FACTORS AFFECTING MARKET ACCESS AMONG SPICE FARMERS IN ZANZIBAR: A CASE OF ZANZIBAR STATE TRADING CORPORATION

NUNUU A. ABDALLA

A DISSERTATION SUBMITTED IN PARTIALFULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

DEPARTMENT OF ACCOUNTING AND FINANCE

THE OPEN UNIVERSITY OF TANZANIA

2021

CERTIFICATION

The undersigned certifies that, he has read and hereby recommends for acceptance by The Open University of Tanzania a dissertation titled: *"Factors Affecting Market Access Among Spice Farmers in Zanzibar: A Case of Zanzibar State Trading Corporation (ZSTC)". In* partial fulfillment of the requirements for the Degree of Master of Business Administration of The Open University of Tanzania.

……………………………………….

Dr. Lilian Macha

(Supervisor)

…………………………………

Date

COPYRIGHT

No part of this dissertation may be reproduced, stored in any retrieval system, or transmitted in any form by any means, electronically, photocopying, recording or otherwise without prior permission of the author or The Open University of Tanzania in that behalf.

DECLARATION

I, **Nunuu A. Abdalla,** declare that, the work presented in this dissertation is original. It has never been presented to any other University or Institution. Where other people's works have been used, references have been provided. It is in this regard that I declare this work as originally mine. It is hereby presented in partial fulfillment of the requirement for the Degree of Master of Business Administration of The Open University of Tanzania.

………………………..……

Signature

………….…………………

Date

DEDICATION

This work is dedicated to my beloved parents, my husband and children.

ACKNOWLEDGEMENT

ABSTRACT

This study intended to examine factors affecting market access among spice farmers in Zanzibar. A descriptive research design was adopted. A sample of 85 respondents was employed. Convenience sampling technique was used to select eighty (85) respondents consisting of 65 spice farmers and 20 spice traders. Convenience and purposive sampling were used to select respondents. A self-administered questionnaire composed of closed and open-ended questions were used to collect data from eighty-five respondents. Data were analyzed using two methods; descriptive statistics using excel and quotient analysis for qualitative data. The findings indicated that distant market, market information access, market organization, number of spice crops sold, quantity of spice sold, spice selling price and quantity of spice demanded made a unique statistically significant contribution to the chances of accessing the spice market. Findings showed that there exists relationship between marketing factors and market access among spice farmers. It was concluded that an analytical structure of marketing channels provided an important framework for mapping and explaining potentials in market access for spice farmers such as the market channels and sales points where farmers sold their spice products. It was recommended that Spice farmers should strengthen spice value chain in which a number of spice markets can be increased and developed. Farmers should be trained entrepreneurship and strengthened their collaboration to traders.

Keywords: *Market access, spice farmers, spice traders, Zanzibar*

TABLE OF CONTENT

LIST OF TABLES

FIGURE

LIST OF ABBREVIATIONS

FAO	Food Agricultural Organization
ITC	International Trade Centre
MDG	Millennium Development Goals
MKUZA	Mkakati wa Kupunguza Umaskini Zanzibar
USA	United States of America
USD	United States Dollar
ZAFFIDE	Zanzibar Association for Farmers and Fishers Development
ZDV	Zanzibar Development Vision
ZEDS	Zanzibar Export Development Strategies
ZSGRP	Zanzibar Strategy for Growth and Reduction of Poverty
ZSTC	Zanzibar State Trading Corporation

CHAPTER ONE

INTRODUCTION

1.1   Overview

This chapter introduces the background of the study, statement of the research problem, objectives of the study, research questions, and hypotheses, significance of the study, scope of the study and organization of the study.

1.2   Background to the study

Omani Arabs arrived in Zanzibar in 19th century to survey the island's spice farming potential. They realized that the hot climate and regular rainfall provide perfect conditions to grow spices. Thereafter, Sultan Seyyid Said, the first Sultan of Zanzibar, successfully developed Zanzibar as a spice-growing area from thereon., contributing to 86% of total world production'', followed by other countries with production percentage like China (4%), Bangladesh (3%), Pakistan (2%), Turkey (2%), and other countries (Samaratunga, 2007). The figures show that the international market for spices is dominated by one producer (India) and it is further noted that the demand for spice products in the USA and European markets is increasing from USD 18 billions 2000 to 54.9 billion in 2009 (Kledal *et al*., 2013).

In the context of Zanzibar,the agricultural sector through the spice sub-sector also, contributes to the development of the tourism sector via spice tours. About 76,000 to 120,000 foreign visitors arriving in Zanzibar annually visit spice farms (Tiru et.al., (2017), Spices under the agricultural sector and its related products are among

priority sectors as stipulated in Zanzibar Export Development Strategies document (ARIF, 2016). Therefore, the spice sub-sector has an immense potential for economic development in Zanzibar and poverty reduction through creation and expansion of employment opportunities and distribution of income and foreign exchange earnings. Zanzibar being the most important spice producing area in Tanzania began its effort to look for alternative export crops to diversify its export earnings from cloves in the early 1990s. The diversification was facilitated by change in government trading policy and trade arrangements towards cash crops farming system after falls in the export value of cloves, on which the island's economy traditionally depended. The fall on the volume exported was due to cyclical nature of the crop, while export prices declined on account of increased supply in the world from other clove producing countries such as Indonesia. A survey conducted by the Ministry of Agriculture, Livestock and Natural Resources

Spice farmers produce spice products and sell them for their livelihood. Based on the current governance structure of spice industry in Zanzibar, cloves are controlled by the national government through the Zanzibar State Trading Corporation (ZSTC) (Mahamoud, 2013). Farmers are required to sell their cloves (*Eugenia Aromatica*) only to ZSTC, not to other markets as a government strategy to control foreign exchange earnings. Other spices like Cardamom (*Eletharia cardamomum)*, cinnamon (*Cinnamomum Verum)*, Vanilla (*Vannila planfolia)*, Turmeric (*Curcuma Longa)* and black pepper (*Piper nigrum)*, for a case of this study, are sold to different traders or market places. The reasons for the farmers to sell these spices to these traders were unorganised spice business, limited market access of their products and

unsatisfactory market participation. Trading of these spices is through channels like middlemen (intermediaries), through spice tours (tourists visited in Zanzibar) and other traders (Akyoo & Lazaro, 2007). Therefore, it was more important to find factors affecting market access among spice farmers. The findings inform interventions to support smallholder farmers so that they participate consistently in lucrative spice markets.

1.3   Statement of the Research Problem

Spice framing is essential for income generation in rural areas and for the establishment of sustainable production system in semi-arid areas. Smallholder farmers in Zanzibar depend on subsistence farming and other sources of income, spices being among farmers products. Spices have nutrition, medicinal and decorational value. Despite spice being a high value crop in Zanzibar agriculture which contributes to 27% of the GDP, smallholder farmers have failed to benefit from selling the crop direct to retailers or consumers (Mlingi, 2017). These farmers sell their produce to brokers and wholesalers at farm. These market intermediaries supply the bulk products of Unguja spices to retailers at Mwanakwerekwe and Darajani markets. Finally, the retailers sell spice products to consumers. In their participation in agricultural markets, spice farmers find themselves at a major disadvantage. Ending up with low farm gate price makes spice producers have limited market access and hence low income compared to middlemen who do not put efforts in spice production. This is clear evidence to believe that there is something wrong with the present marketing system of spices.

A study done by Akyoo & Lazaro (2017) in relation to spice industry identified spice chains dominated by the government through the Zanzibar State Trading Corporation (ZSTC) for cloves on one hand, and private companies for other spices like black pepper and cinnamon on the other hand. The studies mainly focused on agricultural marketing information, profiling spices grown in Tanzania, and documenting actors involved, including the small-scale farmers. Those studies have less researched on the position of the smallholder farmers (as primary producers) in the spice market access and factors influencing market access to spice farmers. Therefore, relationships between those factors and market access by smallholder farmers are not documented. In this regard, this study intended to examine factors affecting market access of spice farmers in Zanzibar. There is limited information addressing the issue of how spice farmers can be empowered to benefit from market access. Therefore, it was the essence of this study to identify factors that are currently preventing spice farmers from accessing reliable spice markets.

1.4   Research Objectives

1.4.1 General Objective

The main objective of this study was to examine factors affecting market access among spice farmers in Zanzibar.

1.4.2 Specific Objectives

i)   To examine the economic factors that affect market access by spice farmers and spice traders in Zanzibar.

ii) To examine the factors that affect spice market demand and supply in Zanzibar

iii) To determine marketing channels which influence access to market for spices produced in Zanzibar.

iv) To examine the factors hindering spice market access among spice farmers.

1.5 Research Questions

i) What are the economic factors that affect market access of spice farmers and spice traders in Zanzibar?

ii) What are the factors that affect spice market access to market demand and supply of spice products in Zanzibar?

iii) What is the marketing channels which influence access to market for spices produced in Zanzibar?

iv) iv.What are the factors hindering spice market access among spice farmers?

1.6 Significance of the Study

The findings of this study is expected to enhance smallholder farmers in overcoming factors that are currently preventing them from accessing reliable spice markets and hence participating in spice market chain. The spice industry, if properly exploited, can accelerate the potential for smallholder spice farmers' participation towards overcoming economic and social conditions prevailing in Zanzibar such as unemployment. Government and donor policies converge on the need for more effective local development efforts to integrate fully Zanzibar smallholders into the mainstream development process. The results of this study will make an important

contribution towards addressing the fallouts of the marketing reforms on a sustained basis, especially as they relate to the special circumstances of the emerging spice farmers and the smallholders in Zanzibar.

1.7 Scope of the Study

The study covered Zanzibar farmers selling through State Trading Corporation (ZSTC).

1.8 Organization of the Study

Chapter one of this study introduced the background to the study, statement of problem, the objectives of the study, research question, and significance of the study and the scope of the study. Chapter two comprises three sections. The first section looks at theoretical literature review. It starts looking at some conceptual definitions of terms; theoretical analysis looks at different theories put forward by various scholars and tries to see if those theories safeguard this study. The second section of this chapter deals with empirical studies. In this section review of studies done outside and in Tanzania by various scholars concerning the topic is done. Last section is conceptual framework. Chapter three deals with research methodology. This chapter looks at research design and strategies, survey population and area of study. It also looks at sampling procedures, sample size and methods of data collection. It ends up by looking at data analysis. Chapter four is about research findings, analysis and interpretations, and lastly chapter five provides recommendations and areas for future studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This chapter presents definition of key terms. Theories concerning spices are identified. Empirical literature on the topic is made to show the knowledge gap and the relevancy of the study. Furthermore, a conceptual framework for addressing the research problem is presented.

2.2 Definitions of Key Terms

The following are key terms used in this study.

2.2.1 Spices

FAO (2005) defines spices as vegetable products used for flavoring, seasoning and imparting aroma in foods. Examples of spices are cardamom, cinnamon, vanilla, cloves etc.

2.2.2 Marketing Channels

According to Kilingo & Kariuki (2001) a marketing channel is a business structure of interdependent organizations that reach from the point of product origin to the consumer with the purpose of moving products to their final consumption destination. In this study marketing channels denote farmers selling their spices product to middlemen at farm, retailers or direct to consumers at market places.

2.2.3 Market Access

Market access refers to the processes by which people access markets in relation to the nature, efficiency and costs of these processes (Killick *et al.,* 2000).

2.3   Overview of Zanzibar Spice Production

According to Murphy (2010) small-scale farmers, peasant farmers, resource-poor farmers, subsistence farmers, food deficit farmers, household food security farmers and emerging farmers are termed as smallholder farmers. In context of Zanzibar, Mahmoud (2013) defines smallholder farmers as persons who earn their living and that of their family by practicing subsistence agriculture through growing crops (food and cash crops) such as spice and rearing animals like chicken, goats and cows. Their capital base is small to invest in large scale agriculture because they get low profits from selling agriculture products. This is confirmed with literature that defines small-scale farmers as among people in rural community for whom farming is a major livelihood activity, hold land of two or less hectares, represent roughly 85% of the world's farms, they lack access to inputs, technologies, credit and information, and majority are living in poverty (Murphy, 2010). In this study smallholder farmers refer to farmers producing spices in area of not more than five (5) hectares.

2.3.1 Status of Spice Production in Zanzibar

Spice and herb production is predominantly undertaken by small scale farmers in the spice growing zones in the famous Zanzibar Islands. Most spices and herbs are economically important for both domestic and export markets. However, like other horticultural crops, spice production is low although there are few exported spices

like cinnamon, cloves, ginger, turmeric and garlic to various destinations. The current export estimates for spice crops is less than US dollars 5 million per year although DTIS (2005) reports the spice export potentials to possibly reach US dollars 15-20 million per year. Zanzibar has been exporting cloves, black pepper, cardamom, cinnamon, hot chillies, ginger, and so on internationally but in particular to the Gulf States and the Far East. These spice exports have been significant factors in boosting Zanzibar's economic growth, and Zanzibar intends to exploit these important natural resources through encouraging private foreign and domestic investment in increased production capacity and expanded market networks (FAO, 2011). Mainland Tanzania is not recognized as a major spice producing origin, but does have a long-established position as a minor supplier of sun-dried (straw-colored) cardamoms. A wide range of other spices are also present in the mainland agricultural sector, partly due to the proximity and activities in Zanzibar, and partly due to the wide range of climatic niches found in the country.

2.3.2 Contribution of Spices in Socio-Economic Development

The contribution of the spice sector to the Zanzibar economy cannot be under rated. However, no figures are available to assess the actual contribution of the spice sector in Zanzibar. Nevertheless, it is obvious that the spice industry is making a major contribution to the national economy in terms of foreign exchange earnings, employment opportunities, rural development and food and nutritional security (Ruben *et al.*, 2007).The spices sector both for the domestic market as for export (regional and International) creates employment for a large number of people. Data necessary for assessing the role of the domestic spices sector in the Zanzibar

economy are lacking, but it is assumed that an even much larger number of people are involved in this sector and depend at least partly for their livelihood on production, trade and processing of spices.

2.3.3 Marketing of Spices in Zanzibar

Marketing system in Zanzibar differ from those on the Tanzania mainland in two main ways. Firstly, the three main export crops – cloves, copra and chillies are still under state monopoly even following trade liberalization (Mahamoud, 2013). For the spices whose marketing is not controlled such as ginger, black pepper, turmeric, cinnamon and cardamom traders (shopkeepers and exporter) seek out producers, especially when such items are in short supply, or farmers bring their produce to the urban markets and bear all the risks involved. Secondly, it is the difference in marketing across commodities destined for domestic use or for export. The traders can buy product from farmers and take it to wholesale markets, where they are bought by retailers who sell it to consumers (Mahamoud, 2013). Farmers may also sell their produce directly to retailers, or even to consumers.

2.4   Constraints Faced by Smallholder Farmers in Market Access

Smallholders, especially in less developed countries, have encountered several challenges in gaining access to markets such as constraints on production, high transaction costs, lack of information on markets, grades and standards, organization in markets, legal environment, storage facilities, market transport and value adding (Salami *et al*., 2010)

2.4.1 Constraints on Production

Producing products for the market requires production resources including land, labour force and capital. Poor access to these assets affects the way in which smallholder farmers can benefit from opportunities in agricultural markets, and especially in terms of the volume of products traded and the quality of those products (Bienabe *et al.*, 2004). Smallholder farmers lack consistency in terms of producing for the markets due to insufficient access to production resources. The quantities and qualities produced by individual smallholders seldom match the requirements of subsequent actors in the value chain (Ruben *et al.*, 2007).

2.4.2 High Transaction Costs

Transaction costs are observable and non-observable costs associated with enforcing and transferring property rights from one person to another (Eggertson, 1990). These include the costs of searching for a trading partner with whom to exchange with, the costs of screening partners, of bargaining, monitoring, enforcement and, eventually, transferring the product to its destination (Hobbs, 1997; Jaffee & Morton, 1995). Delgado (1999) identified high transaction costs as the embodiment of market access barriers among resource poor smallholders. These high transaction costs result from individual produce transportation and selling, difficulties in getting trading partners and poor bargaining power (Delgado, 1999). When transaction costs are high, smallholder farmers may cease produce marketing. In other words, with high transaction costs, markets fail in their role of allocating scarce resources to alternative ends. For developing countries, Makhura (2001) explained that high transaction costs prevail among the smallholder farmers. Smallholder farmers are

located in remote areas and are geographically dispersed and far away from lucrative markets. There is no doubt that high transaction costs tend to discourage commercialization (Makhura, 2001). Distance to the market, together with poor infrastructure and poor access to assets and information results in business costs (Senyolo, *et al.,* 2009). Since smallholders are poor they find it difficult to compete in lucrative markets due to the high transaction costs. Traders with higher social capital are better able to enter more capital – intensive marketing activities such as wholesaling and long-distance transport, where as traders with poor social networks face major barriers to enter into the more lucrative market segments (Kherallah & Kirsten, 2002).

2.4.3 Lack of Information on Markets

Rural producers, and especially small farmers, have little information about the market demand, which is costly to obtain (Baloyi, 2010). They may gather information through contact with other actors in the commodity chain, but the accuracy of this information is not certified, since those actors might be exhibiting "opportunities behaviour" (Bienabe *et al*., 2004). Smallholder farmers lack information about product prices at the local level, about quality requirements, about the best places and times to sell their products, and about potential buyers. This in turn reduces their ability to trade their products efficiently and to derive the full benefit from the marketable part of their production.

Market information is vital to market participation behaviour of smallholder farmers. Market information allows farmers to take informed marketing decisions that are

related to supplying necessary goods, searching for potential buyers, negotiating, enforcing contracts and monitoring. Necessary information includes information on consumer preferences, quantity demanded, prices, produce quality, market requirements and opportunities (Ruijs, 2002). Of equal importance is the source of market information because it determines accuracy of the information. According to Ruijs (2002), smallholder farmers have difficulties in accessing market information, exposing them to a marketing disadvantage. Smallholder farmers normally rely on informal networks (traders, friends and relatives) for market information due to weak public information systems (Ruijs, 2002). However, such individuals may not have up to date and reliable market information, making the usefulness of the information doubtful. Additionally, networking theory plays an important role in business due to its value creation, in terms of gathering information and provision of the infrastructure to communicate, purchase, sell products and services and collaborate with others (De Klerk & Kroon, 2007). Farmers relying on informal networks for market information are at risk of getting biased information due to opportunistic behaviour of the more informed group. For instance, Mangisoni (2006) explained that smallholders usually accept low prices for their crops when the broker informs them that their produce is of poor quality. Smallholder farmers accept these low prices mainly because they are unable to negotiate from a well-informed position.

2.4.4 Grades and Standards

Consumers demand high quality for the goods they buy. In addition, they will not buy food products unless there is a guarantee that they are safe to eat (Jari & Fraser, 2014). In other words, Herman *et al* (2012) argued that consumers make purchasing

decisions depending on packaging, consistency as well as uniformity of goods. They further contended that produce from smallholder farmers do not meet certain market grades and standards because the farmers lack the knowledge and resources to ascertain such requirements.

Most smallholder crops have no clearly defined grades and standards and, therefore, cannot meet the consumers' demands (Jari & Fraser, 2014). In addition, institutions for determining market standards and grades tend to be poorly developed in smallholder farmer's environments (Herman *et al*., 2012). Due to uncertainty on the reliability and quality of their goods, they usually cannot get contracts to supply formal intermediaries such as shops and processors (Benfica *et al.*, 2002). Therefore, this indicates that only well organised farmers can benefit from trade liberalisation by adopting strict quality control measures and obtaining the necessary certification for their goods (Baloyi, 2010).

2.4.5 Organisation in Markets

Smallholder farmers tend not to be organised in the markets as they usually sell their limited agricultural produce surpluses individually and directly to the consumers without linking to other market actors (Key & Runsten, 1999). As smallholder farmers lack collective action in markets and individual marketing of small quantities of produce weakens the smallholder farmers' bargaining positions and often exposes them to price exploitation by traders (Bijman *et al*., 2007). They also do not benefit from economies of scale (Jari & Fraser, 2014).

In a globalised world, according to Salami *et al*., (2010), there is increasing vertical integration and alliance formation in the agricultural marketing channels and markets, in an effort to meet consumer needs. Such alliances include contract farming, cooperatives and farmer organisations. Agribusiness firms favour contracts with medium to large-scale farmers, such that individual smallholder farmers cannot be part of these contracting arrangements (Key & Runsten, 1999; Kherallah & Kirsten, 2002). Lack of facilitation in the formation of producers associations or other partnership arrangements makes it more difficult for smallholder producers to participate in formal markets (Bijman *et al*., 2007). The greater the degree of organization in the market, the smaller the transaction costs are likely to be and the easier it is to benefit from the exchange opportunity (Frank & Henderson, 1992). Unfortunately, lack of collective action among smallholder farmers denies them entry into formal market channels (Herman *et al*., 2012). Hence, membership of a farmer group or cooperative may enable access to more market opportunities with economies of scale and more support.

2.4.6 Legal Environment

Legal institutions influence the activities performed on the market and the costs of exchange. Minot & Goletti (1997) affirmed that the formal institutional development of a society has a considerable influence on transaction costs. Effective legal institutions may improve the organization of the marketing channels and decrease marketing costs (Herman *et al*., 2012). In many developing countries, laws are not always executed and enforced correctly, bribery and cheating are often not penalised, courts are out of reach for the majority of the population, and market rules are often

not transparent to the producers and traders (Ruijs, 2002). It is even worse for the smallholder farmers because they lack lobbies in the legal environment. As a result, rural trade prospers where trust has been developed based on repeated transactions or informal relationships (Minot & Goletti, 1997). Thus, an unfavourable legal environment creates a significant barrier to entry into formal food trade and limits participation by smallholders in the marketing system (Bijman*et al*., 2007).

2.4.7 Storage Facilities

The ability to deliver a quality product to the market and ultimately to the consumer commands buyer attention and gives the grower a competitive edge (Bachmann & Earles, 2000). Proper post-harvest handling and storage contribute in ensuring quality maintenance for perishable agricultural produce (Baloyi, 2010). Moreover, agricultural commodities have to be harvested at a specific point in time, but are consumed year-round, thus necessitating proper storage facilities (Bachmann & Earles, 2000.

Therefore, if crops are to be available for consumption throughout the year, proper storage facilities have to be implemented by both farmers and traders. Households with proper storage facilities do not need to market their produce immediately after harvest when prices tend to be low (Herman *et al*., 2012). They can store their produce and sell when prices are higher. However, most smallholder farmers do not own adequate storage infrastructure and end up selling their produce soon after harvest, also because they need the money involved. Smallholder farmers often rely on open-air storage (Gabre-Madhin, 2001). Due to lack of storage facilities, most

smallholder producers sell their produce almost immediately after harvest in order to ease congestion, leading them to sell their produce at lower prices (Wilson *et al.*, 1995).

2.4.8 Market Transport

It is difficult to transport produce to the market in time (produce spoilage and losses) if there is no reliable private form of transport, since public vehicles tend to be limited in the rural areas (Bachmann & Earles, 2000). In addition, unavailability of reliable transport will increase transport costs, which in turn increases transaction costs amongst smallholder farmers (Zaibet & Dunn, 1998). In developing countries, most smallholder farmers usually pack their goods in sacks, which are then transported to the market places using public transport (Jayne *et al.*, 2002). This leads to bruises and damage and, thus, drastically reduces the quality of the agricultural produce being transported. Some farmers use their own vehicles to get to the market centres. Makhura (2001) pointed out that these farmers with these assets are able to move around in search of more rewarding markets. Those farmers stand a better chance of getting market information from different markets.

2.5   Market Potential of Spice Products

FAO (2011) reported the production of spices by smallholder farmers being big business in many countries. The methods of finance, production, processing, quality control and marketing have been widely studied. Melanie & Michael (2011) argued that local demand in developing countries is largely for spices rather than herbs – taste which varies regionally but pepper, curry spices and paprika are mainstay crops.

They suggested that local markets for fresh dried and value-added spice and herb products should be developed in competition with imports. Local processing can widen the variety of spice and herb crops that may find markets (Melanie & Michael, 2011). In countries which are not traditional exporters, new production of such spices, where conditions are suitable, can often compete successfully with imports (FAO, 2011). Melanie & Michael (2011) mentioned culinary herbs to be less often traditionally produced by small-scale farmers than spices. They further argued that herb production is often mechanized, and good quality is easier to achieve using forced air drying and machine cleaning by small-scale sun drying and hand sorting methods, as used satisfactorily for many spices. Many culinary herbs originate in temperate/ Mediterranean climates, and perhaps for this reason local markets trade fewer herbs than spices in many developing countries (Melanie & Michael, 2011).

2.6   Theoretical Framework for Market Access

2.6.1 Networking Theory and Spice Market Access

According to O'Donnell (2004) networking in a small firm context is an activity in which the entrepreneurially oriented producers build and manage personal relationships with particular individuals in their surroundings. According to De Klerk & Kroon (2007), strategic cooperation and networks are the means that allow producers to compete and innovate in dynamic business environments. Therefore, the success of a firm depends on its collaboration with other organizations that influence the creation and delivery of its products or services (Moeller, 2010). Networks play an important role in business due its value creation, in terms of gathering information and provision of the infrastructure to communicate, purchase, sell products and

services and collaborate with others (De Klerk & Kroon, 2007). Moreover, networks offer interactive, personal relationships with individual consumers, and offer an opportunity to understand individual preferences and needs (Mort & Weerwardena, 2006). Therefore, networks and relationships are important for smallholder farmers because they enable these farmers to link activities and tie available resources together, to identify new market opportunities and contribute to building market knowledge and the absence of networks hinders the producers' efforts to expand into multiple markets (Mort & Weerawardena, 2006). This theory is of importance in this study as it underpins the presence of intermediaries in the networking channels from farmers' or middlemen's consolidation centres that link spice farmers and spice traders in activities such as transporting the products between these two nodes, insurances, consolidating and packaging.

2.6.2 Power-Dependency Theory

Power-dependence theory is the name commonly given to the social exchange theory originally formulated by Richard Emerson (1962, 1972a, 1972b). As the name suggests, the dynamics of the theory revolve around power, power use, and power-balancing operations, and rest on the central concept of *dependence*. Mutual dependence brings people together; that is, to the extent that people are mutually dependent, they are more likely to form exchange relations and groups and to continue in them. Inequalities in dependence create power imbalances that can lead to conflict and social change. Power and dependency are generally considered as important concepts in understanding buyer-seller relationship (Caniels & Gelderman, 2007). A high level of interdependence is an indicator for a strong, cooperative and

long-term relationship characterized by mutual trust and mutual commitment (Berthon*et al*, 2003). A close and lasting cooperation between supplier and buyer leads to improvements in quality, delivery reliability and cost reduction (Caniels & Gelderman, 2007). Power is the major means available to achieve coordination and cooperation among channel members (Berthon *et al*, 2003). This could be in the form of high level of commitment, cooperation and trust. This theory is helpful in this study as it asserts that the level of power and dependence is a critical determinant of business partnership existence between the spice farmers and traders. It is, therefore, necessary to assess Power- Dependency relationships in order to find out how power distribution influences spice market access in Zanzibar.

2.7 Conceptual Framework

The conceptual framework presented in Figure 2.1 illustrates the relationships of independent variables (market access factors), intermediary variables (farmers capacity indicators) and necessary factors that influence smallholder spice farmers in market participation. Farmer's capacity transaction costs, number of spice crops produced, quantity of crops supplied and value addition should be linked by market information flow to market factors such as distant market for selling spices market organisation, quantity of product demanded, quantity of product sold and product selling price. Market information includes information about prices of spice products and their demand at market places. The link established by market information flow can influence spice farmers to participate in market and hence have direct sales to retailers and/or consumers. If spice farmers are able to participate in market by direct

selling the products to retailers or consumers, then the outcomes is less exploitation
from traders and therefore capture the spice market potential.

| Independent Variables | Intermediate Variables | Dependent Variables |

Factors Affecting Market Access
- Market organization
- Grading and standards
- Quantity demanded Quantity sold
- Selling price

Market Channels

Challenges hindering market access to spice farmers

Market access
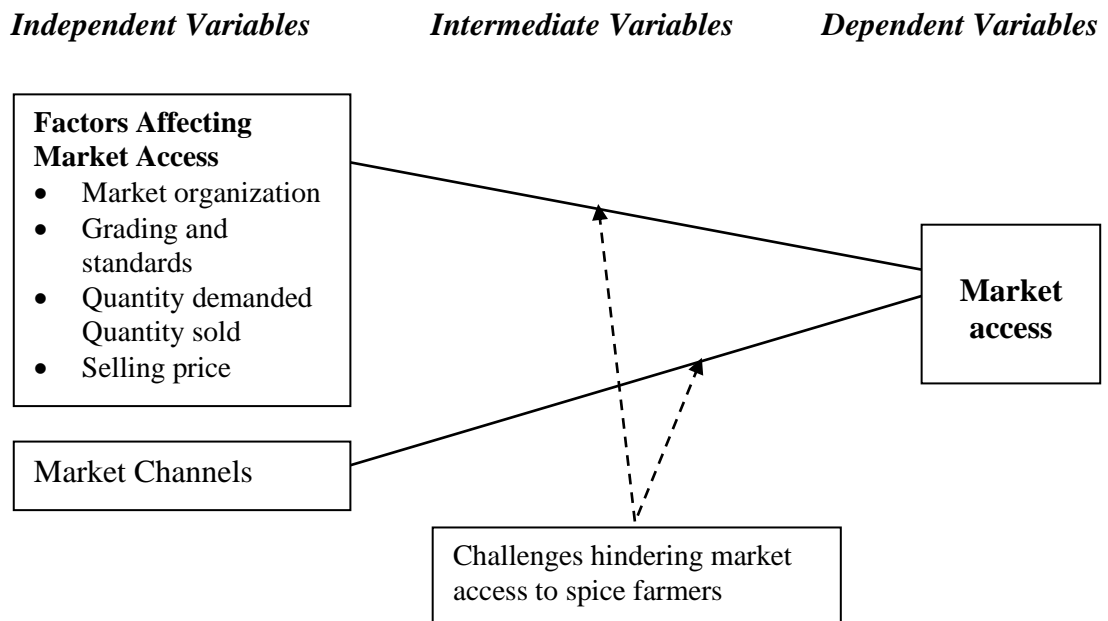
Figure 2.1: Conceptual framework

Source: Researcher (2021)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter is about the methodology. It covers the research paradigm, research design, area of the study, the target population, sampling size and sampling design, data collection methods, data collection tools, reliability and validity of research instruments, data analysis and ethical considerations.

3.2 Research Philosophy

Saunders et al. (2012) defines research philosophy as a system of beliefs and assumptions on knowledge development. This study will adapt positivist research philosophy because data will be collected about an observable reality and regularities and causal relationship will be searched in data to create law-like generalization (Gill & Johnson, 2010).Both qualitative and quantitative approaches were aimed at eliminating the weakness of one approach by being complimented by another approach in this study (Fuller et al., 2015; Gibson, 2017).

3.3 Research Design

A research design is the basic plan that guides the data collection and analysis phase of the research project (Saunders,2005). The study focused on examining factors affecting market access among spice farmers in Zanzibar. The study employed descriptive research design. Descriptive research is concerned with either determining the frequency with which something occurs, or relationship between

variables (Saunders, 2005). Due to time and financial constraints, a cross sectional research was used. Cross section studies involve taking a sample of population elements at one point in time (Kothari,2006).

3.4   Area of the Study

The study was conducted in West District in Zanzibar. The West District is one of the two districts which form the Urban and West Region in Zanzibar.The climate of Zanzibar is tropical and maritime, and follows the monsoon winds.Therefore in this area we get cold weather because of the trade winds and low waves from the sea but Southern Coast of Zanzibar Island is not good for planting spice because this area has coral rag (Zanzibar Meteorology Authority, n'd). The study area was chosen because of large number of spice farms available and market of spice in Zanzibar which facilitated ample data collection.

3.5   Target Population

Population is the aggregate of elements defined prior to selection of sample (Kinnear & Taylor 1996). Moreover, population is defined as the totality of objects under investigations (Kamuzora & Adam, 2008).The study consists of a total of 750 people. These include; 574 spice farmers, 132 spice traders from ZAFFIDE and 44 spice traders from ZSTC.

3.6   Sample size and Sampling Procedures

The study was interested in identifying factors affecting market participation among spice farmers in Zanzibar. The main criteria for participating as spice farmers in this

study were being smallholders dealing with the spice production less than 5 hectares. To answer the stated research question(s) and meet the research objectives, Systematic random sampling techniques was applied. This technique was used to select farmers from five villages which were Kizimbani, Kijichi, Dole, Kianga and Mbuzini where spice production is operational. The sampling process started by obtaining a list of all spice farmers in their respective village. The selection of farmers was done by picking every 3rd farmer in the list of farmers written from Sheha's list. Furthermore, in order to obtain information from key informants a purposive sampling was used. Purposive sampling allowed the researcher to select spice traders from ZSTC and from ZAFFIDE in order to get the information needed to achieve the research purpose. The size of the sample of this study was determined by the formula explained in Kothari (2004) when estimating a sample size by a percentage or proportion as:

$$n = \frac{Z^2 . p.q.N}{e^2 (N-1) + Z^2 . p.q}$$

From Kothari (2004), the above formula gives the size of the sample

Where p = Sample proportion of success probability

$q = 1 - p$ showing failure probability

e = Acceptable error (the precision)

Z = Standard variate at a given confidence level

n = Size of sample

N = Size of population

In the case of this study $p = 0.1$ for spice farmers, $e = 0.06$ for the smallholder farmers, $Z = 1.96$ (confidence interval of 95%) and $N = 750$ for total population. Hence n which is a sample size was:

$$n = \frac{1.96^2 \times 0.1 \times (1 - 0.1) \times 750}{0.06^2 (750 - 1) + 1.96^2 \times 0.1 \times (1 - 0.1)}$$

$$n = \frac{259.3}{3.04} = 85.3$$

Therefore, sample size for the study was 85.

This sample included 65 spice farmers, 15 spice traders from ZAFFIDE and 5 spice traders from ZSTC.

Table 3.1 shows the sampling distribution of the respondents

Table 3.1: Sampling Distribution

Type of respondents	Target population	Sample size
Spice Farmers	574	65
Spice Traders from ZAFFIDE	132	15
Spice Traders from ZSTC	44	5
Total	**750**	**85**

3.7   Methods of Data Collection

The study used primary.

3.7.1 Primary Data

The primary data are those which are collected afresh and for the first time, and thus happen to be original in character. The primary data in this study were collected through questionnaire.

3.8   Data Collection Tools

3.8.1 Questionnaires

Structured questionnaires were administered to spice farmers and spice traders in the respective villages and traders at market place. A check list was used for key informants from Mwanakwerekwe and Darajani market offices and Zanzibar Association for Farmers and Fishers Development (ZAFFIDE) and ZSTC to tap their great depth of knowledge on the spice market access issues.

3.9   Reliability and Validity of Research Tools

The researcher attempted to ensure validity and reliability of results. As outlined by Neuman (2006), reliability means dependability or consistency. It therefore refers to whether similar results were achieved even if more tests are conducted from the same thing. Validity, on the other hand, refers to truth and accuracy. Researcher constantly tried to verify the responses given by respondents by triangulating between various data collection techniques. Responses were checked in correspondence with the questions asked. This was done to ensure that the study could be replicable by others. To enhance the validity and reliability of these instruments, a pilot study was conducted prior to the main primary data collection process. The pilot survey was conducted to 10 spice farmers at Mwakaje village and necessary corrections were done in these instruments.

3.10 Data Analysis

Data analysis means the computation of certain indices or measures along with searching for patterns of relationship that exist among the data groups (Kothari,

2004). Qualitative data collected for this study were analyzed using content analysis for all research questions to set categories developed from identified commonalities. Quantitative data were processed and analyzed in order to get the frequency and percentage research questions 1, 2 and 3. These describe the nature of the data collected. Besides, inferential statistics specifically Binary logistic regression analysis for hypothesis 1 was used to examine relationship among market factors and farmer's access to spice market.

The determinant of market access is a qualitative decision that is based on probabilities of either accessing market or not (in this case for spice crops market). One qualitative choice model of interest in this type of decision was the logistic regression model. Logistic regression model is a powerful, convenient and flexible tool used in predicting a categorical (usually dichotomous) variable from a set of predictor variables. By using the logistic regression, the probability of a result being in one of two response groups (binary response) was modeled as a function of the level of one or more explanatory variables. Thus, the probability whether or not the farmer sells spice crop direct to retailers or consumers was modeled as a function of the level of one or more independent variables. The logistic regression model that was used is illustrated below.

Let Y be the target variable (Market access) and if the probability that Y = 1 is denoted as p then the probability that Y is 0 would be $1-p$. Therefore, the logistic model for predicting would be given by following equation:

$$\ln\left(\frac{p}{1-p}\right) = \alpha + \beta_1 MI + \beta_2 TC + \beta_3 DM + \beta_4 NS + \beta_5 SPf + \beta_6 MO + \beta_7 PG + \beta_8 VA + \beta_9 QD + \beta_{10} QSm \dots \beta_n X_n$$

Where;

$$\ln\left(\frac{p}{1-p}\right) = \text{The log of the odds ratio known as logit which is the dependent variable}$$

Where:

MI = Market information access

TC= Transaction cost

DM= Distant market

NS = Number of spice crops

SPf = Selling price from farmers

MO = Market organization

PG= Product grading

VA = Value addition

QD = Quantity demanded

QSm = Quantity sold at market and

α = Constant term

β_1, β_2, β_3, β_4 β_5, β_6, β_7, β_8 β_9 and β_{10} are the coefficients for variables MI, TC, DM, NS, SPf, MO, PG, VA, QD and QSm, respectively.

3.11 Ethical Consideration

During the study the respondents were told the purpose of conducting the study. The permission was sought to by a letter from the Open University of Tanzania Post-Graduate Studies (DRPS). Respondents were made aware by the researcher that in

the process of giving information they were at liberty to stop if they felt uncomfortable. Since the study depended on their responses, it was ensured that the questions asked were well planned and that they were treated with respect. The researcher assured the respondents of confidentiality and anonymity. The respondents' names were option whether to give out or not. However, all respondents gave out their names. A straight-forward ethical principle makes it clear that in no uncertain terms should the researcher cause physical harm to the respondents. A researcher guard against choosing risky areas as interviewing sites by trying to keep up to basic safety concerns by ensuring that the information given by respondents do not jeopardize any friendships and working as well as farming relations that were there before the study was conducted.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1   Overview

Chapter four presents results and discussion of the findings which aimed at analyzing factors affecting market access among spice farmers in Zanzibar. The chapter sections present distribution of characteristics of interest through demographic characteristics, production and economic characteristics, spice trader characteristics and structure of marketing channels for spices produced in Zanzibar. Furthermore, spice market potential in Zanzibar was assessed and the market access among spice farmers for their products was also examined.

4.2   Demographic Characteristics

This section gives some insight into demographic characteristics of the respondents. Demographic characteristics of surveyed farmers were important in determining the extent to which they influence farmers' responses in the study. The study examined and discussed the distribution of farmers by Shehia, sex, age, marital status and level of education.

4.2.1 Distribution of Respondents by Shehia

The distribution of respondents by Shehia was done to identify the proportion of farmers engaged in spice production in all the five shehias. In examining the distribution of farmers by Shehia, the findings in Table 4.1 indicated that the highest number of respondents came from shehia of Kizimbani (32.9%), Dole (23.5%) and Kijichi (20%). The minimum proportion of 15.3% and 8.2% of respondents came

from Mbuzini and Kianga, respectively. The findings show that Kizimbani, Dole and Kijichi had high number of respondents due to potential spice tourism activities taking place in these areas. Kizimbaniis also a historic place for agricultural researches which signifies its prominence for spice tourism in Zanzibar.

4.2.2 Distribution of Respondents by Sex

The distribution of respondents by sex was done to ensure representation of both women and men's views in this study. Table 4.1 shows that 80% of the respondents were male; this is not surprising given cultural norms regarding gender roles in Zanzibar. The norms restrict female members in the presence of the head of male headed households to have casual discussions with unknown visitors.

Table 4.1: Distribution of Farmers by Demographic Characteristics (n = 85)

Variable	Frequency (n)	Percent (%)
Shehia of respondent		
Kizimbani	28	32.9
Dole	20	23.5
Kijichi	17	20.0
Kianga	7	8.2
Mbuzini	13	15.3
Total	**85**	**100.0**
Sex of respondent		
Male	68	80.0
Female	17	20.0
Total	**85**	**100.0**
Age of respondent		
Below 30 years	7	8.2
30 - 39	32	37.6
40 -50	39	45.9
Above 50 years	7	8.2
Total	**85**	**100.0**
Marital status of respondent		
Single	8	9.4
Married	75	88.2
Widow / widower	2	2.4
Total	**85**	**100.0**
Education of respondent		
Primary education	13	15.3
Secondary education	65	76.5
Tertiary education	7	8.2
Total	**85**	**100.0**

Source: Field data (2021)

The study findings indicated that women had limited access and participation on spice crop production. These findings suggest that these Shehias are typical rural and reflect a patriarchal role of men as the heads of household; male dominate all economic activities. These Shehias are unlike other West District Shehias where diversity of population allows for a greater variation in cultural attitudes, and hence more economic activities and opportunities for women are available.

4.2.3 Distribution of Respondents by Age

The distribution of respondents by age was done to identify potential age category for engaging in spice production in all selected Shehias. With respect to age categories of the respondents, Table 4.1 indicates that 83.5% were spice farmers aged between 30 and 50 years. The findings revealed that the majority of spice farmers were in the age between 30 and 50 years. Below 30 years and above 50 years categories in combination accounted for 16.4% of spice farmers. Possible reasons why young generation accounted for 8.2% in spice production could not only be true that at young age, young people are still engaged in studies at various levels of education, it could but also be their perception that agriculture is a career for the old, and it does not give profit in very short time. It could also be possible that young generation is not attracted to engage in agriculture for many other reasons such as use of crude implements. Given a pyramid demographic structure and the life expectancy at birth in Zanzibar which ranges from 53 to 60 years (RGZ, 2009); one would expect fewer aged people in farming as well.

4.2.4 Distribution of Respondents by Marital Status

Sample respondents were assessed on their marital status to capture representation of opinions with regards to their decisions on spice production. The finding in Table 4.1 shows that 88.2% of respondents were married, while 11.8% were single, widow and separated. The findings suggest that, with complementary role between couples with regard to their livelihood, a household comprising husband and wife may help each other rather than a single headed household focusing on farming activities. Thus, the extent to which a single headed household can carry out farming activities would be expected to differ from married.

4.2.5 Distribution of Respondents by Level of Education

The level of education was assessed to determine the proportion of respondents with their corresponding education level. The results in Table 4.1 show that 76.5% of the respondents attained secondary education while 15.3% and 8.2% had primary and tertiary education. The findings imply that all farmers had attained a certain level of formal education. Education is an important tool to escape poverty, but only if the education system reaches the right people with the right content. Randela*et al.* (2008) argued that intellectual capital as captured by education is hypothesised to play a positive role in influencing market participation. They added that level of education gives an indication of the household ability to process information and causes some farmers to have better access to understanding and interpretation of information than others. However, the expectation may be reversed when there are competing and more remunerative employment opportunities available in the area that require skills that are enhanced by more education (Lapar *et al*., 2003).

4.3   Production and Economic Characteristics of Spice Farmers

This section discusses different production and economic characteristics of sample farmers which include farm occupation, association membership, land category and annual farm income. These factors were considered important in determining production and economic levels of spice farmers.

4.3.1 Distribution of Respondents by Farm Occupation

Farm occupation in this study refers to farmers' engagement in production of spices, spice products selling and spice tourism. Farm occupation was examined to identify proportion of farmers producing spices, farmers selling spice products and farmers engaging in spice tourism. The findings in Table 4.2 revealed that 41.2% of the farmers interviewed were growing spices, 25.9% were selling spice products and 32.9% were dealing with spice tourism. The findings imply that diversity of spice farmers' participation in marketing spice products can successfully be assessed as their farming occupation involved spice production that subsequently sold to the consumers.

4.3.2 Distribution of Respondents by Association Membership

Distribution of farmers by membership of social and community groups was done to gain insights of these associations in supporting farmers' production and economic activities. The analysis identified farmers and types of associations they belong to. Table 4.2 indicates that 64.7% of farmers were members of farmers' associations, 24.7% belonged to community development groups, 8.2% belonged to savings and credits groups and 2.4% cooperatives. The findings imply that farmers see

associations as mechanism for them to enhance their production by providing training and extension services, and facilitating acquisition of technology and other farming inputs. They also use association as a channel which might influence practices of individual members to achieve the quality requirements of targeted market and strengthen their ability to negotiate product prices.

4.3.3 Distribution of Respondents by land Size

The study analyzed the size of land owned by farmers to ascertain its contribution to spice production. The findings in Table 4.2 show that 82.3% of farmers owned land between 2.0 and 3.0 acres, 16.5% of the farmers owned less than 2 acres and only 1.2% of these farmers had farm sizes of greater than 3 acres. Owning land for agricultural purpose implies existence of opportunities for farmers to produce varieties of crops in demand. Therefore, increase in land size might influence these farmers to integrate spice production and increase production. Ownership to arable land is a necessary condition for market participation. This variable is measured by the size of the arable land the household operates. Randela *et al*., (2008) contended that the larger the size of arable land a household uses, the higher the production levels are likely to be, and the higher the probability of market access.

Table 4.2 presents the summary statistics of production and economic characteristics of the surveyed farmers managed, spice crop is an opportunity that has the potential to increase income generated by farmers and hence improve well-being of farmers' livelihoods.

Table 4.2: Distribution of respondents by production and economic characteristics

Variables	Attributes	Frequency (n)	Percent (%)
Occupation			
	Spice production	35	41.2
	Spice product selling	22	25.9
	Spice tourism	28	32.9
	Total	**85**	**100.0**
Association			
	Farmers association	55	64.7
	Community Development	21	24.7
	Credit and savings	7	8.2
	Cooperative	2	2.4
	Total	**85**	**100.0**
Land ownership			
	Below 2 acres	14	16.5
	2-3 acres	70	82.3
	Above 3 acres	1	1.2
	Total	**85**	**100.0**
Income category (TZS)			
	Below 500,000	2	2.4
	500,000 – 2,000,000	17	20.0
	2,000,000 – 6,000,000	55	64.7
	Above 6,000,000	11	12.9
	Total	**85**	**100.0**

Source: Field data (2021)

4.4   Marketing Channels for Spices Produced in Zanzibar

Marketing channels in this study gives the framework to explain channels by which spice farmers sell their products after harvesting and how spice traders source spices for their business. The analytical structure of marketing channels provides an important framework for mapping and explaining potentials in market access.

4.4.1 Spice Farmers and Sales Points

Evaluation of market access by farmers was carried out to examine the potential of market channel where farmers sell their spice products. The sales points were examined in terms of spice crops produced and sold by farmers to the sales points.

The crops were cardamom, cinnamon, cloves, turmeric, black pepper, ginger and vanilla. Two sales points, namely market and middlemen were identified for all crops except cloves which have additional sales point of Zanzibar State Trading Corporation (ZSTC). Selling at market point denotes selling the spice products to retailers at market places while selling to middlemen refers to selling the spice products to wholesalers or traders at farm places. In Table 4.3 the study findings show that 62.3% of the surveyed farmers produced cardamom and sold it. The results also show that 37.6% and 24.6% sold the cardamom to market point and middlemen, respectively. In the case of cinnamon sales, Table 4.3 shows that 93% of the farmers surveyed produced and sold cinnamon. Findings reveal that 67.1% sold cinnamon to market point and 25.9% sold cinnamon to middlemen. Table 4.3 also shows that 43.5% of spice farmers produced and sold black pepper. The study indicates that 32.9% and 10.6% sold the black pepper to market point and middlemen, respectively. The sales of ginger were also observed from 95.3% of spice farmers surveyed. Table 4.3 shows that 72.9% sold ginger to market point and 22.4% sold ginger to middlemen. In the case of turmeric sales, 22.4% of spice farmers interviewed produced and sold turmeric. Findings in Table 4.4 reveal that 13.0% sold turmeric to market point and 9.4% sold turmeric to middlemen.

With respect to vanilla crop sales, the study reveals in Table 4.4 that 13% of the spice farmers reached produced the crop. Results indicate that 5.9% and 7.1% sold vanilla to market point and middlemen, respectively. When cloves were considered in the marketing channels as spice crop produced and sold by spice farmers, Table 4.4 reveals that 36.5% of surveyed farmers produced cloves and sold them. The study shows

that 2.4 % of spice farmers sold cloves to market point and 34.1% sold the cloves to ZSTC. Results indicate that cloves have no middlemen but ZSTC stands as intermediary agent for marketing cloves.

Table 4.3: Distribution of farmers by sales point (n=85)

Attributes	Frequency (n)	Percentages (%)
Cardamom		
Market	32	37.6
Middlemen	21	24.7
Not producing	32	37.6
Total	**85**	**100.0**
Cinnamon		
Market	57	67.1
Middlemen	22	25.9
Not producing	6	7.0
Total	**85**	**100.0**
Black pepper		
Market	28	32.9
Middlemen	9	10.6
Not producing	48	56.5
Total	**85**	**100.0**
Ginger		
Market	62	72.9
Middlemen	19	22.4
Not producing	4	4.7
Total	**85**	**100.0**
Turmeric		
Market	11	13.0
Middlemen	8	9.4
Not producing	66	77.6
Total	**85**	**100.0**
Vanilla		
Market	5	5.9
Middlemen	6	7.1
Not producing	74	87.0
Total	**85**	**100.0**
Cloves		
Market	2	2.4
ZSTC	29	34.1
Not producing	54	63.5
Total	**85**	**100.0**

Source: Field data (2021)

When farmers traded spice products to the market points it may imply that farmers had very slight option to market access for consumers. The results reveal that marketing channel for spice products in Zanzibar is indirect as it involves intermediaries between

the producers and final consumers and perform numerous channel functions. These functions include processing and packaging before selling to ultimate consumers. This form of market channel is not effective to farmers' access to spice market. The strength of this channel depends on quality, quantity and prices of the spice products demanded, available and supplied from farmers to retailers. Farmers can have strong relationship to retailers if their products are of good quality and highly available and vice versa.

4.5 Spice Market Potential (Demand and Supply) in Zanzibar

It is crucial in this study to determine spice marketing potential for spices produced in Zanzibar. The analysis of spice market potentials provides important road map for spice market access. In this section, the study analyzed types of spice crops produced by farmers, quantity of spice crops sold by producers, mean prices of spice crops sold, types of spice crops from both producers and suppliers bought by traders, mean buying prices from both farmers and suppliers, quantity of spice products sold by traders and mean selling prices for traders. The insights from this section highlight the level of demand and supply for spice products in Zanzibar.

4.5.1 Types and Quantity of Crops Produced by Farmers

The study considered it crucial to identify types of spice crops produced by spice farmers in the study area. The findings revealed seven (7) types of spice crops produced and marketed. Table 4.6 indicates that in terms of land size used for selected spice crops, from surveyed farmers four crops occupied large land size in hectares. These crops are cinnamon (6 ha), ginger (5.4 ha), clove (4.5 ha) and cardamom (4 ha). Black pepper, turmeric and vanilla occupied 3.4 ha, 1.2 ha and 1.0 ha, respectively. Table 7 also reveals

average acreage of each spice crop in a household basis. The acreage of the spice crop
per household ranges from 0.017 ha to 0.145 ha per crop per household. This implies
that none of the spice farmers surveyed produced a single spice crop in more than 1 ha.
With regard to quantity of spice crop harvested, Table 4.6 reveals that ginger, cloves
cinnamon, turmeric and cardamom had high yields of 1547 kg/ha, 1356 kg/ha, 1145
kg/ha, 1117 kg/ha and 1055 kg/ha, respectively. Other crops are black pepper (820
kg/ha) and vanilla (620 kg/ha). The above yields observed per hectare in all spice crops
were below the recommended yield per hectare (kg/ha). The reason for low yield could
not only be low input supply but also limited emphasis on production of spice crops for
commercial reason. The only commercial spice crop in Zanzibar is clove, the remaining
spice crops are mostly for spice tourism which does not necessitate large scale
production.

In Table 4.6 the findings indicates that all quantity of spice crops harvested was sold
except ginger and cloves which have less quantities sold compared to harvests. The
results imply that farmers sell all the spice products harvested in the season. However,
for ginger and cloves farmers put aside some amount for home use especially medical
purpose.

Table 4.4: Types and quantity of spice crops produced by farmers

Spice crop	Acreage (ha)	Acreage/ Household (ha)	Quantity harvested (kg)	Productivity (kg/ha)	Recommended productivity (kg/ha)	Quantity sold (kg)
Cardamom	4	0.075	4220	1055	1300	4220
Cinnamon	6	0.077	6870	1145	1400	6870
Clove	4.5	0.145	6140	1365	2700	6040
Turmeric	1.2	0.075	1340	1117	7500	1340
Black pepper	3.4	0.089	2790	820	3930	2790
Ginger	5.4	0.071	8356	1547	14000	8310
Vanilla	1.0	0.085	620	620	750	620

Source: Field data (2021)

4.5.2 Types and Quantity of Spice Products Traded by Spice Traders

Determination of types and quantity of spice products traded at market places played a central role in assessing the level of supply and demand of spice products for spice business in Zanzibar. The analysis for the types of spice products traded by surveyed business men in Table 4.7 revealed that five (5) spice crops are more potential in spice business. These crops in Table 4.7 are cardamom, cinnamon, turmeric, black pepper and ginger. In the supply side from farmers, Table 4.6 indicates that cardamom has the highest quantity (445 kg) bought by traders from farmers, followed by cinnamon, black pepper, ginger and turmeric. Mean prices were also revealed in Table 4.7 indicating that the highest price from farmers was that of cardamom (TZS 15 750/kg) and the lowest mean price was that of cinnamon (TZS 3 688/kg). Traders interviewed also purchased spice products from suppliers. Table 4.7 shows that the highest quantity bought by traders from suppliers was that of cinnamon (623 kg) and thelowest quantity bought from suppliers was that of turmeric (210 kg). Mean prices of spice crops from suppliers indicated in Table 4.7 revealed that the highest price from suppliers was also that of cardamom (TZS 17 300/kg) and the lowest mean price was also that of cinnamon (TZS 4 130/kg). The analysis shows that with exception to cardamom, high quantities of traded spice crops were bought from suppliers rather than spice farmers. The findings imply that these suppliers may either be wholesalers who buy spice crops from farm or importers buying the spice crops outside Zanzibar. The difference in mean prices of spice crops between farmers and suppliers comes from the bulkiness, quality and processing techniques the suppliers perform before selling the spice products. The study also analysed the quantity of spice products sold by the traders and their mean prices. Table 8 indicates that the highest quantity sold by the traders was cinnamon (978 kg) and the lowest quantity was turmeric (290 kg). Findings revealed that all quantity bought by

traders was sold to consumers. The results imply that the demand of spice product to consumers is still high. Mean selling prices for traders to consumers in Table 4.7 show that cardamom had high price of TZS 20 470/kg compared to other spice products. The marginal price difference between farmers' price and traders' price was also analysed to ascertain price gap which existed in spice business. Trader's mean price appeared to be high than farmers. There was high discrepancy of farmers' price and traders in cardamom (TZS 4720/kg), ginger (TZS 4420/kg) and cinnamon (TZS 3912/kg). Black pepper and turmeric also recorded a gap of TZS 1170/kg and TZS 250/kg, respectively. This implies that traders benefit more than farmers in spice market.

Table 4.5: Types and quantity of spice products traded by spice traders

Spice crop	Quantity from farmers (kg)	Price from farmers (TZS)	Quantity from suppliers (kg)	Price from suppliers (TZS)	Quantity sold (kg)	Trader's price (TZS)	Price gap (Trader-farmers) (TZS)
Cardamom	445	15750	315	17300	760	20470	4720
Cinnamon	355	3688	623	4130	978	7600	3912
Turmeric	80	4500	210	5810	290	4750	250
Black pepper	188	10830	280	10500	368	12000	1170
Ginger	177	3800	360	5000	537	8220	4420

Source: Field data (2021)

The discussion with the surveyed farmers and traders revealed that quantity of spice bought and sold have an effect to market access among spice farmers. Mahamoud (2013) identified spice demand in Zanzibar to be about 8 tons of spices annually, but less than 4 tons are made available from individual spice farmers in Zanzibar. This implies that spice farmers in Zanzibar have failed to deliver quantity of spices like black pepper, cardamom, ginger, turmeric and cinnamon to meet market demands.

4.6   Factors Influencing Market Access among Spice Farmers

This section examines factors influencing market access among spice farmers in Zanzibar. Logistic regression model was performed to assess the impact of a numbers of factors on the likelihood that spice farmers would access market for their products. The model contained ten independent variables (distant market, market information access, transaction cost, market organization, number of spice crops, quantity sold, spice selling price, spice demanded, spice grading and value addition). The full model containing all predictors was statistically significant, Chi-square (5, N = 85) = 39.59, $p < 0.001$, indicating that the model was able to distinguish between the spice farmers those who accessed market and those who did not access market for spice product. The model as a whole explained between 37.2% (Cox & Snell R square) and 55.3% (Nagelkerke R square) of the variance in market access status of spice produce, and correctly classified 83.5% of cases. Table 4.8 shows that seven independent variables i.e. distant market, market information access, market organization, number of spice crops sold, quantity of spice sold, spice selling price and quantity of spice demanded made a unique statistically significant contribution to the chances of accessing the spice market. The analysis reveals that there exists relationship between marketing factors and market access among spice farmers. Therefore, the study rejects the null hypothesis and accepts the alternative hypothesis which states that there is relationship between marketing factors and market access among spice farmers. The explanation of contribution of these factors is explained in subsequent sections.

4.6.1 Market Organization

Market organization denotes the degree of which product exchange process among producers, traders and consumers is facilitated by formal market structures to enhance the business. Market organization appeared to be the strongest predictor of market access for spice farmers which positively significant recorded an odds ratio of 25.66 (Table 4.8). This indicated that spice farmers were nearly 25.66 times more likely to access the spice market when market is properly organized in comparison when market is not organized, controlling for all other factors in the model. Findings imply that positive relationship between market organization and market access is based on a priority expectation that there is a marginal cost associated with searching for the potential buyer in organized market. Existence of the guaranteed market is hypothesized to impact positively on market access. However, Smallholder farmers tend not to be organized in the markets as they usually sell their limited agricultural produce surpluses individually and directly to the consumers without linking to other market actors (Key and Runsten, 1999). In other words, smallholder farmers lack collective action in markets. Herman, *et al.,* (2012), in explaining market organization, argued that individual marketing of small quantities of produce weakens the smallholder farmers' bargaining positions and often exposes them to price exploitation by traders. Therefore, farmers should organize into groups for market access facilitation for their products.

4.6.2 Quantity of Spice Product Sold

Another strong predictor of marketing access for spice farmers was quantity of spice produce sold to market places which recorded positive significance with an odds

ratio of 21.38 in Table 4.8. This indicated that farmers were nearly 21.38 times more likely to access market when they had large quantity of spice produce to sell than those who had low quantity of spice for sale, when other factors are controlled for all other factors in the model. The findings imply that the higher the quantity the farmers supply the more they access market for the spice products. In his study on Inclusion of Small-scale farmers in the Spice Value Chain in Zanzibar, Mahamoud (2013) argued that quantity of spice supplied was the first problem relating to commercial pressure in spice business. He found that farmers in Zanzibar have failed to deliver quantity of spices like black pepper, cardamom, ginger, turmeric and cinnamon as markets require because they worked individually. He also identified spice requirement in Zanzibar to be about 8 tons of spices annually, but less than 4 tons are made available from individual spice farmers in Zanzibar. Results imply that spice traders also buy spices from contracted farmers in Tanzania Mainland to feel the market gap.

Table 4.6: Results of logistic regression for market access among spice farmers

Variables	β	S.E.	*p-value*	Exp(B)
Distant market	-2.330	0.981	0.017*	0.10
Market information access	2.937	1.239	0.018*	18.86
Transaction cost	0.821	1.057	0.437ns	2.27
Market organization	3.245	0.940	0.001**	25.66
Number of spice crops	-1.921	0.873	0.028*	0.15
Quantity of spice sold	3.062	1.037	0.003**	21.38
Spice selling price	-5.447	1.892	0.004**	0.01
Quantity of spice demanded	-2.678	1.039	0.010*	0.07
Spice grading and standards	-0.964	1.155	0.404ns	0.38
Product value addition	0.567	0.915	0.535ns	1.76
Constant	3.835	2.446	0.117	46.314

*and ** significant at $p<0.05$ and $p<0.01$, respectively Dependent variable: Market access ns = statistically non-significant at 0.05 level of significance

4.6.3 Market Information Access

The variable market information access is positively significant to market access, implying that farmers who have access to market information are likely to access the spice market. Market information access recorded an odds ratio of 18.86 as a predictor of market access among spice farmers (Table 4.8). Market information access indicated that spice farmers who accessed market information were 18.86 times more likely to improve their spice market access than spice farmers who had no market information, given that all other factors in the model are constant. Results imply that smallholder farmers have difficulties in accessing market information, hence exposing them to a marketing disadvantage. According to Ruijs (2002), smallholder farmers normally rely on informal networks (traders, friends and relatives) for market information due to weak public information. However, relying on informal networks for market information are at risk of getting biased information due to opportunistic behaviour of the more informed group. For instance, Mangisoni (2006) explained that smallholders usually accept low prices for their crops when the broker informs them that their produce is of poor quality. Smallholder farmers accept these low prices mainly because they are unable to negotiate from a well-informed position. Therefore, for smallholder farmers to have reliable access of market information, they should form spice farmers' associations or networks.

4.6.4 Number of Spice Crops Sold

Number of spice crops sold is said to be another factor that influences market access among spice farmers. In Table 4.8, number of spice crops sold was negatively significant and revealed the odds ratio of 0.15 to be less than 1, indicating that when

spice farmers had various kinds of spice crops were 0.15 times less likely to access spice market, controlling other factors in the model. The findings imply that spice market access is more open in crop specialization rather than diversification. The results reveal that spice farmers specialized in individual crops such as cardamom only, black pepper only, cinnamon only and ginger only have better market access than farmers who diversified and sold various spice crops at a time. The market access for specialized spice farmers might be due to relatively large quantity they supply to the market compared to farmers who diversified in several spices who is unlikely able to produce large volume of each spice.

4.6.5 Distance to Market Places

From the fact that most of farms are distant from the place where goods and services are exchanged, it was expected that the variable distance to the market could play an important role in determining whether farmers can access market or not. The coefficient of the variable distance to the market was found to be negatively significant to market access recording an odds ratio of 0.10 as a predictor of market access among spice farmers (Table 4.8). Findings imply that increase in the distance travelled to the market could reduce the market access by 0.10 times. This is expected since an increase in the distance travelled might contribute to high transaction cost. The farther away a household is from the market, the more difficult and costly it would be to access market. Delgado (1999) identified high transaction costs as the embodiment of market access barriers among resource poor smallholders. These high transaction costs result from individual produce

transportation and selling, difficulties in getting trading partners and poor bargaining power (Delgado, 1999).

4.6.6 Quantity of Spice Crops Demanded

Quantity of spice crops demanded was examined to observe the influence of demand to market access among spice farmers. The variable quantity of spice crops demanded is negatively significant to market access, implying that when spice crop demand is high spice farmers have less market access. In Table 4.9, quantity of spice crops demanded in market revealed the odds ratio of 0.07, indicating that when spice crops were in high demand at market, spice farmers were 0.07 times less likely to access spice market, controlling other factors in the model. The findings imply that high demand for spice crops might necessitate traders to follow farmers at field. Following crops at field means buying them at farm gate price and farmers are likely to sell all spices to traders and have little to offer to other market channels. In order to make other market channels active, farmers have to explore market demand information before sell their products.

4.6.7 Price of Spice Crops

The price of spice crops is said to be another factor that influences market access among spice farmers. Price is negatively significant to market access, implying that when price of spice crop increases spice farmers have less market access. Price of spices recorded an odds ratio of 0.01 as a predictor of market access among spice farmers (Table 4.9). Results indicated that when price increased at market, spice farmers were 0.01 times less likely to access spice market, controlling other factors

in the model. Findings imply that when spice price is high in the market, middlemen tend to collect spices from farmers and farmers have little to offer to other market channels. This tendency limit spice farmers to access direct market and benefit from spice sales.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1   Overview

This chapter presents the summary of findings, conclusion, recommendations and areas for further study.

5.2   Summary of the Findings

It was found that distant market, market information access, market organization, number of spice crops sold, quantity of spice sold, spice selling price and quantity of spice demanded made a unique statistically significant contribution to the chances of accessing the spice market. It was reveals that there exists relationship between marketing factors and market access among spice farmers. Therefore, the study rejects the null hypothesis and accepts the alternative hypothesis which states that there is relationship between marketing factors and market access among spice farmers. The variable market information access is positively significant to market access, implying that farmers who have access to market information are likely to access the spice market. The findings reveal that spice farmers specialized in individual crops such as cardamom only, black pepper only, cinnamon only and ginger only have better market access than farmers who diversified and sold various spice crops at a time.

5.3   Conclusion

This study explored the existing factors affecting market access among spice

farmers in Zanzibar. Production and economic levels of spice farmers depend on characteristics identified from their production and economic activities. Surveyed farmers were engaged in spice production according to different production and economic characteristics. Farmers' characteristics considered include farm occupation, association membership, land category and annual farm income. Study revealed that social-economic characteristics such as sex, age, education, type of trader and experience in spice business contribute significantly on spice product trading. The study identified existing market channels for spices produced in Zanzibar by explaining routes through which spice farmers sold their products after harvesting and how spice traders sourced spices for their business. The analytical structure of marketing channels provided an important framework for mapping and explaining potentials in market access for spice farmers such as the market channels and sales points where farmers sold their spice products. Farmers were identified to sell their products not only to market places and middlemen for all spices, but also to ZSTC for clove sales.

Spice market potential which explained demand and supply for spice crops in Zanzibar was analyzed to provide road map for spice market access. The study identified types of spice crops produced by farmers, quantity of spice crops sold by producers, mean prices of spice crops sold, types of spice crops bought by traders from producers and suppliers, mean buying prices from both farmers and suppliers, quantity of spice products sold by traders and mean selling prices for traders. The insights provided highlight on the level of demand and supply for spice products in Zanzibar. The study examined ten factors influencing market access among spice

farmers in the study area. Logistic regression model was performed to assess the impact of these factors on the likelihood that spice farmers would access market for their products. Seven independent variables i.e. distant market, market information access, market organization, number of spice sold, quantity of spice sold, spice price and quantity of spice demanded made a unique statistically significant contribution to market access among spice farmers. This contribution shows that there is relationship between marketing factors and market access among spice farmers. Therefore, the study rejected the null hypothesis and accepted the alternative hypothesis which stated that there was relationship between marketing factors and market access among spice farmers.

5.4   Recommendations

Based on the findings, the study recommends the following for improvement of spice market access among spice farmers;

- Spice farmers should strengthen spice value chain in which a number of spice markets can be increased and developed. The increase in the marketing channels would not only make the spice market less informal but also increase demand for spices which is necessary for farmer market access.

- Government should give support to spice farmers by giving them farm utilities. Farmers should be given training so as to cultivate spice using economies of scale. There should be a formation of stronger spice farmers' associations or networks in order to facilitate market access. The associations could enable spice farmers to pool resources and benefits from economies of scale instead of competing between themselves. These groups could make spice farmers

participate effectively in spice tourism activities which is the emerging industry in Zanzibar such as cooperatives, spice growers

5.5   Limitations and Delimitations of the Study

One of the limitations of the study was that some respondents were suspicious over researchers taking them as agents of competitors. This makes them reluctant to provide the requested data. After insisting that the data enquired was for academic purposes and that was to be treated confidentially, the respondents accepted to cooperate.

5.6   Areas for Further Researches

This study was conducted in only one area, Zanzibar. Other studies can be conducted at other places where spices are planted to see whether the findings will be the same as the one observed in this study. Another study can be conducted to assess the impact of spice farming to tourism in Zanzibar.

REFERENCES

Akyoo, A.M. and Lazaro, E. (2007). The Spice Industry in Tanzania: General Profile, Supply Chain Structure, and Safety Standards Compliance Issues. *DIIS Working Paper no. 2007:8,* Copenhagen, Denmark. 1-31. Retrieved from https://www.econstor.eu/handle/10419/84561 on 11th May, 2019.

ARIF, (2011). Restructuring of Zanzibar State Trading Corporation, Interim Report. Agricultural Innovation Research Foundation, Tanzania. Un published.

Bachmann, J. and Earles, R. (2000). Postharvest Handling of Fruits and Vegetables, ATTRA. Horticulture Technical Note. 19pp. Available at: [http://attra.ncat.org/attra-pub/PDF/postharvest.pdf] site visited on 22/08/2013

Baloyi, J. K. (2010). An Analysis of Constraints Facing Smallholder Farmers in The Agribusiness Value Chain. Master's Thesis: Department of Agricultural Economics, Extension and Rural development. University of Pretoria. Pretoria. pp 23-27. Retrieved on 14th November, 2019 from https://repository.up.ac.za/bitstream/handle/2263/29038/dissertation.pdf?sequence=1.

Benfica, R., Tschirley, D. & Sambo, L. (2002). The Impact of Alternative Agro-Industrial Investments on Poverty Reduction in Rural Mozambique. MINAG/DE/DAP Research Report No. 51E. Retrieved on 22nd August, 2019 from http://www.aec.msu .edu/fs2/mozambique/wps51e.pdf.

Berthon, P., Pitt, L. F., Ewing, M. T. & Bakkeland, G. (2003). Norms and Power in Marketing Relationships: Alternative theories and empirical evidence. *Journal of Business Research, 56*: 699-709.

Bienabe, E., Caronel, C., Le Coq, J. and Liagre, L. (2004). Linking Smallholder Farmers to Markets: Lessons Learned from Literature Review and Analytical Review of Selected Projects. Study Report. CIRAD and IRAM.World Bank. pp. 82. Retrieved from https://agritrop.cirad.fr/524030/1/document_524030.pdf on 1st May, 2020

Bijman, J., Ton, G. and Meijerink, G. (2007). Empowering Smallholder Farmers in Markets: *National and International Policy Initiatives*. Paris/Wageningen: IFAP-ECART. pp 29.

Caniëls, M.C.J. and Gelderman, C.J. (2007). Power and Interdependence in Buyer Supplier Relationships: A Purchasing Portfolio Approach. *Industrial Marketing Management*, *36*: 219-229

De Klerk, S. and Kroon, J. (2007). Networking in South African businesses. *Management Decision, 45*(1): 89 – 103.

Delgado, C. (1999). Sources of Growth in Smallholder Agriculture in Sub-Saharan Africa: The Role of Vertical Integration of Smallholders with Processors and Marketers of High Value-added Items. *Agrekon, 38*(S1): 165–89.

DTIS, (2005). Tanzania Diagnostic Trade Integration Study. Study Report, November 2005. *Diagnostic Trade Integration Study. Volume* 2. pp 74. Dar es Salaam, Tanzania.

Eggertsson, T. (1990). *Economic Behaviour and Institutions*. Cambridge, UK: Cambridge University Press. pp 363.

FAO (2005). Herbs, Spice and Essential Oils: Post-harvest Operations in Developing Countries. Retrieved from https://www.fao.org/3/ad420e/ad420e.pdf on 19th November, 2019. pp 61.

FAO, (2001). Contract Farming. Partnerships for Growth: *FAO Agricultural Services Bulletin* No. 145. Retrieved from https://www.fao.org/3/y0937e/y0937e00.pdf on 16th December, 2019. pp. 161.

FAO, (2011). Health and Wealth from Medicinal and Aromatic Plants, *FAO Diversification booklet* No. 17. Retrieved on 19th November, 2019 from https://www.fao.org/3/i2473e/i2473e.pdf. pp. 70.

Frank, S. D. and Henderson, D.R. (1992). Transaction Costs as Determinants of Vertical Coordination in the US Food Industries. *American Journal of Agricultural Economics, 74*: 941-950.

Gabre-Madhin, E.Z. (2001). Understanding How Markets Work: Transaction Costs and Institutions in the Ethiopian Grain Market. MSSD Discussion Paper No. 31: International Food Policy Research Institute, Washington, DC. Retrieved from http://www.cgiar.org/ifpri on 10th January, 2020. pp. 44.

Herman, D., Van Schalkwyk, Groenewald, J. A., Fraser, G.C.G., Obi, A.& Van Tilburg, A. (2012). *Unlocking Markets for Smallholder in South Africa*. Wageningen, Netherlands: Academic Publishers: pp. 23 – 33.

Hobbs, J. (1997). A Transaction Cost Approach to Supply Chain Management. *Supply Chain Management, 1*(2): 15–27.

Jaffee, S. & Morton, J. (1995). Transaction Costs, Risk, and the Organization of Private Sector Food Commodity Systems. In Marketing Africa's High-Value Foods: Comparative Experiences of an Emergent Private Sector: Iowa, USA: Kendall/Hunt Publishing Company. pp. 21 – 62.

Jari, B. & Fraser, G. C. G. (2014). An Analysis of Institutional and Technical Factors Influencing Agricultural Marketing amongst Smallholder Farmers in the Kat River Valley. *International Journal of Agricultural Marketing 1*(1): 002-009.

Jayne, T. S., Govereh, J., Mwanaumo, A., Nyoro, J. & Chapoto, A. (2002). False Promise or False Premise: The Experience of Food and Input Marketing in Eastern and Southern Africa, Perspectives on Agricultural Transformation: A View from Africa. *World Development, 31* (11): 1967 – 1986.

Key, N. & Runsten, D. (1999). Contract Farming, Smallholders and Rural Development in Latin America: The Organization of Agro-processing Firms and the Scale of Out-grower Production. *World Development. 27*(2): 381–401.

Kherallah, M. & Kirsten, J. F. (2002). *The New Institutional Economics*: Applications for Agricultural Policy Research in Developing Countries. *Agrekon, 41*(2): 110-132.

Kilingo, J. K. & Kariuki, J. G. (2001). *Marketing of Smallholder Produce*: *A Synthesis of Case Studies in the High Lands of Central Kenya*. Nairobi, Kenya: Sida's Regional Land Management Unit. pp 75

Killick, T., Kydd, J. & Poulton, C. (2000). Agricultural Liberalization, Commercialization and the Market Access Problem in the Rural Poor and the Wider Economy: The Problem of Market Access. International Fund for Agricultural Development, Rome. pp. 3001 – 3012.

Kledal, P. F., Eyhorn, F., Elzakker, B. & Pereira, E.A. (2013): The Possibilities for Inclusion of Smallholder Farmers in Organic Chain Development. In: Halberg, N. and Muller, A. (eds): *Organic Agriculture for Sustainable Livelihoods, Earthscan*. London, UK: Routledge. pp154-173.

Kothari, C.R. (2004). *Research Methodology: Methods and Techniques* (2nd Ed.). New Delhi, India: New Age International Publishers, 401 pp.

Lapar, M. L., Holloway, G. & Ehui, S. (2003). Policy Options Promoting Market Participation of Smallholder Livestock Producers: A Case Study from the Philippines. *Food Policy*, *28*: 187-211.

Louw, A., Madevu, H., Jordaan, D. & Vermeulen, H. (2007). South Africa. In: B. Vorley, A. Fearne and D. Ray, (eds*) Regoverning Markets: A Place for Small-Scale Producers in Modern Agri-food Chains*. Oxford, UK: Gower Publishing Ltd. pp. 73-81.

Mahamoud, I. I. (2013). Inclusion of Small-Scale Farmers in the Spice Value Chain in Zanzibar, Tanzania. Master's Thesis: Governance, Policy and Political Economy (GPPE). Institute of Social Studies. The Hague. pp 49

Makhura, T. M. (2001). Overcoming Transaction Costs Barriers to Market Participation of Smallholder Farmers in the Northern Province of South Africa. Unpublished PhD Thesis, University of Pretoria. Pretoria, South Africa. pp. 228.

Mangisoni, J. (2006). Markets, Institutions and Agricultural Performance in Africa. ATPS Special Paper Series No. 27, African Technology and Policy Studies Network, Nairobi, Kenya. pp. 19.

Mather, C. (2005). SMEs in South Africa's Food Processing Complex. Working Paper No 3. Available at: [http://www.tips.org.za/node/394] site visited on 22/08/2019.

Melanie, M. & Michael, J. (2011). *Spices and Herbs for Home and Markets: Rural Infrastructure and Agro-Industries Division*. FAO, Rome. pp. 70. Retrieved from https://pdf4pro.com/view/s-p-i-c-e-s-a-n-d-herbs-f-o-r-h-o-m-e-a-n-d-market-fao-org-5adb90.html on 19th May, 2019.

Ministry of Agriculture, Livestock and Natural Resources (MALNR), (1993). Proposed candidate crops for research and Development. ZCCFSP Technical Report no. 93/4. Discussion document 64. Unguja, Zanzibar.

Minot, N. & Goletti, F. (1997). Impact of Rice Export Policy on Domestic Prices and Food Security, Markets, Trade and Institutions. Retrieved on 1st May, 2019 from http://:www.ifpri.org/divs/mtid/mtidr.asp+Goletti++institutions&hl=en&ct=clnk &cd=2&gl=za.

Mlingi, B. & Rajab, K. (2009). Post-Harvest Losses Assessment. Ministry of Agriculture Livestock and Environment and FAO. Zanzibar. pp 88

Moeller, K. (2010). Partner Selection, Partner Behaviour, and Business Network Performance: An Empirical Study on German Business Networks. *Journal of Accounting and Organisational Change, 6*(1): 27-51.

Mort, G. S. & Werawardena, J. (2006). Networking Capability and International Entrepreneurship: How Networks Function in Australian Born Global Firms. *International Marketing Review, 23*(5): 549-572.

Murphy, S. (2010). Changing Perspectives: Small-Scale Farmers, Markets and Globalisation. The Hague. Retrieved from [http://pubs.iied.org/16517iied. on 22nd August, 2019.

Neuman, W. L. (2006). *Social Research Methods: Qualitative and Quantitative Approaches* (6th Edn.). Boston, USA: Pearson Education Inc. pp 460.

O'Donnell, A. (2004). The Nature of Networking in Small Firms. Qualitative Market Research: *An International Journal 7*(3): 206-217.

Randela, R., Alemu, Z. G. & Groenewald, J. A. (2008). Factors Enhancing Market Participation by Small-Scale Cotton Farmers. *Agrekon, 47*(4): 451-469,

RGZ (2010). The Zanzibar Strategy for Growth and Reduction of Poverty: 2010-2015 (ZSGRPII), *MKUZA* II, SMZ, Zanzibar. pp 197.

RGZ, (2002). Zanzibar Development Vision 2020, Ministry of Finance and Economic Affairs, Zanzibar. pp 44.

RGZ, (2009). Zanzibar Human Development Report. Towards pro poor growth. Revolutionary Government of Zanzibar (SMZ). Zanzibar. pp150

Ruben, R. Boselie, D. & Lu, H. (2007). Vegetable Procurement by Asian Supermarkets: A Transaction Cost Approach. Supply Chain Management: *An International Journal 12*(1): 60 - 68.

Ruijs, A. (2002). Cereal Trade in Developing Countries: A Stochastic Equilibrium Analysis of Market Liberalization and Institutional Changes in Burkina Faso. PhD Thesis, University of Groningen, The Netherlands. pp. 219.

Salami, A., Kamara, A.B. & Brixiova, Z. (2010), Smallholder Agriculture in East Africa: Trends, Constraints and Opportunities, Working Papers Series No. 105. African Development Bank. 44pp. Retrieved on 27th December, 2020 from ttps://www.commdev.org/pdf/publications/.

Samaratunga, P.A. (2007). *Sri Lanka: Innovative Practice in Integrating Small Farmers into Dynamic Supply-Chains: A Case Study of Ma's Tropical Food Company. Regoverning Markets Innovative Practice Series*. London, UK: IIED, pp. 55 – 67.

Senyolo, G.M., Chaminuka, P., Makhura, M.N. & Belete, A. (2009). Patterns of Access and Utilization of Output Markets by Emerging Farmers in South Africa: Factor Analysis Approach: *African Journal of Agricultural Research, 4*(3): 208-214

Sharp, J.S. & Smith, M.B. (2003). Social Capital and Farming at the Rural-Urban Interface: The Importance of Non-Farmer and Farmer Relations. *Agricultural Systems, 76*: 913-927.

Tiru Tesfa, Wondimu Bayu, Arega Gashaw, Hassen Beshir (2017). Spice Production, Marketing, and Utilization in South Wollo, Ethiopia. *East African Journal of Sciences, 11*(1) 27-36.

Wilson, L.G., Boyette, M.D. & Estes E.A. (1995). *Postharvest Handling and Cooling of Fresh Fruits*. Vegetables and Flowers for Small Farms. North Carolina Cooperative Extension Service, Raleigh. pp. 67 – 88.

Zaibet, L.T. & Dunn, E.G. (1998). Land Tenure, Farm Size, and Rural Market Participation in Developing Countries: The Case of The Tunisia Olive Sector. *Economic Development and Cultural Change, 46*: 831-848.

Zanzibar Meteorology Authority, (n.d). Zanzibar Spice Farms. [www.zanzibarspices] site visited on 22/08/2013. Zanzibar website, (2013). [http://zanzibar.go.tz/] 09 September, 2013

APPENDICES

Factors Affecting Market Access Among Spice Farmers in Zanzibar Smallholder Farmer Questionnaire:

Introduction

Dear respondent,

I, **Nunuu A. Abdalla**a student of the Open University of Tanzania pursuing Masters of Business Administration (MBA),as part of my academic curriculum I am conducting a research to examine the factors affecting market access among spice farmers in Zanzibar. The study is solely for academic purposes and the information given will be treated with strict confidentiality. I therefore, humbly request you to spare some time and answer the following questions. Thank you very much for your understanding. You are supposed to answer the questions according to their requirements.

APPENDIX 1: Spice Farmers' Questionnaire

SECTION A: BACKGROUND INFORMATION OF RESPONDENT

Demographic Characteristic

1. Gender: Male [   ] Female [   ]

2. Age:

Below 25 years	
26– 35 years	
36- 45 years	
Above 45 years	

3. Level of education

   (i)   O level   [   ]

   (ii)   A level   [   ]

   (iii)   Diploma [   ]

   (iv)   Bachelor degree [   ]

   (v)   Post Graduate or high   [   ]

4. By how long have you been in this bank?

(1)   1 -5 years [   ], (2) 5 – 10 years [   ], (3) 10 – 15 years [   ], (4) Above 15 years

5. Socio-economic Information of a respondent.

Occupation	Association/group	Current annual income earnings
1= Spice production 2= Spice product selling 3= Food crop selling 4= Spice tourism	1= Farmers association 3= Cooperation 4= Credit &savings 5= Individual	(T.shs)

SECTION B: Production and Marketing Information

1. Total land owned by the farmer………………………….. acre…………….. (ha)

2. Total land used for production……………………………acre………………(ha)

3. What types of spice do you cultivate (fill the table below)?

Spice cultivated	Acreage cultivated (ha)	Amount harvested (Kg/ year)	Amount sold (Kg/ year)	Price per Unit (kg)	Place sold	Revenue

4. To whom do you sell your products? 0 = Middleman 1 = Retailer or consumer

5. Please indicate marketing challenges you face when marketing your produce to market.

S/N	Market Participating Challenges	Yes	No
1	Access of marketing information		
2	Long distance to the market		
3	Transport problems		
4	High transaction costs		
5	Market organization		
6	Type of spice to be sold		
7	Quantity of spice to be sold		
8	Selling price		
9	Quantity of product demanded		
10	Product grading		
11	Product value addition		
12	Others, (specify)		

6. How far is the market place from your spice farm? ....km

7. Do you transport your product to market?   0 = No   1 = Yes

8. If yes, how do you transport your products to market place?

    1 = Own transport   2 = Public transport   3= Hired transport

9. What is the transport cost do you spend to the market? ....

10. Whom do you sell your products to?

    1 = Market   2 = Middlemen   3 = Customers

11. Do you face competition with other spice producers at market? 0 = No 1= Yes

12. If yes, what is the competition for?

    1 = Product prices 2 = Quantity supplied 3 = Quality of products

APPENDIX 2: Spice Traders Questionnaire to ZSTC

Factors Affecting Market Access Among Spice Farmers in Zanzibar

SECTION B: Trading and Marketing Information

1. Estimate average spice demand and supply per year

Spice Product		Amount (kg/year) bought	Total cost		Amount sold (kg)	Total revenue	
Farmer	Price	Supplier	Price	Total	Price/kg	Sales kg	Price/kg

2. What are processing activities do you perform before selling the spice

    1 = Drying 2= Cleaning 3= Grading 4= Packaging

3. How is the quality of spice product from farmers?

    1 = Good2 = Better3 = Best

4. How is transaction cost for the spice product bought directly from farmers?

    1 = low 2 = Moderate 3 = High

5. What is the length of payment period for products from farmer?

6. How is product price from farmers?

    1 = Low   0 = High

7. How is product supply from farmers?

    1 = Regular   0 = Irregular

8. What is the processing quality of the products from farmers?

    1 = Processed products 2 = Unprocessed products

9. Suggestions for spice farmers to improve quality of their products

....

Thank You Very Much