of interdependent organisations involved in availing a product for consumption by the consumers. Therefore, cassava microenterprises will choose effective and efficient channels that ease the access and consumption of cassava products to existing and potential consumers thus increase in sales powers resulting to high performance for the microenterprises.

Cassava microenterprises in Migori County potentially could use strategic marketing alternatives, which best suit them for better performance of their microenterprises. Achievement of this would be through application of appropriate marketing strategies such as price variation, product promotion, value addition and marketing through alliances among other suitable strategies (Migori

CIDP, 2018). Consequently, since the crop marketing is responsively picking up in the County, the study had objectives to determine the effects of marketing strategies on product line margins and factors influencing choice of marketing strategies by cassava microenterprises in Migori County, Kenya. Such factors influencing the choice of marketing strategies which in turn influence the product line margins were studied and insights drawn on which strategies are appropriate to marketers of a region (or regions) for better performance of enterprises through expansion on market shares (sales turnover) and profits among all the product lines engaged in.

2.6 Theoretical Framework

Market Orientation and Strategic Management Theories underpinned this study by describing behavioural production and marketing of cassava outputs by cassava microenterprises with their overall objective of making profits. Market orientation is a business culture in which an enterprise is committed to the continuous processing and offering superior products to customers. Cassava microenterprises are committed to offering high value products in their existing and potential consumers of their products. Market Orientation Theory is an approach to business prioritising identified needs and desires of consumers through offering products satisfying them. According to Narver and Slater (1990), market orientation approach could be explained using a triangular plane with three behavioural aspects: Customer, competitor orientations and inter-functional coordination given that the ultimate goal is to make profits. To achieve it, a microenterprise has to concentrate on provision of high-value products by focusing on their customers, competitors and its inter-functional coordination for them to increase their cassava turnovers hence sustainable marketing margins (Figure 2.1).

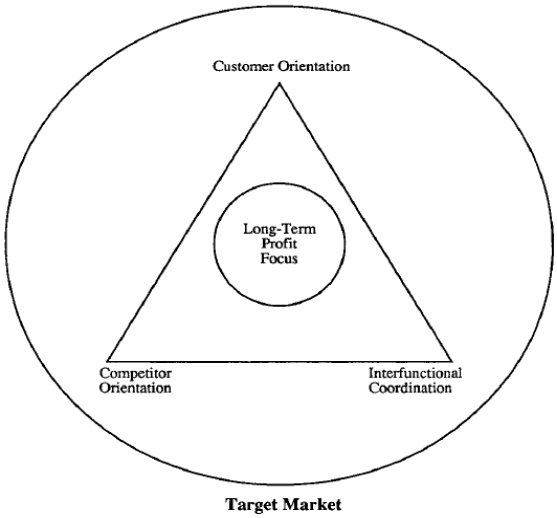


Figure 2.1: Market Orientation Theory plane
Source: Narver and Slater 1990:23

Strategic Management Theory supports objective of cassava microenterprises in order to make profits. According to Jofre (2011), profitability of an enterprise depends on having successful

business strategies. The Theory further argued that if the business strategy gives the enterprise its competitive edge, then there should be a clear reflection of adopted strategy in the market share. This basically emphasizes on profitability and market share increment. Norreklit and Mitchell (2007) argued that a satisfactory financial result could be first obtained by supplying a good product at low prices, satisfying needs of customers while gaining market share and awareness. Then, later reducing the levels of satisfaction by increasing prices. This strategy leads to increased market share through creation of loyalty in customers.

Achievement of improved performance in cassava microenterprises is a function of market share and market prospects. This implies that an increase in market share will lead to higher profits of the microenterprises. Marketing strategies normally entail planning to achieve a better performance than how competitors do. Therefore, cassava microenterprises are ought to employ this strategy to popularize consumption of cassava products for their gains.

2.7 Conceptual Framework

Marketing strategies by cassava microenterprises potentially increase market shares resulting to improved performance in terms of growth in sales volumes and profits. Growth in product turnovers and profits in microenterprises is explained by both endogenous and exogenous variables to it. These are independent variables, which interact and as a result, affect the growth of market shares and profits. Such variables are demographic, economic, market and Institutional factors. Together with the intervening variables, they favour or deter marketing strategies chosen by the cassava microenterprises.

Demographic and economic factors that are attributed to the cassava microenterprises include age, gender, years of schooling, household size and the marketing experience. Market and Institutional determinants include marketing outlets, marketing information, market prices, distance to the preferred markets, use of seed money, entrepreneurial trainings, entrepreneurial group membership and its existence period. Demographic, economic and market-institutional factors determined marketing strategies to be adopted by the head of cassava microenterprise. Age, gender, and years of schooling by the cassava agripreneur to the microenterprise are most likely to have an influence on marketing strategy decision. These variables are reinforced by the marketing experience and

the quantities of cassava products available to run a microenterprise. Household size is a factor that would determine the amount of cassava available to be marketed through production and consumption respectively (Opondo et al., 2017). On the other hand, availability of market information, market prices, means of transport and the distance to the nearest preferred market would influence the choice of marketing outlets opted for and market participation by cassava microenterprises. Olwande and Mathenge (2012) pointed out that access to market information is an important variable that would influence marketing decisions among the poor rural households.

Use of seed money and entrepreneurial trainings would influence the capability of a microenterprise to venture into various products due to availability financial resources that would improve performance of a microenterprise in terms of product diversifications (value addition) and accessing distant markets. They would also influence cassava value addition through acquisition of tools (machines and equipment) and technical knowhow respectively. Cassava value addition is a proxy to market participation and an incentive to cassava output commercialisation that improves marketing margins of cassava microenterprises.

Finally, group membership and its time of existence together with the above-discussed variables influence the choice of marketing strategies by cassava agripreneurs. The choice of the strategies is based on the expected benefits mainly through increment in market shares and positive marketing margins among the cassava microenterprises.

In this study, marketing strategies that were studied in Migori County included price adjustment (pricing strategy), augmented promotions, product improvement, and finally the use of strategic marketing alliances. Marketing strategies are defined by a number of variables that may consequently be informed by the nature of a given cassava product line adopted in an enterprise. Market for cassava products is currently expanding following the 2018 food policy on processed flour fortification and emerging economies. The above stated factors influence market shares in terms of products sales turnover for each cassava product line and eventually contribute to performance of cassava microenterprises. Conceptualisation of this study is mapped out in Figure 2.2.

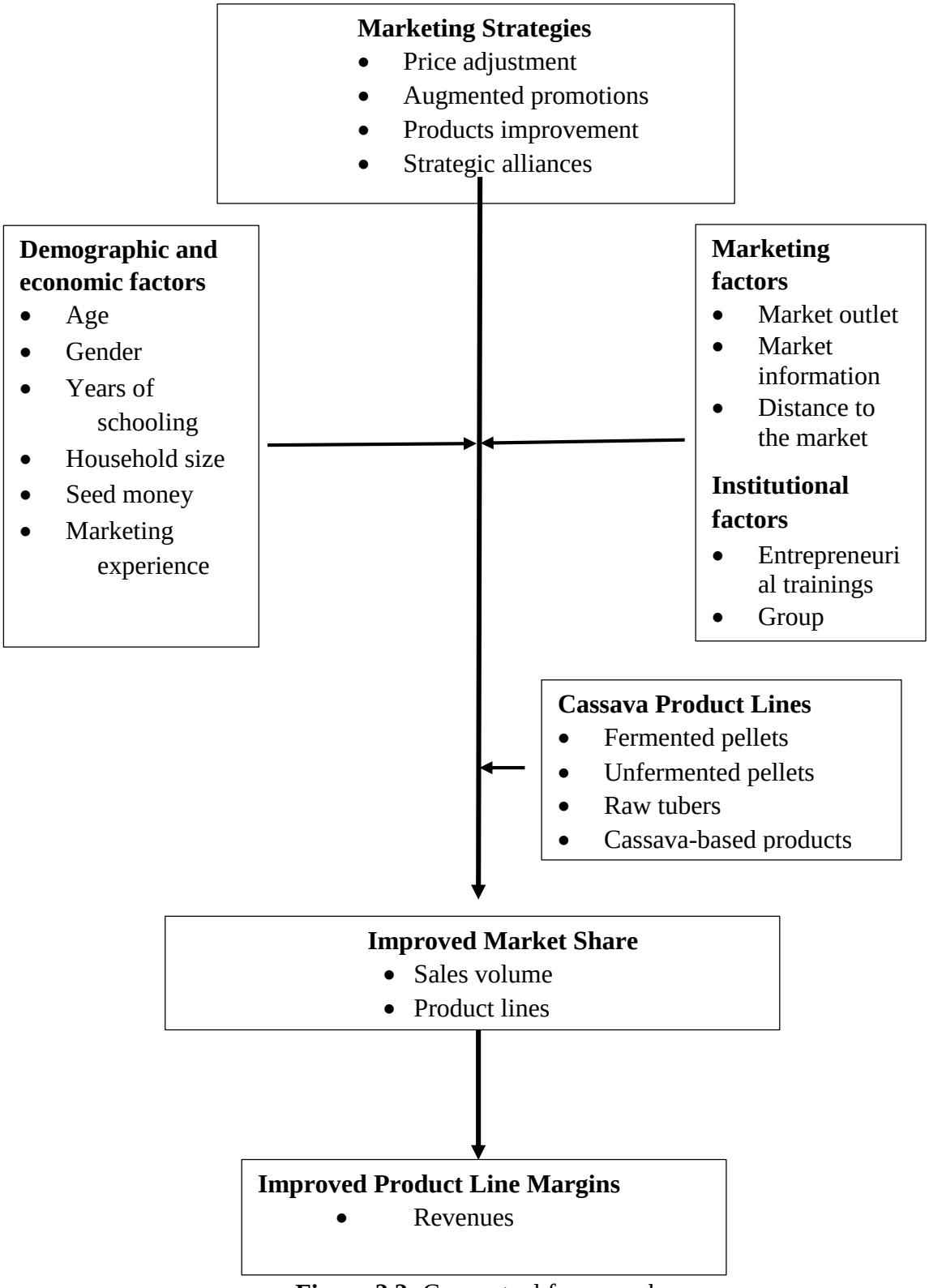


Figure 2.2: Conceptual framework

CHAPTER THREE
RESEARCH METHODOLOGY

This chapter describes the methodology that was used in conducting this study. It explains the research design, study area, sample size, and sampling procedure. It also describes data, operationalization of the variables used in the study, data collection methods, and statistical techniques used in analysis and summarizing of data.

3.1 Research Design

The study used a cross-sectional survey research design as data were collected in a one-time period. Cross-sectional survey design was considered appropriate because data collected at a given point in time on a given study units represent the whole population in the area of study. Such survey design method gives itself a probability sampling from the large populations (Bryman & Bell, 2011). This ideally qualified cross sectional survey appropriate when studying large populations.

3.2 The Study Area

Migori County is part of the former Nyanza province in South Western part of Kenya (Appendix VII; Figure 3.1). It borders Homa Bay County to the North, Kisii and Narok Counties to the East and the United Republic of Tanzania to the South. Lake Victoria borders the County to the West. The County is located between Longitude 34^{o} East and 34^{o} 50’ East and latitude 0^{o} 24’ South and 0^{o} 40’South. The County covers an area of 2,591.8 Km^{2} including approximately 478 km^{2} of water surface. Its headquarters is Migori town, which is the most diverse and developed commercially in the former Nyanza province after Kisumu. There are eight Sub-counties namely Awendo, Kuria East, Kuria West, Nyatike, Rongo, Suna East, Suna West and Uriri.

The inhabitants are Luos, Suba-Luos, Luhya, Abagusii, Kuria, Somalis and minority groups of Arabs, Indians and Nubians. Migori town serves as the important interlink between Kenya and Tanzania (Migori CIDP, 2018). The study was conducted in Kuria West, Suna East, Suna West and Uriri Sub-counties (Figure 3.1). These are areas where cassava production and marketing were most concentrated in the County. Production and marketing of cassava products among other food crops is one of economic activities in the County. The most common marketing outlets for food crops found in the area of study were the open-air markets, marketing alliances, farm gate,

roadside, shops, stall markets (*kibanda*) and mobile vendors. These outlets are prevalent in Kenya with additional well-established supermarkets outlets and other food stores in urbans across the country.

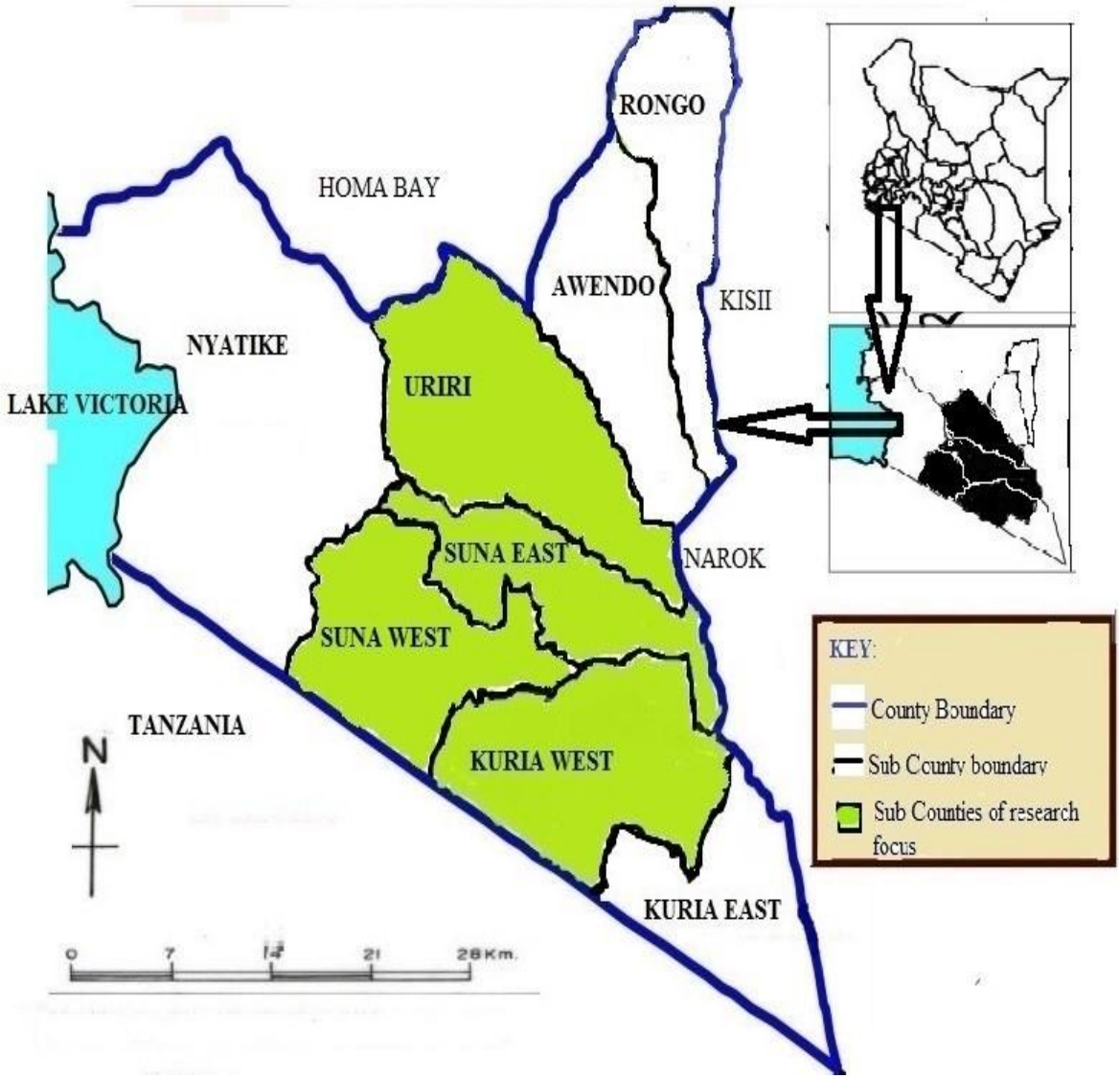


Figure 3.1: Map of the Study area

Source: *www.ehealth.go.ke* (Master Facility List)

3.3 Sampling Procedure and Sample size Determination

A survey was conducted in the year 2019 using a semi-structured questionnaire (Appendix I) administered to cassava microenterprises (cassava agripreneurs). Migori County had a population of 1,116,436 persons according to 2019 population census (KNBS, 2019). A semi-structured questionnaire was developed and administered to obtain primary data from the respondents. It was pre-tested in a sub-county (Rongo), which was not intended for the main study. The pre-test tool was realigned through distillation of the questions to achieve effectiveness during the interview sessions. Each interview session took an average of 25 minutes, with maximum care to provide an enabling environment and flexibility to the respondent. Pre-testing helped in the realignment of the tool through customisation of the questions according to the expected data. It was then administered through personal interviews by well-trained enumerators.

A multi-stage sampling procedure was used to draw a sample size of 267 cassava agripreneurs from the County since there was no systematic listing. The multi-stage procedure was a three-stage involving cluster, purposive and random sampling approach. In the first stage, the County was segmented basing on the total number of sub-counties (eight sub-counties) which formed clusters. In the second stage, the four sub-counties with many cassava agripreneurs (Kuria West, Suna East, Suna West and Uriri) were purposely selected. The third and final stage involved the random sampling of cassava agripreneurs from each sub-county. The sample size was computed using Cochran's (1977) formula.

$$n_0 = \frac{Z^2 pq}{e^2} \quad \text{..... Equation (3.1)}$$

Where: n_0 is the sample size, Z^2 is the abscissa of the normal curve that cuts off an area α at the tails; (1–α) equals the desired confidence level at 94%). e is the desired level of precision (acceptable marginal errors by the researcher: 0.05 for qualitative data and 0.01 for quantitative data) p is the estimated proportion of an attribute that is present in the population; q is otherwise and is given as 1-p.

$$n_0 = \frac{1.96^2 * 0.5 * 0.5}{(0.06)^2} \quad \text{..... Equation (3.2)}$$

≈267 respondents

Table 3.1 shows proportionate study units calculated based on Sub-counties geographical sizes since cassava microenterprises population was not known across the County.

Table 3.1: Proportionate study units distribution summary

Sub-county	Area (Km^2)	Target respondents
Kuria West	332.5	74
Suna East	207.3	46
Suna West	282.8	63
Uriri	380.7	84
Total	**1,203.3**	**267**

Source: Migori CIDP 2018

3.3 Data Sources, Collection and Analysis

A baseline survey tool (Appendix I) was developed and used to collect detailed data from the study area on prevailing situations regarding cassava processing, marketing and performance of cassava microenterprises in the County. Pre-testing of the questionnaires was done and revised accordingly prior to the study, which ensured accuracy of the data collected. The study used both qualitative and quantitative methods during data collection. Achievement of this was through visitation by enumerators to cassava microenterprises in their markets to collect data on the marketing strategies and the product lines in Migori County. Ward agricultural officers and the County cassava microenterprises coordinator were the initial contact persons during data collection in respective areas of study.

Both descriptive and quantitative data collected were analysed using STATA and SPSS. Descriptive statistics and econometric model were used in analysing demographic, economic and institutional factors influencing the choice of marketing strategies among the cassava microenterprises. Increased sales translated to improved performance of cassava microenterprises in terms of growth in profits per product line sold in the area of study.

3.4 Analytical Framework

Objective One: To identify marketing strategies and product lines involved in amongst the cassava microenterprises in Migori County, Kenya

The study used descriptive statistics in identifying and characterizing various products processed and traded on by cassava microenterprises in the area of study. Besides, respective marketing strategies to identified product lines were descriptively analysed and described. This enabled the extraction of statistical and descriptive measures such as frequencies and percentages. The objective was to explore different cassava products available in the area of study and respective marketing strategies that contribute towards the improvement in performance of their microenterprises as an outcome.

Objective Two: To determine relationships between marketing strategies and product lines involved in amongst the cassava microenterprises in Migori County, Kenya.

The study aimed to determine if there was significant relationships and benefits between and from each marketing strategy per product line used by cassava microenterprises. Correlation test was used to determine the effects of product lines on the marketing strategies used in the area of study by cassava microenterprises and vice versa.

Objective Three: Modelling the determinants of choice and the effects of marketing strategies on the product line margins among cassava microenterprises in Migori County, Kenya.

Decision on the marketing strategy selection is a discrete choice from among alternative strategies available to cassava microenterprises. The decision is driven by the legible marketing margins (profits) that they would get in order to survive in the cassava marketing. Because only the cassava microenterprise's choice on a particular marketing strategy is observed, the following latent structure univariate probit model for the choice of each marketing strategy can be specified (Greene, 2012).

$$y_i^*=X\beta+\mu_i \quad \text{.....Equation (3.3)}$$

$$y_i=\{1\ if\ y_i^* = X\beta + \mu_i > 0; 0\ if\ y_i^* \leq 0\}$$

Where: y_i^* is the binary latent variable for marketing strategy choice observed (observed if y_i^*>0, 0 otherwise); and X is a vector of household-specific, institutional and socioeconomic factors determining marketing strategy choice.

However, cassava microenterprises might select one or a combination of marketing strategies depending on the prevailing and expected benefits besides risks associated with each marketing strategy. The potential for simultaneous correlation across different marketing strategies suggests that a model addressing correlated choices is appropriate. In the presence of correlation among unobserved factors across the choices, a simple probit or logit model would produce biased estimates of choice probabilities as well as incorrect standard error for β; and inferences based on those for determining critical factors influencing choices and would lead to inconsistent results (Greene, 2012).

Multivariate Probit modelling was appropriate for correcting such biases generated from correlation across choices, because it allows for possible simultaneous correlation across available choices. Hence, this study used a Multivariate Probit econometric technique to simultaneously model the influence of the set of independent variables on each of the different marketing strategy choice decisions, while allowing the unobserved variables (error terms) to freely correlate with each other (Arinloye et al., 2015; Mokhtarian & Tang, 2011).

The choice of marketing strategies: Pricing, product promotion, product improvement (value addition) and use of marketing alliances generated dichotomous data, for example, either cassava agripreneur chooses a strategy or not. The data might also be correlated, for example, choosing pricing strategy could be positively or negatively related with the chosen product promotion strategy and so to other strategies. This prompted the use of Multivariate probit as it is popularly used in modelling correlating data (Cappellari & Jenkins, 2003). The model is used in estimating matrix equations by maximum simulated likelihood methods. The variance covariance matrix of cross-equation error terms has values of 1 on the leading diagonal and off diagonal elements are correlations to be estimated (pjk-pkj), and pjk=1 for j=k, for all j, k=1, … *m*. In this study, the marketing strategy decision was considered as a system of a multiple-choice equation respective to each type of marketing strategy (Equations 3.4 to 3.7).

$$price\ adjustment_i^* = X_1'\beta_1 + \varepsilon_{1i} \quad \text{.....Equation (3.4)}$$

$$augmented\ promotion_i^* = X_2'\beta_2 + \varepsilon_{2i} \quad \text{.....Equation (3.5)}$$

$$improving\ products_i^* = X_3'\beta_3 + \varepsilon_{3i} \quad \text{.....Equation (3.6)}$$

$$strategic\ alliances_i^* = X_4'\beta_4 + \varepsilon_{4i} \quad \text{.....Equation (3.7)}$$

Where: $\mathrm{E}(\varepsilon/x) = 0,\ var(\varepsilon/x) = 1, cov(\varepsilon/x) = \rho$ and price adjustment$_i$, augmented promotion$_i$, improving product$_i$, and strategic alliances$_i$ are binary variables taking the value 1 when cassava microenterprise *i* chooses them and 0 when otherwise. X_1 to X_4 are vectors of explanatory variables determining the respective strategy choice variables, $\boldsymbol{\beta's}$ are vectors of simulated maximum likelihood (SML) parameters estimated; $\boldsymbol{\varepsilon_1\ to\ \varepsilon_4}$ are correlated error terms in a seemingly unrelated multivariate probit model and $\boldsymbol{\rho's}$ are tetrachloric correlations between endogenous variables.

Determination of product line marketing margins

Product line margins were categorised and analysed in two dimensions based on the following contexts: market and marketing margins. Cassava microenterprises are potential to charge different prices at different market levels hence making market margins. On the other hand, marketing margins are the difference between prices paid by the consumers for cassava products and those obtained by ordinary marketers. This also refers to the difference between prices paid by the consumers for value added products relative to for raw cassava products. It enables cassava agripreneurs to choose appropriate marketing strategy for higher profits.

Determination of marketing margins per product line was to illustrate relative importance of marketing strategies marketing strategies for different cassava products and market outlets. This enables cassava microenterprises use appropriate market integration and marketing strategies, which optimise their market shares in agricultural commodity markets in the country. This would eventually leads to the achievement of cassava microenterprises objectives of improving their livelihoods mainly through generation of better income. Marketing margin analysis was based on gross figures since return on capital and imputed prices earned by cassava microenterprises in the sale of value added products is often very difficult to calculate. Price differences were between

farm gate or retail and the consumer prices. Estimation of marketing margins analysis was as follows:

Marketing Margins = Consumer –Farm gate prices (Retailing prices)..... (3.8)

Table 3.2: Variables used in the Multivariate Probit Model Analysis

Dependent variables	**Descriptions**	**Unit of measurement**	**Expected sign**
Marketing strategies	Choices on marketing strategies	Discrete 1,2,…*n*	+/-
Independent Variables			
AGE	Age of the microenterprise head (years)	Continuous	+/-
GEND	Gender of the microenterprise head	Binary 1-male, 0-female	+/-
YRSSCH	Years of schooling by the microenterprise head	Continuous	+/-
HHSZE	Number of dependants in the household	Continuous	+/-
MAJOCC	Major Occupation as per Microenterprise head	Categorical	+/-
YRSS	Microenterprise head's years of selling (experience)	Continuous	+/-
SEEDM	Access to seed money by the microenterprise head	Binary 1-Yes, 0-if otherwise	+/-
TRNNG	Trainings received by the microenterprise head	Binary 1-Yes, 0-if otherwise	+/-
MKTI	Microenterprise head access to market information	Binary 1-Yes, 0-if otherwise	+/-
MKTO	Market outlets opted by the microenterprise head	Categorical	+/-
DISTM	Distance to the nearest preferred market (km)	Continuous	+/-
GRPM	Membership to agripreneurial group by microenterprise head	Binary 1-member,0-if otherwise	+/-
GRPEXT	Group existence in years	Continuous	+/-

CHAPTER FOUR
RESULTS AND DISCUSSION

This chapter presents results, analysis, interpretation, and discussions of the analysed data obtained from the field. The first part presents demographic and economic characteristics of the cassava microenterprise heads and identification of product lines and respective marketing strategies were considered in this study. The second part discusses the correlations between the identified product lines and marketing strategies used by the cassava microenterprises. The third section presents discussions on factors that influence the choice of marketing strategies used by the cassava microenterprises in the areas of study. The section ends by discussions on the effects of marketing strategies on marketing margins from different product lines among cassava microenterprises from the area of study.

4.1 Descriptive Statistics

This section presents and discusses results of descriptive statistics of the demographic and economic characteristics for the respondents and profiling of their microenterprises. Besides, results for descriptive analyses of the study are also presented, interpreted and discussed.

4.2 Demographic and economic characteristics of cassava agripreneurs in the area of study

Figure 4.1 and Table 4.1 present summarized statistics of the gender, age, education levels, household sizes, and group memberships among the cassava agripreneurs in the area of study.

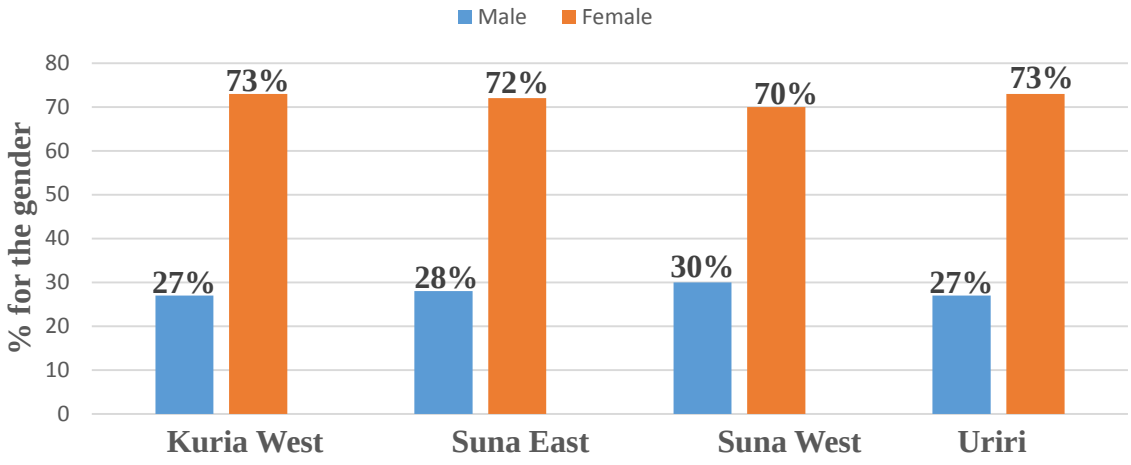


Figure 4.1: Gender distribution over the Sub-counties

Table 4.1: Demographic characteristics of the respondents: Gender, Age, Education levels, Household sizes and Group membership (*n=267*)

Variable	Frequencies	Percentages
Gender		
Male	95	35.6
Female	172	64.4
Total	267	100
Age		
18-35	73	27.4
36-50	117	43.8
51-65	57	21.3
66 and above	20	7.5
Total	267	100
Education level (based on years)		
No formal education	30	11.3
Primary education	164	61.4
Secondary education	58	21.7
Tertiary education	15	5.6
Total	267	100
Household size		
3 or less	19	7.1
4-6	139	52.1
7-9	80	30
10-12	23	8.6
13 and above	6	2.2
Total	267	100
Group membership		
Members	168	62.9
Non-members	99	37.1
Total	267	100

4.2.1 Gender of the respondents

Based on the results displayed, revelation is that female agripreneurs dominated cassava microenterprises (64%), while males comprised of 36% among the 267 respondents (Table 4.1). This is probably because cassava crop is highly considered as a women's crop in the last two decades and it seems the same trend continues. Besides, women tend to participate more in selling farm produce whereas men are known to participate more in physical activities mainly in farm production (crop cultivation) at the household level following the existing cultural beliefs and practices. Furthermore, gender affects the decision making for the microenterprise and the results (Figure 4.1) show that key decision makers are women. Across all four sub-counties (Figure 3.1), cassava microenterprises headed by women dominated among the sampled microenterprises (Figure 4.1). This proves the crop considered more as women crop.

4.2.2 Age of the respondents

Results show that among the interviewed cassava agripreneurs, the youngest had 20 years while the eldest had 86 years (Table 4.1). Most of them were found to have ages between 35 and 50 years with the majority being at 45 years. Knowing the age category of the respondent is very important because it is associated as the key informant to population dynamics (characteristics), which include births, deaths, dependency ratios, mobility, and the other social activities that are highly informed by the age variable. Besides, age is a proxy to physical market participation, as it requires strong and energetic agripreneurs to enable cassava microenterprises thrive. This is because of transporting bulky cassava products from one point to the other. Therefore, the study found out that marketing activities were influenced by the age of an agripreneur. Effects of the age variable on the cassava microenterprise performance in the area of the study could be positive or otherwise. The age of the cassava agripreneur could contribute to how they can apply the marketing strategies for better marketing performance. This is perceived to be attached on being innovative in the microenterprises and could thereby influence the use of effective marketing strategies (Bekele & Drake, 2003).

4.2.3 Education level for the respondents

Results show that 88.7% of the respondents had formal education (primary, secondary, and tertiary education), while 11.3% had no formal education (Table 4.1). This showed that majority of the

respondents involved in marketing cassava across all the visited markets were educated and they had capabilities of being the best marketing strategists. Education level was informed by the number of years taken in school to transit from one class to another.

4.2.4 Household size for the respondents

Determination of household sizes was pegged at considering all individuals who have been with the respondent for more than three months cumulatively and would receive assistance from them. They included parents, children, and the other dependents. From the results, majority of the respondents (52.1%) had average household sizes of between four and six heads. Furthermore, 30% of the respondents, which were the second largest, had household sizes of seven to nine people. Ten to twelve people per household took the third position. This showed that the highest percentage of the respondents were having larger household sizes. Households with three people or less as their household sizes had 7.1% and they were the fourth largest groups. Lastly, 2.2% of the households which were the smallest group had thirteen people and above in their households (Table 4.1).

4.2.5 Group membership among the respondents

Groups were rarely present in the area of study due to resource constraints and mobility of the people from their households to new places; contributed by jobs seeking in urban areas. In addition, marriage for the case of female household members who normally move out of their cradle homes to the new homes. Being a member of a given group (agripreneurial group) increases the bargaining powers of the respondents. Based on the results, majority of the respondents (62.9%) belonged to a given social group within their localities (Table 4.1). Entrepreneurial group membership (involvement) would assist participants through the combination of ideas, skills, and resources for the betterment of their day-to-day activities. From the area of the study, groups also could influence the choice of marketing strategies among the cassava agripreneurs.

Table 4.2: Economic Characteristics of the respondents: Major economic activities and the average monthly income in Kenya shillings. (*n=267*)

Variables	Frequencies	Percentages
Major Occupation		
Business/Trade	177	66.3
Agriculture	83	31.1
Others	7	2.6
Total	267	100
Average Monthly Income		
4000 or less	106	39.7
4001 to 8000	84	31.5
8001 to 16000	40	15.0
Above 16000	37	13.8
Total	267	100

4.2.6 Major Economic Activity for the respondents

To distinguish clearly major occupation of the respondents, they were asked to specify an activity, which could take most of their time per day (24 hours). The results show that majority of the respondents (66.3%) dedicated most of their time in running their marketing activities (Table 4.2). Though some were doing farming, they attended their farms briefly while others would hire casual laborers to work on their entities. Furthermore, results show that respondents (31.1%) were being involved in agribusiness as their major economic activity. Minority group of the respondents (2.6%) stated that they were being involved in other activities, which included being civil servants, mineral extractors, and others in transport services (*bodaboda*). Their major occupations were expected to have positive or negative influence on their marketing skills with respect to marketing strategies to their cassava microenterprises.

4.2.7 Cassava agripreneur monthly income

Results indicate that majority of the cassava microenterprises heads (39.7%), who were engaged in selling cassava products earned monthly income of Kenya shillings 4,000 and below while the

minority (13.8%) would earn KSh. 16000 and above which is considered relatively more stable financially (Table 4.2). Income to cassava agripreneur has a positive influence in determination of the marketing strategy used. More income translates into increased marketing capabilities of the respondents boosting their performance because of the improved purchasing powers. Income earned could be used to access long distant markets, which allows the use of different selling points (distribution channels) for cassava products hence relatively better prices.

Besides, income is used to acquire various assets including value addition equipment, mode of transport (transport vessels) such as motorcycle and boosting product promotion through advertisements. More income also equates to increased potentiality to get improved technologies. Agripreneurs (microenterprise heads) who are well off can afford the price of new improved technology than low-income agripreneurs (Rogers, 2003).

4.2.8 Years of selling cassava products

Results show that the years of selling cassava products by the respondents informed their experience handling cassava commodities in the industry (Figure 4.2).

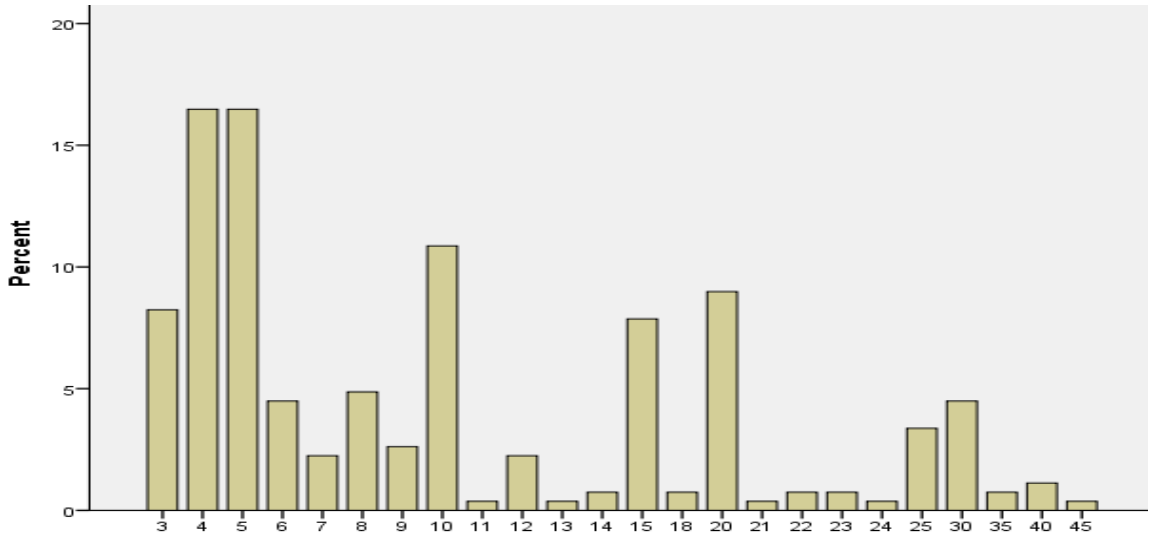


Figure 4.2: Time of selling cassava among the CMEs in years

Majority of the microenterprises (66.3% cumulatively) are reported to have been amateur in the marketing of commodities with between three and ten years' experience (Figure 4.2). This was because the commodity had begun to attract attention of the potential consumers due to nutritive

benefits perceptions currently trending. It was also noted that the other cassava agripreneurs have been in the cassava trade industry for and over 10 years with 33.7% cumulatively (Figure 4.2); thus, they were the elderly group. This might have been attributed that they have been consuming the commodities since their youthful stages. They grew up in families where the crop was among the staple food crops grown. Others were within the decade and have been trading on the crop on an average of seven years (Figure 4.2). Marketing experience could have had positive or negative influence on the marketing strategies. Being in the market for long enabled the respondents to understand the market supply and demands. This prompted the development of the survival moves (marketing strategies) for the great market performance.

4.3 Product lines and marketing strategies used by cassava microenterprises in Migori County, Kenya

Cassava microenterprises were found to be combining different mutually non-exclusive marketing strategies for different product lines and this is the achievement of objective one.

Table 4.3: Product lines distribution over the sub-counties (frequencies)

Cassava products	Kuria West	Suna East	Suna West	Uriri	Percentage
Raw tubers	23	11	22	16	19.94
Unfermented chopped tubers	20	3	5	29	15.79
Fermented chopped cassava	66	46	60	59	63.99
Other forms e.g. local brew	1	0	0	0	0.28

The results in Table 4.3 show the overall product line distribution across the area of study and that majority of cassava agripreneurs (63.99%) were found to be marketing fermented cassava products. This was followed by the sales of raw tubers and unfermented cassava pellets at 19.94% and 15.79% respectively. Other cassava-based products such as local brew, *ugali* and porridge were least done at 0.28%. Value addition enabled them to have better sales turnover in addition to accessing long distant markets. They revealed that selling at the market places was more profitable than selling at the farm gates. This could be explained by the complex preparation of the products (fermentation) and the less preference of the raw tubers in the area of study due to the fear of the

cyanide content. Cassava agripreneurs explained that cassava tubers were very detrimental when not handled cautiously hence the need to ferment so to eliminate the cyanide content.

Marketing strategies are systematic, timely and technical actions from the acquisition of the products to the actual '*pass over'* to the buyers (assumed to be the consumers) who form the major components of the marketing margins analysis in this study. A typical cassava products marketing system in Migori County can be characterized by both simple and complex value chain whereby a product could move directly from the producer to the consumer. Nevertheless, some intermediaries do form part of the cassava value chain who make the products go through them before reaching the final consumers.

Table 4.4: Marketing Strategies used by the Cassava microenterprises (*n=267*)

Types of marketing strategies	Categories	Frequencies	Percentage
Pricing Strategy	Users	245	91.76
	Non-users	22	8.24
	Total	**267**	**100**
Product Promotion Strategy	Users	148	55.43
	Non-users	119	44.57
	Total	**267**	**100**
Product/Value addition Strategy	Users	128	47.94
	Non-users	139	52.06
	Total	**267**	**100**
Marketing Alliance use Strategy	Users	23	8.61
	Non-users	244	91.39
	Total	**267**	**100**

The findings revealed mutual combinations of the marketing strategies used by cassava microenterprise in the order of 91.76% in pricing strategy, 55.43% use product promotion, 47.94% use product-improvement strategy (value addition) and 8.61% were engaging other marketers commonly known as alliances (Table 4.4). It is clear that pricing, product promotion and product improvement (value addition) strategies were highly used in the area of study while the strategic

marketing alliances were the least engaged. This might be attributed to the nature of the microenterprises not worth engaging other marketing partners. Therefore, based on the ratings (percentages), the use of pricing, product promotion and improvement strategies appear to be the ideal marketing strategies; on the other hand, engaging marketing partners appears to be the least option of choice.

4.4 Marketing outlets used by cassava microenterprises in Migori County

One of the causes for low cassava commercialisation activities in the country is that agripreneurs are highly constrained by the marketing challenges including low bargaining powers due to limited and inefficient marketing outlets, low commodity prices, poor infrastructure, limited market information and weak policy support (Bezabih & Hadera, 2007; Moti, 2007; Nigatu et al., 2010). The consumption and commercialisation of cassava products has been gradually increasing hence unfolding the leeway hence expansions of the marketing outlets among the cassava microenterprises. The study found out various distribution channels (strands) for cassava products and the main strands identified were as follows:

(a) *Strand I: Agripreneurs* → *Consumers.*

This was the shortest of all cassava-marketing strands identified during the study. This was where the cassava microenterprises (agripreneurs) would sell their products directly to rural and urban consumers for their domestic consumptions.

(b) *Strand II: Agripreneurs* → *Local Food Vendors* → *Consumers*

This marketing strand involved the sale of cassava products to local food vendors in the nearby town centers. They were those who would buy from cassava agripreneurs especially during marketing days and later on re-sale the products in a stall (well-modified selling structures) commonly identified as '*kibanda*' during the rest of the days in a week. They were acting as the intermediaries of the commodities concerned.

(c) *Strand III: Agripreneurs* → *Contracted buyers (Alliances)* → *Consumers*

This was another marketing strand identified. This was whereby the cassava agripreneurs could process their commodities and took them to distant markets or rather buyers whom they had had informal contracts with them. The strand was found to be mostly applicable in Kuria West Sub-county where they were marketing unfermented cassava pellets.

4.5 Relationships between marketing strategies and product lines involved by cassava microenterprises in the area of the study

In a bid to determine the correlations among the identified cassava product lines and the marketing strategies used by cassava microenterprises in Migori County, the study used Pearson product-moment correlation analysis in achieving objective two. The study used correlation analysis to describe effects, associations and the linear relationships between the variables. Pearson Product-moment correlation coefficients were used to explain the strength of relationship and the inter-dependence between the product lines found in the market and the suitable marketing strategies among the cassava agripreneurs. The correlations of product lines and marketing strategies were both positive and negative hence different influence on each other (Table 4.5).

Table 4.5: Correlation between Vectors of Values for Marketing Strategies and Product lines involved by Cassava Microenterprises (N = 267)

	Correlation between Vectors of Values for Product lines and Marketing Strategies used by Cassava Microenterprises							
	Raw tubers	Chopped and dried/unfermented tubers	Fermented forms	Cassava-based products like local brew	Pricing strategy	Product promotion strategy	Product value addition strategy	Formation of strategic alliances
Raw tubers	**1**							
Chopped and dried/unfermented tubers	0.095*	**1**						
Fermented forms	-0.106	-0.490	**1**					
Cassava-based products like local brew	-0.037**	-0.032**	-0.155	**1**				
Pricing strategy	-0.002***	-0.110	0.081*	-0.205	**1**			
Product promotion strategy	0.069*	0.007***	0.021**	-0.068*	-0.104	**1**		
Product value addition strategy	0.076*	-0.024**	0.006***	-0.059*	0.097*	-0.391	**1**	
Formation of strategic alliances	-0.036**	0.068*	-0.035**	-0.019**	0.043**	-0.020**	0.053**	**1**

Note: *, **, *** Denotes significance levels at 10 , 5 , and 1 % respectively

Results show that given a product line that the cassava microenterprise was transacting on, the use of a marketing strategy to sell off was predicted (Table 4.5). Selling cassava tubers was highly and negatively associated with the pricing strategy at 1% significance level. This implied that pricing strategy was not useful to those selling raw cassava tubers. With product promotion strategy, sales of raw cassava tubers was positively related at 10% significance level. Displaying cassava tubers would influence their purchase positively. With raw cassava tubers, cassava microenterprises also had a chance of adding value as shown by positive correlation at 10% significance level. Raw cassava tubers would discourage the use of strategic marketing alliances as depicted by negative correlations at 5% level of significance.

Selling unfermented cassava pellets highly contributed the use of product promotion strategy among the cassava microenterprises at 1% significance level (Table 4.5). With product value-addition strategy, there was a dissociation with the sale of unfermented cassava pellets. The consumers were less likely to buy unfermented products. However, strategic marketing alliances would want to trade on unfermented cassava pellets, their correlation was positively associated at 10% significance level. This implied that dried and unfermented cassava pellets could be transported to distant markets for sale.

Fermented products would encourage price variations at 10% significance levels (Table 4.5). This would result to positive marketing margins among the cassava microenterprises. Fermented cassava pellets also encouraged the use of product promotion strategies such as displaying in the marketing points. Fermented cassava pellets were by default considered as value added products and the cassava microenterprises pivoted their sales on them. This was highly used at 1% significance level. With the involvement of strategic marketing alliances, it was negatively associated with the fermented cassava products. The possible reason for this is that the distant cassava marketers would quote relatively lower prices for the products regardless of the processing costs involved in fermenting the products. This discouraged cassava microenterprises from using the strategy with their fermented products.

Finally, other cassava-based products such as local brews, *ugali,* and porridge discouraged the use of any of the identified marketing strategies. This could have been because their demand was not

elastic *per se*. Consumers knew where to get the products even without the use of marketing strategies. Pricing strategy too could not affect the consumption and strategic alliances were not ideal because the products were delicate to transport and would need special transporting vessels, which the microenterprises could not afford. The product was also illegal to sell in public markets.

4.6 Determinants of choice and the effects of marketing strategies on the product line margins among cassava microenterprises in Migori County, Kenya

4.6.1 Preliminary diagnostics on the variables used in the econometric analysis

Preliminary diagnostics were conducted for statistical problems of heteroskedasticity and multicollinearity in the socio-economic and institutional variables used in the econometric analysis. To detect heteroscedasticity, a white test was used for all hypothesized explanatory variables (Table 4.6). The results revealed the presence of heteroskedasticity since a chi^2 value of 227.59 was significantly large. Therefore, to counter this problem, robust standard errors were used in the econometric analysis.

Table 4.6: White test for the detection of heteroskedasticity

Source	Chi^2	df	p-value
Heteroskedasticity	227.59	231	0.5510
Skewness	58.67	21	0.0000
Kurtosis	24.62	1	0.0000
Total	310.88	253	0.0076

Multicollinearity, a state of very high inter-correlations or inter-associations among the proposed independent variables (both continuous and categorical variables). For continuous variables, multicollinearity was tested using variance inflation factor (VIF) and results presented in Table 4.7. The results proved that there was no serious linear association among all the continuous variables used since VIF values were less than 10 (Table 4.7).

Table 4.7: Variance inflation factor results for continuous explanatory variables.

Variable	VIF	1/VIF
Age of CME head	2.01	0.498071
HH Size	1.06	0.945938
Years of schooling by CME head	1.15	0.868820
Years of selling	1.92	0.521354
Market distance	1.02	0.977105
Group existence	1.12	0.889701
Mean VIF	1.38	

For categorical variables, pairwise correlation analysis was done to test multicollinearity among the independent categorical variables. Contingent coefficients were calculated and results presented in Table 4.8. Results similarly confirmed that there was no serious linear relationship among the categorical independent variables because contingent coefficients were less than 0.75 in all cases. And for this reason, there was no strong association among all explanatory variables. Therefore, all of the proposed potential independent variables were used in the regression analysis.

Table 4.8: Contingency coefficient test results for categorical explanatory variables

	Gender	Mjr Occption	Seed money	Training	Market info	Group membrshp	Farmgate	Roadside	Open air	Shoppng c~r	Contrtd trdrs
Gender	1.0000										
Mjr Occption	0.2285	1.0000									
Seed money	-0.0548	-0.0367	1.0000								
Training	0.1121	0.0740	0.0188	1.0000							
Market info	-0.0388	0.0392	0.1618	0.1848	1.0000						
Group membrshp	-0.1413	0.0549	0.1413	0.1860	0.3277	1.0000					
Farmgate	0.1505	0.2613	0.0516	0.0766	0.3035	0.3136	1.0000				
Roadside	-0.1207	-0.1157	0.0769	0.0878	0.0814	0.0515	-0.0135	1.0000			
Open air	-0.0855	-0.0839	0.0223	-0.0076	-0.0570	-0.0608	-0.1907	0.0370	1.0000		
Shoppng c~r	-0.0919	-0.0777	0.0760	0.0235	0.1001	0.1716	0.0454	0.0841	-0.0403	1.0000	
Contrtd trdrs	0.0077	0.1132	0.2254	0.1248	0.0528	0.0731	0.0217	-0.0192	-0.0892	-0.1205	1.0000

4.6.2 Determinants of choice for the marketing strategies by cassava microenterprises

This section describes factors that influence the choice of marketing strategies aimed at improving performances of cassava microenterprises in relation to revenues. Such factors as demographic, institutional and marketing characteristics led to the achievement of objective three as shown in Table 4.9. Multivariate probit model results showed that age, major occupation (marketing), years of selling cassava products (marketing experience), entrepreneurial trainings received, farm gate marketing outlet and group membership significantly influenced the choice of the pricing strategy among the cassava microenterprises. In addition, gender of the respondents, household size, major occupation (marketing), access and the use of seed money (credit/capital), access to marketing information, open-air market outlet and joining a business-oriented group significantly influenced the choice of augmented promotion strategy. Product improvement commonly referred to as value addition as a marketing strategy was significantly influenced by the household size, access and the use of seed money, farm gate marketing outlet and distance to the preferred market. The choice of marketing alliance strategy was significantly influenced by age and education level (years in school) for the respondents and the access to marketing information. All marketing strategies were aimed at improving the performance of cassava microenterprises that resulted from relatively better profits earned.

These observations conformed to Staw (2013) who revealed that age is a factor that predicts success of a business as it implies extensive experience. Even though the study reiterated that education leads to successful entrepreneurship, Hall (2013) did not acknowledge education as the key contributor to successful entrepreneurship; the study pointed out that education plays a subsidiary role to entrepreneurs as real entrepreneurs are born and not made through education. The success of cassava microenterprises is positively related to aging, extensive marketing experience, entrepreneurial group membership and training due to accumulated knowledge and acquired skills in the field of marketing as the major occupation. Seed money enables cassava microenterprises to access and sell their products in distant markets thus maximising marketing opportunities hence better performance.

Table 4.9: Multivariate Probit model results for marketing strategies used by cassava microenterprises in Migori County

	Pricing		Promotion		Value addition		Alliance	
Variables	***β***	**RSE**	***β***	**RSE**	***β***	**RSE**	***β***	**RSE**
Age of CME heads	**-0.0226****	0.0090	0.0106	0.0103	0.0210	0.0144	**0.0166***	0.0087
Gender of CME heads	0.1452	0.2156	**0.4579***	0.2443	0.1112	0.3431	-0.2692	0.2032
Years of schooling by CME heads	-0.0336	0.0255	0.0107	0.0290	0.0021	0.0291	**0.0482***	0.0248
Household sizes for CME heads	0.0643	0.0403	**-0.0789****	0.0389	**-0.0727***	0.0419	-0.0444	0.0354
Major occupation for CME heads	**0.3849****	0.1950	**0.6061*****	0.2135	0.0328	0.2180	0.1274	0.1840
Years of selling cassava products	**0.0358***	0.0199	-0.0097	0.0164	-0.0159	0.0215	0.0023	0.0146
Access and use of seed money	0.0660	0.2499	**0.5417****	0.2637	**0.7735***	0.4148	-0.1175	0.2312
Entrepreneurial trainings received by CMEs	**0.4694***	0.2433	-0.2601	0.2615	-0.2051	0.3632	-0.2182	0.2234
Access to market information	0.2599	0.1969	**0.3971***	0.2124	0.1772	0.2987	**0.3343***	0.1892
Farm gate outlets	**-0.8272*****	0.2168	0.0806	0.2211	**3.3528*****	0.3226	0.1234	0.1940
Roadside as an outlets	0.0637	0.2222	-0.1725	0.2293	0.3638	0.2974	0.0780	0.2004
Open air marketing outlets	-0.0060	0.2710	**6.6756*****	0.3458	-0.4282	0.4687	0.0795	0.2767
Shopping center as marketing outlets	0.0283	0.1969	0.1328	0.2026	-0.0143	0.2245	0.0689	0.1787
Contracted traders as marketing outlets	-0.0422	0.2544	-0.0962	0.3041	-0.1821	0.3730	0.1397	0.2412
Distance to the preferred market (km)	0.0114	0.0096	-0.0116	0.0084	**0.1093****	0.0504	0.0033	0.0106
Group membership by CME heads	**-0.4212***	0.2509	**-0.5254****	0.2473	0.0036	0.2750	0.1728	0.2179
Group existence in years	0.0023	0.0283	0.0329	0.0283	-0.0140	0.0270	-0.0302	0.0226
Constant	0.5470	0.6078	-7.3574	0.8416	-2.6101	0.5978	-1.4813	0.6181
Multivariate probit regression								
Number of observations	267							
Wald Chi2 (68)	2164.95							
Log pseudo likelihood	-473.1674							
Prob > Chi2	0.0000							

Note: *, **, *** Denotes significance levels at 10, 5, and 1% respectively, CME=Cassava microenterprise, Km=kilometres
RSE=Robust Standard Errors

The coefficients of the respondents' age was positively significant on formation of marketing alliance strategy but negative for pricing strategy (Table 4.9). As the respondents grew older, they were more unlikely to use pricing strategy owing to reduced vibrancy required to search for better prices (negotiations) for their microenterprises. Furthermore, they resorted to depending on the other cassava marketers (marketing alliances). It is also likely that older marketers were more satisfied with the little marketing margins (profits) and could not venture in outcompeting the young and actively more able marketers who always intend to maximise through price variation. This correspondingly translated into better marketing margins than for the aged agripreneurs. These findings conformed to the work of Egbetokun and Omonona (2012) who found out that age of farmers was inversely related to active market participation. Thus, implies ageing tends to reduce the likelihood of engaging in commercialisation activities. Randela et al. (2008) observed that younger agripreneurs were relatively progressive, more receptive to new ideas of doing agribusiness and better understood benefits of commercialising agricultural commodities. Hailua et al. (2015) acknowledged positive relationship between age and commercialisation among the farmers in Tigray Region, Ethiopia. Although age advancement promotes commercial activities due to accumulation of knowledge and skills from the farming experience, increase in age among cassava agripreneurs draws uncertainties about market prices because of limited access to market information, therefore depending on others in marketing their products.

The coefficient for the gender of the cassava agripreneurs was positively significant on using promotion strategy during selling cassava products (Table 4.9). Being female agripreneur increased the probability of promoting the products in the markets by 10% owing to their superiority unlike their male counterparts. This was probably because males were less associated with food commodities in the markets; specifically selling cassava products. Agwu et al. (2015) argued that a man's social life is less interactive than for a woman; thus lowering males' participation in cassava marketing activities. Furthermore, males engage mostly in selling high-value commodities for fast and better earnings. The study findings affirmed that male agripreneurs prefer quick 'money-earning' transactions, compared to their female counterparts who are highly motivated by selling food commodities regardless of their monetary values. This contradicts the study by Forsythe et al. (2016), who revealed that in Nigeria, both men and women actively participated in cassava commercial activities equally; therefore, they should be emulated for better

performance of cassava microenterprises. This implies that socio-culture has a marked influence of cassava agripreneur behaviour in the choice and participation in agricultural produce marketing.

The number of years spent in school by the cassava agripreneurs was positively significant on the formation of strategic marketing alliances (Table 4.9). This implies that more years of learning translated into more ideas, skills, and knowledge on how to achieve marketing objectives through partnerships in cassava trade. This inference conforms to the findings of Enete and Igbokwe (2009) and Randela et al. (2008) who argued that education equips agripreneurs with better production and managerial skills, which results in their increased chances of market participation; such skills are crucial when making decisions.

The coefficient of household sizes on cassava agripreneurs was significant but negative on augmented promotions and value addition strategies (Table 4.9). This suggests that the larger the household size, the less likelihood to practice cassava value addition and promotion of cassava-based products. Large households tended to diminish the potential availability of cassava products for value addition and for sale in general (Olwande & Mathenge, 2012). This observation would also suggest that cassava product advertisement (as promotion) through the media as part of product promotion would be unlikely owing to the additional costs it entails, against the meagre incomes of cassava agripreneurs. Large households, however, tend to reduce the commodities through home consumptions, hence discouraging value addition as the available quantities insufficient. Siziba et al. (2011) believed that larger households consumed larger proportions of outputs, leaving little for selling; hence reduced the likelihood to participate in marketing. This argument contradicts that of Jaleta et al. (2010) who stated that large household sizes encourage market participation; this could be through increased production due to availability of family labour.

This study has demonstrated that marketing activity/trading formed the major occupation for the cassava agripreneurs as it took the larger portion of their working time daily (Table 4.9). Results showed a positive coefficient of major occupation with regard to the usage of pricing and augmented promotion strategies while marketing their commodities. Being a cassava agripreneur related positively to the use of pricing and promotion strategies. This implied that the two strategies

were highly and statistically significant towards achievement of the occupation objectives. It translates into improved performance of cassava microenterprises due to positive marketing margins (profits) and sales turnover in the long run. This resulted from the marketing activity as a norm that offers tangible experience, which is a proxy to success of a business (microenterprise) according to Saleem (2012).

Years of selling cassava-based products built up the marketing experience among the cassava microenterprises heads (Table 4.9). The coefficient of years of selling cassava was positively significant on using pricing strategy. This implied that cassava agripreneurs were more likely to apply the pricing strategy with additional years in marketing. This further indicates that as marketing period increases, agripreneurs gained technical knowledge on how to increase their marketing margins (revenues). Employment of various marketing strategies yields to enhanced marketing experience because long time agripreneurs tend to be more efficient and with greater knowledge and skills in marketing (Boeker & Wiltbank, 2005). Pricing strategy involves negotiation skills built through marketing experience as explained by their statistically significant relationships; therefore, cassava agripreneurs' marketing capacities could not only be built through education but also through experience.

The coefficient of seed money in support of cassava microenterprises in the regression model was found to influence product promotion and value addition positively among cassava micro-enterprises in Migori County, Kenya (Table 4.9). Seed money in this study refers to any form of cash that was used by the cassava microenterprises heads to support and improve the performance of their enterprises. Other studies referred to it as credit (Adejobi & Akinola, 2013; Martey et al., 2012). Access and use of seed-money among cassava microenterprises was found to boost their abilities to using product promotion strategy. Cassava microenterprises were more likely to promote their products through the provision of good packaging materials to customers, travelling to various events where they could sell the commodities (mobile marketers) thus increased sales turnovers. Moreover, there was also increased likelihoods of obtaining resources such as technical services (trainings) and assets (processing equipment) used in value addition.

The coefficient of entrepreneurial training received by the cassava agripreneurs was positively significant only to pricing strategy (Table 4.9). Pricing strategy was highly attributed to getting

marketing information either from other market participants or from the service providers. Getting training from service providers acted as networks for disseminating information and this would be likely to improve commercialisation (Rahut et al., 2015). Contrary to the expectation, trainings offered to cassava agripreneurs had no significant effect on their ability to improve and promote cassava products as well as formation of marketing alliance. Usually, such trainings contribute to development of new products due to generation of new ideas in return (Elnaga & Imran, 2013; Karaam, 2019). A possible explanation for the unexpected behaviour could be that since the commodity in the area of study was not industrially processed, agripreneurs were used to the ordinary ways of improving the product (traditional value addition), whose scope of benefits and marketability are dismal.

Access to market information by agripreneurs in cassava microenterprises was positively significant on using product promotion and marketing alliance strategies (Table 4.9). Having efficient and reliable marketing information sources resulted into knowing precisely what the consumers needed while increasing the capabilities of partnership. Technically this suggests that getting the information could reduce prices uncertainties while increasing the bargaining powers among the cassava microenterprises heads. Sigei et al. (2015) affirmed that farmers getting prices information at their farms were less likely to go and sell at urban markets, as they would try to escape the transaction costs, which reduces their potential profits. This is because they are in a position to calculate the opportunity costs.

Although the coefficient of farm gate marketing outlet was negatively significant on pricing strategy, it was positively significant on value addition strategy (Table 4.9). The negative relationship between the farm gate-marketing outlet and pricing strategy was because farm gate prices of all agricultural commodities were relatively lower than in the standard markets (Abu et al., 2016). This implies that cassava microenterprises were not likely to vary prices, thus they were price takers while at their homes. Farm gate marketing outlet had a positively significant influence on cassava value-addition strategy (Table 4.9). This confirmed that adding value cassava tubers increases the likelihood of selling them at a fair price. This study found cassava agripreneurs were doing value addition at different nodes right from washing, sorting, peeling and chopping, sun drying to fermentation. Furthermore, at least one of the value addition activities was done to

increase the likelihood of selling the product. Since raw tubers were bulky, heavy and of less monetary value, it was then ideal to add value to increase the shelf life, hence selling easily at distant markets while fetching higher prices.

The coefficient of selling cassava products in an open-air market had a positive effect and statistically significant on promotional marketing strategy (Table 4.9). This implied that open-air marketing outlet was more effective and ideal for selling the products since various forms of product promotion were easily done. Product display as a way of informing market clients about the availability of cassava products was a form of product promotion strategy. In an open-air market, there were many sellers of the same commodities (in terms of unit of selling and quality) and to convince the buyers to buy from them, they needed to promote the products strategically. Provision of carrier bags (packaging materials) to buyers increased their likelihoods of selling the products relative to who were giving none.

The coefficient for distance to the preferred market was positively significant on cassava value-addition strategy (Table 4.9). This implied that since cassava tubers are bulky, heavy and of less monetary value; chopping, fermenting and drying as forms of value addition were worth doing to increase chances of selling at the distant and preferred markets for the commodities. Through value addition, price uncertainties and transaction costs in terms of transport costs would be reduced; hence encouraging participation in distant preferred markets. This was in contrast with Martey et al. (2012) and Ochieng et al. (2015) who argued that an increase in distance to the market reduced market participation because of increased marketing costs (transaction costs), which was the deterrent to market participation. Furthermore, several other researchers also found out that increase in distance to the market limit the market access among the smallholder farmers (Agwu, 2012; Gebremedhin & Jaleta, 2010; Omiti et al., 2009).

The coefficient of joining agripreneurial groups was significant but negative on using pricing and product promotion strategies (Table 4.9). The outcome was rather surprising; it showed that cassava microenterprises heads who were in different agripreneurial groups were unlikely to have exchanged ideas on pricing and product promotional strategies. Group membership has benefits to participants and the study expected positive relationships. This is because being in a group of

agripreneurs; members were likely to share marketing ideas and information as well as increased bargaining power relative to when operating in isolation (Shiferaw et al., 2006). Sewando et al. (2011) also reported that poor organisation and coordination of farmers (agripreneurs) makes it difficult for them to access lucrative markets. The results, therefore, predicted well the reason why cassava microenterprises were not performing well in the area of studies and it should be reversed to realise better performance of their microenterprises in their core activities.

4.6.3 Marketing margins as the indicators of performance per product line

Marketing margins according to this study are the differences between product price paid by consumers and what received by cassava agripreneurs. Furthermore, product lines means and the standard deviations were analysed as shown in Table 4.10.

Table 4.10: Product line marketing margins

Product line	Min	Max	Mean	Std. Dev	*n*
Raw tubers	0	30	3.44	6.452	267
Unfermented cassava pellets	0	45	3.26	7.128	267
Fermented cassava pellets	0	50	14.61	8.871	267
Other cassava-based products-local brew	0	15	0.06	0.918	267

Consumers are the final receivers of the cassava products prices. They are the most crucial elements in the cassava marketing system in influencing the contribution of agribusinesses to the economic development of a country. The study found out that most of the cassava products marketing margins per product line across the area of study were 90% similar despite the difference in their selling prices across the area of study. This showed that the price difference set by the initial sellers of the commodity were equally transmitted along the cassava value chain in all markets visited. It was highly attributed to the pricing strategy which was most used in the area of study (Table 4.4), staked by product promotion and marketing alliance strategies. Again, this was informed by the prevailing demand of the products, which affected both the producers and the product marketers (intermediaries) proportionately as informed by the product improvement strategy. As it is in the perfect competitive marketing system, the study acknowledged that low demanded cassava products (raw tubers) had low prices.

Fermented cassava products had the highest marketing margins (KSh. 50) and standard deviations (8.871), followed by unfermented cassava (KSh.45) and raw tubers (KSh.30) with standard deviations of 7.128 and 6.452 respectively (Table 4.10). Finally, other cassava-based products (for our case was local brew) had the lowest marketing margin of KSh.15 and the standard deviation of 0.918 (Table 4.10). This showed that fermented cassava products had no fixed prices across the sub-counties therefore the microenterprises were just fixing their own prices to suit their benefits. Cassava-based products had the lowest standard deviation, which showed that their prices were closely similar across the area of the study.

Besides, in Kuria West, some of the cassava microenterprises were selling wholly fermented cassava tubers; this was an observation not found in the other sub-counties; raw cassava tubers were peeled and fermented. Cassava tubers had marketing margins of Ks.30, mean of 3.44 and standard deviation of 6.452 implying that cassava microenterprises would double their prices during the selling of commodities. This also was applying with the unfermented cassava pellets and other cassava-based products with the means of 3.26, 0.06, and standard deviations of 7.128 and 0.918 respectively. Fermented products had lower standard deviations from their means, which implied that their selling prices were hardly increased relative to that for the other product lines in the markets.

Plate 4.1 and 4.2: Drying chopped and unfermented cassava pellets on PVC material and tarmac road respectively in Kuria West.

Across all the markets visited in Migori County, it was noted that all cassava marketers used a 2kg-container "*Korogoro*" as a measuring unit for the value-added cassava products. Value addition strategy was noted to be done differently across all the markets visited. In Kuria West

Sub-county, wholesalers of chopped cassava products doing instant drying after chopping (sun drying without fermentation). They were spreading the commodities on PVC sheets and along the tarmac road (Plate 4.1; Plate 4.2). They were bulking before transporting and others selling to the distant markets and contracted marketers.

4.6.4 Effects of marketing strategies on product line margins

Table 4.11 shows the summary of the marketing strategies packages that would better performances of cassava microenterprises by giving a maximum margin to each product line. This is supported by the regression analysis results as per Table 4.9.

Table 4.11: Product lines, marketing strategies, and product line margins

	Pricing	Promotion	Value addition	Marketing alliances	Maximum Margins
Raw tubers		✓	✓		30
Unfermented	✓	✓		✓	45
Fermented	✓	✓	✓		50
Cassava-based products					15

Results revealed that raw cassava tubers were doing well with promotion and value-addition marketing strategies package and it would yield a maximum margin of Ksh. 30. Unfermented cassava pellets encouraged the use of pricing, promotion and marketing alliance strategies with a maximum margin of KSh. 45. Fermented cassava products attracted pricing, promotion and value addition marketing strategies package with a maximum margin of KSh. 50; which was the highest product line margin recorded across the area of study. Thus, cassava microenterprises may improve their performance with the marketing strategies package (Pricing, promotion, and value addition strategies) on their product lines since they are compatible and potential for higher margins. Finally, all the marketing strategies package could not influence the margins of cassava-based products due to the inelastic demand across the area of study.

4.7 Perceptions of cassava agripreneurs on factors that would lower performance of their microenterprises

To determine how cassava agripreneurs perceived the effects of potential constraints to their microenterprises, a Likert Scale comprising five statements was used. A five point Likert Rating Scale (LRS) graded 1 to 5 as follows was applied for the test: 1 = None, 2 = mild, 3 = Average, 4 = Severe and 5 = Very severe effects. The study had pre-selected the potential constraints and the respondents were allowed to rate the constraint once mentioned and explained by the interviewer (Table 4.12). Results found out that the most significant challenges to cassava microenterprises were the weaker trader institutions that could guide them, weak cassava policy that has not been implemented among themselves and the efficient sources of seed moneys to boost their microenterprises.

Table 4.12: Potential constraints to cassava microenterprises (*n=267*)

	None	Mild	Average	Severe	Very Severe	Total
Potential Constraint	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	
Product(cassava) scarcity	12	51	130	60	14	267
Poor market infrastructures	13	44	138	49	23	267
Damages by pests & diseases	50	24	54	76	63	267
Limited product diversity	65	39	133	27	3	267
Weak trader Institutions	3	11	41	85	127	267
Lack of cassava policy	2	10	30	60	165	267
Seed money limitation	14	30	69	120	34	267
Inadequate labour & skills	45	20	134	53	15	267
Perishability of tubers	55	71	102	33	6	267
Distance to the markets	25	38	114	61	29	267
Limited marketing information	18	55	148	38	8	267
Low cassava-products prices	10	19	77	89	72	267
Fear of cyanide contents	82	57	107	18	3	267
Association of cassava to poverty	169	47	51	0	0	267

Other potential constraints that were ranked average by the majority included the scarcity of the products, marketing infrastructures, limited product diversity, inadequate labour and value addition skills, perishability of tubers, distance to the preferred markets and marketing information since majority of them had no major challenges in accessing them, and lastly the fear of cyanide contents in their products. Finally, association of cassava to the poor was ranked less of a challenge since the crop has been consumed in the area of study for centuries.

CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the conclusions and recommendations of the study. The conclusions and recommendations are drawn and based on the study objectives respectively. Furthermore, the chapter outlines and discusses implications of the study on cassava policy and marketing of the crop-based products among cassava microenterprises. It concludes with areas for further research.

5.1 Conclusions

The Theory of Market Orientation and Strategic Management Theory guided the study in determining the effects of marketing strategies on product line margins among the cassava microenterprises in Migori County. The findings of the study yielded the following conclusions:

i). The results showed that there were three main product lines of cassava in the area of study namely raw tubers, unfermented dried cassava pellets, and fermented dried pellets. There was a minority sale of the other cassava-based products like the local brew. Fermented cassava products are highly encouraged in the area of study since it was noted to be more profitable and has great potential to boost economy among the cassava microenterprises. It was noted that unfermented cassava pellets were highly concentrated only in Kuria West relative to other Sub-counties. On the other hand, fermented cassava pellets were found on the other areas of the study (Suna East, Suna West, and Uriri Sub-counties) as their main traded cassava products.

ii). In pursuance to determine the relationships between the product lines and marketing strategies identified, raw cassava tubers, unfermented cassava pellets and fermented cassava pellets, the results further revealed a mixture correlations with the marketing strategies identified. On the other hand, other cassava-based products had complete negative associations with the marketing strategies used by cassava microenterprises: A scenario explained by dynamic logistics associated with the products. Raw cassava tubers had negative relationship with pricing but positively associated with product promotion. Fermented pellets positively related with the pricing strategy while discouraging the involvement of other marketers (marketing alliances). Unfermented cassava pellets recorded positive association with marketing alliances, who would acquire at relatively cheaper prices and transporting to distant markets for selling hence making good returns (marketing margins). Cassava-based products neither showed any effects from the marketing

strategies. This could be explained by their inelastic demand from the consumers. Their prices were not of high influence on their consumption.

iii). The results further revealed that significant factors influencing the choice of marketing strategies among the cassava agripreneurs were their age, gender, education level (years of schooling), household sizes, major occupation, years of selling the products (marketing experience), access and use of the seed money, entrepreneurial trainings, access to market information, farm gate and open air marketing outlets. These observations are very crucial in seeking for relevant interventions to establish ideal marketing strategies for the cassava agripreneurs. Furthermore, it was proved that distance to the preferred markets and membership to agripreneurial groups influenced the choice of the strategies. The key finding is that among the four major product lines found in the area of study, marketing margins were well established and analysed. It was found out that fermented and unfermented cassava products (mainly pellets) had the highest marketing margins while other cassava-based products such as local brew had the lowest marketing margins. A combination of pricing, promotion and value addition strategies give an optimum marketing margin under the most marketable product line among cassava microenterprises.

Furthermore, it was found out that the perceptions of cassava agripreneurs on the possible constraints to better performance for their cassava business were the weaker trader institutions that could guide them, weak cassava policy that has not been implemented in their areas and the efficient sources of seed moneys to boost their microenterprises. The least feared challenge was the association of cassava to the poor by the public as it has been consumed in the area of study for decades.

5.2 Recommendations

This study contributes to the understanding of the effects of marketing strategies on product line marketing margins among cassava microenterprises in Migori County, which is a reflection of the country. However, this also applies to other agricultural commodities. The findings of the study gave insights to the following recommendations.

Findings of the study revealed that there were limited cassava products traded on among the microenterprises in Migori County. Fermented cassava pellets emerged as the popular product line across the area of study. However, it was also noted that cassava-processing activities were done traditionally. Since the product was the most preferred, microenterprises need to seek financial capital to invest in modern technologies from lending institutions, or supported by both governments (County and National) and alternatively development partners in the region such as *Self Help Africa* and others. The products have high consumption potentials when processed and packed well and so for export. All these product improvement activities need to be well done for better performance of cassava microenterprises.

Results from the correlation analysis between the product lines and the marketing strategies showed that pricing strategy was ideal only in selling fermented products and it had an association with product improvement (value addition) and marketing alliances. They have to be combined for better marketing margins. Product improvement strategy was applicable only to when selling raw tubers and fermented pellets. There was interdependence with pricing and formation of marketing alliance strategies but not to product promotion strategy. Product promotion strategy was significant only when selling raw tubers, fermented and unfermented pellets. Furthermore, this strategy did not have any interdependence with other identified marketing strategies in the area of study. Formation of strategic marketing alliances only encourages selling of unfermented cassava pellets and it associated only to product improvement strategy. Therefore, all cassava agripreneurs need to apply a combination of appropriate marketing strategies on respective product lines for better performance of their cassava microenterprises.

Results further revealed demographic and economic characteristics among cassava agripreneurs that significantly influenced the choice various marketing strategies for identified cassava products. For pricing and product promotion, strategies that were the most significant drawing the need of cassava microenterprises to use them for better performance of their microenterprises. They have to be trained on better skills to increase their productivity in marketing of the products. Seed money need to be provided to facilitate their core marketing activities. They also have to collaborate with other potential commodity marketers including supermarkets and exporters to widen their markets hence increasing their market shares for their growth. On gender basis, men

have to contribute more in marketing of the crop products so as to offset their female counterparts to do other household chores and crop production hence strengthening the crop value chain for better future. Aged crop marketers to collaborate with other young, energetic, and active sellers to avoid intermediaries and to receive better marketing margins. The government to strengthen training in equipping scholars with agripreneurship skills, which have to be incorporated in their curriculum and taught in all learning Institutions.

Households need to diversify in food production and consumption to enable crop product lines be sold for domestic revenue. This would reduce the dependence on cassava for household consumption. Specialisation in selling the crop product lines will increase marketing productivity due to better understanding of the markets. This will be supported by the access to the market information regarding the commodity at hand. Farm gate operations should be discouraged for better marketing margins and agripreneurial groups should be trained on various skills including marketing strategies for selling agricultural commodities. In addition, they should be encouraged to sell their produce in groups for better market prices since they will have relatively higher bargaining power to the buyers of their commodities than on sole proprietorship. Finally, marketing infrastructures (open-air markets) to be improved as it favours the sale of cassava products through the display technique. Display always provoke buying of the products through 'mind ignition' –impulse buying: (commonly known as the power of product display).

Finally, marketing fermented and unfermented cassava pellets recorded the highest marketing margins therefore agripreneurs need to scale up their trading quantities for better and sustainable performance of their microenterprises.

5.3 Recommendations for Cassava Policy

In general, public recognition in this case referred to national government contributions on cassava industry is highly recommended. The national government should resonate to the 2007 cassava policy and put more resources in support of cassava crop as another staple food crop, which has high potentials in achieving food security, which is one of the *Big 4 Agenda* of 2018. Cassava microenterprises should be integrated into market-oriented production hence successful market participation on cassava products. Industrial cassava processing plants should be established in the cassava-producing areas to boost cassava industry. Consumption of cassava to be promoted, just

as it was proposed on the 2007 cassava policy to open its markets and marketing potentials. Since cassava microenterprises from the area of study rated the challenges facing their enterprises, cassava policy has not been felt on their backyards. Both County and National governments should ensure that cassava policy as it was formulated, effected in 2007 and 2018 respectively hence need to be equally implemented with the current crop microenterprises. This would attract more cassava consumption rate hence a well-established marketing resulting to relatively better performance of microenterprises in the country.

5.4 Areas of further research

Since this study focused on the effects of marketing strategies on the product line margins among cassava microenterprises, collective action drivers and inhibitors were not explored. Orphaned crops value chains are currently the day-to-day talks among the researchers. Cassava being one of the deserted and underutilised crops is still under full control of smallholder agripreneurs. Therefore, an in-depth study on the missing linkages on the low adoption of collective actions in strengthening cassava value chain is highly recommended.

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APPENDICES

Appendix I: Questionnaire

To the Farmer,

am Geoffrey Cheruiyot Ngenoh, a Student from Egerton University carrying out a study regarding the effects of marketing strategies on product lines margins among the cassava microenterprises in Migori County, Kenya. This will contribute to the achievement of *Presidential big 4 agenda*,

I Vision 2030, Africa's Agenda 2063 and Successful completion of my Master of Science degree course in Agri-Enterprise Development, therefore appreciating your support towards accomplishing them.

The study is carried out in the following Sub-counties: ***Kuria West, Suna East, Suna West,*** and ***Uriri.*** You have been selected to participate in the Survey on cassava microenterprises in this Sub-county. The main purpose of this survey is to get insights on the actual market outlets, marketing strategies, and respective marketing margins per product line. Cassava crop has a great potential to becoming both subsistence and commercial crop. This will enable me to come up with the Recommendations to Policy makers, National and County governments for formulating Agribusiness Strategies.

Instructions (Optional):

Please read the question carefully.

Your answers are completely confidential and will be used **ONLY** for academic purposes. Unless otherwise instructed, please **cycle/tick ALL** the numbers corresponding to the answer categories that **BEST** describe your opinion.

It will take approximately 20-30 minutes to complete it.

~Welcome~

Start Time: ☐ **End Time:** ☐

Enumerator's name: …… Date: ……

PERSONAL DETAILS:

Name of the respondent: ……Cell phone: ……

Q1. Sub-County	**Ward**	**Village**
1. Kuria West		
2. Suna East		
3. Suna West		
4. Uriri		

SOCIO-ECONOMIC CHARACTERISTICS OF CASSAVA MICRO ENTERPRISE:

Q2.Gender of the respondent	**Q3.Gender of cassava microenterprise (CME) Head**	**Q4.Age of the CME head(years)**	**Q5.Education level of the CME head**
1. Male **0**. Female	**1**. Male **0**. Female	*Record the number of complete years*	**1.** Unattended **(Go to Q7)** **2.** Primary **3.** Secondary **4.** Tertiary **5.** University **6.** Adult education

(NB: Tertiary level refers to colleges and Technical Institutions like Polytechnics)

Q6.Years of Schooling	**Q7. Household Size**	**Q8. Major Occupation**	**Q9.Monthly income (Estimation in KShs.)**
*Calculate based on **8-4-4** Kenyan education system*	**1.** 2 or less **2.** 3-5 **3.** 6-10 **4.** Above 10	**1.** Agriculture **2.** Civil servant **3.** Other (Specify) …….	**1.** 4,000 or less **2.** 4,001-8,000 **3.** 8,001-16,000 **4.** Above 16,000

NB: MONTHLY INCOME QUESTION WILL BE ASKED THE LAST! Q9.

CASSAVA MARKETING: VARIETIES, RESOURCES, & SUPPORT SERVICES

Q10.Total cassava sold-Kgs	**Q11. Total cassava processed -Kgs**	**Q12. Processing equipment ownership**	**Q13.Years of selling cassava**
1. 50 or less **2.** 51-99 **3.** 100-500 **4.** 501-1000 **5.** Specify ……	**1.** 50 or less **2.** 51 - 99 **3.** 100 - 500 **4.** 501-1000 **5.** Specify …….	**1.** Own **2.** Family **3.** Communal **4.** Other(Specify) ……..	**1.** 3 or less **2.** 3-6 **3.** 7-10 **4.** Specify …….

Which cassava varieties have you been trading on mostly? ***(Five most preferred)***

Q14. Variety Names	**Q15. 1.Local variety 2.Improved variety 3. Other(*Specify*) Write as 1, 2, 3**	**Q16. Which variety is most marketable? Rank them as per preference, 1 as most, 4 the least**
1.		
2.		
3.		
4.		

Q17. Do you access and use seed money? (**Seed Money** is any cash money that you can be given or borrowed mainly to support your cassava-microenterprise)

1=Yes **2**=No ***(Go to Q19.)***

Q18. What are your sources of money (seed money) used in supporting cassava micro-enterprise activities?

1=Own **4**=Relatives **7**=Remittances

2=Friends **5**=Lotteries **8**=Pension

3=Loans **6**=Salaries

9=Others (***Specify***)……

CASSAVA PRODUCTS COLLECTION, VALUE ADDITION, MARKETING

STRATEGIES, OUTLETS AND INCOMES

Q19. In which forms (types) do you sell it? ***Choose all that applies***

1= Raw **2**= Boiled tubers **3**= Roasted tubers

4=Cassava Flour **5**= Chips **6**=Crisps

7=Animal feeds **8**=Chopped and dried pellets **9**=Snacks (*Mandazi and Chapati*) **10**=**Other (*Specify*)**……

Q20. Where do you get cassava product(s) you are selling?

1= Own farm **2**=Village farmers **3**=Contracted farmers **4**=In the market

5=Others (Specify) ……

Q21. Where do you get labour for processing cassava?

1=No processing **2**=Own **3**=Group members **4**=Hired labour

5= Family members **6**=Other (***Specify***)……

Q22. Have you **received training** on cassava value addition? **(Entrepreneurial Trainings)**

1=Yes

2= No ***(Go to Q26)***

Q23. If yes, was it about training on how to make:

1=Cassava flour **2**=Chopped and dried pellets **3**=chips **4**=crisps

5=Animal feeds **6**=Snacks (*Mandazi and chapati*)

7=Others (Specify) ……

Q24. **Where** did you get the training?

1= Fiends **2**= Family members **3**= Through farmer groups **4**=Farmer to farmer

5= Farmers field day **6**= Private partners **7**=County government officer 8=Other (Specify) ……

Q25. How many times during the last seasons (for the past one year)? ☐

Q26. Do you access **market information**?

1=Yes

2=No ***(Go to Q28)***

If yes, which type?

1=Prices **2**=Products demand **3**=Market opportunities

4=Others (Specify) ……..

Q27. Where do you get the information?

1=Friends/Neighbours/Family **2**=County government extension officers

3=National government extension officers **4**=Research Organizations

5=Training Institutions **6**=Non-governmental organizations

4=Mass media e.g. radio, TV, Newspapers, WhatsApp etc.

8= Others (***Specify***)……..

Q28. Where do you sell your cassava? **(Market Outlets- *Choose all that applies*)**

1=Farm gate (***Go to 31***) **2**=Roadside **3**=Open air Markets

4=Shopping centres **5**=Supermarkets **6**=Contract marketers

7=Events **8**=Others (***Specify***)……

Q29. How far is the nearest and preferred market from your cassava processing point?

In Kilometres ☐

Q30. How do you get your produce to the market? ***Choose all that applies***

1=Porterage **2**=Own bicycle **3**=Hired bicycle **4**=Own vehicle

5=Hired vehicle **6**=Own motorcycle **7**=Hired motorcycle **8**=Own cart

9=Hired cart **10**=Public Transport means

11=Other ***(Specify)*** ……..

Q31. From the above form(s) you sell, what are the unit of sales and unit costs in **Kenya Shillings (KES)?**

Forms	**Unit of Sale**	**Farm gate unit cost**	**Outlet unit cost**
Raw tubers			
Boiled tubers			
Roasted tubers			
Cassava Flour			
Cassava chips			
Cassava crisps			
Animal feeds			

Chopped & dried pellets			
Snacks (E.g. *Chapati*)			
Others *specify* ……			
TOTAL			

Q32. Product entry into a market need some strategic moves. Among the following marketing penetration strategies, which one(s) do your microenterprise uses in increasing products sales? (***Interviewer to explain extensively; interview the respondent based on the specified market penetration strategies used****)*

1. Price adjustment/ Pricing strategy
2. Augmented promotion
3. Product distribution channels
4. Improving products
5. Strategic alliances
6. Being unique (educating consumers on importance of cassava consumption)
7. Others (Specify) …….

Q33. Reasons for selecting the Strategy (*Choose all that applies*)

1. Easy to use
2. Most profitable
3. Suitable to the area of study
4. Do not know other strategies
5. Other reason (Specify) ……..

NB: Interview the respondent basing on the above selected strategies

Pricing strategy

Q34. Do cassava price variation affect cassava products consumption for/among your marketing outlet(s)?

1=Yes **2**= No

Q35. Do you vary your products prices for you to increase market sales?

1=Yes **2**=No

Give reason(s) for the above choice ……..

Augmented Promotions:

Q36. Which among the following promotion strategies are used in your cassava microenterprise?

1. Good packaging
2. Selling during events (wedding, trade fairs etc.0
3. Sales promotion
4. Personal selling (Door to door selling)
5. Advertising
6. Displaying

Q37. Which advertisement channel do you use?

1. Facebook
2. WhatsApp
3. Radio
4. Television
5. Newspaper
6. Barazas
7. Others (Specify) …….

Product Improvement/ Product Strategy

Q38. What product strategies do you apply when selling your products? **(Design & Style)**

1. Offering small sizes or quantities for easy purchase,
2. Different shapes for snacks, pellets etc.,
3. Packaging materials,
4. Products quality,
5. Others (Specify) ……

Strategic Marketing Alliances

Q39. Who is/are your business partner(s)?

1. None
2. Shop owner
3. Other trade partners
4. Supermarkets

5. Contract marketers **6** = Others, specify …….

Q40. What is the relationship between you and strategic alliance partners?

1. None
2. Family member
3. Group member
4. Business partners
5. Others (Specify) ……

Q41. Which one(s) is/are the most effective in marketing penetration strategies?

1. ……..
2. …….
3. …….
4. …….
5. **…….. 6. ALL**

CONSTRAINTS FACING CASSAVA MICROENTERPRISES

Q42. The following are some of the constraints that cassava traders are most likely to encounter. Kindly tell the level of severity on cassava commercialisation basing on your experience. ***(Read loudly to the respondent and tick respectively)***

Constraint(s) influencing cassava commercialisation	**Level of severity**				
	None	**Mild**	**Average**	**Severe**	**Very Severe**
Less preferred variety (Scarcity)					
Poor infrastructures that can support agri. produce marketing					
Damages on products caused by Pests					
Damages caused by Diseases – **CBSD (1) & ACMV (2)** (Cassava brown streak disease & African cassava mosaic virus)					
Consumption limited to fresh cassava (limited product diversity)					
Weak Market linkages					
Weak trader institutions to support cassava microenterprises- **Trainings**					
Lack of policy/regulations support to cassava marketing in Migori					
Limited funds to buy equipment (for value addition)					
Inadequate labour/processing skills					
Perishability of tubers					
Market too far, (***Kms***)					
Lack of market information?					
Prices too low?					
Limited amount of cassava products to trade on					

Consumer fear about cyanide content (Cassava-caused deaths)					
Others *(Specify)* **…….**					

GROUP MEMBERSHIP INFORMATION

Q43. Do you belong to any group?

1= Yes

2=No … (***Probe why and record verbatim)***

……

……

…… (***End the Questionnaire!)***

Q44. How long has the group existed? (***Time in years***)

Q45. Is it registered?

1=Yes **2**=No

Q46. What is/are the main role(s) of that group?

1=Farming/Agricultural inputs (Purchase)

2=Marketing of farm produce

3= Processing cassava and other farm produce

3=Merry-go-round

4=Table banking

5=Members Welfare

6-Credit/Loan/Seed money

7-Joint extension services

8-Entrepreneurial Trainings

9=**Others (*Specify*)**……

*****THE END*****

THANK YOU VERY MUCH/*AHSANTE SANA*

Appendix II: Correlation Analysis between Marketing Strategies and Product lines involved by Cassava Microenterprises

	Correlation between Vectors of Values for Product lines and Marketing Strategies used by Cassava Microenterprises							
	Raw tubers	Chopped and dried/unfermented tubers	Fermented forms	Cassava-based products like local brew	Pricing strategy	Product promotion strategy	Product value addition strategy	Formation of strategic alliances
Raw tubers	**1**							
Chopped and dried/unfermented tubers	0.095*	**1**						
Fermented forms	-0.106	-0.490	**1**					
Cassava-based products like local brew	-0.037**	-0.032**	-0.155	**1**				
Pricing strategy	-0.002***	-0.110	0.081*	-0.205	**1**			
Product promotion strategy	0.069*	0.007***	0.021**	-0.068*	-0.104	**1**		
Product value addition strategy	0.076*	-0.024**	0.006***	-0.059*	0.097*	-0.391	**1**	
Formation of strategic alliances	-0.036**	0.068*	-0.035**	-0.019**	0.043**	-0.020**	0.053**	**1**

Note: *, **, *** Denotes significance levels at 10 , 5 , and 1 % respectively

Appendix III: Multivariate Probit model results for marketing strategies used by cassava microenterprises in Migori County

	Pricing		Promotion		Value addition		Alliance	
Variables	***β***	**RSE**	***β***	**RSE**	***β***	**RSE**	***β***	**RSE**
Age of CME head	**-0.0226****	0.0090	0.0106	0.0103	0.0210	0.0144	**0.0166***	0.0087
Gender of CME head	0.1452	0.2156	**0.4579***	0.2443	0.1112	0.3431	-0.2692	0.2032
Years of schooling by CME head	-0.0336	0.0255	0.0107	0.0290	0.0021	0.0291	**0.0482***	0.0248
Household sizes for CME heads	0.0643	0.0403	**-0.0789****	0.0389	**-0.0727***	0.0419	-0.0444	0.0354
Major occupation for CME head	**0.3849****	0.1950	**0.6061*****	0.2135	0.0328	0.2180	0.1274	0.1840
Years of selling cassava products	**0.0358***	0.0199	-0.0097	0.0164	-0.0159	0.0215	0.0023	0.0146
Access and use of seed money	0.0660	0.2499	**0.5417****	0.2637	**0.7735***	0.4148	-0.1175	0.2312
Entrepreneurial trainings received by CME heads	**0.4694***	0.2433	-0.2601	0.2615	-0.2051	0.3632	-0.2182	0.2234
Access to market information	0.2599	0.1969	**0.3971***	0.2124	0.1772	0.2987	**0.3343***	0.1892
Farm gate outlet	**-0.8272*****	0.2168	0.0806	0.2211	**3.3528*****	0.3226	0.1234	0.1940
Roadside as an outlet	0.0637	0.2222	-0.1725	0.2293	0.3638	0.2974	0.0780	0.2004
Open air marketing outlet	-0.0060	0.2710	**6.6756*****	0.3458	-0.4282	0.4687	0.0795	0.2767
Shopping center as marketing outlet	0.0283	0.1969	0.1328	0.2026	-0.0143	0.2245	0.0689	0.1787
Contracted cassava traders as marketing outlet	-0.0422	0.2544	-0.0962	0.3041	-0.1821	0.3730	0.1397	0.2412
Distance to the preferred market (km)	0.0114	0.0096	-0.0116	0.0084	**0.1093****	0.0504	0.0033	0.0106
Group membership by CME head	**-0.4212***	0.2509	**-0.5254****	0.2473	0.0036	0.2750	0.1728	0.2179
Group existence in years	0.0023	0.0283	0.0329	0.0283	-0.0140	0.0270	-0.0302	0.0226
Constant	0.5470	0.6078	-7.3574	0.8416	-2.6101	0.5978	-1.4813	0.6181
Multivariate probit regression								
Number of observations	267							
Wald Chi2 (68)	2164.95							
Log pseudo likelihood	-473.1674							
Prob > Chi2	0.0000							

Note: *, **, *** Denotes significance levels at 10, 5, and 1% respectively, CME=Cassava microenterprise, Km=kilometres RSE=Robust Standard Errors

Appendix IV: List Of Migori Sub-Counties

	Name	**Area (Km^2)**	**Total Population**
1	Awendo	261.9	117,290
2	Kuria East	240.5	96,872
3	Kuria West	332.5	208,513
4	Nyatike	677.7	176,162
5	Rongo	208.4	124,587
6	Suna East	207.3	122,674
7	Suna West	282.8	128,890
8	Uriri	380.7	141,448
	TOTAL	**2,591.8**	**1,116,436**

Source: Migori CIDP 2018

Appendix V: List Of Sampled Sub-Counties

	Name of the Sub-county	**Area (Km^2)**	**Respondents**
1	Kuria West	332.5	74
2	Suna East	207.3	46
3	Suna West	282.8	63
4	Uriri	380.7	84
	TOTAL	**1,203.3**	**267**

Source: Migori CIDP, 2018

Appendix VI: Research Authorisation Letter (Nacosti Permit)

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Appendix VII: Map Of Kenya

Source: Kenya National Bureau of Statistics

Appendix VIII. Paper Abstract

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FACTORS INFLUENCING THE CHOICE OF MARKETING STRATEGIES AMONG CASSAVA MICROENTERPRISES IN KENYA

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ABSTRACT

Cassava (*Manihot esculenta* L.) production and utilisation in Kenya face stiff competition from other major starchy food crops mainly maize, potatoes and wheat. This is due to the cyanide content in cassava which is lethal when roots are mishandled, leading to avoidance of the crop by potential consumers. This has affected the marketing of the crop and its products. The objective of this study was to analyse factors that influence the choice of marketing strategies among agripreneurs in cassava microenterprises in Kenya. A study was conducted in Migori County (Kuria West, Suna East, Suna West and Uriri Sub-counties) in Kenya, using a semi-structured questionnaire, administered to a sample of 267 cassava micro enterprises. Results showed that the most used marketing strategies were pricing, product promotion, value addition and formation of a marketing alliance mostly in their combination. Multivariate Probit results showed that age, gender, education level, household size, major occupation (trading), marketing experience, seed money, entrepreneurial training, marketing information, market distance, group membership, farm gate and open-air marketing outlets significantly ($P<0.05$) influenced the choice of marketing strategies among cassava microenterprises. Therefore, cassava agripreneurs of microenterprises need to combine viable product lines and the marketing strategies that give maximum performance in order to increase their marketing shares and profits.

Key Words: Agripreneurs, Cyanide, *Manihot esculenta*, pricing

RÉSUMÉ

La production etl'utilisation du manioc (*Manihot esculenta* L.) au Kenya sontconfrontées à une concurrence féroce de la part d'autresprincipales cultures féculentes, principalement le maïs, les pommes de terre et le blé. Celaestdû à la teneurencyanure du manioc qui estmortellelorsque les racinessont mal traitées, ce qui conduit à l'évitement de la culture par les consommateurspotentiels. Cela a euune incidence sur la commercialisation de la culture et de sesproduits. L'objectif de cetteétudeétaitd'analyser les facteurs qui influencent le choix des stratégies de commercialisation des agripreneurs dans les microentreprises du manioc au Kenya. Uneétude a étémenéedans le comté de Migori (comtés de Kuria West, Suna East, Suna West et Uriri) au Kenya à l'aide d'un questionnaire semi-structuré, administré

à un échantillon de 267 microentreprises de manioc. Les résultatsontmontré que les stratégies de marketing les plus utiliséesétaient le prix, la promotion de produits, la valeurajoutée et la formation d'une alliance de marketing principalementencombinaison. Les résultatsmultivariés de Probit ontmontré que l'âge, le sexe, le niveau de scolarité, la taille du ménage, la profession principale (négociation), l'expérience de marketing, l'argent de démarrage, la formation entrepreneuriale, l'information de marketing, la distance du marché, l'appartenance à un groupe, Les points de vente à la ferme et enplein air ($p<0.05$) ontfortementinfluencé le choix des stratégies de commercialisation parmi les microentreprises de manioc. Par conséquent, les agripreneurs de manioc des microentreprisesdoivent combiner des gammes de produitsviableset des stratégies de commercialisation qui donnentune performance maximaleafind'augmenterleurs parts de commercialisation et leursbénéfices.

Mots Clés : Agripreneurs, Cyanure, *Manihot esculenta*, tarification