

**FACTORS INFLUENCING COWPEA PRODUCERS' CHOICE OF MARKETING
CHANNELS IN ZAMBIA**

By

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Extension Education**

By

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LIST OF ABBREVIATIONS

CSO	Central Statistics Office
FRA	Food Reserve Agency
FSRP	Food Security Research Project
MDGs	Millennium Development Goals
NAMBOARD	National Marketing Board
ZARI	Zambia Agricultural Research Institute

ABSTRACT

FACTORS INFLUENCING COWPEA PRODUCERS' CHOICE OF MARKETING CHANNELS IN ZAMBIA

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Cowpeas are an important food legume throughout central and southern Africa and Zambia in particular. They have the potential to contribute to poverty reduction, food security, income generation and even to the achievement of Millennium Development Goals (MDGs). The development of the cowpea industry can also lead to the achievement of the *Zambian Agricultural policy vision* of promoting and facilitating the development of an efficient, competitive and sustainable agricultural sector which assures food security and increased incomes. However, to tap into the potential in the cowpea industry, the markets have to be set right. In setting the markets right, important aspects of marketing such as producer marketing choices should be considered. This is because increased reliance on markets as the foundation for development strategies has put a premium on understanding household market participation.

Marketing channel decisions are among the most critical decisions facing an organization and the chosen channels intimately affect all other marketing decisions (Berry .T, 2010). In an effort to identify interventions that could stimulate farmer participation in marketing, it is important to understand the factors that influence the farmers' choices of marketing channels. Previous studies have analyzed market participation decisions as being made sequentially with the decision of what volumes to buy or sell (Goetz, 1992; Key et. al., 2000; Holloway et. al., 2001; Bellemare and Barrett, 2006; and others). However, it is unclear whether market participation decisions are related to choice of marketing channel decisions, whether as being made simultaneously or sequentially.

Secondary data from the third supplemental survey to the 1999/2000 post harvest survey, collected from CSO was used. The study employed the probit model to identify the factors that influence cowpea producers' market participation decisions as well as their choice of marketing channels in Zambia.

The results showed that cowpea producers sold to a particular channel as long as it presented a ready market to the seller. Markets were the only significant factor with p-values of 0.025 and 0.000. The factors that influence the producers' market participation decisions included price (P-value = 0.019), inventory (P-value = 0.024), transport (P-value = 0.043), level of mechanization (P-value = 0.004) and marital status (P-value = 0.000). The market participation decision and choice of marketing channel are therefore influenced by different factors such that policies to stimulate market participation for cowpea producers are not likely to affect the producers' choice of marketing channel. The results also clarified that cowpea is mainly grown by the resource poor farmers and that its market is largely informal.

This study therefore recommends the setting up of appropriate policies and infrastructure to encourage more market participants thus developing the cowpea value chain

CHAPTER ONE

INTRODUCTION

1.1 Background

Cowpeas (*Vigna unguiculata.L.Walp*) are an important food legume throughout central and southern Africa. They are a high-value food crop which is consumed by relatively rural and peri-urban people of less developed countries. Africa produces 64 percent of the world's cowpeas estimated at 7.6 metric tons per year (African Agricultural Technology Foundation, 2009). Zambia in particular had a production of 4,164 metric tons of cowpeas in the 2007/2008 agricultural season (CSO, 2007). Cowpeas are a source of high-value protein for consumers and also significantly contribute towards food security by bridging food gaps for farmers. The crop is sometimes called the "poor man's meat" because its seeds and leaves are very rich in good quality protein and can easily be accessed by the rural poor. Cowpeas are also rich in potassium and Vitamin A (Patil, 2009). Many new cowpea varieties have high concentrations of Iron, Zinc, Calcium and other minerals. Other improved varieties are loaded with antioxidants and many health-enhancing factors (Fannin, 2010). The crop therefore has many health benefits to consumers and can help improve the currently deteriorated nutritional and health status in Zambia. Since good quality nutrition is the cornerstone of development (Kachingwe, 2009), cowpeas are a potential crop in directly and indirectly promoting development.

In addition, cowpeas have favorable agronomic characteristics which are beneficial to the producers. They mature early, thereby bridging food gaps for farmers (Langyintuo, 2001) and can also be easily accessed by consumers since they are a cheap source of high value protein. However, the potential for cowpeas to contribute towards sustainable agriculture has remained unexploited because little attention has been paid to it. An important argument was presented by the honorable minister of agriculture in Zambia in 2004, in which it was stated that, to tap into the potential in agriculture, we need to set the markets right. This need cannot be overemphasized for the cowpea industry.

Previously, the governments played a major role in helping farmers to market their agricultural products in most sub-Saharan countries. In Zambia, parastatal institutions such as the National

out and the responsibility for marketing rested on the individual farmers. This was with the exceptions of Maize farmers who benefited from the establishment of FRA, a quasi governmental organization established for purposes of stock reserves and marketing of Zambia's staple food, maize. One of the most important aspects of marketing is channel selection. According to Lanchester (2000), distribution arrangements tend to be long term and hence distribution channel choices are usually classified as strategic rather than tactical or operational. This is because channel choices have a direct effect on the rest of the firm's marketing activities and also, once established, channel systems may be difficult to change especially in the short run. Although this may be less true for smallholder farmers, marketing channel decisions are still among the most critical decisions facing any organization or small-scale farmer and the chosen channels intimately affect all other marketing decisions (Berry, 2010).

Cowpeas, just as most agricultural products, are likely to be faced with a multi-channel marketing system. The complexities of a multi-channel marketing system can be daunting and seems to exponentially increase the variables that a marketer must consider (Yulisky, 2000). In increasing producer market participation, these variables and overall farm objectives that influence the cowpea producer's choice of marketing channel must be identified.

1.2 Problem Statement

In an effort to identify interventions that could stimulate farmer participation in markets, it is important that factors influencing the farmers' choice of marketing channels are identified and understood. An increase in market participation in turn makes it easy for farmers to shift into commercial farming, in turn increasing economic growth (Jari, 2009).

Little is known on most important aspects of marketing such as factors affecting farmer market participation in relation to channel choices. Market participation decisions have previously been described as occurring in two steps: 1) whether to participate in the market (buy or sell, versus remain autarkic), and 2) what volume will be bought or sold (Goetz, 1992; Key et. al., 2000; Holloway et. al., 2001; Bellemare and Barrett, 2006; and others). Market participation studies have therefore attempted to model the market participation decision in these two stages. It is unclear however whether market

In preceding researches, demographics, production and market characteristics as well as asset ownership factors have not been considered collectively, in trying to determine market participation determinants (Jari, 2009, Nyaupane, 2010 and others). This study therefore intends to build on these previous studies by identifying the factors that influence cowpea producers' marketing channel choices in Zambia, where such a research has never been carried out in the pulse industry.

According to Barrett (2004), there has been scanty research on market participation, especially in developing country settings where significant frictions make this question most salient. Currently in Zambia, research efforts in the pulse industry by public institutions such as The University of Zambia, The Zambia Agricultural Research Institute (ZARI) and other research organizations have concentrated on agronomic conditions and characteristics of cowpeas with the view of increasing yields. However, even with the most efficient high yielding innovations, without markets, farmers will only produce enough for their consumption unless the constraints to marketing are identified and dealt with. These research efforts therefore have had limited impacts on the growth of the cowpea industry because they have not been coupled with economic researches.

1.3 Objectives

The overall objective of this project was to identify the factors that influence cowpea producers' choices of marketing channels. The specific objectives include:

- i) To determine the production and marketing characteristics of cowpea producers in Zambia;
- ii) To determine the distribution of producers by the type of marketing channel they use in selling cowpeas;
- iii) To identify the factors that affect cowpea producers' market participation decisions.

1.4 Rationale

Increased reliance over the past decade or so on markets as the foundation for development strategies puts a premium on understanding household market participation (Barrett, 2004).

Besides, Conceptual and empirical evidence suggests that interventions aimed at facilitating

Identifying and understanding the factors influencing the producer's choice of marketing channels and how these factors can help develop the cowpea value chain is important in developing the cowpea industry. Understanding the factors affecting market participation decisions and how the bottlenecks associated with these factors can be alleviated is also fundamental in improving marketing and the well being of emerging and small holder livelihood. Participation in agricultural markets by rural households is an important strategy for poverty alleviation and food security in developing countries (Heltberg and Tarp, 2001).

This research was therefore aimed at identifying the factors that influence cowpea producers' choices of marketing channels so as to be able to pinpoint setbacks in the pulse industry and also formulate strategic plans and policies for the development of the industry. This was also in effort to complement the research works on the agronomic aspects of cowpeas so that their impact in the agricultural sector is maximized.

1.6 Structure of the Report

This report begins by giving an introduction of the research topic. The introduction highlights the background information about the subject, the problem statement, objectives, rationale and scope of study. Chapter two focuses on literature review in which the key terms in the study are defined and several aspects of marketing which include the marketing of cowpeas, direct and indirect channels, international marketing channels and factors influencing the farmers' choices of marketing channels are reviewed. In addition, the underlying conceptual framework of the study conceptual framework is discussed. Chapter three looks at the methods and procedures that were used for the study. It encompasses the specification of the model that was used in the study, a description of the data collection methods, data processing and analysis as well as the limitations encountered during the study. Chapter four highlights the findings and interpretation of the study, while chapter five gives conclusions and recommendations based on the findings of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter explored literature surrounding producers' marketing channel choices. The selection of distribution channel is affected by many factors which have been studied by researchers in various fields.

The chapter begins by defining the major terminologies in the study, followed by a presentation of different aspects of marketing (such as direct versus indirect marketing channels), international marketing, and market participation decisions. In conclusion, the chapter looks at the determinants of marketing channel selection as identified by researchers in different market sectors and regions

2.2 Definition of Terminologies

A marketing channel (distribution channel) is defined as a set of interdependent organizations that help make a product available for use or consumption by the consumer or business user. Channel intermediaries are firms or individuals such as wholesalers, agents, brokers, or retailers who help move a product from the producer to the consumer or business user (Scribe, 2010). A marketing channel, according to Lake (2007) is an organized network of agencies and institutions which in combination performs all the functions required to link producers with end customers to accomplish the marketing task.

In Agriculture, distribution channels therefore move agricultural products from farmers to consumers and to other businesses and consist of a set of interdependent organizations such as wholesalers, retailers, and sales agents who are involved in making a product available for use or consumption. The intermediaries in the marketing of agricultural products include all interdependent organizations (firms and individuals) that help move a product from the farmer to the end user.

2.3 Cowpea Marketing

The role of markets in ensuring the efficient distribution of cowpeas has been studied by different researchers in different parts of the world especially in West Africa where cowpeas are an important plant protein source that is used as a substitute for animal protein. In Nigeria, Cowpea is very important for the federal government's strategic food programme such as the strategic grain reserve programme and food aid programme (Adejobi, 2005).

There are several actors who participate in the marketing of cowpeas. The key actors in the cowpea marketing chain in Ogun State of Nigeria according to Ayinde (2005) were wholesalers, Drivers, loaders, retail traders, consumers, Restaurant owners, trader associations, local government/agencies and security outfit while those identified by Adejobi (2005) in his study on Cowpea marketing in Maiduguri, Borno State in Nigeria included farmers/ producers, Trans-border farmers, Rural retailers/bulkers, commission agents, urban wholesalers/bulkers, urban retailers, intra-country traders and consumers as other intermediaries. These intermediaries differ in function, distribution and wealth status. According to Faye (2005), producers represented the largest group and sold directly or indirectly to exporters, collectors, wholesalers, processors, retailers and consumers. Collectors were individual entrepreneurs who acted as intermediaries in the market place.

Wholesalers and retailers normally bought cowpeas from the northern part of Nigeria but were willing to buy from local sources provided the local sources met the same requirements as those from the north. The researchers, Adejobi (2005) and Faye (2005) felt that if local cowpea production increased, there was every possibility that marketers could get cowpeas at lower prices and make more money. Therefore with increased market participation, all actors in the cowpea value chain are likely to have increased returns to their sales.

The perception of trader groups found along the cowpea marketing chain in Maiduguri was that cowpea marketing is very profitable except for the urban retailer and the farmer who opined that there was a marginal profit (Adejobi, 2005). He found that the urban wholesalers and intra-country traders were found to be very rich while the farmers, trans-border farmers and consumers were

2.4 Direct versus Indirect Marketing Channels

In marketing, there are two types of distribution systems that signify two extreme points on a continuum (Ramaseshan, 1993). These are integrated (direct) and independent (indirect) marketing channels. Direct marketing occurs when the producer connects with the end user. The end user may be a consumer or a business. An indirect channel includes one or more marketing intermediaries performing a variety of functions. Each channel member provides value, performs a function and expects an economic return.

In the Zambian markets, direct channels are more frequently used by smallholder farmers as compared to indirect channels. Most producers sell directly to consumers without passing through market intermediaries. This is the case due to the low quantities of cowpeas produced as well as the undeveloped state of the cowpea value chain in which few actors are involved in marketing. The low transaction costs involved in direct marketing are also an incentive for small scale farmers. Cowpea, however, just as other agricultural products is likely to be faced by multi-channel markets. In the direct marketing channel, the choice of marketing channel is limited to the end user who could be consumers or businesses. In the indirect marketing channel, the choice of channel becomes more diverse and the factors to be considered increases.

In designing a distribution system, a producer must make a policy choice between selling directly to customers and employing salespeople or using intermediaries i.e. selling through agents, wholesalers and retailers. Initially, the decision is usually based on cost factors. Distribution costs are largely a function of the number of potential customers in the market, how concentrated or dispersed they are, how much each will buy in a given period, and costs associated with the practical side of the distributive operation e.g. transport, warehousing and stockholding (Lanchester, 1990).

Producers may choose different combinations of features of the direct and indirect channels that offer optimum solutions to their specific situations. Both extremes of the distribution channel

distribution agents (Anderson et al, 1987). Stern and El-Ansary (1988) also found that indirect channels were able to provide many benefits for small manufacturing firms. In cowpea marketing, therefore, where specialized knowledge or difficult tasks are not involved direct channels are less effective and hence indirect channels could be more beneficial since cowpea production is usually by small scale farmers.

Indirect channels were traditionally considered to have more stages in the distribution channel than direct channels (Root, 1964). According to Angelmar and Pras (1984), indirect channels require less investment both in money and management time for manufacturing firms than their direct counterparts. This advantage of indirect channels over direct ones can therefore be utilized by small scale farmers in their marketing of produce. This suggests that cowpea is better marketed through indirect marketing channels in which many actors are involved thereby necessitating the need for a developed value chain for cowpeas.

2.5 International Marketing Channel Choices

A substantial volume of literature covers various aspects of international marketing channel decisions. The export market is faced with a different array of factors affecting the supplier's choice of marketing channel compared to the local market. In a case where a farmer was exporting his produce, the factors that would influence his choice of marketing channel would be different from those that face producers who do not export. According to Kintu (2007), the factors affecting choices of channels to use in international markets include Overall marketing objectives, Nature of the products, Consumers location and coverage, Channel success factors, Level of Cooperation desired, Channel rights and responsibility and Capital requirement. These factors differ for both large scale and small scale farmers as well as for different crops. Czinkota and Ronkainen (1988) suggested a model called the "Eleven Cs" which explained the channel design that an exporter chose to use. The eleven elements of the model included customer characteristics, culture, competition, company objectives, character, capital, cost, coverage, control, continuity and communication. These two studies both stressed marketing objectives, capital requirement, consumer characteristics, continuity (channel success), communication (level of cooperation) and

many market actors is inevitable (Kintu, 2007). The amount of capital required is influenced by factors like transport facilities needed, warehouses, cost of product development, quantity needed etc, consumer characteristics is associated with the consumer's location and coverage while cost affects the profitability of a particular channel. Channel success factors looks at channel experience with the product in the foreign market reputation of delivering the right products and services, channel competitiveness, channel profitability and continuity while level of cooperation required looks at the degree of control that the supplier desires to have in the channel.

The results of another study by Ramaseshan and Patton in 1993 showed that only two factors significantly distinguish small business exporters using direct channels from those using indirect channels. These factors were volume and service. The results showed that volume was negatively related with vertical integration while service was positively related.

This suggests that while numerous factors are considered in choosing any export channel on the distribution channel continuum, only two factors are considered in choosing between the extremes, direct or indirect channels. That is, the more the choices of channels to choose from, the more factors to consider in choosing. The two extremes of eleven factors versus two factors (Czinkota et al, 1988 and Ramaseshan et al, 1993) also suggests that small scale farmers may consider fewer factors in choosing export marketing channels as compared to larger scale farmers.

2.6 Factors That Affect Market Participation Decisions

A study by Jari (2009) suggested that the variables that have a higher probability of shifting households from non-market participation to informal marketing are access to market information in which, for example according to Jagwe (2007), Ownership of radios turned out to be statistically significant in influencing market participation in the banana industry. Other factors included availability of good market infrastructure such as roads and market places, existence of extensive social capital, group participation and guidance from tradition. All of the five variables positively influence informal marketing, implying that households are likely to shift from non-marketing to informal market participation with an increase in any one of the variables.

a source of price information increases the likelihood of market participation for sellers (Jagwe, 2007). The availability of contractual agreements presents a ready market for the seller while expertise on grades and standards show whether the farmer has adequate knowledge and resources to ascertain the safety requirements by consumers. Thus, an increase in each of the variables results in a higher probability of households changing from not participating in produce marketing to formal market participation. In addition, households willing to Participate in the formal markets have to be open to new marketing ideas rather than reliance on traditions.

An empirical study of aggregate productivity of smallholder farms in India, Kenya, and the Sudan by von Oppen et al. (1997) found that improved market access results in increased on-farm productivity. Improvement in market access reduces transaction cost hence increasing the profitability of the farm. The results also suggested that, in Kenya, large farmers gain the most from improved market access (Kamara and von Oppen, 1999). The results of a study by Jagwe (2007) showed that larger land sizes also raise the probability of market participation for banana sellers although Most female headed households lacked access to productive assets (land, labor, capital) thereby limiting their production capabilities. Access to off farm income increased the likelihood of banana market participation for buyers. The gender of the head of the household had a significant impact in the market participation decision in which there was a lower likelihood of market participation female headed households. Ownership of radios turned out to be statistically insignificant in influencing market participation.

2.7 Factors Influencing Marketing Channel Decisions

The choice of the channel to use is a fundamental decision for the producer where a number of factors and objectives have to be considered as a basis for such a decision. Several studies have been carried out to identify the factors that influence the producer's choice of marketing channel.

According to Bucklin (1996), there are six basic channel decisions facing any supplier which include: Direct or indirect channels, Single or multiple channels, Length of channel, Types of intermediaries, Number of intermediaries at each level and which intermediaries avoided intra-

According to Nyaupane et al (2010), farmers choose a market outlet considering its convenience and economic profitability. Farmers will therefore choose the channel that is most convenient and that offers the highest returns. The survey results of the factors influencing producers' marketing decisions in the Louisiana Crawfish Industry showed that most farmers choose wholesale markets compared to selling directly to consumers, retailers and producers. Farmers have a choice of whether to sell through direct or indirect marketing channels. Demographics farm characteristics (farm size and diversification) and premarket characteristics had significant influences on market choice. The choice of channel therefore also depends on the farmer's demographics such as age, gender, marital status and education level as well as on the farm characteristics.

A study by Jari (2009) provides an insight into the institutional and technical factors that influence agricultural marketing channel choices among smallholder and emerging farmers in Kat River Valley. The institutional factors that influence agricultural marketing channel choices include transaction costs, market information flow and the institutional environment which encompasses formal and/or informal rules, the use of grades and standards, organization in the markets and the legal environment. An appropriate institutional environment reduces transaction costs for traders. Mburu et al (2007) found that the institutional factors that were significant in the study of the Determinants of smallholder dairy farmers' adoption of various milk marketing channels in Kenya highlands included credit availability, dairy cooperatives, policy related interventions such as government extension agent as a source of government extension information and finally, membership to agricultural farmer's group.

According to Gong (2007), in his study of transaction costs and cattle farmers choice of marketing channel in china, a farmer's choice of cattle marketing channel is influenced by a number of transaction cost variables, but may also be influenced by the socio-economic characteristics of the farmer or farm. The transaction costs in this study were divided into information costs (price fluctuation, information access and quality inspection), negotiation costs (payment delay and influence on agreement) as well as monitoring costs (grade uncertainty and farm service). The results of a research by Ferto (2002) on the choice of supply chain in Hungarian fruit and vegetable sector showed that Producer's choice to sell to wholesale markets are strongly and negatively

costs arising from traceability are important in vertical integration. Farmers are therefore more likely to sell to marketing channels that involve minimum transaction costs in order to maximize the returns from trade.

Markets can be grouped into formal and informal (Jari, 2009). Formal markets have clearly defined grades, quality standards and safety regulations and prices are formally set while informal markets embrace unofficial transactions between farmers and from farmers directly to consumers (Kherallah and Minot, 2001). In comparison to formal markets, Informal markets are more common among medium and smallholder farmers.

Market information is vital as it allows suppliers to make informed decisions. Market information enables farmers to take informed marketing decisions that are related to supplying necessary goods, searching for potential buyers, negotiating, enforcing contracts and monitoring (Jari, 2009). Necessary information includes information on consumer preference, quantity demanded, prices, producer quality, market requirements and opportunities (Ruijs, 2002). Farmers are likely to exploit a market opportunity which they know about unlike one which they have no idea exists.

Grades and standards ascertain that the producer has adequate knowledge and resources to meet the consumers' requirements. Consumers will not buy food products unless there is a guarantee that they are safe to eat (Kherallah and Kirsten, 2001). However, produce from small holder farmers may do not meet certain market grades and standards because farmers lack knowledge and the resources to ascertain such requirements. Due to this uncertainty and unreliability, some farmers may not be able to supply to formal markets.

Organization in markets is important for the collective action of producers. Usually, small scale farmers do not tend to be organized and hence lack the collective action in markets. Market coordination for agricultural products also critically depends on the fundamental attributes of production, processing, and the market actors (Gabre-Madhin, 2009). Individual marketing of small quantities of produce weakens smallholder farmer's bargaining positions and often exposes them to price exploitations by traders. Furthermore, Lack of facilitation in the formation of producers associations or other partnership arrangements make it more difficult for smallholder farmers to

supply chain. Through organization, small scale farmers are able to sell to more lucrative markets that can only be used by commercial farmers.

Legal institutions influence the activities performed on the market and the costs of exchange. Thus, if trade laws were transparent, agreements can be legally enforced leading to information accessibility and lower costs. According to Minot et al (1997), the formal institutional development of a society has a considerable influence on transaction costs. An appropriate legal framework may prompt farmers to sell to produce to both formal and informal by reducing the risk of loss.

On the other hand, the technical factors include Technical changes in agricultural marketing, physical infrastructure constraints, storage facilities, market infrastructure, road infrastructure, market transport and value adding. Technical factors contribute towards providing good quality products to consumers.

Technical changes in marketing can be viewed as those transformations that allow goods to be available on the market at lower costs and in a more diversified set of markets (Carre and Drouot, 2002). In Agriculture production and marketing, small scale farmers tend to be lagging in the use of improved technology (Carre et al, 2002). While commercial farmers may take advantage of new technologies and sell their produce at lower costs, smallholder farmers may not enjoy the benefits of lower costs due to lack of new technology and may therefore not be competitive in making their goods available to markets. This will affect their choice of marketing channel, in that they may choose a channel that is less competitive in terms of new and expensive technological innovations.

Physical infrastructure includes communication links, electricity, storage facilities, transportation facilities and roads (Machethe, 2004). Jari (2009) affirms that good roads, transportation and communication links are prerequisites to market access. The fewer the physical infrastructure constraints, the less the transaction cost of taking products to potential end users and this encourages farmer participation in markets. Depending on the nature of products, some products may require storage after harvesting to preserve quality. If storage costs are high, the transaction costs may be inflated discouraging farmer participation in the market. Notwithstanding this, storage may have added advantages amongst farmers because it increases market flexibility. That is, farmers with proper storage facilities do not need to market their produce at once. With regards to cowpeas, storage facilities may be important. Inadequate infrastructure and distance from markets

(Makhura, 2001). Market infrastructure includes sheds and stalls in spot markets. Farmers are therefore more likely to sell their produce to marketing channels that have fewer physical and market infrastructure constraints in order to minimize transaction costs.

Value addition not only contributes to the development of the value chain but also increases the farmer's returns from trade. Prices of primary products have fallen but the retail prices of packaged, cut and processed products have increased (Robbins, 2005). This means value adding activities can increase farmers' additional income (Jari, 2009). However, only a handful of small scale farmers, if any engage in value adding activities for their produce. For cowpeas, in particular, value addition if any is very insignificant and hence small scale farmers do not profit much from selling it. Value addition activities would therefore prompt farmers to choose more rewarding marketing channels over those that they would use for their primary produce.

Farmers' resources (Human and physical resources) also influence the producers' choice of marketing channel. This includes the household head age, the household head education, the household head works off-farm, leasing land, number of farms cultivated, total farm acreage, use of hired permanent labor, distance from farm to nearest market, quantity of produce, average price of produce and average production. According to a study by (Mburu et al 2007) on the Determinants of smallholder dairy farmers' adoption of various milk marketing channels in Kenya highlands, the farmer's resources that were found to be significant included; total farm acreage, off farm employment, hired permanent labor, leasing of land, average production and output prices.

2.8 Conceptual Framework

The origin of decision theory is derived from economics by using the utility function of payoffs. It suggests that decisions be made by computing the utility and probability, the ranges of options, and also lays down strategies for good decisions (Arsham, 2011).

This study was based on the theory of utility maximization in producer market participation. The theory assumes that producers are rational and attempt to choose marketing channels that maximize

Market participation decisions have been described as occurring in two steps: 1) whether to participate in the market (buy or sell, versus remain autarkic), and 2) what volume will be bought or sold (Goetz, 1992; Key et. al., 2000; Holloway et. al., 2001; Bellemare and Barrett, 2006). It is assumed that the participation decision is made first and that, conditional on that decision, the household now faces a corresponding quantity decision. The condition characterizing the discrete choice about whether to participate in the market is based on utility maximization and can be written as;

$$Y_{pi} = f_i(X_{pi}) \tag{1}$$

where, y_p is the level of utility derived from market participation for each household i and \mathbf{x}_{pi} is a vector specific to each household. X_{pi} Includes all the different factors that affect the households' utility as well as the constraints they face. These factors affect each farmer differently and also differ with marketing channel. Participation occurs when $y_{pi} > 0$ and nonparticipation otherwise.

The quantity decision is given by the formula;

$$\Phi si y max_i(Y_{si}|X_{si}) \text{ subject to } Y_{si} \geq 0 \tag{2}$$

where i is each household, y is the endogenous variable of interest, y_{si} is the sales quantity and $\phi i(\cdot)$ denotes its first-order partial derivative with respect to the quantity.

An asset-based approach to analyze market participation decision making assumes that household participation in crop markets will be associated with asset endowments, and that participation in higher return markets may require different asset portfolios than participation in less remunerative markets (Boughton et al, 2007). The choice of participation is guided by net returns to market participation. Each household faces a market price for the crop, p and transactions costs, $\tau(Z, A, G, Y)$ that may depend on both public goods and services (e.g. distance to market) and household-specific characteristics (e.g., educational attainment, gender, marital status, age, that might affect search costs, negotiating skills, etc.), reflected in the vector Z , and its assets, A , and liquidity, Y . Liquidity can be increased through off farm income.

The household's choice problem is given by;

and an asset allocation constraint

$$A = A_s + A_{c1} + A_{c2} \quad (5)$$

Where a household maximizes its utility, defined over consumption of a staple food, s , and a Hicksian composite of other tradable crops, x . Production of the crop is a function of flows of services provided by privately held quasi-fixed assets, including land, labor (both quantity and quality, as reflected in education and experience), livestock and other productive capital (e.g., irrigation, tractor and other machinery), reflected by vector A . choice of whether to sell or not is given by the indicator variable M^s while M^c is the choice to buy food for consumption.

The price of crop affects the Net returns from sales such that a high price of crop to be sold increases returns to sales while a high price for the crop to be bought for consumption reduces the returns. Price could be both in monetary terms or as used in barter systems. The quantities sold also affect the returns such that larger quantities sold are associated with higher returns than smaller quantities. The selling of a crop is associated with transaction costs which are increased by longer distances to the market and lack of private transport.

CHAPTER 3

METHODS AND PROCEDURES

3.1 Introduction

This chapter explores aspects of the research methodology used, with regards to data collection and analysis. It begins by specifying the probit model, after which data collection and analysis methods are outlined.

3.2 Model Specification

The two models used in adoption studies are the logit and probit models. Both of these have a dependent variable bound between 0 and 1 unlike their extended forms, multinomial logit and multinomial probit which have more than two dependent variables.

Logit models provide empirical estimates of how changes in exogenous variables influence the probability of adoption of any technology. The results of the logit model estimates are also reported as the marginal effects of a change in the exogenous variables, that is, the change in the probability of choice due to a one-unit change in the exogenous variable. The logit of a variable p between 0 and 1 is given by the formula:

$$\text{Logit}(p) = \log\left(\frac{p}{1-p}\right) = \log(p) - \log(1-p) \quad (6)$$

The Probit model is particularly well suited to experimental data while logit model is for observational data (Rahm and Huffman 1984). Therefore, for purposes of this study, the probit model was used.

The probit model was used to identify the critical factors influencing the cowpea producers' choice of marketing channel in Zambia. The dependent variable was a dichotomous participation variable. That is, choice of marketing channel was between other households and private traders while the market participation decision was also between the decision to either sell or not.

with the realizations that $Y_i = 0$ if $Y_i^* \leq 0$, and $Y_i = 1$ if $Y_i^* > 0$. It follows that $P(Y_i = 1) = P(Y_i^* > 0) = P(\alpha + \beta_1 X_i + e_i > 0)$. That is,

$$Y_i = 1(Y_i^* > 0) = \begin{cases} 1 & \text{if } Y_i^* > 0 \\ 0 & \text{otherwise} \end{cases} \quad (8)$$

Where $i = 1, 2, 3, 4, 5, \dots, n$ and denotes the sample size that was surveyed, Y_i is the dependent binary or dichotomous variable which can take on two values representing market participation and choice of private traders ($Y=1$) and non market participation or choice of other households ($Y=0$) of cowpea farmers, β is the set of parameters to be estimated which reflect the impact of changes in x on the probability, X_i is a vector of independent variables that affects the possibility of a farmer participating in cowpea marketing or selling to private traders and ε is the independent normally distributed error term assumed to be normal with zero mean and constant variance.

In this research, j represents the alternative marketing channels, while x , the independent variables included:

i.	Household head age	X1
ii.	Household head education	X2
iii.	Households' marital status	X3
iv.	Household head off-farm employment	X4
v.	Distance from farm to nearest market	X5
vi.	Ownership of any forms of transport	X6
vii.	Quantity of produce	X7
viii.	Price of cowpeas in Zambian Kwacha	X8
ix.	Price of cowpeas in barter systems	X9
x.	Ownership of machinery for mechanization	X10
xi.	Household heads' gender	X11

Equation (7) was therefore fitted as follows;

$$y_i^* = a + \beta_1 age + \beta_2 ed_{level} + \beta_3 marital_{status2^*} + \beta_4 marital_{status3} + \beta_5 marital_{status5} + \beta_6 of_{femploy2^*} + \beta_7 distance + \beta_8 dtrans2^* + \beta_9 dmec2^* + \beta_{10} dlvstock2^* + \beta_{11} kstored + \beta_{12} dinventory2^* + \beta_{13} pricezmk + \beta_{14} pricebarter + \beta_{15} gender2^*$$

acquired. According to Matere et al (2008), experience is important in generating confidence among the farmers to become receptive to new ideas to enable them be competitive in the market.

The educational level of the household head is expected to be related to the analytical thinking capacity of the farmer. This provided the ability to take calculated risks that bring high returns to the household.

The marital status of the farmer is assumed to have an effect on the way the production and marketing choices of a household are made. The marital status of the household head may also be related to the income levels of the household as well as the household size.

Male headed households are expected to participate more in the marketing of cowpeas because their outputs are assumed to be higher than those of female headed households. The male headed households are also expected to cover longer distances to sell to markets that offer higher prices as compared to female headed households.

The farmers with off farm employment are assumed to engage in the production of cowpeas for consumption purposes unlike as a source of income. They are therefore expected to care less about the nitty gritty of marketing. Off farm income raises a household's purchasing power, and particularly when labor is a constraining factor, households are forced to weigh between on-farm production and off farm income (Jagwe, 2007).

The longer the distance to the market, the less likely the farmers are expected to sell their cowpeas or choose a marketing channel. The farmers are assumed to prefer trading close to their homestead in order to avoid or reduce on transportation costs and other marketing costs.

Households with some form of transport such as a bicycle, car etc are expected to participate more in cowpea marketing compared to those without transport. That is, those with transport are expected to cover longer distances and incur lower transportation costs as they travel to markets that offer higher prices. The availability of transportation facilities helps reduce long market distance constraint, offering greater depth in marketing choices (Jagwe, 2007).

Farmers with livestock are assumed to be at least medium scale farmers who can take advantage of the complementary relationship between livestock and cowpea production. The farmers with livestock are therefore expected to market their cowpeas and be able to use channels that are far from their homestead. Better endowed households should be more likely than poorer households to participate in cash crop markets because the returns to cash crops are then directly related to household endowments (e.g., land, livestock) that typically have a strong, positive effect on the likelihood of being a net seller of basic staples (Barrett and Dorosh 1996).

The farmers who kept inventory from the previous season are expected to participate in cowpea marketing since they are able to take advantage of high prices during periods of low market supply. With low market supply, they are able to sell through channels that offer the highest price. It is expected that the higher the price, the more likely the farmers are, to sell their cowpeas in order to maximize their profits. The farmers are also expected to choose marketing channels that offer high prices over those that offer low prices.

The selection of these variables was guided by previous studies and economic theory. Y_i , a binary variable can be interacted with qualitative variables X_i to determine the slope differences across the respondents thereby, obtaining independent variables having significant and insignificant values at p value less than α at 95% confidence level, in order to explain the factors that determine the cowpea farmers' market participation decision and choice of marketing channel.

3.3 Data and Data Sources

Secondary data was used in this study. For purposes of data analysis, the third supplemental survey (2008) to the 1999/2000 post harvest survey (small and medium scale holdings) was used. The survey was carried out by the central statistics office (CSO) with financial and technical support from Food security Research Project (FSRP) for purposes of studying options to improve crop production and marketing, and food consumption among small farmers. Two hundred and sixteen (216) Cowpea producing households were interviewed in the survey.

3.5 Data Analysis

The data were organized and sorted to separate the relevant variables. The data were analyzed in Stata. Demographic and marketing characteristics of the cowpea farmers were produced in Stata. Charts and tables were also produced to further clarify important demographics, production and marketing characteristics of cowpea producers.

Market participation decision and choice of marketing channel modeled using the probit model. The model was tested for multicollinearity, heteroscedasticity and model specification. Heteroscedasticity was corrected for by making the standard errors robust. To check for multicollinearity, the VIFs for each independent variable were computed, and a VIF of more than 10 reflected the presence of multicollinearity. No multicollinearity was found in the model. The marginal effects of the independent variables on the dependent variable were then obtained thus giving the probability effects which were interpreted.

CHAPTER 4

STUDY FINDINGS

4.1 Introduction

This chapter presents the results of the study, starting with demographic characteristics of the sample households followed by marketing and production characteristics. The results of the market participation probit model are next.

4.2 Demographic Characteristics of the Sampled Population

Demographic characteristics of households are essential when analyzing economic data because such factors influence the households' economic behavior (Randela, 2005). Age, gender, marital status and educational level of cowpea producing household heads were therefore considered in identifying the factors that influence farmers' marketing channel choices.

Table 1: Summary Statistics

	Sold	Not sold
Mean age	47.6	51.2
mean household size	7.9	8.8
proportion of males	88.10%	78.90%

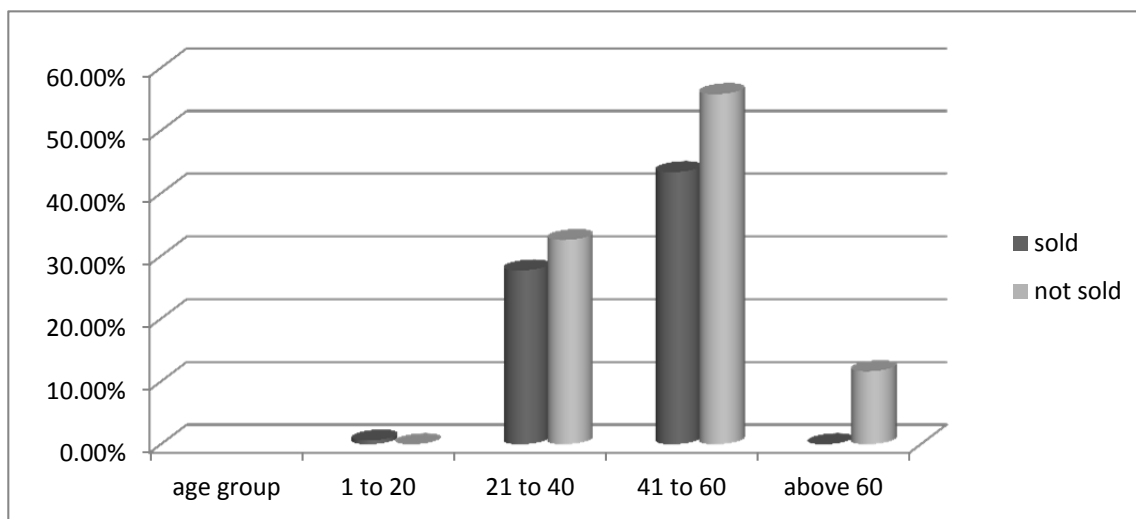
The farmer who sold cowpeas differed slightly from those who did not sell in terms of age, household size and gender proportion. The cowpea sellers were characterized by a smaller mean age of 47.6 year while their non-seller counterparts had a mean age of 51.2 years. The sellers also had a smaller mean household size of 7.9 as opposed to 8.8 for the non-sellers. The proportion of males who sold cowpeas was 88.1% while of those who didn't sell, it was 78.9%.

4.2.1 Age Distribution of Household heads

The age of the household head is important because it shows the level of experience of each farmer which influences the production and marketing choices of each farmer. The bar chart below shows the age distribution of household heads for both the sellers and non-sellers of cowpeas. Though cowpeas is grown by the older populations, the sellers are relatively young than the non-sellers.

The statistics showed that none of the farmers older than 60 years sold any cowpeas while about 12% of these farmers did not sell their cowpeas. Age is therefore less likely to influence cowpea farmers' market choices.

Figure 1: Distribution of Age for Household heads

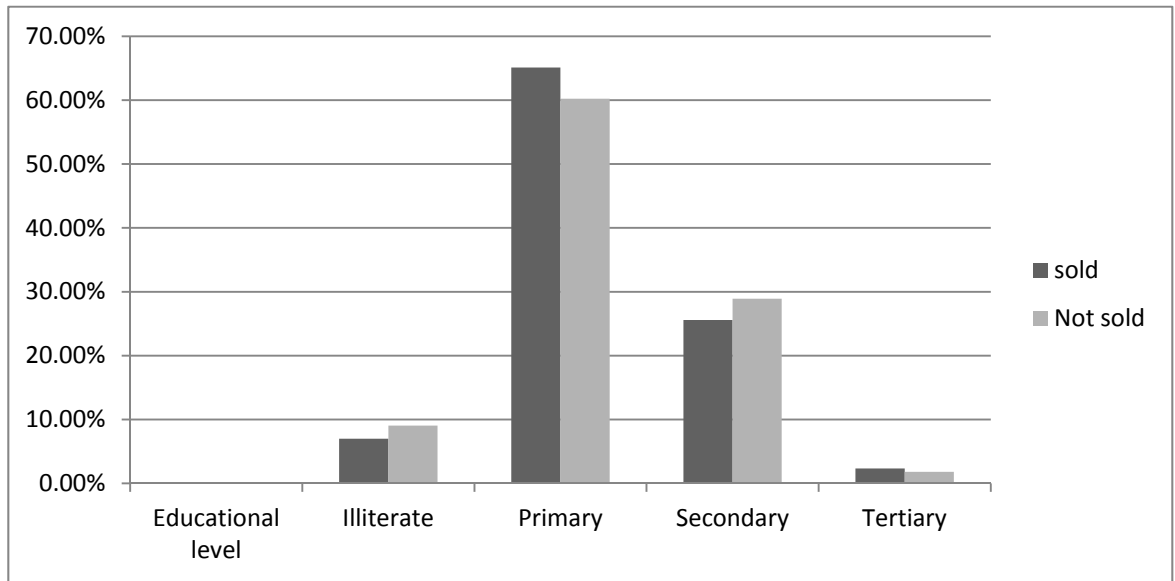


Source: Authors' analysis

4.2.2 Highest Educational level of Household heads

The table below shows the distribution of household heads according to their highest level of education, for both sellers and non-sellers of cowpeas. The distribution shows that most of the cowpea farmers only reached the primary level of education. This shows that most of the cowpea farmers have low levels of education probably because cowpea is usually grown in rural and peri-urban districts where education levels of the indigenous people are low and education is not very appreciated. The difference in educational level between the sellers

Figure 2: Distribution of Highest Educational level of Household heads

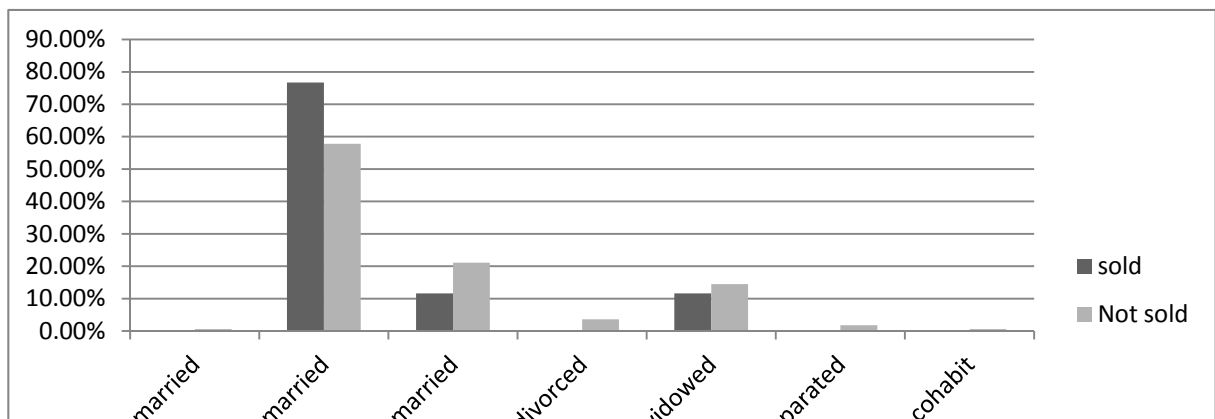


Source: Authors' analysis

4.2.3 Marital Status among the Household Heads

The bar chart below shows that most of the household heads are monogamously married. The marital status of the farmers influences how decisions concerning production and marketing of cowpea are made. The widows and married farmers, both monogamously and polygamously, were the only ones who sold cowpeas. The marital status of the household head therefore influences the marketing decisions for cowpea producing.

Figure 3: Distribution of Marital Status among Household Heads



4.3 Production and Marketing Characteristics of Cowpea Farmers

The farmer characteristics, in terms of both production and market affect decisions about whether, where and to whom to sell to. The important production characteristic likely to affect market decisions is quantity produced while the market characteristics include quantities sold and inventory kept from the previous season among others.

Most of the cowpea farmers are small scale farmers who grew less than 1 hectare of cowpea and had no surpluses left to sell as shown in the tables below. More than 85 percent of the farmers who sold their cowpeas grew less 0.5 ha while less than 15 percent grew more than 1 ha of cowpeas. Of those who did not sell, more than 90% of them grew less than 0.5ha of cowpeas. However, the difference between the two categories of cowpea growers, sellers and non-sellers is small such that the hectares of cowpeas cultivated are less likely to influence market choices.

Table 2: Hectares of Cowpeas Cultivated

Hectares of Cowpeas Cultivated	Sold	Not sold
less than 0.5ha	86.05%	93.37%
0.5 to 1 ha	13.95%	4.82%
more than 1 ha	0.00%	1.81%

Source: Authors' analysis

Of those who sold cowpeas, most of them only sold small quantities. More than 60 percent of farmers who sold their cowpeas sold less than 50 kgs and about 12 percent sold between 51 and 100kgs. Only about 26 percent of the farmers sold more 100kgs of cowpeas. It is expected that the larger the quantities of cowpeas the farmers sells, the more cautious they are likely to be of the channel that they choose.

Table 3: Quantities of Cowpeas Sold

KGs sold	Percentage
-----------------	-------------------

4.3.1 Storage of Cowpeas as Inventory

Keeping of inventory is important in taking advantage of high cowpea prices in future periods of low market supply. The table below shows distribution of cowpea farmers who kept inventory and those who didn't keep. The statistics show that less than 20 percent of the farmers kept inventory while more than 80 percent did not keep.

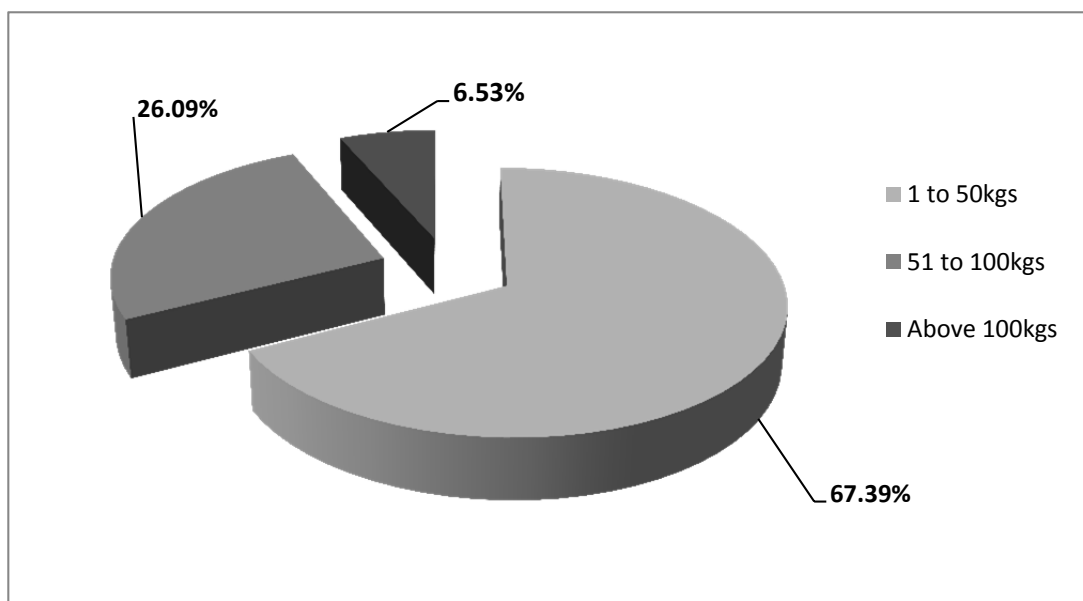
Table 4: Distribution of Farmers who Kept Inventory

Did the household keep inventory from the previous season	Frequency	Percentage
Yes	39	18.66%
No	170	81.34%
Total	209	100%

Source: Authors' analysis

Of the farmers who kept cowpeas, more than 67 percent of them stored less than 50kgs of cowpeas while less than 10 percent of them stored more than 100 kgs. This shows that small quantities of cowpeas are stored in form of inventory. This can be attributed to the fact that small quantities of cowpeas are produced hence leaving small quantities of surplus for storage.

Figure 4: Levels of Inventory Stored by Cowpea Farmers



4.3.2 Ownership of Transportation Implements among Cowpea Farmers

Transport, in form of a bicycle, motorcycle or car has an influence on marketing decisions. Those with some form of transport, such as a bicycle or car are able to take their cowpeas to far markets that offer better prices than their local markets. Of all the cowpea farmers, about 79 percent of them had some of transportation implement while about 21 percent of them did not own any transport implement.

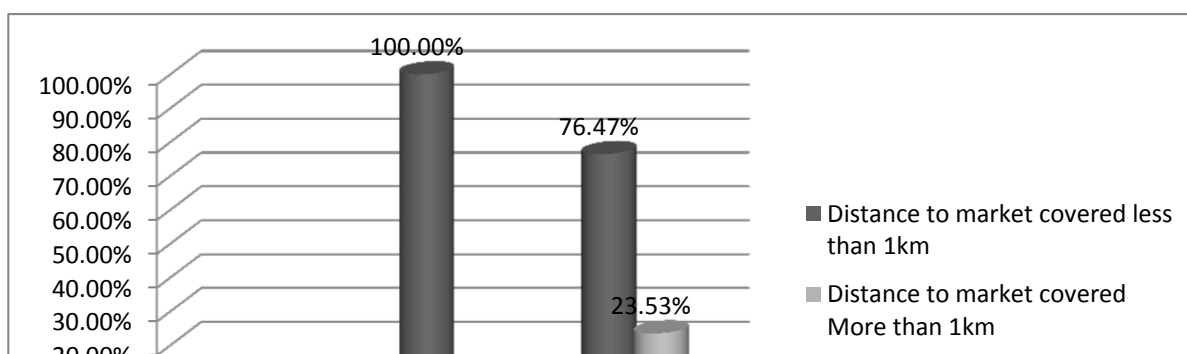
Table 5: Proportion of Cowpea Farmers who Owned Transportation Implements

Ownership of any Transportation Implement	Frequency	Percentage
No	9	20.93%
Yes	34	79.07%
Total	43	100%

Source: Authors' analysis

The relationship between ownership of some form of transport and distance covered to the market is shown in the table below. The statistics show that the farmers who did not own any form of transportation implement only sold within 1km of their homestead while those with transport went further than 1km to sell cowpeas. That is, 100 percent of those without any form of transportation implement sold within less than 1km of their homestead while, of those with some of transportation implement, more than 23 percent of them sold further than 1km.

Figure 5: Relationship between Ownership of Transport and Distance to the Market covered

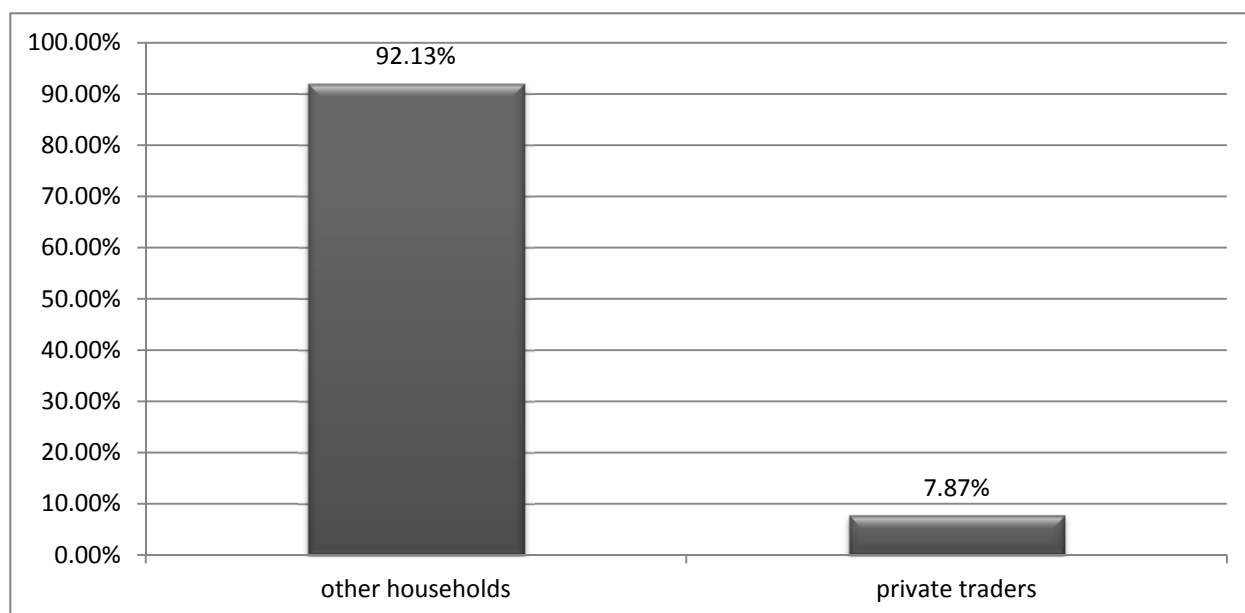


4.3.3 Selling/Exchanging of Cowpeas and the Channels and Markets used

The results of the study showed that few farmers sold their cowpeas. That is, only about 21 percent of the farmers sold their cowpeas thus participating in the market. This is because most of the farmers only produced enough cowpeas for home consumption. More than 79 percent of the farmers produced but did not sell their cowpeas. This verifies the low market participation of cowpea farmers in Zambia.

Of the farmers who sold their cowpeas, more than 90 percent of them sold their cowpeas to other households while only about 8 percent sold to private traders. Cowpea farmers sold their cowpea either to other households or private traders. The table below shows the distribution of cowpea farmers according to their choice of channel.

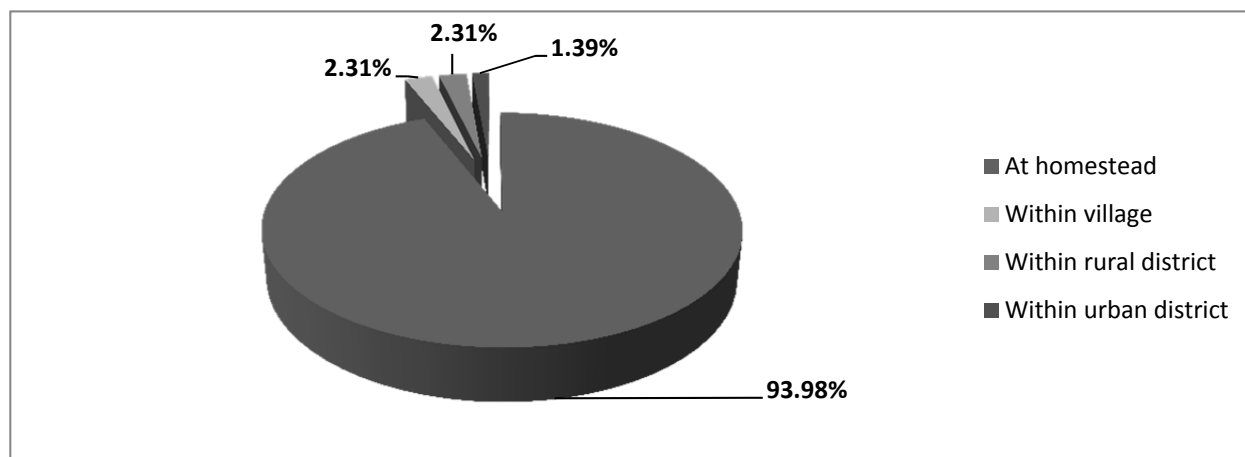
Figure 6: Proportion of Channels used by Cowpea Farmers



Source: Authors' analysis

More than 90 percent of the cowpea market transactions took place within the homestead while less than 10 percent of them took place either within the village, the rural district or urban district. This shows that the largest market for cowpeas is within the homestead thereby reflecting limited participation by private traders such as wholesalers, retailers,

Figure 7: Market Outlets for Cowpeas among Sample Households



Source: Authors' analysis

4.4 Results from the Probit Model for Market Participation

Results of the probit model for market participation is presented below, in which the dependent variable is the decision to either sell or not and the independent variables are as discussed previously. The marginal effects in the table describe the change in the dependent variable due to a unit change in each independent, ceteris paribus. The p-values of less than 0.05 represent the significant variables at 95% confidence level.

Table 6: Probit Regression Results for Market Participation

Variable Description	Marginal Effects	Standard Error	P-value
Price in Zambian kwacha	0.0124	0.00001	0.019
Price used in barter systems	0.0599935	0.02194	0.006
Kgs stored from previous season	-0.00167	0.00144	0.245
Ownership of mechanization	-0.2060751	0.07135	0.004
Ownership of transport	0.0716289	0.03536	0.043
Ownership of livestock	-0.0082535	0.05603	0.883
off_farm employed farmers	0.0076649	0.03655	0.834
Age of farmer in years	0.0003918	0.00142	0.783
Educationa level of farmer	-0.0036204	0.00554	0.514
Inventory kept from previous year	0.3038601	0.13449	0.024
Male headed households	0.0363411	0.0566	0.521
Monogamously married farmers	0.655493	0.13374	0.001
Polygamously married farmers	0.9939511	0.00756	0.000
widowed cowpea farmers	0.9906864	0.00307	0.000

The model was significant with a p-value of 0.0000 and pseudo R^2 of 0.4879. That is, the independent variables explained 49 percent of changes in the dependant variables. The results showed that price, inventory, mechanization and transport were significant determinants of producer market participation decisions.

A positive and significant relationship was found between price and the market participation decision. With a 1000 increase in price in Zambian kwacha, farmers are 0.124% more likely to sell their cowpeas. With a unit increase in the barter price, farmers are about 6% more likely to sell their cowpeas. This is because as the price increases, the return per unit sold is higher thereby presenting an incentive for the profit maximizing farmers to sell their cowpeas.

The farmers who had some form of mechanization were about 21 % less likely to sell their cowpeas than those who were not mechanized. This is most likely due to the fact that cowpea is mainly grown and marketed by the resource poor farmers who lack resources such as machinery and other agricultural equipment. The mechanized large scale farmers are more likely to venture in high value crops and other cereals.

The farmers who owned some form of transport were about 7% more likely to sell cowpeas than those who did not have any transportation implements. This can be attributed to the fact that those who owned transportation implements were able to travel further distances in order to sell cowpeas to markets that offered higher prices than the homestead markets.

The farmers who kept inventory from the previous season were also about 30% more likely to sell cowpeas than those who did not keep inventory. This is most likely due to the fact that those who kept inventory were able to take advantage of the high price in the pre-harvest season when market supply was low.

The widows were about 99% more likely to sell cowpeas than those who were not married.

This indicates that widows are more likely to sell cowpeas than those who are not widows.

4.5 Model Results for Choice of Channel

The table below shows the probit results for the choice of channel, in which the dependent variable is the choice of either to sell cowpeas to other households or to private traders. The marginal effects describe the change in the dependent variable due to a unit change in the independent variable, *ceteris paribus*. The independent variables are as discussed previously.

Table 7: Probit Regression results for Choice of Channel

Variable Description	Marginal Effects	Standard Error	P-value
distance to market	-0.1184561	20.399	0.995
Price in Zambian kwacha	9.03E-07	0.00013	0.994
Price used in barter	0.0053803	0.77873	0.994
Kgs stored from previous year	-0.0000608	0.0088	0.994
Ownership of mechanization	-0.0029788	0.42714	0.994
Ownership of transport	0.0086512	1.25829	0.995
Ownership of livestock	-0.0582842	6.2453	0.993
off_farm employed farmers	0.0072187	1.03013	0.994
age of farmer	0.0001542	0.02232	0.994
educational level of farmer	0.0000524	0.00763	0.995
Inventory kept from previous year	0.015084	1.95716	0.994
male headed households	-0.2370049	17.055	0.989
Market within rural district	0.9976487	0.44225	0.024
Market within urban district	0.9999401	0.03321	0.000
Monogamously married farmers	0.4629354	314.89	0.999
Polygamous married farmers	0.9943081	30.003	0.974
widowed cowpea farmers	0.9270534	274.36	0.997
51 to 100kgs of cowpeas sold	-0.0102648	1.82637	0.996
More than 100kgs of cowpeas sold	-0.0302285	3.14729	0.992
Number of obs	206		
Chi ²	55.81		
p-value	0.0000		
Pseudo R ²	0.4755		

Dependent variable = channel

Source: Authors' analysis

The probit results for choice of marketing channel showed that market was the only factor

the urban district are about 100% more likely to sell to private traders than those who sell within the homestead.

This can be attributed to the fact that the further one goes from the homestead towards the urban areas, the more likely they are to find private traders such as transporters, retailers, wholesalers etc.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the conclusions and recommendations from the research findings. The conclusions are presented first, after which the recommendations are given.

5.2 Conclusions

Cowpeas are grown throughout Zambia. The highest producing province is Southern province producing more than 50 percent of Zambia's cowpeas and the lowest producing province is Luapula, producing less than 1 percent.

The market for Cowpeas is informal with most farmers selling to other households unlike private traders and the barter price for Cowpeas being significant in determining the farmer's market participation decision. Direct marketing channels are therefore more prevalent in the cowpea industry unlike indirect ones.

Cowpea is grown by the resource poor farmers such as the widows. This is because Cowpeas is a low resource requiring crop. The farmers who lack agricultural inputs such as farm machinery, fertilizer and hired labor can grow and sell cowpeas as a source of food and income. The small scale farmers are therefore the majority of the cowpea growers. Most of these farmers exchange cowpeas using barter systems. Hence market for cowpeas is more informal.

The factors that influence the producers' decision of market participation include price, transport ownership, mechanization, inventory and marital status.

Market is the critical factor that affects cowpea producers' choice of marketing channel. That is, farmers sell their cowpeas where they find an available market. Other non-critical factors include age and barter price.

critical in influencing choice of channel. Policies to stimulate market participation for cowpea producers are therefore not likely to affect the producers' choice of marketing channel.

The farmers who had some form of transport were able to sell to far markets while those without only sold within 1km of their homestead. Most of the cowpea farmers (80%) are small scale farmers who cultivated less than 0.5ha. 63% of the producers sold less than 50kgs of cowpeas, 12% sold between 50 and 100kgs while 26% sold above 100kgs. Only 18% of the farmers kept cowpea inventory from the previous year. 92% of cowpea producers sell to other households while only 8% sell to private traders.

5.3 Recommendations

In order to stimulate producer market participation, a high price is needed. Therefore efforts aimed at expanding the cowpea industry could employ price policies such as floor prices. Alternatively, and most importantly, consumer preference studies could be carried out and further value addition activities to improve consumer preference for cowpeas can be encouraged. In addition, other industrial uses of cowpeas could be identified. This could result in increased demand which leads to increase in price thereby presenting an incentive for producer market participation.

Market is the only variable that affects the farmer's choice of marketing channel. That is, farmers sell where they find a market. Most cowpea farmers exchanged cowpeas with other households in an informal market. By developing the cowpea value chain, the number of cowpea markets can be increased and developed. The increase in the marketing channels would not only make the cowpea market less informal but also increase demand for cowpeas which is necessary for producer market participation. Other cowpea market participants such as retailers, wholesalers, processors etc should therefore be encouraged to take part in cowpea marketing. Market intermediaries play a key role in the market channels is in facilitating the access of growers to the Market.

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