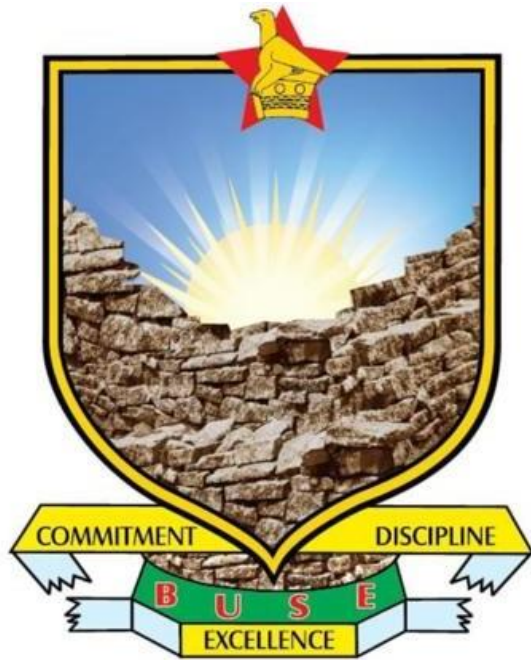


BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCES

DEPARTMENT OF AGRICULTURAL ECONOMICS AND MANAGEMENT



TOPIC: ANALYSING THE MARKETING CHANNELS AND PROFITABILITY OF ROSELLA CROP IN MUDZI DISTRICT.

BY

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Approval form

The undersigned confirms that they have read and recommended this research project entitled, “Analyzing the marketing channels and profitability of rosella crop in Mudzi district” in partial fulfillment of the Bachelor of Science Honours Degree in Agricultural economics and management.

Supervisor

I certify that I have supervised BRYAN KUONA for this research titled, “Analyzing the marketing channels and profitability of rosella crop in Mudzi district”, in partial fulfillment of the Bachelor of Science Honours Degree in agricultural economics and management, and recommends that it proceeds for examination.

Signature 

Date: 7 June 2024

Declaration

I, Bryan Kuona, hereby declare that the research study is my original work conducted under the guidance and supervision of Mrs. D Manyumwa. I confirm that all sources of information utilized in this study have been appropriately acknowledged and referenced following academic standards. I declare that this research study has not been previously submitted for any academic qualification or degree.

The Author

Bryan kuona

Signature_____

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Abstract

This study investigates rosella crop marketing in the Mudzi district, identifying marketing channels, defining influencing variables for channel choice and analyzing farmer problems. To achieve the mentioned goals, a comprehensive research methodology that included qualitative and quantitative methodologies was used. Primary data gathering included questionnaires and focus group conversations with rosella farmers in the Mudzi district. The findings reveal a wide range of marketing channels used by rosella producers in Mudzi district, ranging from traditional methods such as direct sales to consumers and roadside markets to modern channels such as intermediaries, NGOs-assisted markets, wholesale markets, processors, online platforms, and export markets. The factors impacting the choice of marketing channel were identified as market access, transportation costs, price offered, consumer preferences, and quantity demanded.

The study discovered a slew of obstacles that rosella growers experience when marketing their produce, including limited market access, inadequate transportation infrastructure, price volatility, market knowledge asymmetry, and quality control concerns. These issues significantly impede the efficient operation of the rosella value chain and aggravate economic discrepancies among farmers. The study looked into the intricate structure of the rosella value chain in the Mudzi area, identifying the roles, actions, and relationships of major actors involved in rosella production, processing, distribution, and consumption. This value chain analysis identifies the potential for value addition, supply chain optimization, and market linkages to increase the rosella sector's competitiveness and profitability.

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List of Abbreviations

FAO: FOOD AND AGRICULTURE ORGANIZATION

BIZ: BIO-INNOVATION ZIMBABWE

AGRITEX: AGRICULTURAL TECHNICAL AND EXTENSION SERVICE

ARDS: AGRICULTURAL AND RURAL DEVELOPMENT SERVICE

VC: VALUE CHAIN

RBV: RESOURCE-BASED VIEW

USAID: UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

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1. Chapter 1

1.1 Background of the study

Rosella crop, scientifically known as *Hibiscus sabdariffa*, is a versatile plant with a variety of agricultural applications (FAO). It is indigenous to Africa and has been cultivated for centuries because of its culinary, medicinal, and economic value (ICRISAT). In recent years, rosella has gained attention as a potential drought-tolerant crop in areas prone to water scarcity and climate change impacts. Agriculture is critical to the economy and food security in Zimbabwe's Mudzi District. However, the district is plagued by recurring droughts, which pose significant challenges to farmers' ability to maintain traditional crop production systems. As a result, there is an increasing need to investigate alternative crops that can adapt and thrive in drought-prone environments. Rosella cultivation has high potential because of its ability to withstand dry and harsh environmental conditions. The plant uses less water than traditional crops and can still produce viable yields in arid and semi-arid regions ((ICRISAT). Furthermore, rosella possesses several valuable characteristics, including high nutritional value, medicinal properties, and diverse market opportunities.

This feature gives them an advantage over traditional crops such as maize, which may struggle in these adverse conditions, according to Beuselinck, P.R. et al. (2003). Rosella has the potential to supplement farmers' income. Masego, T.S. et al. (2017) report that global demand for herbal teas and products derived from Rosella calyxes has increased significantly. In recent years, Zimbabwe has seen an increase in demand for herbal teas. Farmers in Mudzi District could increase their profits and diversify their income sources by cultivating Rosella and tapping into the expanding market (Food and Nutrition Council).

According to FAO (2013), Rosella contains more essential vitamins, minerals, and antioxidants than any other crop grown in the Mudzi district. The plant's leaves can be eaten as a nutritious vegetable, containing dietary fiber, calcium, iron, and vitamin C (BIZ 2023). According to FAO, incorporating Rosella into the local diet can help improve nutrition and overall health. Rosella is used medicinally in many cultures. It is thought to have diuretic properties and is used to treat hypertension, liver disorders, and urinary tract infections, according to the World Health

Organization. The presence of anthocyanins in the calyxes contributes to their anti-inflammatory and antioxidant properties. G. Chigeza (2020). Rosella can be planted in the landscape alongside other useful plants as part of a multi-layered hedge or windbreak, or on contour ridges between row crops. It's also a pretty plant to have around the house (Bio Innovation Zimbabwe). According to BIZ, introducing Rosella as a supplementary feed for animals provides an opportunity to improve the nutritional value of livestock diets in the Mudzi district while lowering feed costs. Rosella has caught the attention of food and beverage manufacturers as well as pharmaceutical companies. The plant's red calyxes are increasingly being exported to the United States and Europe for use as food colorings to replace some synthetic dyes. (FAO and BIZ) Germany is the leading importer creating export markets for Mudzi district farmers.

Despite the increasing interest in rosella cultivation, there is limited research on its marketing dynamics in the district. Understanding the various marketing channels utilized by rosella farmers and the factors influencing their choice of channels is essential for optimizing market access and profitability (Mukondiwa, 2016). Although rosella's drought tolerance and economic potential make it an appealing option for farmers in Mudzi District, little research has been conducted to assess its viability and impact on local farming systems. As a result, the purpose of this study is to look into the marketing channels and profitability of the rosella crop in Mudzi District. The study will evaluate each marketing channel taking into consideration their potential profitability.

1.2 Statement of the problem

Mudzi district is a semi-arid region of Zimbabwe that faces several agricultural challenges, such as water scarcity as the mean annual rainfall is 450-500mm while the mean annual temperature is 23.8 degrees (Vincent & Thomas, 1960), low soil fertility as the predominant soil type is ferric luvisols, and limited access to agricultural commodity markets (AGRITEX Marondera Province, 2022). Small-scale farmers in this region primarily practice subsistence farming, which frequently results in low income and food insecurity (CARDS). Mudzi district is plagued by recurring droughts, which pose significant challenges to farmers' ability to maintain traditional crop production systems. About 80% of farmers in this district grew drought-tolerant crops such as ground nuts, millet, and Bambara nuts (ARDS) however about 10% of farmers in this area

grow rosella crops as an alternative drought-tolerant crop (BIZ, 2022). The Mudzi district is renowned for its cultivation of the rosella crop, a valuable commodity with diverse applications in the food, beverage, and pharmaceutical industries (Dandena et al, 2019).

However, despite its promising outlook, the sector faces challenges regarding the effective utilization of marketing channels and the optimization of profitability. There is a lack of comprehensive understanding regarding the performance and efficiency of existing marketing channels for rosella crops in Mudzi district. Quantitative data on the market share, distribution network, and sales volume of each channel are limited, hindering farmers' ability to make informed decisions about channel selection and resource allocation (Dandena et al, 2019). Without this crucial information farmers may struggle to identify the most profitable channels and advertently incur unnecessary costs or miss out on lucrative market opportunities (Gomez-Luciano et al., 2019). Profitability analysis within the rosella crop sector in the Mudzi district is hindered by the scarcity of quantitative data on production costs, revenue streams, and financial performance metrics.

Marketing dynamics such as price volatility, demand fluctuations, and competitiveness pressure significantly impact the profitability of the rosella crop in Mudzi district. However, quantitative analyses of these factors and their implications for farmers are lacking, making it challenging for stakeholders to develop effective risk management strategies, price forecasting models, and market entry or exit decisions (IFPRI, 2019). In the district and throughout Zimbabwe, there is a lack of information on the market potential and commercial viability of this crop. Therefore, there is an urgent need for a comprehensive study to analyze the marketing channels and profitability of the rosella crop in Mudzi district. The study will provide valuable insight into the performance, strengths, and weaknesses of existing marketing channels as well as factors that influence the selection of a marketing channel to use, challenges being faced by farmers in marketing the crop, and the value chain of the crop in the district. By addressing these knowledge gaps, farmers, policymakers and other stakeholders can develop targeted interventions and strategies to support the growth and competitiveness of the rosella sector in Mudzi district, ultimately improving the livelihoods of farmers and contributing to the socioeconomic development in Mudzi district.

1.3 Main objective of the study

To determine the marketing channels and profitability of the Rosella crop in Mudzi District.

1.3.1 Objectives of the study

- I. To Identify market channels of Rosella crop available to Mudzi District farmers.
- II. To determine the factors that influences the farmers' choice of rosella marketing channel in Mudzi district.
- III. To investigate the challenges faced by small-scale farmers when marketing Rosella crops in Mudzi District.

1.4 Research questions

- I. What are the marketing channels for the Rosella crop available to Mudzi district farmers?
- II. What are the factors that influence farmer's choice of rosella marketing channel in Mudzi district?
- III. What are the challenges being faced by small-scale farmers when marketing the Rosella crop in the Mudzi district?

1.5 Justification of the study

Rosella is a drought-resistant crop that is high in essential nutrients such as vitamins, minerals, and antioxidants. The study intends to investigate the marketing channels and profitability of Rosella to investigate its potential as a valuable source of income in the Mudzi district. Cultivating Rosella has received little attention in the Mudzi district. The purpose of this research is to determine the economic viability of Rosella cultivation by examining the potential income generation for local farmers. Rosella cultivation is found to be economically viable, and has the potential to improve the livelihoods and economic development (Mavhura et al, 2019) of farmers in the region. Understanding the marketing dynamics and profitability of rosella is essential for maximizing the economic benefits derived from its cultivation. It is frequently grown using organic methods, making it an environmentally sustainable crop. Access to efficient

and effective marketing channels is crucial for farmers to sell their rosella produce at fair prices and optimize their returns on investment (Norton et al, 2019). By analyzing the existing market channels, farmers may identify opportunities to improve market access and enhance efficiency in the marketing process. Maximizing profitability is a key objective for rosella farmers in Mudzi District (Munemo & Khaka, 2017). By studying the factors influencing profitability and comparing the performance of different marketing channels, farmers may make informed decisions to enhance their profitability and overall financial sustainability (Munemo & Khaka, 2017).

The research will look into the viability of implementing such practices in the Mudzi district, which could lead to improved soil health, less reliance on synthetic fertilizers and pesticides, and a more sustainable agricultural system ensuring the long-term viability of rosella cultivation in the district (Manyani, 2020). Understanding the profitability of the rosella crop may help identify practices that promote environmental stewardship, resource efficiency, and resilience to climate change while maintaining profitability for farmers (Chindima, 2020). Despite the economic importance of rosella cultivation in Mudzi District, there may be limited research and empirical evidence available on its marketing channels and profitability hence, this research aims to fulfill that gap by conducting a comprehensive of the marketing dynamics and profitability of the crop, providing valuable insights for future research and extension activities (Mukondiwa, 2016).

1.7 Delimitations and limitation of the study

Delamination

The study focuses specifically on the Mudzi district and may not be directly applicable to other regions with different agro-ecological conditions or socioeconomic contexts, and the study's scope is limited to a specific time frame for data collection and analysis, potentially excluding seasonal variations and long-term trends in Rosella marketing channels and profitability. It may restrict the scope to specific cultivation practices or techniques, such as organic farming methods, which may have implications for the findings' generalizability to other agricultural approaches. The study may involve a limited sample size of rosella farmers and stakeholders in

Mudzi District, which may affect the representativeness of the findings. The study may be conducted in English, which may affect the representativeness of the research.

Limitations

The availability and size of the sample population may limit the study's generalizability. The depth and breadth of the study's research activities may be limited due to funding, equipment, or access to technical expertise. The study may face challenges in obtaining reliable data on market dynamics, consumer preferences, and profitability. External factors such as weather conditions, market fluctuations, and policy changes may influence rosella marketing channels and profitability independently of the variables studied in the research (Mukondiwa, 2016). Participants' responses in surveys or interviews may be influenced by social desirability bias or recall bias, leading to inaccuracies or inconsistencies in data collected (Mujeyi, 2018). By recognizing these constraints and limitations, the study can provide a clear understanding of its scope and potential constraints, enhancing the interpretation and application of its findings within the Mudzi District

2.0 Chapter 2

2.1 Introduction

In Zimbabwe's Mudzi district, rosella cultivation and marketing are an important part of the agricultural economy. Rosella crop, with its diverse applications in the culinary, beverage, and pharmaceutical industries, has significant economic potential for local farmers. Understanding the dynamics of marketing channels and profitability along the rosella value chain is critical for improving farmers' socioeconomic well-being and supporting sustainable agricultural practices in the region. This literature review aims to investigate existing research or similar agricultural value chains, examine relevant marketing techniques, and evaluate the profitability aspects unique to rosella farming and commercialization in the Mudzi district.

2.2 Introduction to rosella crop

2.2.1 Rosella botanical names and origin

Rosella crop has many botanical names, including hibiscus sabdariffa, Florida cranberry, red sorrel, Indian sorrel, and Jamaican sorrel (Laurel Titus). The rosella plant is claimed to have originated in Africa, but it is now grown in tropical and subtropical climes all over the world, with China and Thailand being the primary producers. It spread throughout Asia and the West Indies in the 16th and 17th centuries, but it has since been neutralized in many places (McClintok, 2004). It was first planted in Sudan approximately 6000 years ago, and Sudan is currently the major producer of Roselle in the form of Sudanese tea (McClintok and Tahir, 2004; Mohamad et al., 2002). It was introduced to India and South America as a vegetable in the 17th century and farmed in Asia for fiber production (McClintok and Tahir, 2004). It is mostly grown in Sudan, India, Sri Lanka, China, Malaysia, Thailand, Taiwan, Egypt, and Mexico (El-Saidyet al., 1992). Rosella is an annual herbaceous plant from the Malvaceae family (Nimala C, 2017).

2.2.2 Characteristics of rosella crop

Rosella plants may generate 250-500 kilos of dried rose petals per hectare. A single plant can produce 1 to 7 kg of fresh petals, with 90% of the weight dissipated during drying. In 1920, Wester recognized three edible Roselle cultivars grown in the Philippines at the time: Rico, Victor, and Archer. Rico is a low-growing, spreading shrub that develops simple leaves over time. Victor is a superior selection derived from seedlings grown at the Subtropical Garden in Miami in 1906. It flowers significantly earlier than Rico. A.S. sent seed to Wester, which produced Archer. Archer of Antigua Plant is tall and sturdy like Victor but with green stems.

The plant height, growth, and shape of the flower, pollen, and calyx varied among the three varieties as well. In addition, another rosella variety known as Temprano was produced in 1914 at the Lamao trial site and named after its early flowering. This type was thought to be no longer grown, but it was less robust and productive than the others (Morton, 1987). There are presently no known varieties available for this crop.

2.2.3 Climatic conditions Suitable for rosella farming

Roselle flourishes in warm, humid tropical regions because it is susceptible to cold and mist (Morton, 1987; Qi et al., 2005). The Roselle flourishes at temperatures from 18 to 35°C, with an ideal of 25°C. It thrives in tropical and subtropical areas with elevations of 3,000 feet (900 meters) above sea level and rainfall of around 72 inches (182 centimeters) during the growing season (McClintok and Tahir, 2004). During the growing season, it needs 400-500 mm of yearly rainfall. Irrigation has also proven positive effects on plant development in areas where rainfall is insufficient. It can be grown as a summer crop. The fruits do not ripen, but the herbs are edible. Rosella is a short-day plant that is highly photoperiod sensitive (McClintok and Tahir, 2004). Rosella plants demand well-drained, fertile soil with a pH ranging from 4.5 to 8.0. It can survive floods and strong winds (Duke, 1983).

2.2.4 Methods of rosella cultivation

Roselle is often grown from seeds, although it can also be grown from cuttings (Rolfs, 1916). The latter method results in shorter plants, which are preferred in India for interplanting with tree crops, but the calyces yield is low (Moorton, 1987). Micro-propagated plants were hardened in a greenhouse before being successfully grown in soil (Kumar et al. 2016).

2.2.5 Uses of rosella crop

2.2.5.1 Food processing

Roselle is commonly grown for its bast fiber in the plant's stem, which is also used as a jute alternative in the production of burlap (biodegradable fiber) (Puro et al. 2014). The red calyces are used to make a fruity drink (Morizella juice), as well as to color jams, jelly, marmalade, ice cream, sorbets, butter, pies, sauces, tarts, and other desserts. This plant's green leaves are eaten as a vegetable, similar to spinach. The leaves are also used to prepare spices and as a flavoring agent. Dried petals are used to make sweet herbal tea (Mohamed et al. 2012).

2.2.5.2 Medicinal uses

Calyces are also beneficial in lowering blood viscosity, lowering hypertension, and promoting healthy bone and tooth formation due to their high Ascorbic Acid or Vitamin C content (Fleck and Munves, 1962; Sionget al., 1988; Wong et al., 2002). It is also important for blood production. Calyx extracts have also been shown to be effective in eliminating radicals, acting as a preventative measure for liver disorders (Duh and Yen 1997; Furuta et al. 1998). A study indicated that Roselle extract has anti-inflammatory, anti-nociceptive, and antidiarrheal properties (Ali et al. 2005). Roselle extracts reduce excess fat in the liver and abdomen (Cid-Ortega and Guerrero-Beltran, 2015). Calyx extracts also help reduce body fat and body mass index (BMI). Calyces extracts also reduce calcium oxalate crystal formations in the kidneys due to their uricosuric impact, with no adverse side effects (Qi et al. 2005; Prasongwatana et al. 2008). Calyx extract also contains various amino acids that are beneficial to the body (Al-Wandawi, 2015). According to research findings, Roselle has strong anti-cancer properties against prostate cancer cells (Duke, 1983; Muhammad and Shakib, 1995). Recent research has also focused on the ant-diabetic properties of rosella calyx extract via increasing insulin secretion (Wisetmuen et al., 2013). G. Boiling the leaves also helps to treat foot cracks and ulcers quickly (Boudraa et al., 1990; Lin et al., 2007a).

The seeds of this plant are also a good source of lipid-soluble antioxidants, particularly gamma-tocopherol. Roselle seed extracts have been shown to suppress the growth of a variety of bacteria and fungi. Roselle extracts are also safe to use in skin conditioning treatments (Ali et al., 2005). Another study describes the immune-protective properties of Roselle extracts, which can protect human cells from cadmium-induced damage such as tumor necrosis (Sulistyani et al. 2016). Sepal extract has been used to treat leukemia, liver damage, hypertension, and pyrexia because of its high polyphenol content, particularly protocatechuic acid (Tseng et al., 2000). The petals could be an excellent source of antioxidants such as anthocyanin and ascorbic acid. Roselle's extracts include anthocyanin, which lowers bad cholesterol (LDL) levels in the blood (Hirunpanich et al., 2006; Lin et al., 2007b; Kuriyan et al., 2010). Dried petals are used to make sweet herbal tea (Mohamed et al. 2012).

Roselle tea can help reduce blood pressure in hypertensive and pre-hypertensive people (Muhammad and Shakib, 1995; Faraji and Tarkhani, 1999). Herbal tea has a variety of other health benefits, including the ability to soothe colds, coughs, and fevers, promote kidney function, aid digestion, and act as a general tonic and diuretic. Many plant parts are also utilized in traditional remedies, such as to treat urinary tract infections. Consumption of rosella juice in various quantities may aid in the treatment and prevention of renal stone disease by lowering creatinine, uric acid, citrate, tartrate, calcium, sodium, and potassium (Kirdpon, 1994). Roselle juice mixed with salt, pepper, and molasses is also used to treat coughs and biliousness (Mohamed et al., 2012). It also helps to boost stamina and balance electrolytes after exercise.

2.3 Marketing channels of rosella crop

Rosella marketing channels are critical for connecting producers with consumers and enterprises, determining the distribution and consumption of this adaptable crop (Nath. P, 2020). Rosella crop, also known as hibiscus sabdariffa, is appreciated for its culinary, medicinal, and ornamental uses, making it a popular product in many parts of the world (Ayedun, 2018).

Understanding the many routes via which rosella products are sold is critical for farmers, processors, and distributors to efficiently reach their target consumers and maximize profits (Miao & Seale, 2018). By examining the intricate network of marketing channels, including direct sales, online platforms, partnerships with food processors, and collaborations with specialty stores, stakeholders can develop strategic initiatives to capitalize on the growing demand for rosella products (Nath. P, 2020) in the Mudzi district. Academic research insights provide useful recommendations on customer preferences, market trends, and distribution tactics, which affect decision-making processes in the rosella business in Mudzi (Agymang & Egyir, 2019).

2.3.1 Direct sales to consumers

In regions where rosella is popular, such as parts of Africa, Asia, and Australia, local markets play a significant role in distribution, with farmers often selling fresh rosella pods or dried calyces directly to consumers (Zain, M. M, 2016). This direct-to-consumer approach not only

provides farmers with higher margins but also fosters relationships with consumers, leading to potential repeat purchases and word-of-mouth referrals in the district (Ayedun, 2018).

Consumers who buy directly from farmers can often get fresher rosella goods that have just been harvested, ensuring higher quality and better taste than products that have been sitting on store shelves for a long time (Ayedun, 2018). Direct sales provide consumers with transparency about the origin and production procedures of the rosella items they buy, allowing them to ask questions about growing methods and obtain insight into the product's journey from farm to table. Purchasing directly from farmers promotes a sense of community participation and support for local agriculture since consumers may meet the people who cultivate their food, learn about agricultural practices, and contribute directly to the local economy (Nath. P, 2020). This often provides farmers in the Mudzi district with higher profit margins than selling through intermediaries. By eliminating middlemen, farmers can retain a bigger share of the proceeds from each sale, adding to their financial stability (Nath P, 2020). Farmers in the Mudzi district have more pricing and marketing strategy flexibility thanks to direct sales, which allow them to modify prices based on factors such as demand, seasonality, and production costs without having to haggle with wholesalers and retailers.

2.3.2 Road side markets

Roadside markets are a direct-to-consumer technique in which farmers sell fresh rosella pods or dried calyces to individuals at roadside kiosks, farmers' markets, or on busy streets (Ayedun, 2018). These markets offer consumers an easy and simple way to buy rosella products, while farmers can promote their products and engage with customers in a dynamic, community-oriented setting.

Roadside marketplaces allow Mudzi district farmers to communicate directly with consumers, offering them knowledge about rosella products, production, and uses; thus, these personal interactions help create trust and loyalty among customers (Nath P, 2020). Farmers may offer their rosella products directly to consumers, eliminating the need for intermediaries and complex distribution networks (Cushman, G., 2016). Farmers have the freedom to set their prices and showcase their rosella goods in a way that captures consumers' attention (Kambe. Y & Dhale. D,

2019). Roadside markets benefit the local economy by boosting small-scale agriculture and entrepreneurship in the Mudzi district. They offer farmers a platform to sell their products locally, keeping money in the community and supporting rural livelihoods. Customers may reap the benefits of locally grown, freshly harvested rosella, which may be more tasty and nutritious than imported or processed alternatives (Ayedun, 2018).

2.3.3 Fresh Produce Markets

Fresh produce markets, also known as farmers markets or green markets, allow farmers to sell fresh rosella pods or dried calyces directly to consumers in a centralized site operated by a town council or private individuals (Chikazunga et al., 2008), such as Mbare Musika in Harare. These markets are usually hosted regularly in cities or suburbs, and they draw a wide client base interested in locally grown and seasonal produce

.

Fresh produce markets allow farmers in the Mudzi area to contact directly with consumers, giving them information about rosella products, growing methods, and uses, so increasing customer trust and loyalty (Nath. P, 2020). Participating in fresh produce markets encourages local agriculture and helps small-scale farmers by allowing them to present their products and highlight the range of locally cultivated crops such as rosella (Mohamed M, 2016). Consumers visiting fresh produce markets frequently value the freshness, quality, and uniqueness of locally grown produce, which presents an opportunity for farmers to charge higher prices for their rosella goods than mass-produced, commercially available alternatives (Ayedun, 2018). Fresh produce marketplaces allow Mudzi district farmers to network and engage with other growers, food artisans, and community organizations (Chai, S. S, 2019). However, fresh produce markets are often localized and may draw a smaller customer base than other marketing channels, such as online marketing (Ayedun, 2018).

2.3.4 Intermediaries markets

Intermediary marketplaces use middlemen or intermediates such as wholesalers, distributors, or retailers to ease the distribution and sale of rosella products (Nath. P,2020). These intermediaries

play an important role in linking producers with customers and businesses by managing duties such as transportation, storage, and marketing.

Intermediary markets allow rosella growers in Mudzi district to reach a larger client base by using the distribution networks and market presence of wholesalers, distributors, and retailers. This enables companies to reach remote or specialized markets that would be impossible to reach through direct sales (Ebuwa A. I, 2015). Intermediaries provide logistics such as transportation, storage, and inventory management, which simplifies the distribution process for rosella products (Nath P, 2020). Farmers in Mudzi district, on the other hand, may have limited pricing and branding control when selling their rosella goods through middlemen (Ayedun, 2018). Working with intermediaries generally incurs additional costs such as fees, commissions, and markups, reducing profit margins for rosella growers (Nath P, 2020).

2.3.5 Wholesale markets

Wholesale markets serve as key intermediaries in the distribution chain for rosella products, connecting producers with retailers, processors, and other businesses. These markets facilitate bulky sales and distribution of rosella products, including fresh pods, dried calyces, and processed goods from Mudzi to a wide range of buyers (Nath P, 2020).

Wholesale markets provide a central location for efficiently purchasing and selling big amounts of rosella goods (Ayedun, 2018). These markets give rosella farmers in the Mudzi area access to a wide range of clients, including merchants, processors, restaurants, and institutional purchasers, allowing them to reach numerous market segments and extend their customer base (Adepoju, A. O, 2015). Selling rosella products in bulk at wholesale markets allows farmers in the district to profit from economies of scale. Wholesale purchasers, on the other hand, frequently demand discounted pricing to cover their profit margins (Fasasi, O. S., 2017). Maintaining product quality and consistency can be difficult when selling through wholesale markets, especially if products are passed through many intermediaries before reaching the final consumer (Nath. P, 2020).

2.3.6 Retail markets

The retail market is the process of selling consumer goods or services, such as rosella crops, through multiple channels of distribution to meet consumer demand. Just like the rosella flower attracts pollinators, retail stores entice customers with their diverse selection of goods and services. According to Kotler and Armstrong's (2016) research, retail operations include the direct sale of rosella from Mudzi district growers to customers for personal use. According to Berman and Evans (2017), retailers play an important part in the distribution process by providing customers with a convenient location to purchase rosella crops and goods such as jam and jellies. Rosella farmers in the Mudzi region may sell their crops and rosella products through a variety of retail channels, including supermarkets, specialized stores, groceries, and convenience stores (Kotler P, 2016).

2.3.7 Processors markets

Processor markets involve selling rosella products such as dried calyces, to food processors and manufacturers who further process them into various products like teas, jams, syrups, or supplements (FAO, 2022 & Nath P, 2020). These markets serve as a critical link between rosella producers in Mudzi and the broader food industry, enabling the transformation of raw rosella materials into value-added products such as morizela juice (ITM).

Processor markets allow rosella farmers to add value to their products by selling them to food processors who can turn them into higher-value items (ITM). Food processors frequently have a continual demand for raw materials such as dried rosella calyces to continue producing final products (Nath. P, 2020). These markets give rosella producers in the district access to specialized markets that cater to specific consumer preferences or dietary needs. For example, processors may produce rosella-based products aimed at health-conscious consumers or those seeking natural and exotic ingredients (Okoli, N. J, 2019). However, rosella producers that sell to processors may become unduly reliant on them for market access and sale, limiting farmers in Mudzi's ability to negotiate better terms or seek alternate marketing channels (Ayedun, 2018). Negotiating rates with processors may be difficult for rosella growers in the district, particularly if they lack bargaining strength or are competing with other suppliers (Nath P, 2020).

2.3.8 Online market

The online market has arisen as an important marketing avenue for rosella products, allowing producers to reach a large audience while selling their products through various e-commerce platforms and digital channels (Kotler et al., 2016). According to Rosella Digital Marketing Agency 2023, the five primary digital marketing channels are email marketing, social media marketing, content marketing, search engine optimization, and media planning and buying.

Rosella farmers in the Mudzi region may offer their products to clients in various geographic locations, helping them to enter new markets and broaden their customer base (Kotler et al, 2016). Customers may explore and purchase rosella items from the comfort of their own homes, avoiding the need to visit physical stores and thereby reducing travel costs (Dholakia et al, 2015). Online platforms provide rosella producers in the district with valuable data analytics tools that can help them understand consumer behavior, preferences, and trends, allowing them to make more informed decisions about product development, pricing, and marketing strategies (Kotler et al, 2016). However, online marketing is extremely competitive, with several suppliers competing for consumers' attention (Dholakia et al, 2015). Online transactions pose digital security concerns such as data breaches, fraud, and identity theft (Dholakia et al., 2015).

2.3.9 Exports market

Export markets involve selling rosella products such as dried calyces or processed goods such as rosella jams to international buyers in foreign markets. This marketing channel allows rosella producers in the Mudzi district to access new markets beyond their domestic borders and capitalize on global demand for exotic and natural ingredients (WTO, 2020). Export marketing plays a crucial role in expanding the market reach of rosella products by tapping into international demand and reaching consumers beyond domestic borders (Muhammad et al., 2017). To engage in export marketing, rosella producers in Mudzi district need to comply with international trade regulations, quality standards, and certifications required by target markets (Usman et al., 2020).

Developing strong relationships with importers, distributors, and retailers in overseas markets is essential for building trust, securing long-term partnerships, and ensuring a consistent supply of

rosella products (Nguyen et al., 2021). Successful export marketing of rosella products may lead to increased profitability, brand recognition, and market competitiveness for farmers in developing countries like Zimbabwe (Jintasataporn et al., 2018). By strategically leveraging export channels, rosella producers in the Mudzi district may access a wider consumer base, diversify their customer portfolio, and contribute to the growth of the global superfood industry (Muhammad et al., 2017). However, exporting rosella products involves logistical challenges such as transportation, shipping, and customs clearance (Nath P, 2020).

2.4 Factors affecting the choice of marketing channel

The choice of rosella marketing channel is influenced by various factors such as the target market preferences, distribution infrastructure, and cost considerations (Sweeney et al., 2016). Producers in Mudzi may need to assess the demand for rosella products in different market segments and select channels that align with consumer preferences and purchasing behaviors (Kumar et al., 2018). The availability of efficient transportation networks and logistics services plays a crucial role in determining the feasibility of using certain marketing channels, especially when targeting distant or international markets (Jones et al., 2020). Economic factors, including production costs, pricing strategies, and profit margins, also impact the decision-making process when choosing a marketing channel for rosella products (Smith et al., 2019). Furthermore, regulatory requirements, compliance standards, and certification processes may influence the selection of marketing channels to ensure legal compliance and access to specific markets (Brown et al., 2021). Consideration of the competitive landscape, market trends, and industry dynamics is essential in identifying opportunities and challenges associated with different marketing channels for rosella products in the district (Gupta et al., 2017).

2.5 Challenges faced in marketing rosella

Farmers face several challenges in marketing rosella crops, including limited market access due to inadequate transportation infrastructure and remote location of farms (Osei et al., 2018). Poor road networks and lack of storage facilities in Mudzi district may hinder farmers' ability to transport their rosella products to markets efficiently, leading to spoilage and reduced profitability (AgYEI et al., 2020). Additionally, fluctuations in supply and demand dynamics can

pose challenges for farmers in managing inventory levels and pricing strategies to maximize returns on their rosella produce (Kwadwo et al., 2019). Limited knowledge of market trends, consumer preferences, and marketing strategies may also impede farmers' efforts to effectively promote and sell their rosella products in competitive markets (Obeng et al., 2021). Furthermore, insufficient access to market information, pricing transparency, and market intelligence may constrain farmers from making informed decisions regarding the sale and distribution of their rosella crops in the district (Boakye et al., 2017). The lack of proper quality control measures, certification requirements, and compliance standards may further complicate the marketing process for rosella farmers in Mudzi, especially when targeting export markets with stringent regulations (Appiah et al., 2016).

2.6 Theoretical framework

A theoretical framework is a foundational review of existing theories that serve as a roadmap for developing the arguments you will use in your work and is also a theoretical foundation for understanding a particular phenomenon or problem (Kaplan, D., & Duchon, D., 1988). Marketing channels refer to the pathways through which products move from producers to consumers. Marketing channels play a crucial role in connecting farmers with buyers and facilitating the distribution of rosella products to end-users. The selection of appropriate marketing channels can impact the profitability and market reach of rosella farmers.

2.6.1 Resource-based View Theory (RBV)

The Resource View theory is a managerial framework used to identify the strategic resource a firm can exploit to achieve sustainable competitive advantage (Barney, J. B., 1991). For resources to hold potential as sources of sustainable competitive advantages, they should be valuable, rare, imperfectly imitable, and substitutable. In the Mudzi district, this RBV theory suggests that the unique attributes of rosella crop such as their high nutritional value and medicinal properties, can serve as valuable resources that farmers in the district may leverage to differentiate their products in the market and capture higher margins. Farmers in the Mudzi district may gain a competitive advantage if they segment their market according to nutritional value and medical properties targeting customers who need these properties.

2.6.2 Agricultural Marketing Theory

Agricultural marketing theory investigates how agricultural products are distributed from producers to consumers, as well as the economic ideas that underpin this process. This theory tackles the distinct characteristics of agricultural markets, such as seasonality, perishability, and the inelasticity of supply and demand (Kohls & Uhl, 2002). It also investigates the responsibilities of various market participants, price formation mechanisms, and how government policies affect market efficiency and equality (Kohls & Uhl, 2002).

The structure of agricultural markets can vary widely, ranging from perfectly competitive markets with many small producers to oligopolistic markets with few large firms. Market structure influences pricing, market power, and the distribution of profits along the value chain (Porter, 1985). In perfectly competitive markets, numerous producers and consumers interact, leading to price-taking behavior and minimal individual market power. In contrast, oligopolistic markets feature significant price-setting power by a few dominant players (Porter, 1985).

According to Bain (1959), Market conduct refers to market actors' activities and strategies, such as price, product differentiation, and market entry and exit. Agricultural producers may differentiate their products based on quality, branding, or production methods (for example, organic versus conventional). The level of competition and the structure of the market have a significant impact on market behavior.

Market performance measures how successfully a market performs its economic functions, such as guaranteeing efficient resource allocation, achieving customer happiness, and delivering fair returns to producers (Tomek & Kaiser, 2014). Price stability, market access, and general welfare are all considered performance measures. Effective agricultural markets should promote smooth transactions, reduce transaction costs, and ensure that all market participants gain equally (Tomek & Kaiser, 2014).

Price formation in agricultural markets is influenced by supply and demand dynamics, market structure, and external factors such as government policies and global market trends. Prices in agricultural markets are often volatile due to factors like weather conditions, pest outbreaks, and

seasonal variations. Mechanisms like futures markets and government price supports can help stabilize prices and reduce uncertainty (Gardner, 1975). Intermediaries including wholesalers, processors, and retailers, play a crucial role in agricultural marketing by facilitating the movement of products from farms to final consumers. They provide essential services such as aggregation, storage, transportation, and value addition. The presence of intermediaries can affect price transmission and market efficiency (Kohls & Uhl, 2002). Government interventions in agricultural markets, such as subsidies, price supports, and trade policies, can significantly influence market outcomes. Policies aimed at stabilizing prices, ensuring food security, and supporting farmers' incomes are common in many countries. However, such interventions can also lead to market distortions and unintended consequences (Schmitz, Furtan, & Baylis, 2002).

Market Structure In Mudzi District, the market structure for rosella farming is characterized by many small-scale farmers with limited market power. These farmers often operate in a competitive environment with minimal influence over market prices. The fragmented nature of the market leads to price-taking behavior, where individual farmers accept market prices rather than setting them. This structure may limit farmers' ability to achieve economies of scale and improve bargaining power (Pingali, Khwaja, & Meijer, 2005). **Market Conduct** Rosella farmers in Mudzi District engage in various market conduct practices to improve their market outcomes. These include forming cooperatives to enhance collective bargaining power and adopting quality differentiation strategies to appeal to niche markets. For example, some farmers might focus on organic production methods to target health-conscious consumers. Such strategies might help farmers achieve better prices and market access despite the competitive market structure (Staatz, 1987).

The performance of the rosella market in Mudzi District may be evaluated based on several indicators, including price stability, market access, and income levels for farmers. Effective market performance would ensure that rosella farmers receive fair prices, have reliable access to markets, and achieve sustainable incomes. However, challenges such as price volatility, market access limitations, and high transaction costs may hinder market performance. Addressing these challenges through improved market information systems, infrastructure development, and supportive policies can enhance overall market performance (Tomek & Kaiser, 2014). Price formation for rosella in Mudzi District is influenced by supply and demand dynamics, seasonal

variations, and market intermediaries. Prices tend to be volatile due to factors like weather conditions and production levels. Farmers often lack access to price information and market trends, leading to suboptimal pricing decisions. Establishing market information systems and price stabilization mechanisms can help reduce price volatility and improve farmers' incomes (Gardner, 1975).

Intermediaries play a crucial role in the rosella market by providing aggregation, transportation, and value addition services. They help bridge the gap between small-scale farmers and larger markets, enhancing market efficiency. However, intermediaries can also capture a significant portion of the value, reducing the share of profits that reach farmers. Strengthening farmers' cooperatives and improving direct market access can help balance the power dynamics and ensure a fairer distribution of benefits (Kohls & Uhl, 2002). Government policies can significantly impact the rosella market in Mudzi District. Supportive policies such as subsidies for inputs, infrastructure development, and access to credit can enhance farmers' productivity and market access. However, poorly designed policies can lead to market distortions and inefficiencies. For instance, excessive price controls or export restrictions can disrupt market signals and harm producers. A balanced policy approach that support market development while minimizing distortions is essential for improving market outcomes for rosella farmers (Schmitz, Furtan, & Baylis, 2002).

2.6.3 Transaction Cost Economics Theory

Transaction Cost Economics (TCE) is a theoretical framework that examines the costs of participating in a market, beyond the prices of the goods or services themselves. Developed by Ronald Coase in his seminal paper "The Nature of the Firm" (1937) and later expanded by Oliver Williamson, TCE focuses on the costs associated with exchanging goods or services, such as search and information costs, bargaining costs, and enforcement costs (Coase, 1937; Williamson, 1979).

Transaction costs include all the costs incurred during the exchange of goods or services. Costs incurred in determining that the required good is available on the market, identifying the best deal, and gathering the necessary information to complete the transaction (Stigler, 1961). Costs

associated with negotiating and arriving at an acceptable agreement with the other party (Williamson, 1979). 3. Costs of ensuring that the other party sticks to the terms of the contract and taking action if they do not (Williamson, 1981).

Bounded rationality refers to the limited cognitive abilities of individuals to process information and make perfectly rational decisions (Simon, 1957). Opportunism is the assumption that individuals may act in their self-interest with guile, which can lead to dishonest or unfair behavior (Williamson, 1979). Asset Specificity refers to investments that are specific to a particular transaction or relationship and have limited value outside of that context. High asset specificity increases transaction costs because it creates a dependency between parties (Williamson, 1985). Transactions that occur frequently or under high uncertainty tend to have higher transaction costs. Frequent transactions benefit from economies of scale in transaction management, while uncertain transactions require more complex contracts and safeguards (Williamson, 1985).

Farmers in Mudzi District face significant search and information costs due to limited access to market information. Farmers must spend considerable time and resources to identify potential buyers, understand market prices, and determine the quality standards required (Jensen, 2007). This often results in suboptimal decisions and missed opportunities. Improved access to market information systems may reduce these costs and enhance market efficiency (Jensen, 2007). The bargaining power of individual rosella farmers is typically low due to their small-scale operations and lack of market knowledge. Negotiating fair prices and favorable terms can be challenging, especially when dealing with larger buyers or intermediaries. Forming cooperatives or farmer groups can help mitigate these costs by pooling resources, sharing information, and enhancing collective bargaining power (Staatz, 1987).

Ensuring that buyers adhere to agreed-upon terms can be costly for rosella farmers, particularly in informal markets where legal enforcement mechanisms are weak or non-existent. Farmers might face issues such as delayed payments or buyers reneging on agreements. Developing standardized contracts and establishing trust-based relationships can help reduce these enforcement costs (Klein, Crawford, & Alchian, 1978). The limited ability of rosella farmers to process complex market information and their susceptibility to opportunistic behavior by buyers

or intermediaries pose significant challenges. Opportunistic behavior can manifest as buyers taking advantage of farmers' lack of knowledge to offer lower prices or alter terms of trade unfavorably. Training programs that enhance farmers' market literacy and negotiation skills can mitigate the impact of bounded rationality and opportunism (Williamson, 1979). Investments in specific assets, such as specialized drying equipment or packaging for rosella, increase dependency on particular transactions or buyers. This dependency can heighten transaction costs and risks if the relationship breaks down. Diversifying market channels and reducing dependency on specific buyers can lower these risks and associated costs (Williamson, 1985).

The frequency of transactions and the uncertainty inherent in agricultural markets, such as fluctuating prices and weather conditions, contribute to higher transaction costs. Regular, reliable market access can lower costs by providing consistent demand and reducing uncertainty. Establishing long-term contracts or partnerships with buyers can help rosella farmers in the Mudzi district stabilize market relationships and lower transaction costs (Williamson, 1985).

Chapter 3: Research Methodology

3.0 introduction

Methodology refers to the systematic and structured approach used to conduct research, investigation, or analysis (Kumar R, 2019). This encompasses the principles, techniques, and tools employed to gather, analyze, and interpret data such as questionnaires and interviews.

3.1 Brief description of the study area

This project's research area is the Mudzi district in Zimbabwe's Mashonaland East province. Mudzi is located in the country's northeast and shares borders with Mozambique to the east (USAID). The district is entirely communal and agrarian, with four (4) service centers: Kotwa Growth Point, which serves as the district's modal administrative center, Nyamapanda border post, Makaha, and Suswe. Mudzi consists of 18 wards (FAO & ACFD, 1999). The district has growth points and rural service centers as settlements. Mudzi RDC also has communal rural

settlements. Mudzi district is mostly rural, with agriculture being the main economic activity. The climate in the region is semi-arid, with hot summers and mild winters. Rainfall patterns vary greatly, with the rainy season lasting from November to March. Droughts are common in the district, which can have a significant impact on agricultural productivity.

Mudzi's topography is varied, with some areas having undulating terrain and others being relatively flat. The district's soils range from sandy loams to clayey soils, with fertility varying by region. Water availability can be a challenge, especially during the dry season, necessitating farmers to employ water-saving techniques and investigate drought-resistant crops. Mudzi district's population is primarily made up of small-scale farmers who rely on subsistence farming for a living. The main staple crops grown in the area are maize, groundnuts, sorghum, and cowpeas. Livestock rearing, particularly cattle, goats, and poultry, is also important to the local economy. Despite its agricultural potential, Mudzi faces several challenges, including limited market access, insufficient infrastructure, and limited extension services. However, the district also provides opportunities for diversification and sustainable agricultural practices, such as rosella farming, which can improve food security, income generation, and farmer resilience to climate change.

Understanding the study area's unique characteristics is critical for developing appropriate interventions and strategies to promote Roselle production. This project aims to empower farmers in the Mudzi district to incorporate Roselle cultivation effectively and improve their overall agricultural productivity and well-being by taking into account existing farming activities, environmental conditions, marketing channels, and profitability of the crop. The ten wards of Zimbabwe's Mudzi district each have their distinct characteristics and farming activities. When incorporating Roselle production into these areas, it is critical to consider existing agricultural practices, soil conditions, water availability, and local community preferences.

DISTRICT NAME: MUDZI

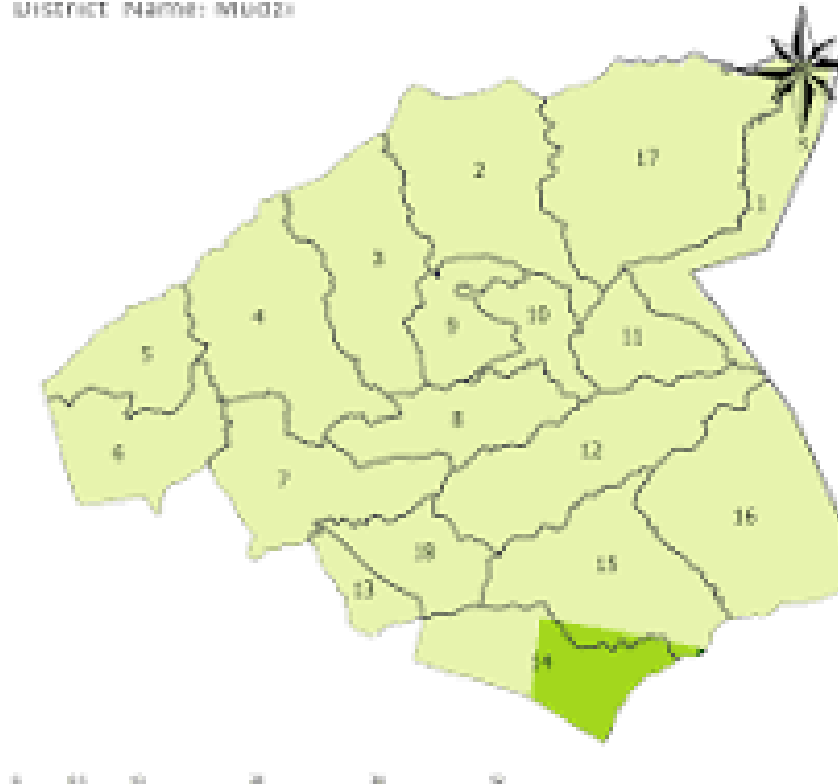


Figure 1: Mudzi district map (FAO)

3.2 Research Design

The research design is the general plan or blueprint that directs data collection, analysis, and interpretation in a research study. This research design provides a road map for doing the investigation systematically. To gain a full understanding, a mixed-method research design integrating quantitative and qualitative data collection approaches was adopted. The goal of the study is to examine the marketing channels, challenges farmers face when marketing, and profitability of the rosella production in Mudzi District.

3.2.1 Sampling

Sampling is the process of picking a subset of individuals, items, or pieces from a larger population to represent its characteristics. Sampling is an important part of research since it helps researchers collect data efficiently and effectively while reducing costs and time (Bryman, 2016).

3.2.2 Target population

The study's primary focus is on its target population. It depicts the group of people that the researcher wishes to learn more about and form conclusions about their traits, activities, and experiences (Neuman, 2014). The target population for this research study is Rosella farmers in Mudzi District. These farmers are directly involved in the cultivation, marketing, and sale of the Rosella crop in Mudzi District.

3.2.3 Sampling techniques

Sampling techniques are the methods or procedures used to choose a selection of individuals or items from a broader population for analysis in a research study (Neuman, 2014). It entails systematically selecting samples to conclude the overall population. This study employs two sampling techniques: stratified random sampling and convenience sampling. Stratified random sampling divides a population into discrete subgroups or strata based on certain features, such as wards, as used in this study. This guarantees that the wards are representative of the entire population and enables comparisons between farmers in different wards in the Mudzi district.

Convenience sampling selects participants depending on their ease of access to the researcher (Creswell, J. D., 2017). In this technique, people who are easily accessible or available are included in the sample. Convenience sampling includes Rosella farmers who are not involved with agricultural cooperatives or extension agencies and may be more difficult to identify using typical sampling methods.

3.2.4 Sample size

Sample size refers to the number of individuals included in the research sample (Babbie E, 2016). This study has a sample size of 10 farmers from each of the seven wards to be sampled. Out of 18 wards in Mudzi District seven wards were used and only 10 farmers from each ward were chosen to make it 70 farmers to be studied.

3.3 Data collection methods

3.3.1 Secondary data

Secondary data refers to existing data that has been previously collected, processed, and published by others such as researchers, organizations, or government (Lewis P, 2018). This type of data is readily available and can be accessed through various sources including online databases, academic journals, books, and market research reports (Kumar, R, 2019).

- Academic Research

This study uses information collected from scholarly studies and dissertations conducted by researchers in various fields often available in libraries and online repositories.

- Published sources

This study uses information from books, academic journals, newspapers, magazines, and reports published by government agencies and other NGO organizations.

3.3.2 Primary data

Primary data refers to original data collected directly from the source, specifically for a research study (Kumar R, 2019). It is fresh, first-hand information gathered through various methods such as surveys, interviews, and questionnaires (Lewis P, 2018). This study employed a combination of quantitative and qualitative data-gathering approaches to provide thorough insights into the research objectives. The data-collecting methods used include:

- Questionnaires

Questionnaire forms were distributed to Rosella farmers in Mudzi district to collect quantitative data on several elements such as production costs, sales revenue per hectare, marketing channels employed, value chain, and Rosella profitability.

- Interviews

Semi-structured interviews with farmers and key stakeholders, including Rosella intermediaries, extension officers, dealers, and processors, were performed to gain in-depth qualitative insights into marketing strategies, difficulties, and potential.

- Focus group discussions

A small group of Rosella farmers met to examine marketing routes and the profitability of the Rosella crop in the Mudzi area. These group talks encouraged farmers to communicate and exchange ideas, revealing common experiences, perspectives, and preferences.

3.3 Data Analysis Methods

- Descriptive analysis

This study uses descriptive analysis to summarize the various marketing channels available to farmers in Mudzi District. This classifies the many marketing channels, including direct sales, wholesale marketplaces, and export markets. Descriptive statistics such as frequencies, percentages, and averages were used to create a clear image of marketing channel distribution and characteristics.

- Regression analysis

Regressions aid in identifying the characteristics that influence farmers' choice of rosella marketing channel. The data was collected on a variety of independent variables, including farm size, distance to markets, access to transportation infrastructure, market information availability, and farmers' socioeconomic characteristics. By regressing these variables against the dependent variable (choice of marketing channel), the study discovers characteristics that influence farmers' marketing channel decisions. Qualitative analysis

A qualitative study is critical for determining the obstacles farmers encounter when marketing rosella in Mudzi District. Farmers were interviewed and held focus group talks to learn about their experiences, perspectives, and concerns about rosella marketing. This technique contributes to a better understanding of the underlying challenges and complexities of rosella marketing in Mudzi District.

Table

Objective Research question Analytical Tool

To identify marketing channels of rosella in Mudzi District What are the marketing channels of rosella in Mudzi District? Descriptive analysis

Table 1: Analytical tools

Objective	Research question	Analytical Tool
To identify marketing channels of rosella in Mudzi District	What are the marketing channels of rosella in Mudzi District?	Descriptive analysis
To determine the factors that influence farmers choice of rosella marketing channel in Mudzi District	What are the factors that influence the farmer's choice of rosella marketing channel?	Descriptive Analysis
To investigate the challenges being faced by farmers when marketing rosella in the district	What are the challenges faced by farmers when marketing rosella in Mudzi district?	Regression Analysis, R squared

Chapter 4: Results and discussions

4.1 Introduction

Data presentation and discussions are the process of visually representing and analyzing data to communicate findings, insights, and interpretations (Edward R., 1986). It involves representing data in various formats such as tables, charts, graphs, or infographics, and then discussing the implications and significance of the findings (Stephen M, 2006). This chapter portrays the findings of the study on demographic characteristics such as sex, age, educational level, and occupation of the rosella farmers in the Mudzi district. It also presents findings on the types of marketing channels used by rosella farmers in the district as well as factors that affect the choice of these marketing channels. The chapter ends with representing on the challenges farmers face when marketing rosella and the value chain of rosella crops in the district.

4.2 Demographic information

Table 2: Demographic information

Demographic	Category	n=66	%=100
Sex	Male	26	39.4
	Female	40	60.6
Age	18-25	0	0
	26-35	5	7.6
	36-45	30	45.5
	46-55	13	19.7
	>56	18	27.3
Highest level of education	Primary	2	3
	Secondary	61	92.4
	Tertiary	2	3
	Informal	1	1.5
Occupation	Full time	32	48.5
	Part time	34	51.5

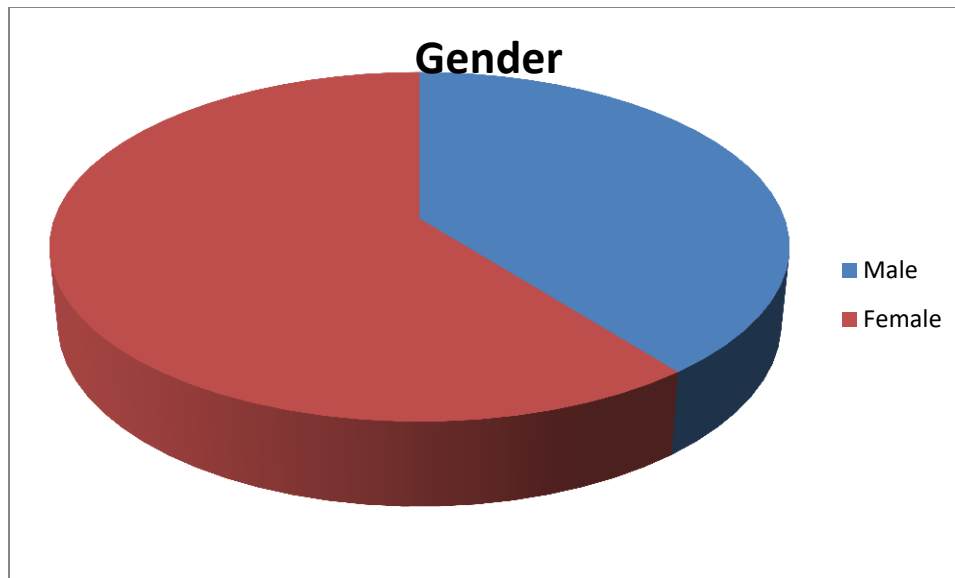


Figure 2: Gender

The study on rosella farming in Mudzi district highlights the involvement of both men and women in agricultural production. Among the respondents, 39.4% were male, while the majority, accounting for 60.6%, was female. This indicates that female farmers were more actively engaged in the rosella production and marketing activities. The research support that women play a crucial role in agricultural production worldwide (FAO, 2011). According to World Bank (2009), women farmers typically achieve lower yield than men but in Mudzi districts it's the opposite. Women often have less secure land tenure compared to men, which limits their ability to invest in land improvements and access credit (Agarwal, 2003).

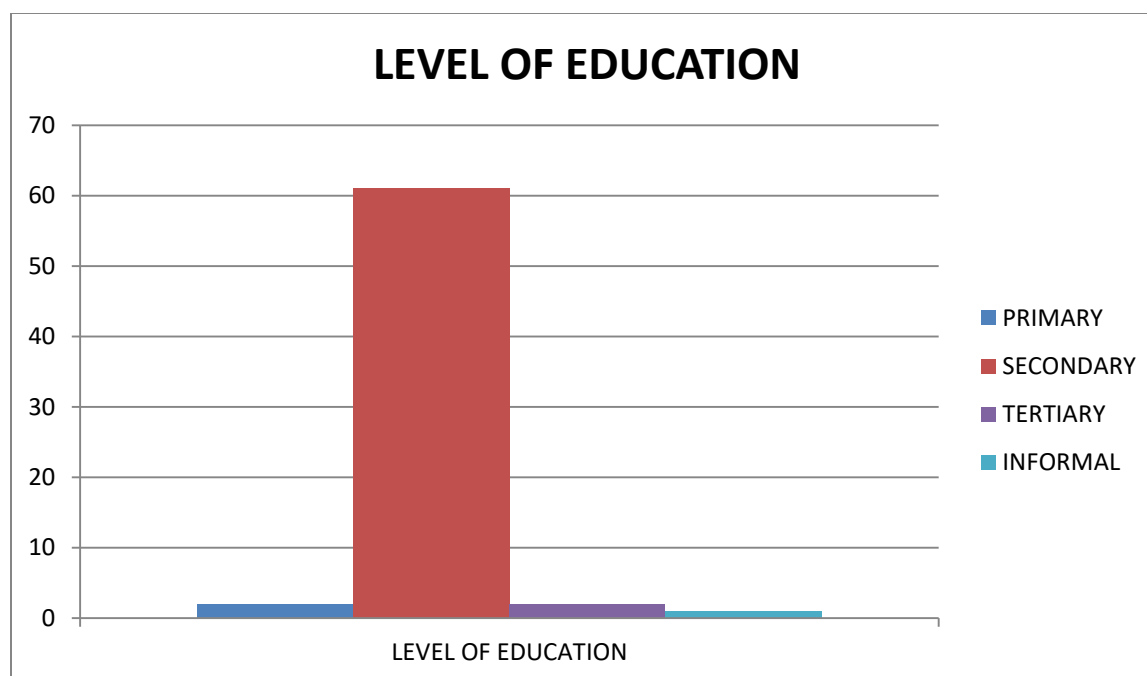


Figure 3: Level of education

Regarding education, the respondents' highest level of education varied. The majority of the participants, constituting 92.4%, had completed secondary education. This suggests that a significant proportion of rosella farmers in the district have attained a basic level of formal education, which may positively influence their decision-making abilities, access to information, and overall understanding of agricultural practices. A smaller percentage of respondents (3%) had a tertiary education, indicating that a few farmers possess higher levels of formal education. These individuals may potentially bring additional skills and knowledge to their rosella farming practices, which could impact their marketing strategies and decision-making processes. A very small number of respondents (1.5%) had only completed primary education, demonstrating the presence of rosella farmers with limited formal education. This finding suggests that there may be variations in educational backgrounds among rosella farmers, which could influence their access to information, market understanding, and adoption of modern agricultural practices.

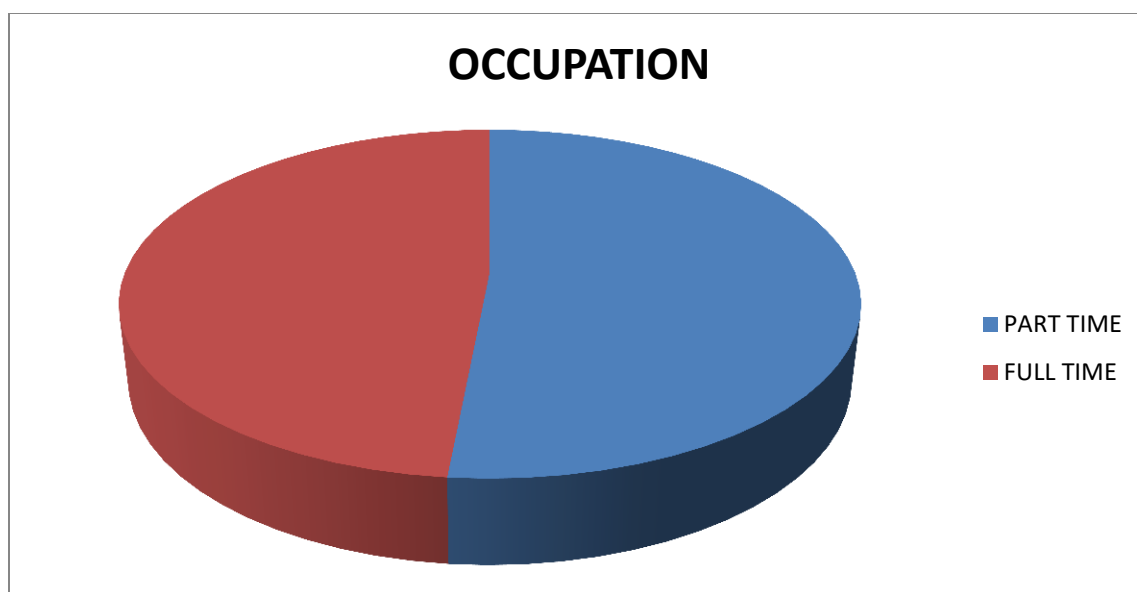


Figure 4: Occupation

The occupation of the respondents was categorized into full-time and part-time farmers. Among the participants, 48.5% identified themselves as full-time farmers, while 51.5% identified as part-time farmers. This suggests that rosella farming is not the sole occupation for a significant number of rosella farmers in Mudzi District. They may be involved in other economic activities alongside rosella cultivation, which could impact their availability and commitment to the marketing process as some are part-time farmers.

4.3 Marketing channel of rosella crop

Table 3: Marketing channels

Marketing channels	Frequency	Percentage	Cumulative percentage
Export	1	1.4	9.7
Intermediaries	2	2.8	12.5
NGOs assisted	56	77.8	90.3
Retail	2	2.8	93.1

Retail & Roadside	1	1.4	94.4
Roadside	1	1.4	95.8
Wholesale	3	4.2	100

The bar graph

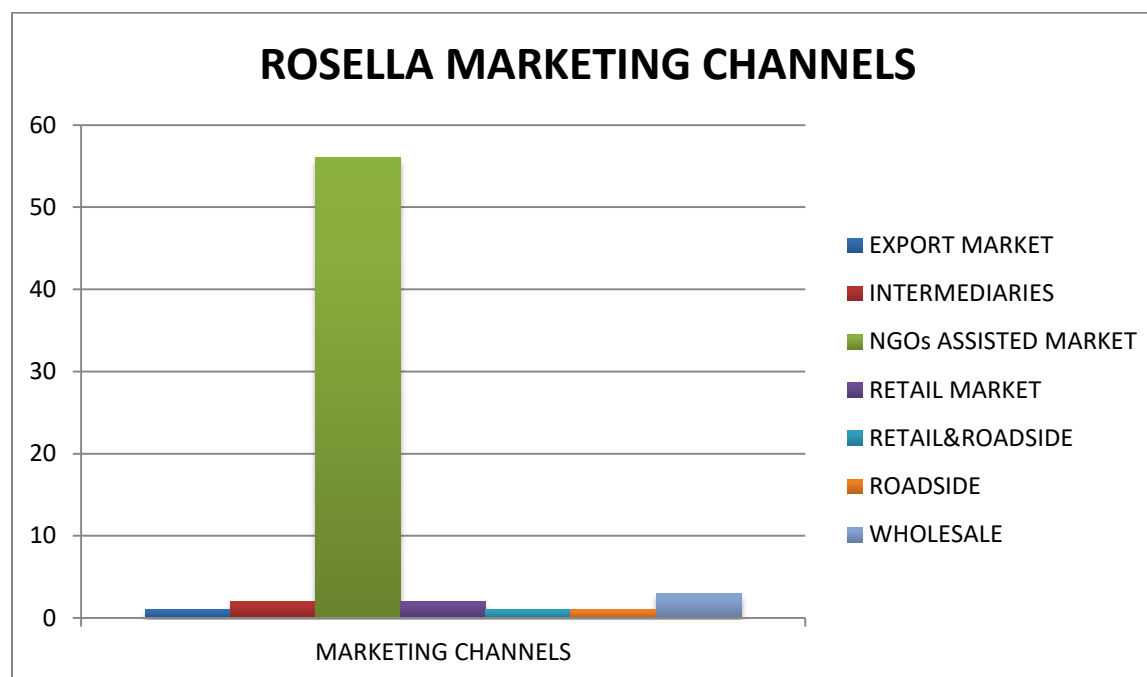


Figure 5: Marketing channels

The results of the study indicate that farmers in Mudzi District choose different marketing channels for their rosella produce. Among the respondents, the majority (77.8%) opted for marketing their rosella through NGO assisted markets. This finding suggests that NGOs play a crucial role in supporting and facilitating the marketing of rosella for farmers in the district. The presence of NGOs likely provides farmers with access to market information, connections to buyers, and assistance in navigating the marketing process (FAO, 2011). While NGO assisted is the dominant channel, a smaller percentage of respondents chose other options. Intermediaries were chosen by 2.8% of farmers, indicating that some farmers rely on middlemen or intermediaries to connect them with buyers. This could be due to the intermediaries' ability to provide market access and handle marketing logistics on behalf of the farmers.

Retail and wholesale channels were selected by a small percentage of respondents, each accounting for 2.8% and 4.2%, respectively. This suggests that some farmers directly sell their rosella products to retail outlets or wholesalers. These farmers may have established relationships with local retailers or wholesalers, allowing them to bypass intermediaries and capture a larger portion of the profit margin. The direct export of rosella was chosen by only 1.4% of respondents. This indicates that direct export is not a common marketing channel among rosella farmers in Mudzi District. Factors such as limited knowledge of export procedures, market requirements, or a lack of access to international markets may contribute to the low prevalence of this channel.

Overall, in Mudzi district rosella farmers sell their crops using different marketing channels discussed above. According to Berman, these marketing channels play a pivotal role in connecting farmers with customers around and beyond the district. Nongovernmental companies link farmers directly with lucrative buyers. The rosella buyers come directly to the farm accompanied by these NGOs (BIZ, 2022) hence; transport cost to the markets is reduced leading to greater profits as compared to other marketing channels. Rosella farmers are also given all the inputs such as rosella seeds and fertilizers by the NGOs hence, production costs are reduced leading to lucrative profits (BIZ, 2022). Other marketing channels such as wholesale, export, and retail markets require transport costs for marketing hence becoming costly to the farmers in the district. However, intermediary markets reduce also transportation costs as they provide farmers with the logistics but may negotiate prices for their benefit rather than farmers (Nath P, 2020). In Sudan, a project by the UNIDO supported smallholder farmers growing rosella. The project provided training, market linkages and access to international markets the same way the Pundutso project by BIZ is doing in Mudzi district. Rosella farmers in Nigeria were supported by the International Fund for Agriculture Development (IFAD) highlighted similar outcomes.

4.4 Factors affecting the choice of rosella marketing channel

Table 4: Factors affecting choice

FACTOR	RESPONSE #	%
Distance to the market in KM	2	3
Price offered in \$	52	80
Market demand/ Quantity demanded	1	1.5
Transport cost to the market	1	1.5
Quality requirement	2	3
Risk and Uncertainty	8	12

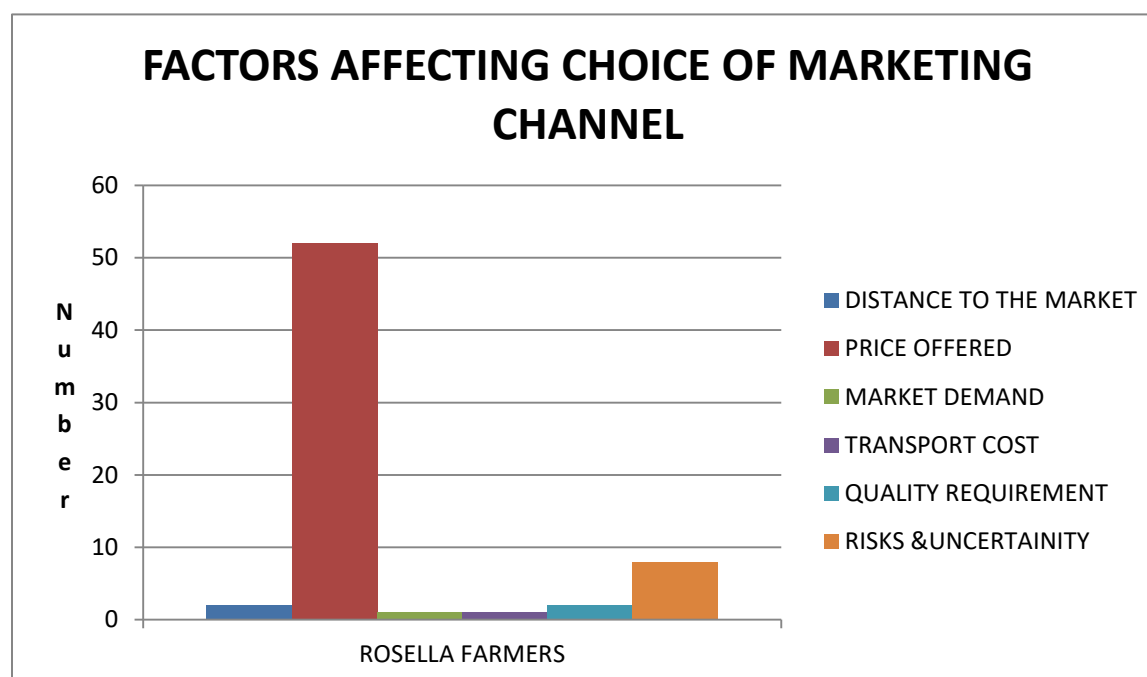


Figure 6: factors affecting choice

Related to the factors that influence farmers' choice of rosella marketing channels in Mudzi District, Only 3% of respondents cited distance to the market as a factor influencing their choice

of rosella marketing channel. This suggests that for a small portion of farmers, the proximity of the market plays a role in their decision-making process. The majority of respondents (80%) identified the price offered as a significant factor influencing their choice of rosella marketing channel. This indicates that farmers prioritize the financial aspect and seek to maximize their profits by selecting channels that provide favorable price offers for their rosella produce.

Furthermore, Market demand or quantity demanded was mentioned as a factor by only 1.5% of respondents. This suggests that for a small proportion of farmers, the level of demand for rosella in the market influences their choice of marketing channel. Similar to distance, transport cost to the market was mentioned as a factor by only 1.5% of respondents. This indicates that a small number of farmers consider transportation expenses when selecting a marketing channel for their rosella produce.

In addition, two percent of respondents identified quality requirements as a factor influencing their choice of rosella marketing channel. This suggests that some farmers prioritize channels that have specific quality standards or requirements, ensuring that their rosella meets the desired quality criteria of buyers and consumers. Approximately 12% of respondents mentioned risk and uncertainty as factors influencing their choice of rosella marketing channel. This indicates that some farmers consider factors such as market volatility, price fluctuations, and uncertain demand when deciding on the most suitable channel for their rosella.

The study on rosella farmers in Mudzi district reveals that the price offered in different markets significantly influences their choice of marketing channel. Farmers in Mudzi district are highly sensitive to the prices offered in various markets. A study in Sudan found that rosella farmers prefer selling their produce to urban markets and export channels facilitated by NGOs due to the higher prices offered compared to local markets and middlemen (UNIDO, 2011). Farmers in Nigeria engaged in NGOs programs that provided access to international markets reported higher incomes due to premium prices offered (IFAD, 2016). These programs helped farmers in Nigeria, Sudan and Zimbabwe to bypass local middlemen, who generally offer low prices (IFAD, 2016). The Pundutso program by Bio Innovation Zimbabwe helped rosella farmers in the district through lucrative markets that are more profitable compared to all other marketing channels. Maize farmers in Kenya show a strong preference for marketing that offer high prices (Mathenge,

2012). Maize farmers are willing to incur additional transportation costs to access urban markets where they can sell their produce at better prices (Olwande, 2012). According to Michael K (2014), access to market information significantly influences the choice of marketing among Tanzanian farmers. Farmers with better access to market information are more likely to engage indirect or sell through cooperatives as they are better informed price trends and demand (Magesa M, 2014).

4.5 Challenges farmers face when marketing rosella crop

Table 5: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.953 ^a	.909	.758	.81650	.909	6.000	5	3	.086

a. Predictors: (Constant), GENDER, PRICE VOLATILITY, LIMITED RESOURCES, AVAILABILITY OF INFORMATION, MARKET ACCESS

b. Dependent Variable: MARKETING CHANNEL

Firstly, The regression results reveal a strong relationship between the predictors (GENDER, PRICE VOLATILITY, LIMITED RESOURCES, AVAILABILITY OF INFORMATION, and MARKET ACCESS) and the dependent variable (MARKETING CHANNEL). The multiple correlation coefficient (R) indicates a positive correlation, with a value of 0.953. This suggests a robust association between the predictors and the choice of marketing channels for the Rosella crop. The coefficient of determination (R Square) is 0.909, indicating that approximately 90.9% of the variance in the MARKETING CHANNEL can be explained by the predictors included in the model. This demonstrates that the selected predictors collectively have a substantial impact on farmers' decisions regarding their choice of marketing channels.

Furthermore, the adjusted R Square, which considers the number of predictors and sample size, is 0.758. This adjusted value provides a more conservative estimate of the proportion of variance

explained by the model. The standard error of the estimate, which measures the average distance between the observed values and the predicted values generated by the regression model, is 0.81650. This value indicates the level of accuracy or precision of the model's predictions.

Additionally, the change statistics provide insights into the impact of adding predictors to the model. The R Square Change shows an increase of 0.909, indicating that the inclusion of the predictors significantly improves the model's ability to explain the variance in the MARKETING CHANNEL. The F Change statistic, which tests the overall significance of adding the predictors, has a value of 6.000. With degrees of freedom (df1, df2) as (5, 3), the associated significance level (Sig. F Change) is 0.086. This suggests a marginal level of significance, indicating that the addition of predictors may have some uncertainty in terms of the model's overall fit.

Table 6: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	7.087E-016	1.722		.000	1.000
AVAILABILITY OF INFORMATION	2.000	.894	.532	2.236	.111
PRICE VOLATILITY	1.165E-015	.894	.000	.000	1.000
MARKET ACCESS	-1.112E-015	.894	.000	.000	1.000
LIMITED RESOURCES	3.000	1.095	.603	2.739	.071
GENDER	-1.000	.837	-.318	-1.195	.318

a. Dependent Variable: MARKETING CHANNEL

The constant term, which represents the expected value of the MARKETING CHANNEL when all predictors are zero, is very close to zero and is not statistically significant, indicating that it does not have a meaningful impact on the MARKETING CHANNEL.

The predictor AVAILABILITY OF INFORMATION has a coefficient of 2.000, suggesting that an increase in the availability of information is associated with an increase of 2 units in the expected value of the MARKETING CHANNEL. However, the statistical significance of this relationship is marginal ($p = 0.111$). The coefficients for PRICE VOLATILITY and MARKET ACCESS are both very close to zero, indicating that changes in these variables do not have a substantial impact on the expected value of the MARKETING CHANNEL. These relationships are not statistically significant.

The predictor LIMITED RESOURCES has a coefficient of 3.000, indicating that an increase in limited resources is associated with an increase of 3 units in the expected value of the MARKETING CHANNEL. The standardized coefficient (Beta) suggests a moderate positive impact. However, the statistical significance of this relationship is marginally significant ($p = 0.071$).

The predictor GENDER has a coefficient of -1.000, implying that being female (GENDER = 1) is associated with a decrease of 1 unit in the expected value of the MARKETING CHANNEL compared to being male (GENDER = 0). The standardized coefficient (Beta) suggests a moderate negative impact. However, the statistical significance of this relationship is not observed ($p = 0.318$).

Farmers in the Mudzi district are faced with different challenges when marketing rosella crops such as lack of market information, price volatility, limited resources, etc. (Osei et al, 2018). These challenges hinder farmers from selling their rosella crop hence affecting the profitability and income of farmers in Mudzi district. In Mozambique, rosella farmers lack advanced technology and income to effectively market their rosella crop and the Morizella juice they produce (Mohamed et al. 2012). Mudzi district farmers have better technology such as mobile phones as compared to those rosella farmers in Mozambique rural places (Mohamed et al. 2012). However, Extension services and NGOs may train farmers, giving them awareness campaigns on price volatilities and linking them to better markets within and beyond the district. Magesa

(2014) emphasize those rural farmers in Tanzania, similar to those in Mudzi district struggle with inadequate market information. Lack of information leads to poor marketing decision making and reduced bargaining power (Michael, 2014). The challenges that farmers in Mudzi district face are different from those in Ethiopian farmers (Dercon S, 2004). According to Dercon, price volatility is a common challenge for Ethiopian farmers.

Chapter 5: Recommendations and conclusion

5.1 Summary

The rosella farming in Mudzi district support gender equality whereby both men and women participate in crop production. The predominant finding is that farmers favors NGOs assisted markets through their programs. In Mudzi district, farmers were involved in the program called Pundutso which was under Bio Innovation of Zimbabwe. The farmers were given rosella seeds, training and market linkages of their rosella produce. The farmers' choice of marketing channels is determined by price offered in the market. NGOs assisted market has less transportation costs to markets as compared to other channels. Despite the benefits farmers get from NGOs, they still face several challenges such lack of market information and price volatility.

5.2 Conclusions

This research revealed a diverse array of marketing channels utilized by rosella farmers in the Mudzi district such as roadside, retail, and NGO-assisted markets. It reveals that most of the rosella farmers in this district were being assisted by NGOs to sell their rosella to lucrative markets locally and internationally. Rosella farmers in the Mudzi district were influenced by various factors which include, transportation costs, price offered, distance to the market, and income generated when choosing the marketing channel to use. Most farmers were influenced by the price offered by NGO markets and also there was no cost of transportation involved. Farmers in the Mudzi district face various challenges when marketing rosella such as limited market access, price fluctuations, lack of market information, and high transportation costs. However, NGOs and extension services play a pivotal role in eliminating these challenges by linking farmers to lucrative buyers. Farmers in the Mudzi district are directly involved in the production,

processing, distribution, and consumption of rosella crops and products. The relationship between rosella farmers and stakeholders involved in the value chain helps in identifying opportunities for value addition, supply chain optimization, and market integrations. Overall, Rosella production in Mudzi district improves the livelihood of farmers and the community at large.

5.3 Recommendations

Effective agricultural marketing is crucial for economic well-being of farmers. In Mudzi district rosella farmers rely more on NGOs assisted market which provides better prices and lower transaction costs. However, several challenges hinder the full realization of potential profits. To overcome these obstacles, Government and NGOs are recommended to

- To enhance market information system through implementation of technology and information hubs within the district. NGOs and government may use mobile technology and local radio broadcast to disseminate market information.
- Encouraging forward contracts and partnership with buyers can provide price stability and reduce the impact of market volatility on farmers' incomes.
- Government and NGOs may facilitate access to credit and financial services. Partnering with Microfinance institutions to provide farmers with access to credit may enable them to invest in necessary inputs and improve their production capabilities.
- Government and NGOs may implement programs and policies to improve rural infrastructure, including roads and transportation networks.
- Encourage the formation and strengthening of farmer cooperatives which may enhance collective bargaining power, reducing transaction costs and improving access to larger and more lucrative markets.
- Ongoing training on market trends, financial management and best agricultural practices may empower farmers with knowledge and skills needed to navigate market challenges effectively.

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Appendix

Questionnaire form

Demographic information

1. Gender: Male_____ Female_____
2. Age: _____ years
3. Educational level: Non _____ Primary_____ Secondary_____ Tertiary_____ Informal education _____ Other (Please specify:_____)
4. Occupation: Full time farmer_____ Part time farmer _____ Other(Please specify:_____)

Background:

1. Which ward in Mudzi district do you live?
.....
2. How many years have you been involved in rosella farming?
.....
3. What is the size of your rosella farm in hectares?
.....
4. How many Kilograms of rosella do you sale per season?
.....

SECTION A: Marketing channels

5. What marketing channels do you currently use to sell rosella in Mudzi District?
Tick in the box the channels

TYPE OF CHANNEL	TICK
Local markets	
Wholesale markets	
Agricultural cooperatives	
Retail stores	
Export markets	
Road side markets	
Fresh produce markets	

Intermediaries markets	
Online markets	
Processors markets	

6. How do you rank each marketing channel you use to sell rosella in the District? .Please rank each channel from 1-10, with 1 being “not preferred at all” and 10 “most preferred”

TYPE OF CHANNEL	RANK	PRICE/KG
Local markets		
Wholesale markets		
Agricultural cooperatives		
Retail stores		
Export markets		
Road side markets		
Fresh produce markets		
Intermediaries markets		
Online markets		
Processors markets		

7. Are there any other additional marketing channels you would like to explore for selling rosella in Mudzi District? If yes please notify.

.....

SECTION B: Factors affecting choice of marketing channel

8. What factors do you consider when selecting the market channel for selling rosella?

FACTORS	ANSWER
Distance to the market in KM	
Price offered in \$	
Market demand/ Quantity demanded	

Transport cost to the market	
Quality requirement	
Income generated per season (\$)	

If there is other please notify.

.....
.....
.....

9. How do you assess the reliability and trustworthiness of potential marketing channels for rosella? Tick one answer of your choice.

ANSWER	TICK
Reputation of the channel	
Past experience with channel	
Transparency in pricing and profitability	
Recommendations from other farmers and stakeholders.	

10. To what extent government and NGOs influence your choice of marketing channel and state how they influence?

.....
.....
.....
.....

11. Which marketing channel for your rosella crop typically generates the highest sales revenue?

SECTION C: Challenges faced in marketing rosella

12. What are the challenges do you encounter when marketing rosella in Mudzi District. Select all that apply?

Challenges	TICK
Limited market access	
Price fluctuations	

High Transportation costs	
Lack of market information	
High quality standards required	

If there is other please notify.

.....
.....
.....

13. How do the challenges above impact your ability to effectively market rosella in Mudzi District?

.....
.....
.....
.....
.....

14. What strategies have you implemented to overcome the challenges faced in marketing rosella?

.....
.....
.....
.....
.....
.....