

**FACTORS INFLUENCING THE PERFORMANCE OF MARKETING
INTERMEDIARIES IN BEAN MARKETING IN
KARAGWE DISTRICT, TANZANIA**



BY

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN
AGRICULTURAL ECONOMICS OF SOKOINE UNIVERSITY OF
AGRICULTURE. MOROGORO, TANZANIA.**

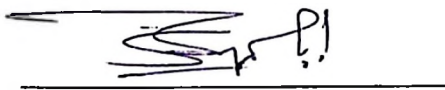
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ABSTRACT

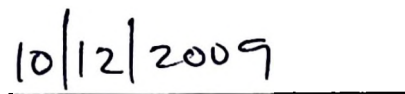
This study was conducted to examine the factors that influence performance of marketing intermediaries (traders) in beans marketing in Karagwe district. Primary data were collected from 100 farmers and 60 traders, using structured questionnaires and these were complemented with secondary data obtained from review of related literature. Data analysis focused on descriptive statistics, marketing margin analysis and linear regression analysis. Results from marketing margin analysis indicate that bean producers gets 52% of the final consumer price and 48% is shared among marketing intermediaries. Marketing costs accounts for over 60% of the total marketing margin received by intermediaries. Transport and commission agents (labour) costs are the largest component of marketing costs. Regression analyses results indicate that traders' age, years of schooling, working capital, initial capital, number of business contacts, distance to sales markets and trading at secondary markets are important variables in influencing the traders' gross margin and performance. The study concludes that traders' working capital is not enough to trade beans in large quantities. Marketing costs are too high to be afforded by small traders and farmers. The share of gross marketing margin in bean consumers' shilling by intermediaries is modest. Traders, who have many business contacts, trade beans at secondary markets, access to financial resources and those with higher level of education, earned significant higher marketing margins. The study recommends to traders and farmers to form and strengthen private trading associations and/or groups. Government should continue focusing on elimination of trade obstacles and providing credits and entrepreneurship skills to farmers and traders.

DECLARATION

I CYPRIDION C. MUSHONGI declare that this dissertation, entitled "Factors influencing the performance of marketing intermediaries in bean marketing in Karagwe district, Tanzania" is a result of my own work and that it has not been submitted either wholly or in part to this or any other university, for the award of any degree.



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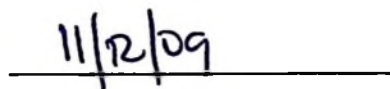


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The above declaration is confirmed by



Dr. A. Temu (Mrs.) (Supervisor)



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I owe special thanks also to my colleagues and friends at Sokoine University of Agriculture whose contributions towards the completion of this work are invaluable

DEDICATION

To my wife Happiness. S. Babwetega and sons Keen Mujwahuzi and Adom Rugaimukamu, for their encouragement and moral supports they accorded during my studies.

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LIST OF ABBREVIATIONS AND SYMBOLS

CIAT	Center for International Tropical Agriculture
COEF	Coefficient
DRC	Democratic Republic of Congo
FAO	Food and Agriculture Organisation
GM	Gross Margin
Kg	Kilogram
Km	Kilometre
m	Metre
M	Million
MAX.	Maximum
MC	Marketing Costs
MIN.	Minimum
MM	Marketing Margin
mm	Millimetre
NMM	Net Marketing Margin
S.E	Standard Error
SCP	Structure Conduct Performance
SPSS	Statistical Package for Social Science
Std.	Standard Deviation
TCE	Transaction Cost Economics
TSh.	Tanzania Shillings

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Common bean (*Phaseolus vulgaris*) is among major food and cash crops for many Tanzanian. The crop is an important source of protein for low-income families in rural and urban areas providing about 38% of utilizable protein and 12 - 16% of daily calorific requirements (CIAT, 2008). Despite its lower calorific value, beans are the cheap source of calories and this makes beans a cheaper source of protein for the poor and one of the most important strategic crops in efforts to eradicate poverty and food insecurity in sub-Saharan Africa (FAO, 2000).

In addition, most of bean growers derive employment and cash income from the crop. Although beans are largely produced for subsistence, mainly by women farmers, approximately 40% of production in sub-Saharan Africa is marketed at a retail market value of \$452 million (Mukandala and Wortmann, 1999). The income obtained from marketed beans is used to purchase household necessities (i.e. food, clothes and utensils) and other less expensive staples (i.e. sweet potato, cassava, other grain legumes).

Agricultural marketing is important in stimulating the production and consumption of agricultural products (Kydd and Dorward, 2004). The contribution of well functioning agricultural markets to the modernization of agriculture is sufficiently documented (Ponte, 1998). Hence, an efficient and well functioning marketing system facilitates easy conversion of products to cash, which further facilitate other exchanges of goods and services required for increased production and consumption (Mohammad *et al.*, 2008).

Since the adoption of structural adjustment program in 1980's and early 1990's agricultural markets have been reformed and prices of commodities are determined through market mechanisms. However, due to the weak bargaining power of producers and harvest fluctuations, the "price free" notion of markets (unregulated price) have been found to affect producers (Kohls and Uhl, 1990).

Agricultural product markets in Tanzania are characterized by seasonal gluts and shortages which in turn affect the prices and thereby affecting marketing behaviour of producers, traders, and consumers (Deborah, 1993; Gabagambi, 1998; Cooksey, 2003; Kilima *et al.*, 2008).

Studies conducted elsewhere in Africa have also accumulated evidence that African markets are typically undercapitalized and inefficient (Gabre-Madhin, 2001; Fafchamps, 2003). Product price variations, transaction costs, and risks are high due to underdevelopment of agricultural markets. Consequently, the underdevelopment of these markets hinders the linkages between agricultural and non-agricultural sectors, cause disincentives for production and reduce export earnings (Osborne, 2005).

Considering the fact that improving market performance and market expansion are essential for exploiting the potential of any commodity in the economic development process, the role and the performance of specific market participant(s) particularly, marketing intermediaries need to be understood as prerequisite for formulating strategic plans that are aimed at promoting agricultural trade, stimulating economic growth and poverty alleviation.

This study presents such an attempt and reports on empirical results on the performance of marketing intermediaries (traders), by focusing on beans marketing business. The study has a particular emphasis, which is marketing behaviour of farmers and intermediaries' marketing margins. The bean sub-sector has been chosen purposively due to its substantial contribution to food supply and farm household income, thus contribution to food security.

1.2 Problem Statement and Justification

Specific ways in which efficient marketing systems play a leading role in economic development have been widely documented (Poulton *et al.*, 2006). Essentially, it is within marketing systems that prices are generated and the allocation of resources, income distribution and capital accumulation are determined.

Research scientists in developing countries are required to provide adequate information on the efficiency and constraints of the marketing systems on which effective policies and strategies can be based. Agricultural crop marketing in Sub-Saharan Africa and Tanzania in particular is entirely in the hands of private marketing intermediaries commonly known as middlemen traders (Kirsten and Sartorius, 2002).

Economists (Arndt, 2001; Lilyan *et al.*, 2004; Barret, 2008) investigating marketing, have accumulated considerable evidence showing that agricultural marketing systems in developing countries are generally inefficient and undercapitalised. The extent to which this assertion is true for bean marketing in Tanzania is uncertain, for the state of knowledge on agricultural marketing largely comes from studies on maize (Moshi *et al.*, 1997; Camphenhout, 2007), and coffee (Temu *et al.*, 2001; Winter-Nelson and Temu, 2002).

There is limited literature on beans marketing. Studies by (Ackello-Ogutu and Echessah, 1998) constitute the only descriptive and narrative information pertaining to bean

marketing in Tanzania. Little is known about marketing functions, competitiveness and performance of traders' presence or absence of opportunities and incentives to market participants to behave in a more market-oriented manner.

This rare (scarce) information is essential for objective and reliable assessments of agricultural marketing and the subsequent formulation of policy guidelines for improvement marketing performance, which benefit all participants in the supply and demand chain. Furthermore, the need to put in place an efficient bean marketing system in Tanzania is underscored by the fact that beans are now considered expensive by low income earner (majority), especially town dwellers. This however, impacts on productivity due to the important place of protein intakes in individuals nutritional requirements.

Thus, the bean commodity and associated services in this sub-sector need to be monitored such that there is an added income incentive to its producers, employer of services for participants on the market chain and a regular and available source of the much needed bean protein at affordable prices for the average people, especially in urban areas. Henceforth, valuable information can come from case studies of the systems serving the urban centers. This study focuses on bean farmers and traders by examining the performance of marketing intermediaries in Karagwe district in Tanzania.

1.3 Objective of the Study

1.3.1 Overall objective

The overall objective of this study was to determine factors that influence performance of marketing intermediaries (traders) in beans marketing business.

1.3.2 Specific objectives

1. To examine the socio-economic characteristics of bean market participants in Karagwe district
2. To identify bean marketing channels and organisation of intermediaries in the marketing system.
3. To evaluate factors influencing traders' margins and their performance

1.4 Hypothesis

- i. H_0 = Marketing intermediaries absorb significant portion of market prices and hence leave the farmers with no price incentives to increase or even maintain production.
- ii. H_0 = There is no effects of traders' assets (financial, human capital and social capital) and trading practices on marketing margins.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Overview of Agricultural Marketing Literature

A growing body of literature (Deborah, 1993; 1994; Lynch, 1999; Temu *et al.*, 2001; Cooksey, 2003; Korir, 2005; Onu and Iliyasu, 2008) exists on the subjects related to agricultural marketing and/or livestock marketing. Many researchers have always underscored the importance of marketing institution as a critical component in the development process, thus the analysis of these markets, especially agricultural markets and marketing, as been an on-going assignment for long time (Scott, 1995).

Studies on the internal distribution and sale of locally produced food crops, particularly pulses, domestic agricultural marketing have tended to receive less attention for an assortment of reasons. In most developing countries, food crops were grown for home consumption and this is reflected in the dichotomous classification of agricultural crops, where we have cash and food crops. Attention was given to traditional export crops by funding agencies including the government. In addition, due to perishability nature of food crops and limited road infrastructure (Ruijsa *et al.*, 2004), it was not an attractive business for private sector to venture hence that's why; it has ever since, received less attention even in the field of research.

In marketing research, particular emphasis beginning in the 1980's was on the perceived imperfections on international commodity markets (Aksoy, 2005). Structural adjustment in the form of trade liberalization became standard government policy throughout much of the developing world but particularly in Sub-Saharan Africa. In addition, the past and the present time have witnessed a dramatic increase in the amount of research on food in

developing countries, such that various authors have examined issues of food aid, global value chains, international trade in agricultural commodities or food security (Liisa and Bistrom, 2001; Oskam *et al.*, 2004; Gereffi *et al.*, 2005; Diop and Jaffee, 2005). However, the research on the aspects pertaining to performance of market participants, especially in domestic food marketing system in Tanzania has been limited. Hence therefore, in this study, bean marketing margin and factors affecting participant performance in food marketing are analyzed, accounting for the participant characteristics, costs and returns- both uniquely and in relation to existing agricultural marketing system.

2.2 Review of Agricultural Marketing in Tanzania

Studies on agricultural marketing, which have been conducted in Tanzania, have indicated that crop marketing by farmers always follow the seasonal patterns of harvest. Some authors (Ashimogo, 1995; Gabagambi, 1998; Skarstein, 2005) have reported the decline in price during this period. On the other hands some researchers have noted that consumers in most of developing countries are located far from the production areas (Jayne and Jones, 1997; Kydd and Dorward, 2004), as the results, farmers have to rely on marketing intermediaries, especially rural assemblers to market their agricultural produce and/or products.

Related observation where documented by Korir (2005), during his study on “Cross border beans marketing between the northern zone of Tanzania and Nairobi-Kenya”. The observation was that food markets in Tanzania are structured in such a way that food reaches consumers mostly through marketing intermediaries (private traders). This business consists of small operations, started and managed by their owners and operating with relatively few fixed investments.

provide a basis for determining and justifying the returns and margins that accrues to different market participants. Market study involving analysis of market performance and efficiency is useful for the formulation of interventions, particularly those aimed at lowering marketing costs and reducing the tendency for excessive profit making.

The study of markets and marketing has witnessed a lot of paradigm shifts. Theoretical and applied models of market analysis such as the Structure, Conduct and Performance (S.C.P.) paradigm (Barrett, 1996), the Commodity Chain Approach (Gereffi, 1999), and Transactions Costs Economics (TCE) (North, 1989), Marketing Channel approach, have been applied. The existence of a wide range of models suggests that there is hardly any single and adequate theoretical framework for studying markets, particularly in developing countries. Any of these approaches can be used singly or combined. The choice of any or combination of the approaches is usually guided by considerations such as the nature of the problem, complexity of the marketing systems and the constraints involved.

Hence, in studying food crop markets, there is a need to combine useful elements of both the old and the contemporary models and/or approaches together in order to understand the structural and institutional factors influencing food crop marketing. Thus, in this study, the major elements in some of these approaches and their applicability or relevance are briefly examined.

2.3.1 Marketing channels approach

The marketing channel, which is sometimes referred to as channel of distribution consists of a whole set of marketing intermediaries, that join together to transport and store goods in their path (or channel) from producers to consumers (Kotler *et al.*, 2006). According to Dijkstra *et al.*, (2001), marketing channel approach has been extensively applied in

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Notably, the channel approach makes it possible to explain the number of trade levels observed in food marketing systems. Moreover, the analysis of marketing channels provides knowledge for understanding the flow of the goods and services from producer (origin) to consumer (final destination). This knowledge is obtained through studying the “participants” in the process. In studying the process that links production to consumption (channel), the decentralised organisational system of intermediaries for agricultural product marketing is appropriate in the sense that it provides the researcher with a scheme to begin mapping out the various intermediaries that are involved in the marketing system, including their connections and functions.

The marketing channels can best be characterized as conventional marketing channels: the actors in the chain usually experience a high level of competition and are separated by markets, and the allocation of resources is guided by prices that result from quantities supplied and demanded. Different types of traders operate at different levels in the marketing channels and in different types of market places.

A channel disintegrates when actors transfer functions to new actors specializing in these functions. The reasons for disintegration can be categorized as effectiveness reasons to reach target groups and stimulate demand in target groups, efficiency reasons to decrease distribution costs from producer to final consumer, and equity reasons to strengthen the bargaining power of a group of actors. Nevertheless, this study examines intermediaries that are in between of a whole series of organisations that join together to help distribute beans from producers (supply area) to consumers (demand area).

2.3.2 The Structure Conduct Performance (S-C-P) approach

A large number of agricultural marketing studies rely on the theoretical foundations laid by the perfect competition model. This is particularly true in studies based on the structure-conduct-performance paradigm. The structure variables of a market include marketing channels, marketed volumes, degree of market information, the ease of entry and exit of buyers and sellers into and out of the market.

Market conduct refers to the actions which market participants take out of their own discretion or patterns of behaviour which they follow in adopting or adjusting to the market in which they buy and sell. It also defines the conditions which make possible exploitative relationships between producers and buyers. This is done via unfair price-setting practices, which Smith (1972), classified as collusive predatory, or exclusionary. These practices result in a level of profit over and above marketing costs and low or nonexistent profit margins for the producer.

The SCP approach postulates that as market structure deviates from the paradigm of a perfect competition, the degree of competitive conduct will decline and there will be a consequent decrease in output (supply) and allocative efficiency, and an increase in prices.

This implies that the performance of markets can be assessed based on the level of competition and efficiency in those markets (Osborne, 2005).

Market performance refers to the impact of structure and conduct as measured in terms of variables such as prices, costs, and volume of output. By analysing the level of marketing margins and their cost components it's possible to evaluate the impact of the structure and conduct characteristics on market performance.

Indicators of market performance are *net returns* and *marketing margins*, and its estimates provide indications of an exploitative nature when net returns of buyers are much higher than the fair amount. Moreover, the analysis of net returns aims to verify (or refute) the existence of above-average profits to intermediaries. If the market were perfectly competitive, net returns would roughly equal a "fair" return to the intermediary's (middleman's) capital. However, oligopsonistic market structure would tend to increase returns as manifest price distortions as well as bias buying and selling practices.

However, despite of the strength of S-C-P framework, some authors have come up with criticism of the approach for being too abstract and deterministic. The approach has been criticized on the following grounds: First, its price integration and price performance analyses are static and suffer from spatial arbitrariness (Harriss, 1979). Second, its market segmentation concepts with respect to margins and transfer costs are faulty (Barrett, 1996). And third, it does not explain how competition among traders may affect consumers' welfare.

Thus the approach fails to explain the causal links between structure, conduct and performance and is therefore unable to predict performance from structures and vice versa

(Harriss, 1979). Nevertheless, despite these limitations, the SCP framework still remains the conventional approach for studying market institutions (Scott, 1995). Hence therefore, this study applies the SCP model to examine whether marketing margins charged by various participants in the marketing system are consistent with costs.

2.3.3 Value chain approach

The value chain approach builds on the S-C-P framework. It assumes vertical as well as horizontal relationships between firms in evaluating market performance and is more dynamic in following the entire commodity flow from producer to the ultimate consumer. At each stage along the commodity chain, the approach permits three types of analysis namely: First, costs and margins, second, the spatial flows (involving places, volumes and directions), and third, the social relations of trade (Gereffi *et al.*, 2005).

According to Kaplinsky (2000), the value chain describes the full range of activities that are required to bring a product from its conception to its end use and beyond. The metaphor of the chain emphasizes the fact that most goods are produced by a sequence of interlinked actors and activities.

The approach focuses on the analysis of the institutional arrangements that link the various economic players, which are: trust, vertical and horizontal integration, organization and contracts (Dolan and Humphrey, 2000). This approach also provides a useful analytical framework for market and sub-sector analysis. It also describe productive processes around a product from the provision of inputs to production, transportation, transformation, processing, marketing, trading, and retailing to final consumption. Thus, in this study, the approach is used to identify the kind of marketing services and/or value

added by individual intermediaries (traders), and thence here mark the costs that are associated with the value added.

Therefore, by relating the value added with its associated costs, it is possible to determine whether the market participants are sharing the returns proportionately to their individual contributions in commodity marketing chain.

2.3.4 Transaction cost approach

One of the assumptions for perfect competition in neoclassical economic theory is perfect information under which it is presumed that traders in each market have perfect knowledge of the situations in all other markets and, as such, inter-market price differentials only reflect transportation and handling costs between markets in question.

Transaction Cost Economics (TCE), unlike neoclassical economic theory, recognizes that commercial activity does not occur in a functionless economic environment (North and Wallis, 1994). Costs usually incurred include cost of purchase of product and transactions costs, which can be further be subdivided into information (ex-ante), negotiation, and, monitoring or enforcement (ex-post) costs.

Transactions costs include inter alia, the costs of searching for a partner with whom to exchange, screening potential trading partners to ascertain their trustworthiness, bargaining with potential trading partners (and in some cases officials who can hold up trade) to reach an agreement, transferring the product (typically involving transportation, processing, packaging and security title if necessary), monitoring the agreement to see if conditions are fulfilled, and enforcing or seeking damages for violation of the exchange agreement (Staal *et al.*, 1997).

Transaction cost theory predicts that transactions costs increase with distance (Ruijs *et al.*, 2004), market concentration, systemic complexity and declining clarity of property rights and that transactions costs decline with relational contracts, with standardizing quality and quantity.

The study conducted by Sartorius and Kirsten (2007), indicated that smallholder nature of crops production by farmers, has implications for increasing transaction cost depending on the degree of involvement of intermediaries (traders) that are involved between these smallholder producers (widely dispersed) and the consumers who are located several kilometres away.

In addition, since the quantities of crops handled by these farmers are small, it necessitates the marketing agents to move around these farmers to collect the little quantities of commodities, which are to be sold. It is expected that if transactions costs are lowered, there would be an increase in traded volume with increased economic benefits to both traders and producers. on the other hand increased volume of bean trade, will promote regional trade and integration.

In many studies (Holloway, 1991; Dean, 2000; Gabre-Madhin, 2001; Osborne, 2005; Haung *et al.*, 2006; Negassa and Myers, 2007), imperfections in marketing systems, which lead to loss of competitiveness and efficiency, have been attributed to high and sometimes prohibitive transactions costs. Even then there are only a few studies in which detailed empirical evidence is provided on the magnitude and importance of transactions costs (Staal *et al.*, 1997). They observed that this may be due to the existence of conceptual and measurement difficulties when transactions costs are high enough to prevent exchange from occurring or due to the differences in the nature of observed transactions costs.

For example, a farmer's decision to sell at the farm gate rather than at a more distant market may be influenced by the desire to avoid transaction costs involved in the later option.

On the other hand, the same farmer may decide to go all the way to a distant market because of excessive profits made by intermediary traders – a situation, which lowers return to producers. It is desirable that observed marketing margins are commensurate with marketing services provided or marketing functions performed. getting a product from its producers (a smallholder) to the final consumer requires more individual transactions due to the small size of each sale relative to what obtains in developed economies where agricultural production is done on a large scale (Fafchamps, 1997).

This phenomenon increases transactions costs and, consequently, increases the amount paid by the final consumers (sales price). In this study costs and marketing margins are used to assess market performance (that is, intermediary trader's performance).

2.4 Review of Methods for Analysing Marketing Margins

Market performance for agricultural commodities can be measured in terms of variables such as prices, costs, and volume of output (Scarborough *et al.*, 1992; Pomeroy and Trinidad, 1995). By analyzing the level of marketing margins and their cost components, it's possible to evaluate the level of competitiveness of a firm or industry. Hence, to be able to analyze marketing margins, marketing costs incurred by each participant are computed for each marketing activity such as assembling, transportation, storage, grading, processing, wholesaling and retailing.

According to Scott (1995), marketing margins can be computed in two ways: a) gross marketing margins; and b) net marketing margins. Gross marketing margin is the difference between the selling price and buying price irrespective of marketing costs incurred, while net marketing margin refers to gross marketing margin minus marketing costs. In the marketing chain, margins are often estimated for different levels like wholesale, retail, etc. Marketing margins are used to assess the costs, quality, utilities and other services performed within the marketing system.

Deconstructing marketing margin analysis encounters several limitations. First, it is difficult to determine whether the costs are minimized or not. Second, it is difficult to assess the levels of returns when margins exceed costs or to explain losses if they do not exceed costs. Third, it is difficult to assess unitary returns over a number of seasons and years in the absence of reliable data (Harriss, 1995).

The data on marketing costs are needed to disaggregate the gross marketing margin of an enterprise at different marketing stages. This also provides important information about the costs of particular marketing functions, which can be used to compare with the costs incurred by other enterprises to assess the operational efficiency (Scarborough and Kydd, 1992).

Margin analysis as a proportion of consumers' price is also frequently used to assess the extent to which consumer prices are transmitted back to producers. Such that when prices are low, incentives to increase output may be restricted, as prices and profits at the producer level may not reflect the opportunity cost of inputs used. Thus high marketing costs sometimes signify as the signs of inefficiencies and middlemen are accused of earning excess profits. An increase in the absolute margin may mean that returns to inputs in marketing have increased (Adekanye 1982).

Some of the outstanding economists (Wohlengenant and Mullen, 1987; Schroeter and Azzam, 1991; Holt, 1993; Sexton *et al.*, 2005) who in their studies, analyzed the marketing margins of various agricultural commodities, argued that even though variations in the margins over time might be attributable to marketing costs under perfect competition, additional factors such as seasonality, technological changes, and sales volume may also explain the variations in the margin.

In analyzing factors explaining variations in the margin, some authors (Brorsen *et al.*, 1985), used the observed margin as a dependent variable. However he was criticized (Holt, 1993), of not taking into consideration the expectations with regards to both the mean and the variance of output price. The explanatory variables used to explain the variations in the margin may include marketing costs, total volume traded, time trend, seasonality, lagged margin. In this study, explanatory variables such as traders' assets (physical, financial social capital and human capital) and trading practices are used to explain the variations in the margins, because of its influence on trading firm's temporal or spatial arbitrage performance.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Description of the Study Area

Karagwe District is one of the seven districts of Kagera Region and covers an area of 7 716 Km². The district is located in the North-Western part of Tanzania. It borders the districts of Ngara and Biharamulo in the South; in the Eastern part it borders Muleba and Bukoba districts. The district also borders the Republic of Uganda in the North and the Republic of Rwanda in the West.

Topographically, the district is characterized by mountain ranges, which are separated by swampy valley bottoms. The height of the mountain ridges range from 1 500 to 1 800 metres above sea level while flood plains lies between 1 150 to 1 450 metres above sea level.

The district has a tropical climate of, which the average annual temperature is 26 °C. Average annual rainfall is 1 040 millimetres with a minimum and maximum annual rainfall of 730 millimetres and 1 290 millimetres per year respectively. The district has a bimodal type of rainfall with long rains normally occurring in March to May, where as short rains starting in early September up to December.

The period between January and February is the dry spell while June to September is a period of marginal or no rainfall. In general, rainfall decreases from Eastern to Western part of the district.

Agro-ecologically the district is divided into: continuous banana-coffee plantations and annual crops about (40%); woodlands, savannah, forest, plains and shrub patches about

(50%), closed forest only about (5%), seasonal swamps of papyrus, reeds and acacia species about (5%). Industrialization is hardly taking place mainly due to limited availability of energy such as electrification. The district also faces the limitations on cross-border trade due to legal and security barriers; poor transportation and communication networks.

The main economic activity is agriculture and it is dominated by smallholder's farmers. The major crops grown include beans, maize, sorghum (brewing type), Irish potato, banana and coffee. These crops play a critical role in ensuring household food security and income for most rural farmers in the area.

Furthermore, food crops produced in the area are transported and marketed by both local and outside traders to final consumers in urban areas of Bukoba, Mwanza, Shinyanga and Dar-Es-Salaam. Occasionally, food crops, especially beans are informally traded to neighbouring countries of Burundi, Rwanda, Uganda and Kenya.

However, there are limitations to agricultural marketing, such as limited access to market, barriers to cross-border food marketing, lack of post-harvest technologies, storage facilities and forced sale of annual crops due to household cash needs. Moreover, the movement of basic food stuffs from rural and urban markets is essentially unregulated.

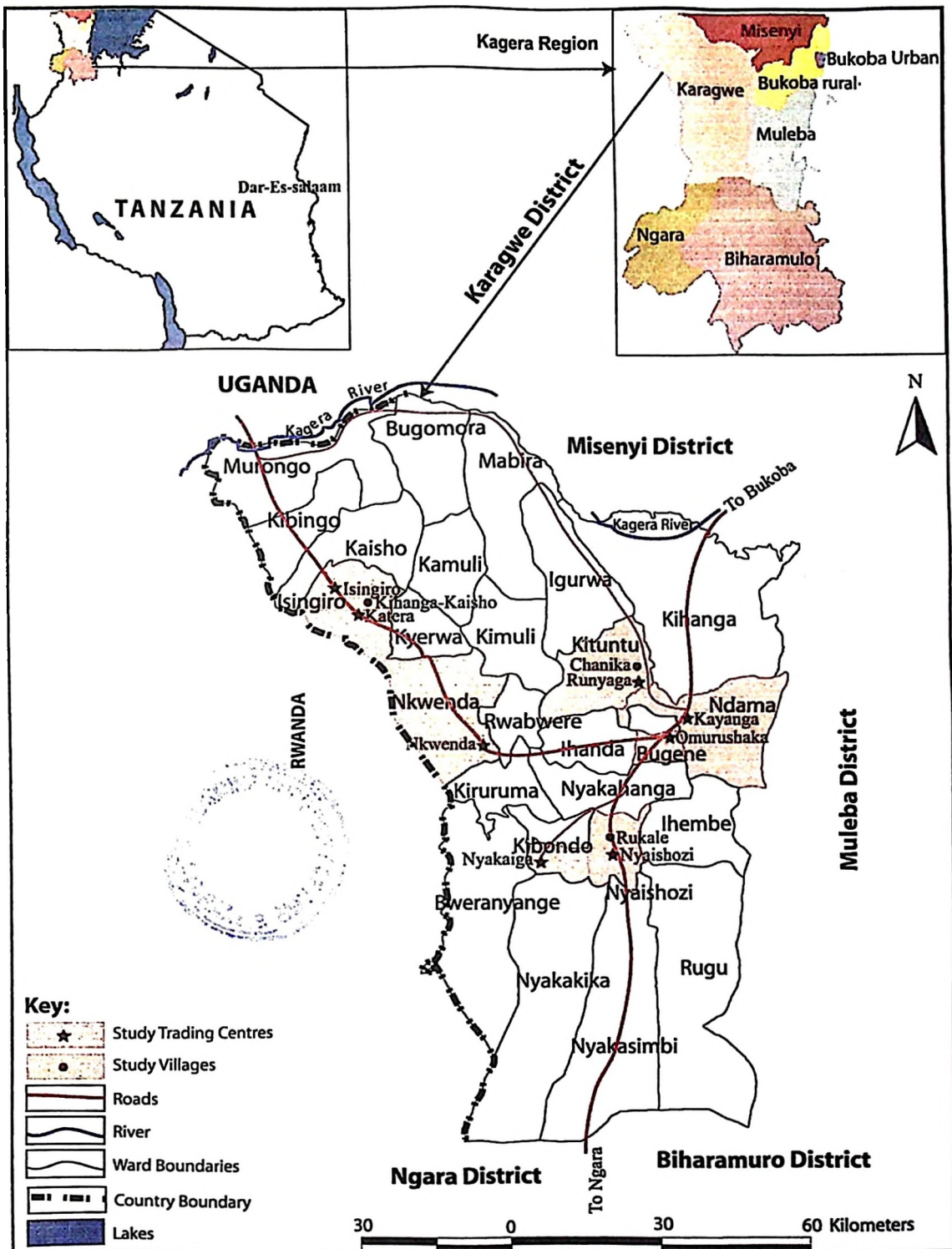


Figure 1: Map showing location of study villages and bean trading centres

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3.2 Conceptual Framework

It is generally well known that in a competitive market a trading firm's temporal and/or spatial arbitrage performance depends on its financial, physical and human capital as well as its ability to minimize costs. There are physical marketing costs; example, transport and storage, and transaction costs that arise from the coordination of the exchange among relevant market agents and include the costs of obtaining and processing market information, negotiating contracts, monitoring agents and enforcing contracts. Transaction costs are unique and specific to individual market agent, so each agent in the market conducts transactions on the basis of his/her own costs. When transaction costs are very high, market become thin or even fail (North, 1989; Gabre-Madhin, 2001).

In some recent studies, the role of social capital in reducing transaction costs has been emphasized under the conditions of imperfect markets, weak property rights and contract enforcement conditions. It is argued that social capital creates trust among economic agents which helps to reduce transaction costs and improve profit margins (Fafchamps and Minten, 1999). To these, Gabre-Madhin and Negassa (2005) have added the role of trading practices in trading performance and they define it as observable market behavioural outcomes of underlying market institutions.

Market institutions encompass 'rules of the game' – rules and laws, informal norms, formal and informal organizations and associations. These institutions may determine trading practices with respect to, among others, mode of purchase and payment, inspection of goods, negotiation and enforcement of contracts, contract violations and means of settlement. Some examples of trading practices include use of regular suppliers and customers, and brokers/agents for purchase and sale, volume of purchase and sale through regulars and agents, cash or credit purchase and sales etc.

customers, and brokers/agents for purchase and sale, volume of purchase and sale through regulars and agents, cash or credit purchase and sales etc.

Trading practices may also be determined by type and composition of assets as firms operating under the same set of underlying market institutions often do not follow similar trading practices. In turn, trading practices may impact on traders' performance through its influence on transaction costs. However, most trading practices are observable and measurable in some form but most transaction costs may not be observable and measurable. Thus, the relationships between trading performance, assets, trading practices and transaction costs outlined by Gabre-Madhin and Negassa (2005), may be specified in the following way:

$$Y = F(A, T, C) \dots\dots\dots 1$$

$$A = F(M, K, H, S) \dots\dots\dots 2$$

Where;

Y = Measure of performance of a trader (volume of business, margin or profit),

A = Assets,

M, K, H, S = respectively measures or proxies of financial, human and social capital,

T = some indicator of trading practices

C = transaction costs.

Thus, a trading firm's performance can be measured by profit subject to fixed resources, trading practices and costs.

Nevertheless, in empirical specification of any model to estimate parameters of these variables, two aspects need to be considered. First, if Y is influenced by A only because of their impact on T, then inclusion of T in an equation will result in insignificant coefficients for A because of the existence of multi-collinearity between T and A.

However, if all trading practices that matter can't be identified and defined in the function, then inclusion of both T and A mean that assets will remain significant in regression results. Second, since T influences C and Ts are more easily observable and measurable than Cs; Ts may be considered as proxies for Cs. In this study the framework is applied in assessing the performance of traders in bean marketing.

3.3 Research Approach

The research was designed such that data were collected in two stages:

- i) Formal structured survey for farmers
- ii) Formal survey for traders

3.3.1 Formal survey

The first stage involved formal cross-sectional survey using a structured questionnaire. The survey was conducted from December 2008 up to February 2009. The sample domain was selected to represent bean growers in the district, drawn from five villages. In each village 20 farmers were selected randomly to make a total sample of 100 farmers.

However, two criteria were considered important before interview exercise was conducted in each village: first those respondents who were willing to be interviewed; second typical representative farmer in the beans production and marketing system. The total sample of 100 farmers was interviewed using structured questionnaire. The second stage involved bean traders, whereby formal cross-sectional survey using a structured questionnaire was employed. The survey was conducted from January to February 2009. Due to the scattered and mobility nature of traders' the random sampling method was used to select respondents.

3.3.2 Sampling frame

The research focused on bean marketing intermediaries (traders), as unit of analysis. However, the research also included farmers for the purpose of getting more insights on bean production and marketing system at farm gate level. Hence, the target population in this study was farmers who participate in the market at the farm gate and beyond, mobile intermediaries, agent middlemen, stationary wholesalers and retailers' intermediaries.

3.3.3 Sampling procedure and sample size

A total of 100 farmers were purposively selected for interview from five villages. About 20 farmers were selected from each village and the criteria used to select farmer for interview was that only farmers who are producing and selling beans had an equal chance of being interviewed in the selected village. In addition, a total of 60 traders (marketing intermediaries) were randomly selected from four categories of traders, such as agent middlemen, mobile intermediaries, stationary wholesalers and retailers.

3.3.4 Data collection method

Information used in this study was derived mainly from primary data sources collected from formal households' survey as well as survey of bean traders. Data were collected through individual administered interview using a structured questionnaire containing both closed and open ended questions. The primary data were supplemented by secondary data, which was obtained after critical review of related literature.

3.4 Empirical Model and Data Analysis

3.4.1 Descriptive data analysis

To address the objectives on examining socio-economic characteristics of market participants and identifying marketing channels and organisation of intermediaries in the

marketing system, the descriptive statistics (frequencies, means and cross tabulation) were used to describe the socio economic characteristics of producers and traders. Hypothesis underlying these objectives was subjected to non-parametric statistics (Chi-Square statistic) to test the significant differences between traders and farmers' socio economic characteristics such as gender, age, experience volume traded etc. Data were analyzed using SPSS software.

3.4.2 Empirical model specification for multiple regression analysis

Profit is the ultimate objective of a firm though performance can be assessed by volume of business or cost per unit. Gross margin as a measure of return on own labour and capital, can be a good indicator of business performance as minimization of variable costs will lead to increased gross margin (Nicholson, 2002). Gross margin per traded volume was used as an indicator of performance and a model for empirical estimation of its determinant is represented in the following form:

$$GM/trader = f(X, C, e) \dots\dots\dots 3$$

Where;

X = a set of qualitative variables: sales strategies and market traded

C = a set of quantitative variables (covariates): age, education, working capital, start-up capital, time between purchase and sales, business contacts and distance to sales market

e = an error term.

X and C = include asset variables (human, financial and social capital), trading practices variables and other general variables.

Asset variables include years of schooling of the trader, his/her age, start-up capital, working capital during the year preceding the survey, and number of other traders known in purchase and sale markets who could be relied up on for information, advice or credit.

Trading practices variables; include use or non-use of forward contracts in buying and/or selling beans, distance between purchase and sale markets where transactions were made which indicated spatial arbitrage behaviour, and number of days between purchase and sale transactions which included travel time between markets as well as temporal arbitrage behaviour.

Other variables; include type of market (primary or secondary) where transactions took place.

Double-log formulation would give direct estimates of elasticities but could not be used in this study as gross margin was negative in a good number of cases. Hence, to estimate factors that influence bean trader's performance (objectives 3), a multiple regression analyses was performed using STATA software.

Equation (3) for linear regression can be represented in its reduced form for empirical estimation as;

$$GM = f(AGE, WCA, EDU, SCA, BCOT, FCOTR, DIST, TPCH, MKT, TYPT)..... 4$$

Table 1: Definitions of variables used in the regression analysis

Variable	Description
GM	Gross margin: Dependent variable
AGE	Age of the trader: Dummy variable: 1 = >40 years; 0 = Otherwise
EDU	Formal education of the trader: dummy variable: 1 = >7 years; 0 = otherwise
WCA	Traders' working capital: Continuous variable (TSh)
BCOT	Number of business contacts: dummy variable: 1 = >10; 0 = otherwise
FCOT	Use forward contract in sale: Dummy variable: 1=yes; 0= No
DIST	Distance between purchase & sale markets: Continuous variable (Km)
TPCH	Time between purchase and sales. Continuous variable: (Days)
MKT	Sales market: Dummy variable: 1= Secondary; 0= Primary
TYPT	Type of trader: Dummy variable: 1= Wholesaler; 0= Assembler

CHAPTER FOUR

4.0 RESULTS AND DISCUSSIONS

4.1 Socio-Economic Characteristics of Sampled Farmers and Traders

Socio-economic characteristics are important variables that mark necessary attributes, which influence the decision making process of an individual. Various socio-economic characteristics are included in this study to describe on average the farmers' and traders' asset base and vulnerability context which reflect the performance of marketing enterprises. As Mohammad *et al.*, (2008) argue, temporal or spatial arbitrage performance varies with socio-economic characteristics of market participants when the decision maker's goal is to make profit, which is large enough to cover marketing costs.

4.1.1 Farmers' socio-economic characteristics

The findings (Table 2) revealed that 62% of the farmers' respondents belong in the age group between 36-60 years and 75% attended formal school at least up to primary education level, this indicated that most of the bean producers were in their active age but were not well educated. This is expected as the marketing of agricultural products need agile and literate people as this enhances productivity and makes them to be independent economically.

Furthermore, results in (Table 2) show that 84% of the respondents are preoccupied with farming activities. This means that majority of the farmers in the study area relies much on farming, especially of beans to earn their living (food and income).

Table 2: Socio-economics characteristics of bean producers

Characteristics	Frequency (N = 100)	Percent (%)
Age range (mean = 43 years)		
< 25	4	4
25-35	24	24
36-60	62	62
> 60	10	10
Education level		
No formal education	12	12
Primary education	75	75
Secondary education	11	11
Tertiary education	2	2
Main occupation		
Farming	84	84
Formal employment	10	10
Off-farm activities	6	6

4.1.1.1 Characteristics of bean production, sales and income

The average land size under all crops cultivated by a farmer was about 6 acres with a standard deviation of 4.4 (Table 3) indicating a narrow dispersion of land size distribution in the sample surveyed. On the other hand, the average land size under bean cultivation was about 2.5 acres with standard deviation of 1.5 acres.

These findings suggest that most farm households had on average small land holdings under beans cultivation, which have an implication on the marketed surplus as well as marketing costs. It is acknowledged that large farm size provides greater rooms for farmers to shift from subsistence farming to commercial farming.

Bean production per acre (Table 3) was estimated on average at 550 kg/acre. However, results in Table 3, shows that on average, the productions per sampled respondents were found to be less than a metric ton (793 kg). About 97% of the sampled farmers sold more

than 75% (Table 3) of their total output. The rest of the outputs (24%) were reserved for home consumption and seeds.

Table 3: Distribution of mean for bean production and allocation

Variable	Responses	Mean	STD	Min.	Max.
Land for all crops (acre)	100	6.2	4.4	1	22
Land for beans (acre)	100	2.5	1.5	0.5	10
Yield/acre (kg)	100	552	192	162	1080
Production (kg)/farmer/last season	100	793	754	81	5292
Quantity of beans sold (kg)	98	602	629	40	4500
Quantity consumed (kg)	98	90	60	20	300
Reserved for seeds (kg)	97	61	51	10	300
Quantity stored (kg)	100	238	427	0	2000
Storage length (month)	44	2.6	1.3	1	7

The tendencies of farmers to sale large quantities of beans compared to what is left for consumption and seeds imply that beans are evolving from subsistence to a dependable cash crop. This is supported by the results in Table 4, which indicates that about 64% of the sampled households in the study area, considered beans as their first main source of cash income.

The most widely grown and sold varieties are Lyamungu 85 & Lyamungu 90 both varieties are undistinguishable at farm level, thus commonly known as Rosecoco. These varieties are grown by over 90% of the sampled farmers. Other varieties commonly grown for market include Soya and Njano (Yellow).

Table 4: Bean production scale and importance at household level

Variable	Frequency	Percent (%)
Bean outputs/farmer (mean=7 bags)		
< 2 bags	13	13
2 - 9 bags	64	64
10 - 25 bags	21	21
> 25 bags	2	2
Total	100	100
Rank of beans as cash crop		
Number 1	64	64
Number 2	28	28
Number 3	7	7
Number 4	1	1
Total	100	100

4.1.1.2 Characteristics of bean marketing at household level

The results (Table 5) indicate that majority of respondents (51%), sold their bean output due to immediate needs for cash and about 27% were motivated to sell by the prevailing good price of beans. Moreover, if the motivation behind selling beans is to meet household cash demand, then most producers are likely to sell large quantities of beans soon after harvesting when the price is often low and hence this will lower producers' returns. In addition, most of respondents sold beans through commission agents (54%), while the most common points of sales were at farm-gate (93%) and most farmers had little influence on price offered by traders such that about 77% had to take market prices which was largely dictated and/or fixed by traders.

Furthermore, the results in Table 5 show that the overwhelming majority (85%) of sampled respondents who sold beans to various traders used plastic bucket as their common measurement unit. Moreover, it is claimed that traders make profit through the use of plastic buckets (un-standardised measurements) when purchasing beans from farmers, whereas in selling mostly at secondary markets they use standardized weighing

scales (i.e. the consignment is measured in terms of Kilograms). The reason could be lack of weighing scales at farm level. Henceforth, one needs to collect quantitative data to ascertain whether trader's benefit from using un-standardized measures during the purchase of agricultural crops, particularly beans from farmers.

Table 5: Bean marketing characteristics at farm level

Variable	Frequency (N = 100)	Percent (%)
Determinant of bean quantity to sell		
Cash need	50	51
Good price	27	27
Production levels	12	12
Lack storage facilities	10	10
Type of trader used by farmer		
Commission agents	52	54
Assemblers/collectors	34	35
Wholesalers	5	5
Retailers	6	6
Price determination		
Take market price	77	78
Costs involved	18	18
Others	5	4
Market outlets (point of sale)		
Farm gate	93	93
Within village markets	6	6
Neighbouring village	1	1
Common measurement unit		
Plastic bucket (18kg)	85	85
Plastic bucket (10kg)	9	9
Plastic mug (0.5kg)	6	6
Unethical trading practices		
Un-standardised measurements	50	69
Misleading price quotations	21	28
Others	2	3

4.1.2 Traders' socio-economic characteristics

Traders of the bean marketing channel described in (Fig. 2) range from small itinerant traders to large scale traders (wholesalers). In this study, a total of 60 traders (intermediaries) were interviewed, and these include 30 rural assemblers, 16 urban wholesalers, 6 urban assembler-retailers and 8 urban retailers. Other market participants involved include bean producers, brokers and commission agents commonly known as “dalalis”.

The socio-economic characteristics of bean traders are presented in Table 6. The results from this table show that the majority (67%) of the traders' age lied between 30 years to 40 years. Furthermore, the results (Table 6) shows that on average the sampled traders had formal education with 80 per cent, 17 per cent and 3 per cent of the respondents attaining primary, secondary and tertiary education respectively. The most educated respondents were found among the wholesalers and the retailers, whereby some of them have attained tertiary education.

Majority (53%) of the respondents have been dealing with bean trade for about 7 years to 12 years, such that 60 percent of rural assemblers and 17 percent of assembler-retailer fell in this range. In addition, results (Table 6) also show that about 15 percent of all sampled traders have been operating bean business for more than 12 years.

Regarding the volume of beans traded in a season by traders, most frequent responses (35%) of sampled traders purchased bean quantities that ranged between 80 bags to 500 bags. Furthermore, the results (Table 6) show that about 25% of all sampled traders

purchased beans above 1500 bags per season and this being accounted for, mainly by rural assemblers (17%) and wholesalers (63%).

Majority of the sampled traders had their working capital that ranged between 6 - 15 million Tanzania Shillings. Nevertheless, about 13% of the respondents had their working capital exceeding 25 million Tanzania Shillings. All those sampled traders who possessed the working capital above 25 million Tanzania Shillings, included only two categories of traders; these include rural assemblers (7%) and wholesalers (38%).

A cursory look at (Table 6) revealed that 73 per cent of the sampled traders indicated that they were using capital from their own source and from friends/relatives. From the discussion with various bean traders in the study area, it was noted that bean trading involves a lot of capital and as a coping strategy, some of the traders had to initially act as agents of traders with much capital by assisting them in buying and collecting beans from farmers' homes and markets.

It could be acknowledged that successful participation in crop trade requires not just the financial capital but also a period of apprenticeship that could last for years. Although operating capital may not pose a serious monetary barrier to intending entrants into the bean trade, but integrity, reputation, honesty, experience (in pricing beans) and confidentiality which could only be acquired through apprenticeship.

Table 6: Characteristics of sampled traders operating in Karagwe district

Characteristics	Assembler (n=30)	Wholesale (n=16)	Assembler -retailer (n=6)	Retailer (n=8)	Average (n=60)
Age range (years)					
< 30	10	6	33	13	12
30-40	67	69	50	75	67
41-50	20	19	17	0	17
> 50	3	6	0	13	5
Education level					
Primary education	93	56	83	75	80
Secondary education	3	38	17	25	17
Tertiary education	3	6	0	0	3
Experience (years)					
< 3	7	0	17	25	9
3-6	23	13	67	13	23
7-12	60	56	17	50	53
> 12	10	31	0	13	15
Volume-traded (bags)					
< 80	20	6	33	100	28
80-500	53	6	67	0	35
501- 1500	10	25	0	0	12
> 1500	17	63	0	0	25
Capital source					
Own sources	3	31	0	38	53
Fellow traders	20	25	17	0	19
Relatives/friends	13	0	0	50	13
Bank loan	60	44	83	13	15
Initial capital (TSh)					
< 1M	73	25	67	100	63
1M-5M	23	63	33	0	32
> 5M	2	13	0	0	5
Working-capital (TSh)					
< 2M	20	0	50	100	28
2M – 5M	40	0	0	0	20
6M – 15M	33	38	33	0	30
16M – 25M	0	25	17	0	9
>25M	7	38	0	0	13

1 bag of beans (6 plastic buckets) = 108kg; M= Millions in Tanzania Shillings
 Figures in the table are in percentages (%)

Table 7: Characteristics of bean commodity transactions

Procurement of beans	Frequency (n = 60)	Percent
Self purchasing	16	27
Use commission agents	44	73
Criteria for setting price		
Seasonality	36	60
Transaction costs	21	35
Others	3	5
Factors for price differentiation		
Variety	35	58
Quality	15	25
Bean size	10	17
Sales strategies		
Store before selling	12	20
Immediate selling	31	52
Forward contract	17	28
Common trading practices		
Use brokers	23	38
Maintain regular supplies	27	45
Pre-contact traders	10	17
Location of sales market (n= 58)		
Within Karagwe	26	45
Bukoba	10	17
Other Lake Zone markets (i.e. Kahama)	18	31
Dar-Es-Salaam	4	7
Distance to sales market		
< 100 km	30	50
100-500 km	22	37
> 500 km	8	13

4.2 The Bean Marketing System

4.2.1 Overview of bean marketing channels

Agricultural marketing channels are the routes followed by the agricultural commodities (marketable or marketed surplus of producer) before reaching in the hands of final consumers. Hence, the number of intermediaries in a given marketing channel will have a bearing effect on both producers' and consumers' prices. The shorter the channel the more likely that the producers' price will be high and consumers' prices will be low. On the other hand as the longer the chain the higher the price the consumer will have to pay. The survey results indicate the different actors who usually get involved in channelling of bean commodity to demand areas particularly in urban towns.

4.2.2 The structure of bean marketing

Marketing channels facilitate the flow of beans from producers to consumers. A variety of well established although informal marketing channels exist in Karagwe district for the distribution and sale of beans in markets. Such that (Fig. 2) shows the pattern of bean marketing channels in the study area and the roles played by various intermediaries involved.

Aside from the producers themselves, the participants in bean marketing activities are the assembly traders, traders' agents, wholesalers, and retailers. Hence, (Fig. 2) shows the observed bean marketing channels as follows:

- Producer → Retailer → Consumer
- Producer → Assembler-retailer → Consumer
- Producer → Rural Assembler → Retailer → Consumer
- Producer → Wholesaler → Retailer → Consumer
- Producer → Rural Assemblers → Wholesaler → Retailer → Consumer

Direct sales to consumers normally took place at farm-gate and/or local village markets. Two bean products, dry bean for home consumption and dry bean for seeds, pass through this channel. In addition, the opportunity to sell direct to consumers in bean producing villages has been expanded, owing to increase in number of households that depend on non-farm economic activities as well as the proliferation of primary and secondary schools, which have been established at ward and village level. This means there is increase in numbers of teachers and support staff, who may not depend much on farming

but consumer of beans. The result from the survey indicates that most of the sampled farmers sell their beans through intermediaries, who transport and sell in urban markets.

The diagram (Fig. 2) shows that large volume of beans (about 59% of total volume traded), passed through wholesalers, with another 38% going to rural assemblers, 2% to assembler-retailer and 0.1% directly to urban retailers; The four types of market intermediary all purchased beans from bean producers. Apart from few traders that standardized their beans before selling, most of the beans passing through various assemblers, traders' agents were sold off as un-standardized.

Beans changed hands from producers to market intermediaries or consumers at farmers' homesteads and/or farm gate and occasionally at rural periodic markets. Market intermediaries in turn passed on the beans to retailers mainly in the urban areas of Bukoba, Mwanza, Kahama, Shinyanga, Nzega, Dodoma and Dar-Es-Salaam. Each of the intermediaries had more than one outlet for selling beans. For example, some traders said apart from disposing their purchased beans at urban areas they also sell to school and military camps through tender arrangements.

Bean outlets for assembler-retailer include hotels, food retail shops that also sell other grains, and direct sell to ultimate consumers in urban markets. Likewise, rural assemblers dispose their purchased beans to wholesalers and retailers in urban markets. From producers' gates, beans are collected by traders' agents and hence transported to agent's home place usually by bicycles.

On the other hands beans are transported by producers carrying beans, often head-loaded, to local markets in bean producing villages during market days: or by market

intermediaries assembling beans at the selected collection points in villages usually at traders' agents homestead or local markets for transportation to urban markets using pick-ups, lorries (Fuso).

Moreover, traders who are handling large volume of beans, they transport it using semi-trailer vehicles and these have an average capacity to carry about 24 tons (220 bags). Traders claimed that it is cheaper to use semi-trailer vehicles, because they are usually empty when they go to Dar-Es-Salaam and Isaka (Kahama) ports to load cargo that are transported to Rwanda, Burundi and DRC.

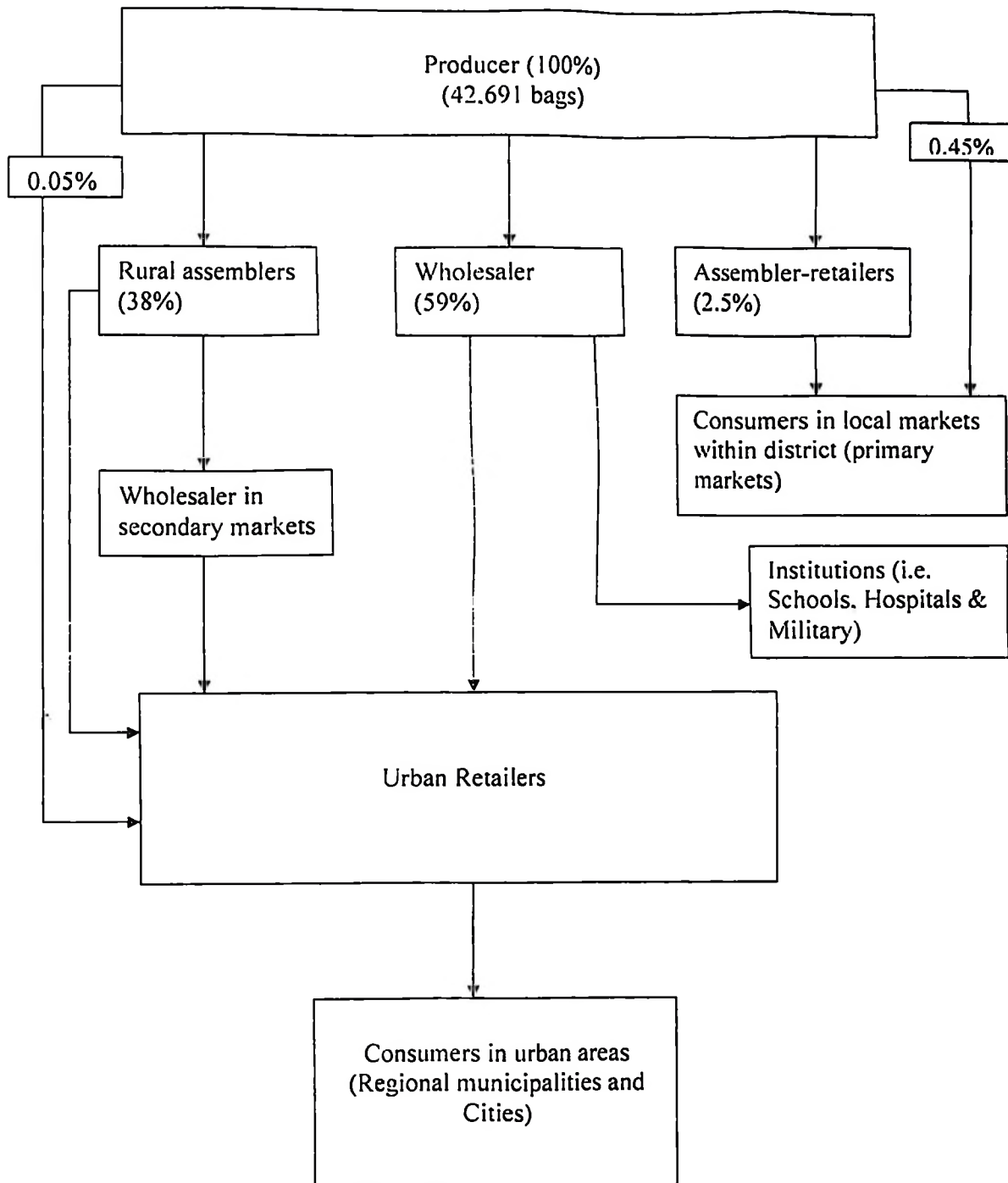


Figure 2: Bean marketing channels in Karagwe District

4.2.3 Conduct of the market intermediaries

Little evidence of collusion by the marketing agents was found. The presence of a large number of small traders (assemblers) suggests that the market for beans in the study area was competitive and not in the hands of few operators. Moreover, big traders are increasingly becoming involved in the marketing of beans, thus creating alternative marketing channels to those already available and raising the level of competition.

Table 8, summarises the typical strategies used by the market intermediaries to attract supplies and sell of their beans. Attracting beans supplies from farmers in the study area was more important, especially during the time when the urban markets (demand areas) are in short of beans supply as a result of other production areas being in off-season; these include; places like Mbeya, Arusha, Kilimanjaro, Rukwa, Kigoma and Lushoto-Tanga.

The off-season period in these areas is usually during December through April. Selling strategies, on the other hand, were more important during the months of June and July, when bean supply is flush. In some cases rural assemblers were attracting bean supplies by advancing credit to some farmers in need of cash money, during crop establishment period and farmers were required to sell their supply (usually at lower price) to the same trader who lend them money.

Few traders provided services like supply of seeds as an incentive to producers. Competing on price (Table 8) was mainly used by most of intermediaries to attract bean supplies especially when bean are in short supply.

For selling the beans, informal contracts with town wholesalers, retailers and institutions which provide food (i.e. hospitals and schools) was a common strategy among some of intermediaries. Price competition (Table 8) was used by most of intermediaries during

flush times. Traders' agents using bicycles visited farmers' homestead regularly promising to offer attractive prices.

Payment arrangements and timing did not vary among the intermediaries, because producers, who sold beans to traders, were promptly paid in cash irrespective of the type of trader. Bean producers preferred market outlets in terms of convenience-being able to sell their beans to traders within their proximity and reliability-easiness to borrow money just in case of immediate cash needs.

Purity of varieties, clean from dust, proper drying, and removal of other foreign materials were the important beans quality aspects that can be improved after harvest in the study area. The final quality of the beans sold to consumers depended on handling and storage, which affected the physical appearance of beans such as a pest's infestation and changing colour.

The results (Table 9) indicate that in the study area, farmers and traders' agents were found to mix the highly preferred bean variety (Rosecoco) by traders with less preferred variety (Rukururana), hence sold as one variety at higher price.

Table 8: Strategies for attracting bean supplies and selling by intermediary

Market intermediary	Strategies to:	
	Attract supplies	Sell
Rural assemblers	- collect beans at farm gate - pay farmers in cash - pay farmer before harvest and collect produce later - use agent middlemen	- forward contract - sell beans as soon as possible - price competition
Wholesalers	- use itinerant traders & agent middlemen - offering attractive prices - provision of seeds	- use brokers - contractual arrangements with institution, which provide food
Assembler-retailer	- collect beans from homesteads - pay in cash	- price competition - informal contract with food vendors and hotels
Retailer	- maintain regular communication with rural assemblers	- price competition - sell more than one variety - sell to food vendor on credit - sort and grade

The tendency of mixing of beans varieties (Table 9) is due to the fact that traders' agents usually offer low price for unpopular small sized bean variety commonly known as "*Rukururana*" and later on mix it with popular large sized variety commonly known as "*Rosecoco*". After mixing process, it is sold at a price of *Rosecoco* which is a bit higher. The above two varieties have got the same colour, which make it easier to mix and sell them sometimes unnoticed. Furthermore, farmers grow "*Rukururana*" because they are accepted locally due to the fact that they are palatable when cooked with banana.

In addition, farmers do not properly dry their beans after harvest, more especially at the beginning of marketing season, as the price at this period in time is usually high and attractive. Consequently, traders experience losses in quantity and quality, mostly those transporting beans to far distant urban markets.

Table 9: Bean quality problems experienced by traders

Nature of quality problem	Frequency	Percent
Mixing of varieties (lack of purity)	27	60
Presence of stones/dust	5	11
Improper drying	13	29
Total	45	100

Furthermore, the results (Table 10) indicates that about 35% of sampled traders neither did they sort and remove of foreign particles nor standardise the beans, only that beans were just packed in the jute bags and transported with the same quality as it was before it was still at farmers' store (usually mixed with dust, stones and other less preferred varieties by traders).

In a marketing system where inspection of the purchased beans is not rewarded, there is a temptation for producers and marketing intermediaries to purposely mix superior varieties with inferior ones and with small stones and be able to increase its volume and/or quantities.

Table 10: Bean handling activities by traders before selling

Strategy	Frequency (N=60)	Percent (%)
Do nothing	21	35
Standardizing	23	38
Remove other foreign particles	10	17
Sorting and grading	6	10

However, different ways were used to check for mixed beans with stones and this was by taking a bag randomly and unpacks it then repacks. Although the marketers in turn could adulterate beans, competitiveness of the market prevented them from excessive adulteration for fear of losing customers. For example during the survey it was observed that traders were crosschecking beans before they buy and once beans are adulterated they were rejecting it outright.

4.2.4 Performance of marketing intermediaries

Prices offered to producers and paid by consumers of beans and costs in the bean marketing chain were used as indicators of relative performance. Table 11 shows that the highest price was received by producers who sold their beans to wholesalers, whilst the lowest price was received by producers who sold beans through rural assemblers. Between the wholesaler and the assemblers there was a difference in buying prices at a rate of at least 50 TSh/Kg. Prices offered by traders, varied according to the variety of beans delivered by the producers. These prices are usually determined and known at the beginning of the bean harvesting season (December).

Producers received the price depending on the time of the season; it starts high in December then drops a bit in January and later on start rising towards the end of the season usually in mid February. However, even if the price rises at the end of production season it does not exceed the price at the beginning of the season. In contrast, there was very slight difference between the prices received by producers from rural assemblers and retailers.

Table 12 also presents average price paid to farmers and intermediaries (traders). Buyers and/or consumers, who purchased beans from retailers, paid significantly more, by 24% or so, than those who purchased beans directly from rural assemblers. The prices charged by the wholesalers and retailers differed only slightly (13%), suggesting a competitive retail market in beans.

Table 11: Average bean buying prices at farm gate, 2008 (TSh/kg)

Market outlet	Price paid to producers			
	Bean variety type			Mean
	Rosecoco	Soya	Yellow (Njano)	
Rural assemblers	550	680	630	620
Assembler-retailer	580	730	-	655
Wholesalers	602	715	733	683
Retailers	600	680	676	652

4.2.4.1 The Bean marketing costs

In this study information was collected on the various costs incurred in the process of assembling, transporting and selling the quantities purchased. These costs outlays are referred to as marketing costs.

The results presented in Table 13 indicates that transport costs represent by far the largest component of marketing costs, accounting for at least 35% of total marketing costs for rural assemblers, wholesalers and assembler-retailers. This means that transport costs are very important component that may hinder or support commercialisation of agriculture in Tanzania and Sub-Saharan Africa at large.

This has been supported by studies conducted by Ruijs *et al.*, (2004), as well as Adetunji and Adesiyani (2008) in sub-Saharan Africa. The second and third most important components of marketing costs are the costs of commission agents and brokers. These costs represent 23% and 14% of marketing costs incurred by the trader, respectively.

Table 12: Average selling prices at each marketing stage, 2008 (TSh/kg)

Marketing stage	Price at each marketing stage			
	Bean variety type			
	Rosecoco	Soya	Yellow	Mean
Producer to Assembler-retailer	580	730	-	655
Producer to Assembler	550	680	630	620
Assembler to Wholesaler	750	850	800	800
Wholesaler to Retailer	950	1 050	1 000	1 000
Retailer to Consumer	1 100	1 300	1 200	1 200

Marketing costs ranges between 71 and 142 Tanzania shillings per kilogram of beans depending on the type of trader. Most of retailers who purchase from nearby markets and thus incur less costs for transport and such related market services receive higher net margin rate (Table 15) than other traders.

Furthermore, as per the results shown in Table 13, the wholesalers incurred the highest costs (142 TSh/kg), owing to the high costs of transporting beans from Karagwe by Lorries to Mwanza, Shinyanga and Dar-Es-Salaam. In addition, greater costs were also incurred on payments of commission agents and town brokers.

Table 13: Distribution of bean marketing costs by intermediary (in Tsh/kg)

Variable costs	Assembler	Wholesaler	Assembler-retailer	Retailer
Transport	39.3	66.4	34.7	17.4
Commission agents	27.4	30.4	24.7	14.7
Town brokers	15.8	18.2	-	-
District council fee	3.5	3.6	3.4	2.4
Town market fee	1.9	1.5	1.5	1.4
Telephone	1.5	0.2	1.6	3.3
Bagging	1.5	1.8	1.6	1.5
Follow-up	3.7	2.9	3.6	12.2
Loading	3.4	3.9	3.1	2.8
Unloading	3.6	4.8	3.4	3.2
Sacks	5.8	5.7	5.6	5.8
Tying strings	0.3	0.3	0.2	0.3
Storage rents	2.4	1.5	0.9	1.9
Security	0.6	0.2	0.8	2.3
Pesticide	1.5	0.7	-	2.2
Total marketing costs	112.2	142.1	85.1	71.4

4.2.4.2 The bean marketing margins

In a perfectly competitive market, the margin should, on the average and in the long run, be equal to costs of capital with a competitive return to labour, management and risks. Marketing margins for individual agricultural products can be measured by farm-retail price spreads (Gross margins).

Marketing margins that are relatively stable over long periods of time prevent undue uncertainty that results in waste and misallocation of resources (Adekanye, 1982). Changes in gross margins reflect changes in marketing costs, profits or both. Marketing costs determine the marketing services offered by the marketing system.

In this study, marketing margins for beans marketing have been analyzed at each marketing stage (nodes). The calculation in Table 14 illustrates that out of 1 200 Tanzania Shillings per kilogram of beans paid by consumers at retail stores, about 52% goes to

farmers, and 48% is shared among the intermediaries, whereby 15% goes to assemblers, 17% to wholesalers and 17% retailers.

This share of gross marketing margin in consumers' shilling is modest, partly because it pertains to a short trade loop within the study area (Karagwe). The marketing margin should be much larger for long-distance trades, such as markets in regional and city centers, which are far distant, corresponding to larger transportation costs and higher risk involved.

Nevertheless, interviews with farmers revealed that a relatively high farmers' share (52%) of the marketing margin does not guarantee that bean producers will earn profits. This may imply that when the price is low, the risk of experiencing the loss is seemingly much higher for producers than bean traders.

Table 14: Prices and margins at various marketing nodes along bean marketing chain in Karagwe district observed in December 2008

Marketing nodes	Price (TSh/kg)	% of retail price
<i>Price</i>		
Farmers to assembler	620	51.7
Assembler to wholesaler	800	66.7
Wholesaler to retailer	1 000	83.3
Retailer to consumer	1 200	100.0
<i>Margin</i>		
Assembler	180	15.0
Wholesaler	200	16.7
Retailer	200	16.7
Total	580	48.4

The results (Table 15) revealed that assemblers and wholesalers operated with modest marketing margins such that their marketing costs were 62% and 71% of their marketing margins respectively.

Hence it is evident to say that the intermediaries' marketing margins are justified given the existing institutional and legal barriers in the study area. On the other hand retailers operated with slightly lower marketing costs at 36% of their marketing margin. Given that the costs of assemblers and wholesalers were more than fifty percent of their marketing margins as opposed to those of retail traders, it can then be said that these traders earned normal profit from trading beans unlike urban retailers.

Table 15: Bean marketing margins and performance by intermediary

	Assembler	Wholesaler	Retailer
Total marketing costs*: a	112	142	71
Mean buying price/kg: b	620	800	1 000
Mean selling price/kg: c	800	1 000	1 200
Margin: $d = c - b$	180	200	200
Net margin: $e = d - a$	68	58	129
MC as % of MM: $f = a/d$	62	71	36
NMM/WC (%): $g = e/(a + b)$	9	6	12

* From Table 12; MC = Marketing Cost; MM = Marketing Margin; NMM = Net Marketing Margin; WC = Working Capital.

Furthermore, the results presented (Table 15) shows that the assemblers enjoyed the returns to their working capital of about nine percent although much of that must be seen as a return to their labour. On the other hand retailers worked with relatively low costs if compared with other intermediaries, realised a higher margin as well as return to their working capital of about 12%, which should slightly allow them to accumulate and invest.

4.3 Factors Influencing Traders' Performance in the Study Area

Factors influencing traders' performance were estimated to determine its influence on traders' gross marketing margins. The regression parameters were estimated whereby a number of explanatory variables were included in the regression model for determining and examining the effects of explanatory variables on the traders' gross margins.

The null hypothesis that there is no significant effect of traders' assets (financial, human capital and social capital) and trading practices on gross marketing margins was also tested. The summary statistics for the regression analysis are presented in Table 16, whereby the regression model explained 67% of variation in gross margin of the trader.

Table 16: Regression estimates of factors influencing gross margins of traders

Independent variables	Coef.	S.E	t-value	P> t
Constant	521	3 558	0.15	0.884
Asset variables				
Age of a trader (above 40 years =1) [AGE]	-8 626	3 807	-2.27**	0.028
Schooling of a trader (beyond primary =1) [EDU]	6 680	3 697	1.81*	0.077
Working capital (TSh.) [WCA]	-0.001	.0002	-3.99***	0.000
Number of business contacts (>10 contacts = 1) [BCOT]	11 391	4 244	2.68***	0.010
Trading practices variables				
Sales strategies (Forward contract = 1) [FCOT]	-5 789	3 369	-1.72*	0.092
Distance between purchase & sales market (Km) [DIST]	-19	4.89	-3.91***	0.000
Time between purchase & sales (days) [TPCH]	183	177	1.03	0.306
Other variables				
Market traded (secondary = 1) [MKT]	10 858	4 241	2.56**	0.014
Type of trader (wholesaler=1) [TYPT]	6.24	3539	0.00	0.999

Number of observation (N) = 60; $R^2 = 63\%$ $R^2_{adj} = 56\%$

Dependent variable = Traders' gross margin ('000')

***, **, * = Significant at 1%, 5% & 10% respectively

The variable (AGE) estimated coefficient is negative and statistically significant at 5% level of significance. The negative sign on the estimated coefficient suggest that older traders (above 40 years of age) are likely to get less gross margins than young traders. The

conceived explanation on this is that young traders may have greater ability to get physical contact with many experienced traders than older traders. As the result, experienced traders can enable young traders to access profitable markets, which may lead them to get higher gross margin than older traders.

The estimated coefficient for the formal education level (**EDU**) is positive and statistically significant at 10% level of significance. The positive sign of the estimated coefficient implies that traders with education beyond primary qualifications are likely to get higher gross margin than traders with and without primary education. The plausible explanation for this is the fact that education does improve traders' intellectual capacity to efficiently perform marketing functions and market related information, which in turns improves bargaining position and other aspects regarding contract enforcement. The belief is that education gives traders the ability to perceive, interpret and respond to relevant market information much faster, therefore a higher level of education is expected to positively relate to the usefulness of analysis of information in making decisions, especially, those pertaining to bean marketing.

The variable working capital (**WCA**) estimated coefficient is negative and statistically significant at 1% level of significance. The results suggest that increasing the size of working capital will decrease the unit gross margins of the trader. Although margin rate decreased as the size of working capital increased, the total gross margin could be significantly higher for such businesses compared to smaller traders. In fact, larger working capital may permit larger volume of business and cost economy, and such traders may earn lower profit per unit quantity of beans but larger amount of total profit, hence they may be more competitive in the market.

The variable number of business contacts (BCOT) estimated coefficients is positive and statistically significant at 1% level of significance. The positive relationship suggests that traders who are in contacts with many other traders (more than 10) are likely to get higher gross margins and vice versa. The reasoning behind this positive relationship is the fact that traders who know more traders are likely to find suppliers and buyers more quickly than those traders that know fewer traders, such that their searching costs are lower.

The estimated coefficients for use of forward contract (FCOT) as sales strategy is negative and non-significant implying less gross margin is likely to be earned by traders who use forward contracts as sales strategy. In a market environment where there is price fluctuation, the traders who will have entered a contract will have to sell at agreed price irrespective of the price rises. Hence if that happens then that trader if bought at higher price will be likely to incur loss or less gross margins.

The estimated coefficient for the distance between purchase and sales market (DIST) is negative and statistically significant at 1% level of significance. Regression results indicate that a unit increase in distance from the purchase area to sales markets decreases the gross margin of the trader. Hence, the decrease in unit margin, as the distance increased, was expected where price gains from longer spatial arbitrage may be lowered as distance becomes longer. Moreover, longer spatial arbitrage significantly increased unit costs and indirectly contributed to lower margins of the traders. Similarly, study conducted by Escola (2005) found the negative relationship between distance to market and gross margins.

The estimated coefficient for time between purchase and sale (TPCH) is positive and statistically non-significant in explaining the traders' gross margin. The variable has a positive relationship, implying that units gross margin increases as the time between purchase and sale increases, which is according to prior expectation. This is due to the fact that traders who hold beans for several days (store), they have the opportunity of maximizing selling price resulting from time utility.

The variable type of market traded (MKT) estimated coefficient is positive and statistically significant in explaining traders' gross margins at 1% level of significance. The results from regression analysis (Table 8) show that unit margins were significantly higher in the secondary markets perhaps because of the opportunities of selling at higher prices in municipal towns and cities.

The variable type of trader (TYPT) estimated coefficient is positive and statistically not significant in explaining traders' gross margins. The positive sign of the estimated coefficient implies that traders who are wholesalers (buy from other traders) are likely to get higher gross margin than traders who are assemblers (buy from farmers). The explanation is that wholesalers are likely to get higher gross margin probably because most of them may possess large amount of initial and current working capital, which may enable them to purchase large quantities of beans that in turn become cost effective to trade at urban markets that offer a competitive price.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The present study conclude that the price charged at each marketing node, indicate the great competitiveness in bean markets as such shows little evidence of collusion by the marketing intermediaries. For instance, the presence of a large number of small traders (assemblers) suggests that the market for beans in the study area is competitive and not in the hands of few operators.

The findings clearly reveal that bean marketing requires substantial capital in order for the trader to operate effectively and efficiently. This study shows that working capital possessed by many traders is not enough to trade large quantities of beans, which are cost effective especially, when trading at far distant (>500km) markets. For instance, about 78% of the traders interviewed had working capital below 15 million Tanzania Shillings, and about 90% of traders, marketed their beans within a distance of up to maximum 500km.

The functioning of food markets in many parts of Tanzania and other developing countries is hampered by the high costs involved in market exchange. For example, in this study, it is revealed that marketing costs accounted for over 60% of the total marketing margin received by intermediaries. Moreover, the costs for transport and commission agents (labour) represented by far the largest component of marketing costs, accounting for at least 59% of total marketing costs. Therefore, it can be concluded that depending on season and distance, marketing costs form a major part of the bean prices that consumers

pay in urban markets (deficit areas) and it also forms the major barriers to entry and survive in bean trading business.

Marketing margin really measures the share of the final selling (consumer) price that is captured by a particular agent in the marketing chain. This study has revealed that the share of gross marketing margin in bean consumers' shilling by intermediaries is modest. The study findings shows that out of 1,200 TSh/kg paid by consumers at retail stores, about 52% goes to farmers, and 48% is shared almost equally among the intermediaries.

Amidst the common negativity thinking of considering marketing intermediaries as exploiters of farmers (producers), this study conclude that marketing margins earned by marketing intermediaries though in excess of marketing costs are justified, given the existing formal and informal trade barriers as well as the transaction costs incurred in performing bean commodity exchange functions.

From regression analysis results, this study shows that there is significant effect of traders' assets (financial, human capital and social capital) and trading practices on gross marketing margins of the traders. On the other hands, other things being constant, education, type of trader, many business contacts and trading at secondary markets (urban markets) significantly increased unit gross margins of the trader. Therefore, from this study findings, it can be concluded that in order to be successful in trading of bean commodity, traders must be well equipped with business education, business contacts with trading agencies and experienced traders and substantial financial capital for trading in secondary markets.

5.2 Recommendations

The study recommends the following;

- The government should continue to promote desirable business environment to provide sustainable increase of business entrant this will encourage many traders to enter and remain in business and hence to maintain the competitiveness in beans markets. Focus should be directed to elimination of trade obstacles such as non-tariff and institutional barriers, which increase transaction costs for traders.
- Credit facilities should be availed to traders and this should be accompanied with entrepreneurial and/or business skills training. The credit and entrepreneurship skills are expected to empower traders so that they can trade in profitable secondary markets. Markets are not only a function of producers and final buyers or end users, but depend upon effective intermediaries.
- The study findings shows that price for beans was determined basing on variety, such that some varieties like *Yellow* and *Soya* types were priced if compared with *Rosecoco* type. This should echoes researchers to continue emphasizing market traits in the current and upcoming breeding programmes for improved varieties.
- The present study clearly illustrates the high marketing costs that are incurred by marketing intermediaries. Yet intermediaries (traders) are accused of earning excess profits. There is a need to form and strengthen private trading association and/or group; this will enable them to have an efficient procurement, delivery and sales of their bean products. This strategy in turn is expected to minimise marketing costs as well as being able to take advantage of economies of scales.

- If farmers are to share the benefits of the growing bean markets, additional efforts should be undertaken to build the capacity of farmers groups to be more productive and market responsive. To scale up such efforts, investments will be required to provide training materials and coaching to the extension service and to leading NGOs to undertake this task. The private sector should also play a role in such exercises such that new networks are developed with a commercial perspective and clear market signals.
- This study has at best scratched the surface in terms of generating knowledge on the overall burden of un-ethical trading practices by traders, which is experienced by majority of farmers. Findings reveal that traders are claimed to make profit through the use un-standardised measurements unit such as plastic buckets during purchase, yet when they sell they use standardized weighing scales (i.e. in Kg). There are still knowledge gaps. Effective measures against these malpractices in business require scientific evidence (facts). Henceforth, there is a need to collect quantitative data to ascertain whether trader's benefit from using un-standardized measures during the purchase of agricultural crops, particularly beans from farmers.

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APPENDECIES

Appendix 1: Bean farmers' questionnaire

Name of interviewer _____; Date _____
 Name of respondent _____
 District _____ Ward _____ Village _____
 Contact _____

A. Household & Farming characteristics

1. Age of respondent _____ years
2. Gender of respondent: 1: Male (☐); 2: Female (☐)
3. Marital status: 1: Married (☐); 2: Single (☐); 3: widow/divorced (☐)
4. Level of education: 1: None (☐); 2: Primary (☐); 3: Secondary (☐); 4: Tertiary (☐)
5. Main occupation: 1: Farming (☐); 2: employment (☐); 3: Off-farm activities
6. Type of producer: 1: large scale (☐); 2: medium (☐); 3: small scale (☐)
7. Mention the major five crops you grow in your field:
 I _____ ii _____ iii _____ iv _____ v _____
8. Rank of beans in terms of its importance as food crop _____ and cash crop _____
9. Land allocation for crops; under all crops _____ acre; under beans production _____ acre

B. Bean production aspects

10. For how long do you accomplish the following activities in an area of 1 acre?

Activity	Land preparation	Planting	1 st Weeding	2 nd Weeding	Harvesting	Winnowing	bagging
Days							
Cost							

11. Quantity of bean seed required _____ kg/acre; Price of seed/kg _____ TSh.
12. How much yield do you obtain in one acre? (_____ bags/acre)
13. Mention major production problems you face?
 I _____; ii _____; iii _____

C. Bean utilization and storage

14. Quantity of bean produced last season _____ bags
15. On average how do you apportion your bean produce after harvest?
 Quantity produced _____ bags; Quantity for sale _____ kg; consumption _____ kg; seeds _____ kg
16. Do you store your beans to wait high price? 1: Yes (☐); 2: No (☐)
17. If yes, how long _____ months; quantity stored _____ kg; price before storage _____ Tsh/kg and price after storage _____ Tsh/kg

D. Bean marketing and Transaction aspects

18. Did you sell your beans last season? 1: Yes (☐); 2: No (☐)
19. If yes, to whom did you sell your beans?
 1: Commission agent (☐); 2: assemblers (☐); 3: wholesalers (☐); 4: retailers (☐)
20. Where did those who bought your beans come from?
 1: in village (☐); 2: nearby village (☐); 3: in district (☐); 4: outside district (☐)

21. Rank factors you consider when you decide to sell your beans? price offered (); personal ties with buyers (); Cash demand (); Repay loan of the buyer (); honesty of buyer (); Continuity of trade (); others _____
22. Which factors determine the quantity of beans to sell? 1: cash need (); 2: good price (); 3: level of production (); 4: lack of storage capacity ()
23. What type of beans do you mostly sell to intermediaries? _____

24. Do the intermediaries offer price/kg, basing on bean type?

1: Yes (); 2: No ();

25. Mention price/bucket offered per each type

Bean type					
Price/Bucket*					

*1 bucket = 18kg.

Time of season	Early	Mid	Late
Price/Bucket*			

26. How many buyers did you contact before you decided to sell your beans? _____
27. Have you been selling to the same buyer every season? 1: Yes (); 2: No ()
28. Is it easy to sell beans to alternative trader, when the offer of buyers is not satisfactory? 1: Yes (); 2: No ()
29. Are there observed unethical trading practices? 1: Yes (); 2: No ()
30. If yes, what are they? 1: un-standardised measurements (); 2: misleading price quotations (); 3: Others ()
31. How many days after harvest did you sell most your beans _____ days
32. Why did you sell at this particular time?
1: household cash need (); 2: only buyer available (); 3: higher price ()
33. Where did you sell your beans? 1: at farm gate (); 2: in-village markets (); 3: neighbouring village (); 4: others, specify _____
34. Why do you prefer to sell in this market? 1: high price (); 2: easy to compromise with buyers (); 3: price certainty (); 4: No alternative market (); 5: others (), specify _____
35. If you sold bean beyond farm gate, distance from home to next best market? _____ Km.
36. Price at farm gate _____ & price at your next best market _____
37. How did you transport beans to your next best market? 1: bicycle (); 2: truck (); 3: others () (specify _____)
38. Transport costs per bag? _____ TSh.
39. Do you know prices in advance before selling your bean? 1: Yes (); 2: No ()
40. How do you fix prices of your bean commodity?
1: take market price (); 2: calculate costs involved (); 3: others (), specify _____
41. How do you collect information on market prices? 1: direct visit to market (); 2: crosscheck with different buyers (); 3: Friends (); 4: Extension service ()
42. Do you sometimes sell produce on credit basis? 1: Yes (); 2: No ()
43. What are the common unit of measure? 1: plastic bucket (20lts) (); 2: plastic *sadoline* (5lts) (); 3: bag (100kg) (); 4: plastic bucket (10lts) ()
44. During the production season, what price/bucket did you expect to be offered _____ Tsh.
45. To what extent is the selling price different from the expected one?
1: above expected (); 2: equal to expected (); 3: below expected ()
46. In which month was the price highest? _____, and lowest? _____

47. How many times in the year do you sell your beans? _____
48. How do you market your beans? 1: soon after harvest (); 2: waits price rise (); 3: sell before harvest (); 4: others _____
49. Have you ever experienced the lack of payments (incomplete transaction) from the buyers? 1: Yes (); 2: No ()
50. If the answer in question 48 is yes, did you follow-up your payments from the buyer before you are paid: 1: Yes (); 2: No ()
51. If not paid promptly, how much money do you spend in making follow-up of your payments from the buyer, i.e. travel, telephone etc? _____ Tsh.
52. How long does the buyer take to effect your payments _____ days
53. Does a buyer pay you the price basing on the value added (i.e. sorting)? 1: Yes (); 2: No ()
54. How long have you known your buyer who mainly buys your beans? _____
55. Do you make contract with the buyer? 1: Yes (); 2: No ()
56. If not, explain _____
57. Have you ever got the following services from the buyer?
1: transport (); 2: cash loan (); 3: input credit (); 4: technical advice (); 5: others (), specify _____
58. Before the transaction (selling), how many times did you contact the buyer _____
59. How many hours did you use for negotiating and setting price with buyer _____ hrs
60. Do you jointly transport your beans? 1: Yes (); 2: No ()
61. Explain the contractual behaviour of your buyer: 1: makes new contract every time (); 2: mostly makes contracts (); 3: few occasions (); 4: does not make contract at all ()
62. Explain the functional duties of your buyers: 1: also a producer (); 2: transporter; 3: gives credits (); 4: don't know (); 5: others (), specify _____

Appendix 2: Trader's questionnaire

A. Background Information

Date of interview _____

Trader's name _____ Business centre _____

Contact number _____

1. *Trader's age* _____ years
2. Gender: 1: Male (☐); 2: Female (☐)
3. *Years of schooling* _____
4. Type of trader (intermediary) 1: Assemblers (collector) (☐); 2: Wholesaler (☐); 3: Retailer (☐); 4: Assemblers-retailers (☐)
5. Apart from trading beans, what other crops do you trade?

6. What other economic activities do you perform?
_____; _____; _____
7. *For how long have you been in bean trading business?* _____ years
8. *Number of business contacts* _____

B. Bean purchasing aspects

9. Are beans delivered to you? 1: Yes (☐); 2: No (☐)
10. Who is purchasing beans for you? 1: Self purchasing (☐); 2: An agent (☐); 3: Others, specify _____
11. From whom do you often make the purchase? 1: Producer (☐); 2: Village market (☐); 3: Assemblers (☐); 4: Other _____
12. Where are your major purchasing places?

13. Do you purchase basing on bean types? 1: Yes (☐); 2: No (☐)

14. If yes, what are these types of bean you purchase?

Bean type				
Rank preference				
Reason-preference				
Price/bucket*				

*1 bucket = 18kg

15. Number of traders known in supply and purchase markets? _____
16. *Distance of purchases to sales market?* _____ Km
17. *What is your sales strategy?* 1: store before selling (☐); 2: sell as soon as possible (☐); 3: buy at harvest (☐); 4: buy after planting (☐); 5: Forward contract (☐); 6: Use of brokers;
18. *What are your common trading practices for your beans:* 1: Use brokers; 2: Maintain regular supplies; 3: Customer care
19. *What was the average quantity (bags) of beans purchased last season?* (_____)

20. What was the average buying price per bag in the last season/year? (_____ T.sh)
 21. How long did it take to purchase the last bean consignment? (_____ days)
 22. Time between purchase and sales _____ days
 23. For how long (months) is beans readily available in your buying places? (____)
 24. Which months? (Mention them _____, _____, _____, _____)
 25. Dynamics of beans buying price in different months of the year
 1: Experienced highest buying price? Month _____, Price _____,
 2: Experienced lowest buying price? Month _____, Price _____,
 26. Reasons for fluctuation in buying prices? _____
 27. What are the costs involved in carrying out bean trade

Item	Transport/bag	Telephone charges	District council fees/bag (barrier)	Town market fee/bag
Cost in Tsh.				
Item	Agents (darari)/bag	Bagging/bag	Follow-up charges	Unloading
Cost in Tsh.				
Item	Empty bag	Tying string	Loading/bag	Insecticide (storage)
Cost in Tsh.				
Item	Storage charges/bag	Security guards		

28. Which transport means do you use in transporting beans? 1: Hired truck (____); 2: Own truck (____); 3: Bicycle (____); 4: Head loads (____)
 29. Does the trader use the same truck for other goods traded?
 30. If yes, explain _____
 31. Are there any transportation problems? 1: Yes (____); 2: No (____)
 32. If yes, what are those _____

C. Bean selling aspects

33. To whom do you sell your beans? 1: Contract traders (____); 2: Other traders (____); 3: Other farmers (____); 4: Institutions (____)
 34. Where do you often sell your beans most? 1: District market (____) _____ Km; 2: Bukoba market (____) _____ Km; 3: Kahama/Shinyanga market (____) _____ Km; 4: Mwanza market (____) _____ Km; 5: Uganda market (____) _____ Km 6: Burundi market 7: Other markets, specify _____
 35. What was the average selling price per bag of beans for last season/year (_____ T.sh)
 36. What is the payment condition for your beans sales? 1: In cash (____); 2: In advance (____); 3: Others (____), specify _____
 37. What is the average quantity sold per transaction? (_____ bags)
 38. Time between purchase and sale? (____ days)
 39. Bean selling price in different months
 1: Received highest selling price? Month _____ Price/Kg _____
 2: Received lowest selling price? Month _____ Price/Kg _____

40. Reasons for fluctuation in selling bean prices?

41. What are the reasons for difference in beans buying and selling prices?

1. Access to beans surplus field (), how?

2: Season/year of beans production (), how?

3: Competition among traders (); 4. Transaction costs ()

42. Who sets the price for beans?

1. Producer (); 2. Assembler (); 3. Wholesaler (); 4. Retailer ();
5. Others (specify) ()

43. What criteria are used in setting prices? 1: Demand and supply situation (); 2: Seasonality (); 3: Production costs (); 4: Transaction costs; 5: Others ()

44. Is quality a problem in beans? 1: Yes (); 2: No ()

45. If yes, what are these quality problems _____,

46. How do you deal with the bean quality problems in pricing

D. Bean storage & trading aspects

47. Do you have access to storage facilities? 1: Yes (); 2: No ()

48. *Do you store traded bean?* 1: Yes (); 2: No ()

49. If yes, then where do you store? 1: Hired godown (); 2: Market place (); 3: Own house (); 4: Own store ()

50. How much is the average storage fee per bag of beans? (T.sh)

51. How many bags do you often store at once? (bags)

52. *On average how long do you store your bean?* Months

53. Reasons for storing beans; 1: To accumulate large quantities (); 2: Lack of transport (); 3: Price speculation (); 4: Time to find buyers ()

54. What processing are you doing between buying and selling? 1: Removing stones and unwanted staffs (); 2: Sorting and grading (); 3: Pre-packaging (); 4: Standardizing (); 4. Others (), specify _____

55. What minimum cash is needed to enter into bean business? (T.sh)

56. How much cash did you use to start-up bean trade? TSh.

57. *What is your working capital for purchasing the bean* TSh

58. Is the working capital you have enough to run your business? 1: Yes (); 2: No ()

59. *What was the source of your capital?* 1: bank loan (); 2: Fellow grain traders (); 3: Relatives/Friends (); 4: Own source (); 5: Others specify _____

60. *Do you have access to bean marketing information?* 1: Yes (), 2: No ()

61. If yes, how do you get marketing information pertaining to (buying prices, selling prices, availability of bean surplus)? 1: From other traders (); 2: Visit to markets (); 3: Radio and TV (); 4: Extension agents (); 5: News papers/Magazines (); 6: Use of mobile phone ()

62. Which marketing information do you usually get? 1: Bean price (); 2: Grades and standards of bean (); 3: Others (); Mention them _____,
63. Do you incur any costs in accessing that information? 1: Yes (); 2: No
64. If yes, how much does it cost you? (_____ T.sh)
65. What problems do you face in marketing of beans grains?
_____;
66. Are there formal or informal marketing or producer groups that affect bargaining power? 1: Yes (); 2: No ()
67. What buying/selling practices are in place for your beans?
1: auction sale (); 2: contract sale (); 3: first-come/first-serve ()
68. *What distribution channels are used?* _____
69. Are there constraints in the use of specific market channels?
1: Yes (); 2: No (); if yes, mention _____;
70. What is the basis for price differentiation? 1: bean size (); 2: colour (); variety (); 4: quality ()