

MOSHI CO-OPERATIVE UNIVERSITY

**DETERMINANTS OF MEMBERS LOYALTY TO CASHEWNUT
AGRICULTURE MARKETING CO-OPERATIVE SOCIETIES IN
MKURANGA DISTRICT, TANZANIA**

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AGRICULTURE MARKETING CO-OPERATIVE SOCIETIES IN
MKURANGA DISTRICT, TANZANIA**

BY

LAWI DAUDI MAGOKO

**A DISSERTATION SUBMITTED IN FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN
CO-OPERATIVES AND COMMUNITY DEVELOPMENT OF THE MOSHI
CO-OPERATIVE UNIVERSITY, TANZANIA**

DECEMBER, 2023

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the Moshi Co-operative University a Dissertation titled "Determinants of Members Loyalty to Cashewnut Agriculture Marketing Co-operative Societies in Mkuranga District, Tanzania" in fulfilment of the requirements for the award of a degree of Master of Arts in Co-operative and Community Development of the Moshi Co-operative University.

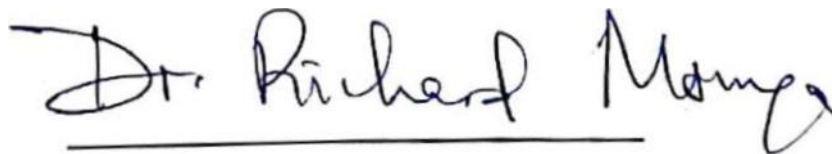
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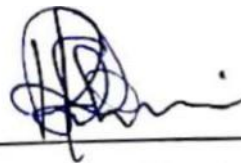


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DEDICATION

I dedicate this Dissertation to almighty God and to my lovely family

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I would like to thank the Almighty God for giving me the strength, knowledge, capacity, and opportunity to join the Master program at the Moshi Co-operative University.

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LIST OF ABBREVIATIONS

AMCOS	:	Agricultural Marketing Co-operatives Co-operative University
CVI	:	Content Validity Index
DRPS	:	Director of Research and Postgraduate Studies. Moshi
FGD	:	Focus Group Discussion
GDP	:	Gross Domestic Product
ICA	:	International Co-operative Alliance
MA-CCD	:	Master of Arts in Co-operative and Community Development of
SERVQUAL	:	Service Quality
SPSS	:	Statistical Package for Social the Science
TCDC	:	Tanzania Co-operative Development Commission the Moshi Co-operative University.
URT	:	United Republic of Tanzania
USDA	:	United States Department of Agriculture
VIF	:	Variable Inflation Factor

ABSTRACT

Agricultural co-operatives are playing a crucial role in uplifting smallholder farmers and development of the agribusiness sector. The main objective of this study was to examine the determinants of members' loyalty to cashewnut agricultural marketing co-operative societies (Amcos). Amcos in Mkuranga, Tanzania. The specific objectives were to examine socio-demographic factors affecting members loyalty to cashewnut Amcos; determine the influence of services provided by Amcos on members loyalty; examine the effect of Amcos service quality on members loyalty; Examine the effect of cashewnut Amcos leadership on members loyalty. This study was guided by field theory as the leading theory and Servqual model. The study adopted a cross-sectional research design. The target population of the study was all cashew nut farmers who are members of Amcos in Mkuranga district, a sample of 350 respondents was involved. The study gathered both quantitative and qualitative data. The qualitative data were analysed through content analysis while the quantitative data were analysed using descriptive statistics, Servqual model and regression analysis. The study findings indicated that socio-demographic factors, including age, level of education, and farm size, significantly influence cashew nut farmers' loyalty to agricultural marketing co-operative societies. On the other hand, gender, marital status, and family size were found to have no significant impact on farmers' loyalty. Co-operative training and education, marketing services, subsidies farm input, linkage to financial institutions had the most substantial positive effect on members' loyalty. The Servqual model revealed significant gaps between members' expectations and perceptions in various dimensions; both had a negative gap ranging from 3 to 8. The study concluded that the independent variables, including linkage to financial institutions, subsidised farm inputs, co-operative training and education, and marketing services, collectively explain approximately 51% of the variation in members loyalty. These variables were found to have a positive influence on farmers' loyalty, with co-operative training and education having the most substantial impact. The study recommends that Amcos should tailor their strategies and services based on farmers' socio-demographic characteristics to enhance loyalty. The study recommends that Amcos should prioritise and invest in providing high-quality training and educational programs for farmers. Given that training and education were found to have the most substantial positive effect on loyalty, Amcos should allocate resources to develop comprehensive and effective training modules on various aspects of agriculture and co-operative management. The study recommends that Amcos should strengthen their leadership and management practices, with a particular emphasis on providing training and educational opportunities. Effective leadership is crucial for creating a positive and supportive environment within the co-operative.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

In developed countries, agricultural co-operatives are playing a crucial role in uplifting smallholder farmers and development of the agribusiness sector. In the Netherlands, co-operatives process 84% of all milk, 63% of all sugar beets, sell 95% of all flowers enabling them to provide 87% of all credit to farmers (Bijman, 2016). According to Bijman (2016), Agricultural Marketing Co-operatives (AMCOS) in the Netherlands attract farmers through providing marketing services and cheap farm inputs. Agricultural marketing cooperatives in the United States have a very strong membership in the rural areas, with most of the farmers finding them efficient channels to sell their products and buy their farm produce. United States Department of Agriculture (USDA) 2020 survey revealed many farmers were members of two or more agricultural co-operatives. The increased membership is attributed to availability of credit and other farm input services (USDA, 2021). A recent report showed that young farmers were not willing to take up leadership positions in co-operative, leading some of them to begin apprenticeship programs (Carlisle *et al.* 2019). Indian dairy co-operative union only has more than 3.6 million members countrywide (Shiratake *et al.*, 2020). Its strong membership has enabled it to build feed factories, milk can production factories, and veterinary and animal husbandry services among other services to its members (Shiratake *et al.* 2020).

Agriculture is one of the major economic activities in sub-Saharan Africa (Bjornlund *et al.* 2020). According to McKinsey report (Goedde, Ombaka and Pais 2019), more than 60% of sub-Saharan Africa's population is involved in farming. Agriculture contributes 23% to Africa's gross domestic product (GDP) (Giller *et al.*, 2021; Goedde *et al.* 2019). Given the role of agriculture in Africa, many initiatives including creation of farmers' co-operative societies have been taken to fully exploit its potential. It is believed that agricultural marketing co-operative societies (AMCOS) can help smallholders' farmers fully exploit the potential offered by agriculture. Anania, Bamanyisa and Rwekaza (2020), explains that AMCOS through their collective action have the ability to link smallholder farmers with the right market, increase access to credit and other essential farm inputs and technical skills. In Rwanda, high co-operative membership has enabled AMCOS to provide modern inputs and access

better markets for their farm produce (Shiratake *et al.*2020). Through co-operative unions, Miraa and coffee farmers in Kenya are able to fetch high prices of their produce by accessing better markets outside the country including Somalia and the United Kingdom (Mwiti, 2020). A study by Miroro *et al.*, (2023) in Kenya found that level of education, need for extension services, number of livestock kept were the key factors influencing farmers to join AMCOS. Gender, age, and household size were found to have no significant relationship with the decision to join AMCOS (Miroro *et al.*, 2023).

According to Tanzania Co-operative Development Commission [TCDC], (2021), Tanzania has 4,538 total AMCOS, with Pwani region having 125 AMCOS. Despite the benefits of AMCOS, the level of member loyalty is very low (Mgonja and Shausi, 2022). Whereas there are more than two million cashew nut farmers in Tanzania (Mgonja and Shausi, 2022; TCDC, 2018), only 561,966 are members of AMCOS. This has adversely affected the ability of AMCOS to deliver on its mandate, especially in getting the right prices and market for cashew nuts.

Cooperative development in Tanzania has evolved significantly over the years, from the Ujamaa policy-driven establishment of cooperatives in the 1960s to the market-oriented reforms of the 1980s (Kamer, 2022). In recent times, there has been a renewed emphasis on cooperatives' role in sectors like agriculture, with efforts to empower small-scale farmers and address sector-specific challenges, such as those faced by cashew nut AMCOS. Research from various sectors and countries has identified common factors influencing member loyalty in cooperative societies. These factors include perceived benefits, the quality of services provided, trust in leadership, and satisfaction with cooperative operations. Socio-demographic variables like age, gender, and education level also play a role (Mgonja and Shausi, 2022).

The low membership is negatively affecting the operational effectiveness of cashew nuts co-operatives (Awoke, 2021). For instance, cashew nuts AMCOS has not been able to secure high prices for raw cashew nuts, causing farmers to boycott auctions in 2018 and 2022 harvesting period. The lower prices are pushing some farmers to reduce cultivation of the crop. In addition, cashew nuts production in Tanzania has been decreasing since 2017/18 from 313.8 metric tonnes to 225.1metric tonnes in 2019, 232.7 metric tonnes in 2020 and 206.7 metric tonnes in 2021 (Kamer, 2022).

Similarly, AMCOS in Tanzania, have failed to scale up local processing of the crop, due to lack of adequate resources (Mgonja and Shausi, 2022). Currently, the country is only processing 10% of its cashew nuts produced with the rest being exported to Vietnam and India as raw materials (Ansaf report, 2021). According to Sultana, Ahmed and Shiratake (2020) agricultural co-operatives need active membership to develop. Low or inactive membership affects co-operative society's ability to mobilise resources, and make democratic decisions (Verhees, Sergaki and van Dijk, 2015). It is from this background that this study assessed the determinants of members' loyalty to cashewnut AMCOS in Tanzania, a case of Mkuranga District, Tanzania.

1.2 Statement of the Problem

Studies have shown that agricultural co-operatives are key in improving the socio-economic welfare of small-scale farmers (Tumenta *et al.*2021). Other studies (Awoke, 2021; Sultana *et al.*2020) have revealed that, high and active membership is essential for empowering agricultural co-operative mobilise resources, develop infrastructure and transfer the benefits to farmers in terms of improved prices and lower cost farm inputs. Although there are a significant number of agricultural marketing co-operative societies in Tanzania, the loyalty of members to AMCOS is very low. Pwani region has 36,436 cashew nut farmers; only 7,056 are members of AMCOS (Payment Report, 2019; Pwani Region Co-operative Report, 2022). Additionally, 95 of 278 AMCOS in Pwani region are dormant (TCDC, 2021). The production of cashew nuts in Tanzania has been on a declining trend since the 2017/18 season. Starting at 313.8 metric tonnes, the output fell to 225.1 metric tonnes in 2019, showed a slight increase to 232.7 metric tonnes in 2020, and then dropped again to 206.7 metric tonnes in 2021. Overall, these numbers indicate a worrying downward trajectory in cashew nut production over the past few years (Kamer, 2022). This decline could have significant implications for both the farmers involved and the larger agricultural sector.

The low and inactive membership affect the ability of AMCOS to mobilise capital from members (Jumbe and Sanawa, 2022). For instance, cashew nut AMCOS have not been able to secure high prices for raw cashew nuts, causing farmers to boycott auction in 2018 and 2022 harvesting period (Jumbe and Sanawa, 2022). The inability to fetch high prices is causing some farmers to cut down on cultivation of the crop as evidenced by the reduction in crop production over the years (Kamer, 2022). Lack of

resources, which can be solved through increased membership, has made it difficult for cashew nuts AMCOS in Tanzania to scale up local processing of the crop.

Loyalty may vary significantly among members due to a range of socio-economic, cultural, and operational factors specific to the cashew nut industry (Mgonja and Shausi, 2022). While some farmers exhibit steadfast commitment to AMCOS, others may demonstrate fluctuating or minimal loyalty. This variance could be attributed to factors such as the perceived benefits of membership, the effectiveness of AMCOS in securing better market prices, and the level of trust and satisfaction among members (Kamer, 2022). The seasonal nature of cashew nut farming, coupled with challenges in market dynamics and processing infrastructure, further complicates this loyalty landscape. Additionally, the level of trust in co-operative leadership, the transparency of operations, and the extent of member involvement in decision-making processes can significantly sway member commitment. Efforts to enhance loyalty in the AMCOS within the cashew nut sector are centred on improving the livelihoods of smallholder farmers by providing an effective platform for aid, input supply, and financial mobilisation. The rationale for these efforts is grounded in the significant role of agricultural production in the economic stability and wellbeing of cashew nut farmers.

While there have been various efforts from the government towards improving the cashew nut sector including making it mandatory for farmers to sell their produce through AMCOS, none of the efforts directly address their low membership and ineffectiveness. There is extensive literature on agricultural co-operative membership. Whereas Cukur and Cukur (2022) examined factors affecting co-operative membership loyalty their study focused on both members and non-members. Dendup and Aditto in their study of determinants of household's membership in agriculture marketing co-operative the study focused on both members and non-members, their study suggested that future studies should examine the relationship between agricultural marketing co-operatives effectiveness and farmer's decision to join and remain committed. Important to note, previous studies on this subject focused on dairy co-operatives and beekeeping, whose daily nature of activities is significantly different from cashew nuts agriculture marketing co-operatives which are mainly active during harvesting season and auctioneering. This study sought to fill the gap by focusing on

agriculture marketing co-operative members and examining cashew nuts sector, which has not been covered in the available literature.

1.3 Objectives of the Study

1.3.1 Main objective

The main objective of this study was to examine the determinants of members' loyalty to cashew nuts AMCOS in Mkuranga District, Tanzania.

1.3.2 Specific objectives

Specifically, the study intended to:

- i) Examine the role of socio-demographic factors on members loyalty to cashewnut AMCOS in Mkuranga District, Tanzania
- ii) Determine the influence services provided by cashewnut AMCOS on members loyalty in Mkuranga District, Tanzania.
- iii) Examine the effect of cashewnut AMCOS service quality on members loyalty in Mkuranga District, Tanzania
- iv) Examine the effect of cashewnut AMCOS leadership on members' loyalty in Mkuranga District, Tanzania.

1.4 Research Hypotheses

- i) Socio-demographic factors do not significantly affect members' loyalty to AMCOS in Mkuranga District, Tanzania
- ii) AMCOS services does not significantly affect members' loyalty in Mkuranga District, Tanzania
- iii) AMCOS service quality does not significantly affect members loyalty in Mkuranga District, Tanzania
- iv) AMCOS leadership does not significantly affect members loyalty to AMCOS in Mkuranga District, Tanzania

1.6 Justification of the Study

The study is of significant relevance to cashew nut farmers and the management of AMCOS, highlighting how the services provided by AMCOS impact farmer loyalty, which is essential for the cooperative's long-term viability and success. By identifying the factors that contribute to loyalty, AMCOS can more effectively customise its services to better align with its members' needs, thereby improving their satisfaction and commitment. For farmers, the findings of this study offer a foundation for

advocating for better services and policy changes that directly affect their livelihoods. Additionally, it provides both the farmers and AMCOS management with valuable data-driven knowledge for making informed decisions, which could lead to improved operational efficiency, increased productivity, and higher incomes for the farmers.

For policymakers and the government, the study holds considerable importance as it offers information that can shape policy decisions and strategies in the agricultural sector, especially in relation to the cashew nut industry. Understanding the relationship between service provision by AMCOS and member loyalty enables the development of more precise and impactful policies that support agricultural cooperatives and their members. Such policies can lead to enhanced agricultural productivity, improved market access for farmers, and better rural livelihoods. Furthermore, the study's findings can aid governmental interventions in providing support to cooperatives, ensuring that the support addresses the real needs of the farmers and contributes to the overall development of the agricultural sector.

Researchers and academicians also find significant value in this study. It presents a rich source of empirical data and perspectives that can further academic discussions on agricultural cooperatives and farmer loyalty. This study serves as a basis for additional research into the complex relationships between service provision, service quality, and member loyalty in cooperative frameworks. The findings can be used for comparative studies across different regions or crops, contributing to a more comprehensive understanding of cooperative management and effectiveness. In addition, these findings can assist in the development of academic curricula in agricultural and cooperative management, ensuring future professionals in these fields are equipped with relevant and practical knowledge from real-world examples.

1.7 Organization of the study

Chapter One: The first chapter provide the groundwork for the study. The chapter introduced the topic, explaining the context and relevance of the research in the cashew nut co-operative. It set the stage by defining the research problem, stating the objectives of the study, and outlining the research hypothesis. This chapter also provided a brief overview of the methodology and the significance of the study, giving readers a clear understanding of what the research entailed and its importance to various stakeholders.

Chapter Two: The second chapter delved into a comprehensive literature review. This chapter was critical in establishing the theoretical foundation of the study. It encompassed a detailed analysis of existing research and theories related to members loyalty in agriculture marketing co-operative, socio-demographic, services provided, quality of services and AMCOS leaders factors in hypotheses. By reviewing and synthesizing previous studies, this chapter helped in identifying gaps in the existing literature and justifying the need for the research.

Chapter Three: The third chapter detailed the research methodology used in the study. This included a description of the research design, data collection methods, and the analytical techniques employed. The study elaborated on how the sample was selected and the rationale behind choosing Mkuranga District Pwani region as the study area. This chapter served to validate the reliability and validity of the research, ensuring that the findings were grounded in robust and systematic methods.

Chapter Four: The fourth chapter presented the findings of the research. This chapter was structured to systematically address each of the research objectives. The chapter discussed the results in the context of the socio-demographic factors, services provided, quality of services provided and influence of AMCOS leaders and compared these findings with the literature reviewed.

Chapter Five: The final chapter summarized the entire study, drawing conclusions based on the findings from the previous chapter. It presented the implications of the findings for management of AMCOS, and policy makers. Additionally, this chapter offered recommendations for practice, policy, and future research study.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Definitions of the Key Terms

2.1.1 Co-operative

Co-operative was defined by International Co-operative Alliance (ICA, 2018) as an independent association of persons united willingly to achieve their common economic, social and cultural needs and ambitions through a jointly owned and democratically governed enterprise. This study adopted this definition because agricultural marketing co-operative societies are formed with the intention of enabling farmers to achieve their economic objective.

2.1.2 Agricultural marketing co-operative societies

Iringa Hope (2022) defines AMCOS as a small local co-operative society that provides agricultural inputs and markets farmers' produce. Anania and Rwekaza (2016) who also examined the determinants of success of AMCOS in Moshi reported that most of them provide farm inputs and market farmers' produce. This study adopts the definition by Iringa Hope since AMCOS are supposed to provide farm input, credit facilities, value addition and marketing farm produce.

2.1.3 Members' loyalty

According to Fulton (1999), member loyalty is the preference of co-operative members to patronise a co-operative even when the co-operative price or service is not as good as that provided by investor owned firms. Sungkawati (2018) defined members loyalty in a co-operative as commitment, involvement and devotion of co-operative members in their co-operative which are influenced by factors like business ownership, members demographic and members satisfaction which make members to create trust in their co-operative. Members' loyalty in co-operatives, as outlined by Fulton (1999) and Sungkawati (2018), extends beyond preferences or commitment. It encompasses both attitudinal elements, such as psychological attachment and trust, and behavioural aspects, including consistent patronage and active participation. This broader view merges emotional commitment with tangible actions, offering a more comprehensive understanding of loyalty in co-operative contexts. This study adopts Sungkawati (2018) definition given that it has elaborated members' loyalty and factors which can influence loyalty in co-operative.

2.1.4 Socio-demographic characteristics

Zoeller (2021) defines socio-demographic characteristics as traits that define the composition of a population in terms of class, age, gender, religion, marital status, education level, income level and race among others. This study will focus on four socio-demographic factors namely; gender, age, education level and marital status.

2.2 Theoretical Review

This study was guided by field theory as the leading theory and SERVQUAL model as secondary model.

2.2.1 Field Theory

The field theory argues that individual decisions such as actively being a member of AMCOS are influenced by personal and environmental factors (Lewin, 1946). Lewin (1946), states that behaviour of a person is a result of their life field which consists of the individual and their surrounding environment. Mathematically, Lewin (1946) expressed this relationship as behaviour being a function of the interaction of the person and the environment. The persons consist of the individual characteristics including beliefs, gender, values, needs and abilities (Lewin, 1946). The environment comprises surrounding contextual conditions and factors that may motivate or discourage individuals from behaving in a certain manner. Thus, Lewin (1946) asserts that to “understand or to predict behaviour, the person and his environment have to be considered as one constellation of interdependent factors,” (p.338).

Loyalty to a cashew nut AMCOS is a behaviour that can be influenced by various factors including individual farmer’s characteristics and other factors in the environment relating to operation and management of co-operatives. Age, gender, level of education and income (Long *et al.*, 2022) are personal demographic factors that can influence various behaviours including the decision to join and actively participate in AMCOS activities. Similarly, other environmental factors such as the services provided by AMCOS, service quality, the leadership style and government policy can either attract or discourage cashew nut farmers from joining and being actively involved in management of AMCOS. As such, to influence increased members loyalty, AMCOs leadership must understand which person and environmental related factors influence such behaviour. While field theory was a major breakthrough in understanding human behaviour, it has been criticised on

various fronts. In particular, the field theory has been criticised for assuming a purely mathematical relationship in predicting human behaviour. Critics argue that human behaviour is predicted by both present and absent factors, hence it is difficult to rely on a mathematical function that needs all factors present. As such, to measure the influence of service quality on AMCOS membership, the study will use the Service Quality Model.

Field theory is relevant to understand the interplay of factors that impact farmers' loyalty to agricultural marketing co-operative societies (AMCOS) in the specific context of cashew nut farming in Mkuranga District. The members' loyalty to AMCOS can be seen as the outcome of a dynamic equilibrium within the social field, where various forces act upon and interact with individual farmers' motivations and perceptions. These forces can include both internal factors, such as farmers' values, beliefs, and past experiences, as well as external factors, such as the quality of services provided by AMCOS, the effectiveness of co-operative leadership, and the socio-economic and cultural context of the region.

Within the field, the determinants of members loyalty can be categorised into different forces or factors, each with its own influence on the outcome. For example, the perceived service quality of AMCOS can act as a driving force that enhances members loyalty. Positive experiences with timely extension services, fair pricing, and accessible credit facilities may lead farmers to feel valued and supported by the co-operative, strengthening their loyalty.

On the other hand, negative experiences with unreliable services, lack of transparency in operations, or poor communication can act as restraining forces that erode farmers' loyalty. Such experiences might lead farmers to question the co-operative's credibility and may result in reduced commitment and engagement. Additionally, the leadership effectiveness of AMCOS leaders can significantly impact members' loyalty. Leaders who exhibit transparency, empathy, and active engagement with members can create a positive field that fosters trust and loyalty. In contrast, ineffective or unresponsive leadership may create a negative field, leading to decreased loyalty and dissatisfaction among farmers.

Furthermore, external factors, such as government policies, market conditions, and social norms, can also influence members' loyalty within the field. Favourable government policies that support co-operative development and provide incentives for farmers to participate in AMCOS can strengthen members' loyalty. Conversely, unfavourable policies or volatile market conditions may introduce external constraints that affect members' decisions to remain loyal to their co-operative.

Field theory provides a useful lens for understanding the multifaceted nature of members' loyalty to AMCOS in the specific context of cashew nut farming in Mkuranga District, Tanzania. By considering the interplay of various forces within the social field, the study can gain deeper insights into the determinants of members' loyalty and provide a comprehensive understanding of the factors that shape farmers' attitudes and behaviours towards their agricultural marketing co-operative societies.

2.2.2 SERVQUAL Model

This study adopted the Service Quality Model (SERVQUAL model) by Valarie Zeithaml, Parasuraman and Leonard Berry in 1988 to measure the quality of service provided by firms (Zeithaml *et al.*, 2010). The SERVQUAL model contains five dimensions which are tangibility, reliability, responsiveness, assurance and empathy (Msuya, 2019). The study used five dimensions which are tangibility, reliability, responsiveness, assurances and empathy. Gap 5 was used to measure the difference between cashew nut farmers perception and expectation (Msuya, 2019; Machimu, 2016). As regards tangibility, farmers expect AMCOS to have physical local offices where they can visit during working hours for consultation. In terms of responsiveness, which Zeithaml *et al.* (2010) showed the willingness to provide prompt service, members of AMCOS expect that they were able to get the required service when they needed it. For instance, AMCOS should be able to provide agriculture input, credit facilities, ready market immediately farmers harvest their cashewnut, reliability ability of AMCOS to deliver services consistently and accurately, assurance regarded as confidence and trust farmers have to AMCOS. AMCOS membership numbers and loyalty is usually a function of trust or credibility that farmers have in AMCOS. Without credibility in services provided, farmers might be very reluctant to join and be loyal to AMCOS. This study will use the SERVQUAL model to measure the quality of services provided by the AMCOS to the cashew nut producers who are their members.

The model focuses on five dimensions of service quality: Tangibles, Reliability, Responsiveness, Assurance, and Empathy. These dimensions are particularly relevant in the context of AMCOS as they represent key aspects that can influence farmers' perceptions and expectations of the co-operative services.

In the context of cashew nut farming in Mkuranga District, Tangibles refer to the physical facilities and materials provided by the AMCOS. This could include the condition of the co-operative office, the availability and appearance of equipment, and storage facilities for cashew nuts. For example, if the AMCOS has well-maintained storage facilities, it may positively impact farmers' perceptions and loyalty, as they can trust that their produce was handled properly and stored securely. Reliability is crucial for farmers' loyalty as it represents the ability of the AMCOS to deliver services consistently and accurately. In the context of cashew nut farmers, this dimension may be reflected in the cooperative's ability to provide timely payments, transparent pricing mechanisms, and dependable transportation services. Farmers who consistently receive timely payments and experience reliable transportation of their cashew nuts are more likely to develop a strong sense of trust and loyalty towards the cooperative.

Responsiveness pertains to how AMCOS addresses farmers' needs and concerns. In the context of cashew nut farmers in Mkuranga District, it is essential for the cooperative to be responsive to farmers' inquiries, requests for assistance, and feedback. For example, if farmers face challenges with pest control or need guidance on best practices for cashew nut farming, a responsive AMCOS that provides timely and relevant support is more likely to foster loyalty among its members.

Assurance refers to the competence, courtesy, and credibility of AMCOS employees in their interactions with cashew nut farmers. Farmers in Mkuranga District are more likely to remain loyal to the cooperative if they perceive that AMCOS employees are knowledgeable about cashew nut farming, co-operative operations, and market trends. Providing accurate information and ensuring transparency in cooperative processes can contribute to farmers' assurance and loyalty.

Empathy is an essential dimension in the SERVQUAL model that emphasises the importance of understanding and caring for customers' needs. In the context of cashew

nut farmers in Mkuranga District, AMCOS should demonstrate empathy by actively listening to farmers' concerns, understanding their challenges, and offering personalised support when needed. Empathetic communication and support can foster a sense of belonging and loyalty among farmers towards the cooperative.

By applying the SERVQUAL model to the study of determinants of members loyalty to cashewnut AMCOS in Mkuranga District, Tanzania, researchers can gain valuable insights into how these five dimensions of service quality influence farmers' perceptions and expectations. The findings provide guidance to AMCOS in Mkuranga District on areas that need improvement to enhance farmers' loyalty and strengthen the cooperative's position in the local cashew nut farming community.

2.3 Empirical Review

2.3.1 Socio-demographic characteristics

Cukur and Cukur (2022) conducted a study on the determinants of co-operative membership of beekeepers in the Milas region in Turkey. The study utilised a decision tree model to determine the factors that influence membership to beekeepers' co-operatives. The study found a significant relationship between beekeepers with elementary education and co-operative membership. Farmers with low levels of education were likely to be loyal to AMCOS to benefit from training and marketing activities unlike highly educated farmers who could get these services elsewhere or are either trained in agriculture (Cukur & Cukur, 2022). These findings contradicted earlier findings by Awoke (2021) in Ethiopia, who found a nonsignificant relationship between education and loyalty of members to agricultural co-operatives.

Dendup and Aditto (2021) study examined the determinants of households' membership in agricultural co-operatives in Bhutan. Dendup and Aditto (2021) found that older farmers are more likely to be loyal to agricultural co-operatives than young farmers who did farming as an alternative source of income to employment or anticipated future employment. Although Dendup and Aditto (2021) found that literacy increased membership in AMCOS, their study did not distinguish the level of literacy. Hence, if the findings were taken to imply basic literacy, then they will contradict those of Cukur and Cukur (2022). Dendup and Aditto (2021) found a non-significant relationship between gender and AMCOS membership-registering as a member. Similar results were also reported by Awoke (2021). However, Awoke

(2021) reported a significant and positive relationship between gender and member participation in governance of AMCOS. Awoke (2021) found that men were more likely to attend AMCOS meetings than women. The study attributed nonparticipation of women in governance of AMCOS to culture that requires them to stay at home and provide care to the family.

2.3.2 Services offered by AMCOS

Existing literature has also explored how various services provided by co-operative societies influence membership decisions. Some of the services covered in the existing literature include credit facility (Cukur and Cukur, 2022), better price/income (Chen, 2019) and marketing of farmers' produce and subsidised farm inputs (Anibogu *et al.*, 2017). Cukur and Cukur (2022) found that beekeeping farmers in Milas Turkey were likely to become a member of co-operative society that provides credit facilities to farmers. This finding contradicted those of Anibogu *et al.* (2017) in Nigeria who reported a nonsignificant relationship between access to credit and AMCOS membership. Anibogu *et al.* (2017) study also revealed that subsidised farm inputs also significantly but negatively related with the decision of becoming AMCOS member.

Another study by Chen (2019) in Hangzhou, China found that co-operative ability to provide high income to farmers was a significant factor that influenced increased loyalty. Chen (2019) found that the members' loyalty increased by 2.519 times with every unit increase in the income they were earning from the co-operative. The study concluded that the benefits farmers get from joining a co-operative are key determinants of their participation. Unlike other studies that examined just becoming a member, Chen (2019) focused on participation of members on co-operative activities. Thus, Chen (2019) findings will enrich the current study by providing literature that relates to loyalty. Another study is required in Tanzania, because farmers' personalities and co-operative effectiveness in Tanzania are very different from those in China.

2.3.3 Quality of AMCOS services

Rwela (2023) conducted a study with the intention of establishing institutional factors that influenced membership decisions by farmers. The study, adopting a cross-sectional research design, was conducted among 340 farmers of various crops in Mvomero and Kilombero districts in Tanzania. Using binary logistic regression analysis, the study found a statistically significant and positive relationship between

the amount of credit facility offered and AMCOS membership decision. The study also revealed that quality of marketing services provided by AMCOS significantly and positively influenced farmers' membership decision. However, given that Rwela (2023) examined farmers of various crops including sugar cane that are largely consumed in the local market, it might be difficult to generalise these findings on cashew nut that is majorly exported in its raw form. The present study will seek to fill the empirical gap by examining how quality of services provided cashew nut AMCOS affect farmers' loyalty. Uwaramutse (2023) analysed the determinants of farmers' satisfaction with access to services offered by Irish Potato Farmer Co-operatives in the Northern and Western Provinces of Rwanda. The study employed descriptive design in cross-sectional research. Data were analysed descriptively and inferentially. Service accessibility level among Irish potato farmers was measured by developing an index. In assessing the level of farmers' satisfaction, the satisfaction index was adapted. Demographic and socio-economic factors influencing farmers' satisfaction with Irish potato farming services were analysed using multiple linear regression. Findings reported a low level of farmers' satisfaction with farming services, and co-operatives in the study area failed to resuscitate their activities, forcing some farmers' exit from Irish potato farming activities.

2.3.4 AMCOS leadership

Leadership of AMCOS plays a key role in ensuring that members' interests are protected and achieved. Chen (2019) examined how members' understanding of the management style affected their level of participation in a farmers' co-operatives in Hangzhou, China. The study reported that increased understanding of management mode, governance style and their role in decision making among co-operative members increased their level of participation (Chen, 2019). Another study by Awoke (2021) also found a significant and positive relationship between low power distance between the senior leadership and members', transparent operations and members participation in decision making. Awoke (2021) study is among the few that examined different levels of members' loyalty including decision making. Nonetheless, their study focused on dairy co-operatives which are active on a daily basis, hence these findings cannot be generalised to all AMCOS that are mostly active during harvesting and selling period.

2.3.5 Loyalty

A significant body of empirical research has explored the factors influencing farmers' loyalty within agricultural cooperatives. For instance, Chung and Park (2019) conducted a study on Korean agricultural cooperatives and found that members' trust in the cooperative significantly influenced their loyalty, as trust was positively associated with continued membership and increased cooperative participation. In a similar vein, Han and Jang (2018) investigated factors affecting members' loyalty in agricultural cooperatives in South Korea and identified that member satisfaction and perceived benefits significantly contributed to loyalty, emphasising the importance of service quality and perceived value.

Further insights into the behavioural aspects of loyalty were provided by studies like that of Chiu, Liao, and Tu (2017), which explored the role of member participation in Taiwanese agricultural cooperatives. Their findings suggested that active participation by members positively correlated with loyalty, with higher participation leading to increased loyalty levels. This aligns with the view that members who engage more with the cooperative tend to be more loyal.

On a broader scale, research by Mazzocchi, Zhang, and Huffman (2019) investigated the loyalty of farmers in agricultural supply chains, emphasising the significance of trust, satisfaction, and commitment. Their study, based on a sample of Chinese farmers, highlighted the multifaceted nature of loyalty and its relevance in supply chain contexts. Additionally, Swanson, Benham, and Hossain (2019) examined the role of member demographics in agricultural cooperatives in the United States. They found that factors such as age, education, and years of membership had varying effects on loyalty, indicating the need to consider diverse member characteristics when assessing loyalty in cooperatives. A study by Sulemana and Iddrisu (2017) in Ghana explored the factors affecting member loyalty in agricultural cooperatives. Their findings revealed that perceived cooperative performance and trust significantly influenced loyalty, highlighting the universality of these factors across diverse agricultural contexts.

2.3.6 Summary of the research gap

Many of the studies reviewed (Chen, 2019; Awoke, 2021; Cukur and Cukur, 2022) suggested that similar studies should be carried out in other countries and different

contextual conditions because farmers inherent characteristics, structure and effectiveness of agricultural co-operatives, agricultural structure of country, types of cash crops vary significantly from one country to another. This study will fill the contextual research gap by conducting a similar study in Mkuranga, Tanzania.

In addition, previous studies exhibit contradictory and inconclusive results on major variables considered in this study specifically education, gender, services provided by AMCOS, and age of farmers (Cukur and Cukur, 2022; Awoke, 2021; Dendup and Aditto, 2021; Chen, 2019). The contradicting results limit the generalisations of the findings to different contexts from where the studies were carried out. This leaves an empirical research gap that this study intends to fill by conducting a closely related study in Mkuranga district, Tanzania. There is a theoretical research gap given that none of the studies examined premised their findings on any theory. This study intends to fill this gap by interpreting its findings through the lenses of field theory, hence validating or invalidating its core assumptions.

2.4 Conceptual Framework

Field theory postulates that human behaviour is a function of the individual characteristics and the interaction with the environment. Based on this theory this study conceptualises that both personal and environmental related factors affect cashew nut farmers' loyalty to AMCOS. To this end, this study conceptualises that socio-demographic factors (age, gender, level of education marital status), service offered by AMCOS, quality of services offered by AMCOS and leadership of AMCOS are the predictor variables affecting the farmers loyalty, which is the outcome variable as shown in figure 1.

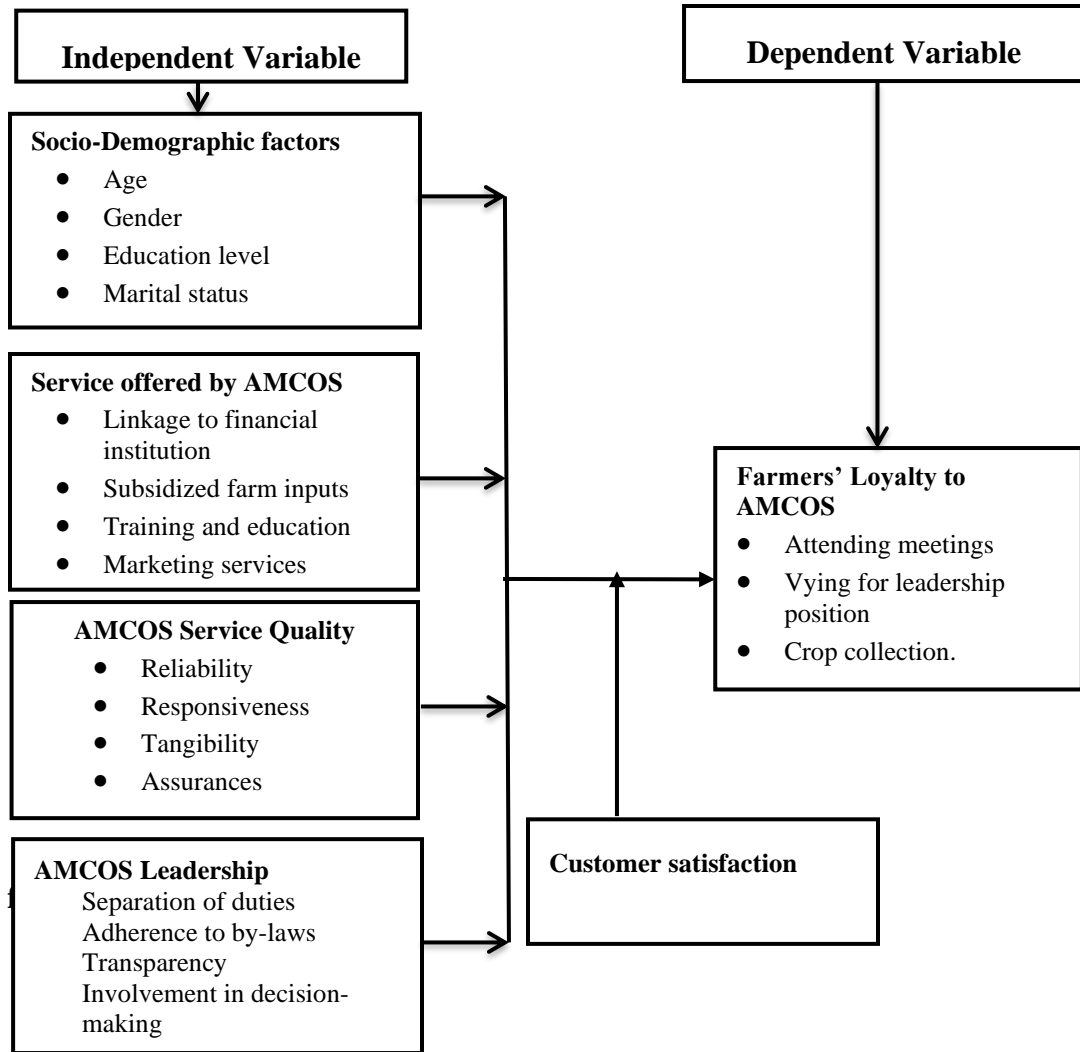


Figure 1: Conceptual Framework of determinants of Member loyalty

CHAPTER THREE

3.0 METHODOLOGY

3.1 Research Design

This study adopted a cross-sectional research design. This design was used because it enables the study to collect data on a range of variables (Blankenagel, Gasser & Hunziker, 2021) including socio-demographic variables, services offered by AMCOS, quality of services provided and leadership of AMCOS all at one instance.

3.2 Geographical Coverage

The study was conducted in Mkuranga District, Pwani region, Tanzania. Mkuranga district was studied because it produces more cashew nuts than the other eight districts. As at 2017/2018, the district produced 8,692.809 metric tonnes followed by Kibiti and Rufiji at 6,491.354 and 2,606.776 respectively (USAID, 2019). Mkuranga district has 16, 496 cashew nut farmers and 45 AMCOS with 2,779 AMCOS members URT (2021). Mkuranga has a higher number of AMCOS and members of AMCOS compared to other districts in Pwani region (Pwani region co-operative report 2022). Cashew nuts in Mkuranga are mostly grown by smallholder farmers, who can benefit from the effective functioning of AMCOS. The study was carried out in the fourteen wards in the district namely Bupu, Kimanzichana, Kisiju, Kitimondo, Lukanga, Magawa, Mbezi, Mkamba, Mkuranga, Mwalusembe, Nyamato, Panzuo, Shungubweni and Njianne.

3.3 Population, Sample and Sampling Strategies

3.3.1 Population

The target population of the study was 2,779 cashew nuts farmers who are members of AMCOS in Mkuranga district, Pwani region Tanzania (URT, 2021). The farmers who are members of AMCOs were the unit of analysis.

3.3.2 Sample size

Given that the target population is known, the study used Yamane (1986) formula to determine the sample size. The formula was also used since the population was large. Thus, using Yamane formula, the sample size of the population was 350 cashew nut farmers found in the 14 wards of Mkuranga district.

$$N = \frac{N}{1+N(\epsilon)^2}$$

Whereas n = sample size,

N = Population size

ε = margin of error

$$n = \frac{2779}{1 + 2779(0.05)^2} = 349.6$$

$n=350$ respondents.

3.3.3 Sampling techniques

The study adopted stratified sampling technique, proportional sampling and simple random sampling. Stratified sampling was used because the farmers who are AMCOS members are spread across the 45 AMCOS, hence each AMCOS is stratum. Proportional sampling was used to allocate respondents from each AMCOS considering their gender, where by male were 165 and female members were 67. To ensure that the sample is a true representation of the entire population, bias is minimised. Simple random sampling was used to select participants into the study.

3.4 Data Collection

3.4.1 Sources of data

The study utilised both primary and secondary sources of data. The two sources were used to complement each other. Specifically, the study reviewed secondary information on membership registration from cashew nuts AMCOS to compare with primary data collected directly from respondents.

3.4.2 Types of data

The study gathered both quantitative and qualitative data. The two types of data were used to enable greater understanding of the research data since quantitative data answers the 'what' while qualitative data responds to the 'why' (Oflazoglu, 2017).

3.5 Data Collection Methods

3.5.1 Surveying method

Data from primary sources were collected through a survey questionnaire that contained closed ended questions (Appendix I). The survey questionnaire which was originally in English was translated into Kiswahili, and directly administered by the researcher to provide any clarifications where needed. The questionnaire was divided into five sections. Section A explored socio-demographic factors that may impact cashew nut farmers' loyalty to AMCOS. Section B investigated the influence of

AMCOS services on the loyalty of cashew nut farmers. Section C delved into the examination of the effect of AMCOS service quality on cashew nut farmers' loyalty. Section D explored the impact of AMCOS leadership on the loyalty of cashew nut farmers. Lastly, Section E focused on understanding members' loyalty to AMCOS.

3.5.2 Focus group discussion

The study conducted six focused group discussions (FGD) in five purposefully selected AMCOS (Appendix III). Each focus group consisted of six participants. The FGD were divided into two groups AMCOS members and AMCOS leaders, where by FGD for AMCOS members were 4 and AMCOS leaders were two, in line with Howitt (2019) advise that the FGD size should enable each participant the opportunity to give detailed responses without feeling the pressure to share time with others. The five purposely selected AMCOS were Sangalani, Makumbea and Magawa; these are AMCOS with lowest numbers of members, Lukanga and Nasibugani with highest number of members. The criteria for selecting AMCOS for the FGD participants were based on the membership size, with three AMCOS having the lowest number of members (Sangalani, Makumbea, and Magawa) and two AMCOS having the highest number of members (Lukanga and Nasibugani).

3.5.3 Key informants

The study used key informants (Appendix III) whereby individuals who have experience and knowledge about the study such as co-operative officers, ward agriculture executive officers, AMCOS leaders and staff were interviewed to collect detailed information of the study. The study used two co-operative officers from Mkuranga district council, eight ward agriculture executive officers, eight co-operative leaders and eight co-operative staff.

3.5.4 Documentary review

The study collected data from secondary sources by reviewing membership lists of AMCOS to establish and identify their socio-demographic characteristics. It reviewed the general meetings attendance register to identify the type of members that usually attend the meetings. Annual reports also were reviewed to identify services provided by AMCOS in the region.

3.5.5 Data collection challenges

The data collection process for this study involved a combination of survey questionnaires, focus group discussions, key informant interviews, and documentary reviews. While these methods were chosen to provide a comprehensive understanding of the factors influencing member loyalty in Cashew Nut Agriculture Marketing Co-operative Societies (AMCOS) in Mkuranga District, Pwani region, several challenges were encountered during data collection. These included potential translation bias in the questionnaire, complexities in managing focused group discussions, a relatively small sample size of key informants, and concerns about data accuracy and completeness in documentary sources. Despite these challenges, the study aimed to overcome this with an awareness of the potential limitations.

3.6 Validity and Reliability

3.6.1 Validity

The survey questionnaire and FGD questions were subjected to a content validity test to ensure that the instruments have enough number of items to measure the required subject. This was done through expert review. Content validity was then tested using a content validity index (CVI) which was above 0.5 (Appendix VI) as recommended by Yusoff (2019).

3.6.2 Reliability

A pilot study of 30 cashew nut farmers from the neighbouring Kibiti district was conducted to test the internal consistency and reliability of the research instrument. The 30 participants were chosen because Lewis *et al.* (2021) suggests that pilot study sample size should be greater than the number of items in the questionnaire. Cronbach Alpha coefficient was used to test for internal consistency of the questionnaire (Table 1). A value above 0.7 is recommended by Creswell (2016), otherwise the instrument has to be modified. Cronbach Alpha coefficient was used to test internal consistency of the questionnaire. The pilot results indicated that the categories had a Cronbach Alpha of above 0.7 and thus was reliable.

Table 1: Reliability Outputs

Categories	Cronbach Alpha
linkage to financial institutions	0.825
Subsidised farm inputs	0.883
Training and education	0.760
Marketing services	0.767
Separation of duties	0.848
Adherence to by-laws	0.830
Transparency	0.806
Involvement in decision-making	0.801
Attending meetings	0.781
Vying for leadership position	0.815
Crop collection.	0.808
Buying additional of shares	0.790
Reliability	0.811
Responsiveness	0.799
Tangibility	0.843
Assurances	0.798
Empathy	0.838

3.7 Data Analysis

Data collected in the study was analysed using descriptive statistics, SERVQUAL model and regression analysis. SPSS software (v25) was used to analyse the quantitative data. Descriptive analysis was carried out to generate means and standard deviations, hence giving statistical meaning to the raw data. Linear multiple regression and multinomial regression models were used in inferential analysis while content analysis was used to analyse qualitative data. Content analysis was done using both thematic analysis that analysed both explicit and implied ideas of the text and schematic analysis. A category and a coding scheme were developed deductively from SERVQUAL model and field theory but then they were modified inductively during the analysis. The themes identified in thematic analysis were then presented using schematic analysis for clarity. The SERVQUAL model was used to measure quality of services and identify the gap between perception and expectation.

The assumptions tests conducted included Multicollinearity Test, Test for Heteroscedasticity and Normality Test. Variance inflation factors (VIF) were used to test multicollinearity and VIF of below 10 indicated acceptable limits. The study utilised the graphical method to assess normality. A heteroscedasticity test was conducted to examine the potential correlation of error terms across observations in the

time series data. To assess whether the residuals satisfy this criterion, the Breusch-Pagan test for heteroscedasticity is employed.

3.7.1 Objective one: Influence of socio-demographic factors on members loyalty to AMCOS

The influence of socio-demographic factors was analysed using a multinomial regression model. The model was used to predict the cause and effect relationship between socio-demographic characteristics consisting of age, gender, level of education, marital status and farm size on independent variables; members loyalty on cashewnut AMCOS. The multinomial logistic regression model helped to identify which socio-demographic factor is associated with high level of members loyalty measured as frequency of attending meetings, participating in leadership, crop sell and buying shares.

The multinomial logistic regression model for assessing the influence of socio-demographic factors on members' loyalty to cashew nut AMCOS was as follows:

$$\log\left(\frac{P(Y=\text{Low Loyalty})}{P(Y=\text{High Loyalty})}\right) = \beta_0 + \beta_1 \times \text{Age} + \beta_2 \times \text{Gender} + \beta_3 \times \text{Education Level} + \beta_4 \times \text{Marital Status} + \beta_5 \times \text{Farm Size}$$

Where;

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the coefficients associated with age, gender, education level, marital status, and farm size, respectively.

3.7.2 Objective two: Influence of services provided by AMCOS on members' loyalty

Multiple linear regression analysis was used to analyse how different services provided by AMCOS influence members loyalty. Specifically, the study regressed the relationship between AMCOS services such as linkage to financial institutions, subsidised farm inputs, co-operative training and education and marketing services on members' loyalty to AMCOS.

Assumptions Tests

The assumptions tests conducted included Multicollinearity Test, Test for Heteroscedasticity and Normality Test.

Multicollinearity Test

Multicollinearity “test was conducted to determine if two or more of the predictor (independent) variables in the regression model were highly correlated (Table 2). Variance inflation factors (VIF) were used to test multicollinearity and VIF of below 10 indicated acceptable limits. If the VIF value of exploratory variables is greater than 10, then variables were regarded as highly collinear.

Table 2: Multicollinearity Test Using Tolerance and VIF

	Collinearity Statistics	
	Tolerance	VIF
Linkage to financial institution	0.327	3.055
Subsidised farm inputs	0.388	2.58
Training and Education	0.355	2.817
Marketing services	0.422	2.369

From the “findings above all the variables had tolerance values >0.2 and VIF values <10 as shown in Table 2 and thus according to Myres (2015) who indicated that where $VIF \geq 10$ indicate presence of Multicollinearity, there was no multicollinearity among the independent variables.

Test for Normality

The study utilised the graphical method to assess normality. The findings obtained through the graphical approach are depicted in Figure 2, revealing that the residuals exhibit a normal distribution.

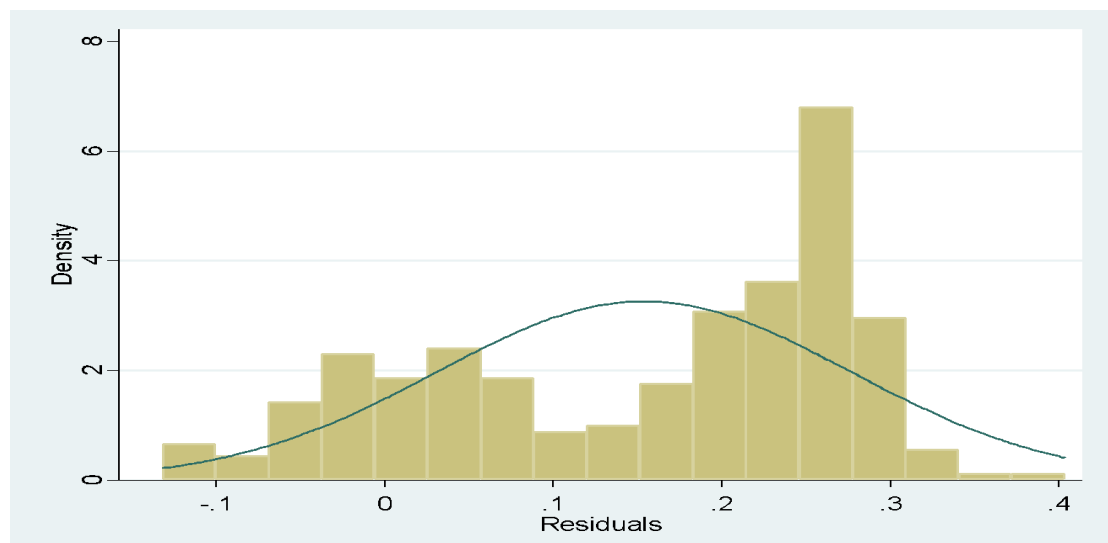


Figure 2: Histograms of residuals

The findings depicted in Figure 2 suggest that the residuals exhibit a normal distribution. Brooks (2008) posits that a normal distribution exhibits symmetry with respect to its mean, whereas a skewed distribution lacks this symmetry and instead possesses one tail that is longer than the other. If the residuals exhibit a normal distribution, it is expected that the histogram will display a bell-shaped pattern. The findings depicted in Figure 2 indicate that the data exhibits a normal distribution, as evidenced by the bell-shaped histogram and the equal length of the tails.

Heteroscedasticity Test

A heteroscedasticity test was conducted to examine the potential correlation of error terms across observations in the time series data. In regression analysis, it is essential for the error terms to exhibit a constant variance, which is referred to as homoscedasticity. To assess whether the residuals satisfy this criterion, the Breusch-Pagan test for heteroscedasticity is employed.

Table 3: Heteroscedasticity Test

Breusch-Pagan test for heteroscedasticity
in fixed effect regression model
H0: $\sigma(i)^2 = \sigma^2$ for all i
chi2 (9) = 37.57
Prob>chi ² = 0.072

In Table 3, the null hypothesis of this test posits that the residuals are homoscedastic. If the p-value exceeds 0.05, it can be inferred that there is a consistent level of variance. The null hypothesis was not rejected at a significance level of 0.05, as the reported p-value was 0.100. Therefore, based on the findings presented in Table 3, it can be concluded that the data did not exhibit significant heteroscedasticity.

The multiple linear regression model that was used is shown in equation 1

$$Y = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \varepsilon_o \dots \dots \dots (1)$$

Where:

Y= dependent variable which is members loyalty to AMCOS

α = intercept

$\beta_1 - \beta_4$ = Regression coefficients

X_1 = Credit Facility

X_2 = Subsidised farm inputs

X_3 = Training and Education

X_4 = Marketing services

ε_0 = stochastic error term.

3.7.3 Objective three: Influence of quality of service on members loyalty to AMCOS

Based on the SERVQUAL Model, the study tested whether there is a casual relationship between the quality of services offered by AMCOS and members' loyalty. The SERVQUAL model was applied to analyse the effect of AMCOS (Agricultural Marketing Cooperative Society) service quality on members loyalty. It consists of five dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy. Each dimension represents a set of statements that customers use to evaluate their expectations and perceptions of service quality. The model calculates the gap between these two measures, providing valuable insights into areas where improvements are needed. The percentages provided under "Expectation Score," "Perception Score," and "Gap Score" represent the customers' expectations, perceptions, and the gap between the two, respectively. The "Overall Gap Score" is the cumulative gap score for each dimension.

3.7.4 Objective four: Influence of AMCOS leadership on members' loyalty.

Ordinal logistics regression model was used to analyse the relationship between AMCOS leadership and farmers loyalty. In particular, the model examined whether leaders that are accountable, compliance with AMCOS by-laws, transparent and participative can predict members loyalty on AMCOS.

The ordinal logistics regression model was;

$$\log\left(\frac{P(Y>j)}{P(Y\leq j)}\right) = \alpha_j - (\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7)$$

Where:

- $P(Y\leq j)$ is the probability of the dependent ordinal variable being less than or equal to a certain level j .
- α_j is the intercept for each category j of the ordinal outcome (not provided in your data).
- $\beta_1, \beta_2, \dots, \beta_7$ are the coefficients for each independent variable.
- X_1, X_2, \dots, X_7 are your independent variables (Transparency in Leaders, Transparency in Management, etc.).

Table 4: Operational Definitions of Variables and their measurement levels

Variables	Definition	Measurement	Instrument
Gender	Male, Female	Nominal scale	Questionnaire, Focused Group Interview, Documentary Review
Age	Youth, adult, elderly	Interval scale	Questionnaire, Focused Group Interview, Documentary Review
Education level	Not educated, primary, secondary and tertiary.	Ordinal scale	Questionnaire, Focused Group Interview, Documentary Review
AMCOS services	Credit facility, Subsidised farm inputs, Training and education, Marketing services	three-point Likert scale	Questionnaire, Focused Group Interview, Documentary Review
AMCOS Leadership	Separation of duties, Adherence to by-laws, Transparency, Involvement in decision-making	three-point Likert Scale	Questionnaire, Focused Group Interview, Documentary Review
Quality of services	Tangibility, Reliability, Responsiveness, Assurance and Empathy	three-point Likert Scale	Survey questionnaire, Focused group discussions, observation.
Farmers loyalty	Attending meeting Vying for leadership Crop collection Buy share	Qualitative and quantitative	Questionnaire, Focused Group Interview, Documentary Review

3.8 Ethical Considerations

Ethical considerations in the study were carefully addressed to ensure the well-being and rights of participants while maintaining the integrity and credibility of the research. Informed consent was obtained from all participants, and they were informed about the purpose of the study, the nature of their involvement, and the voluntary nature of their participation. Participants were assured of their anonymity, and their responses were kept confidential. Moreover, ethical approval was obtained from the relevant institutional review board or ethics committee to conduct the research in compliance with established ethical guidelines.

To protect the privacy of participants, all personal identifying information was removed from the data during analysis and reporting. The research team also ensured that the data collected were used solely for research purposes and would not be disclosed or shared with any unauthorised individuals or organisations. Additionally,

steps were taken to minimise any potential harm or discomfort to participants. Questionnaire items were designed to be non-invasive and not intrusive, and participants were given the option to withdraw from the study at any point without facing any negative consequences. Moreover, the research team made efforts to minimise any potential biases or conflicts of interest throughout the research process.

CHAPTER FOUR

4.0 FINDINGS AND DISCUSSION

4.1 Response Rate

The response rate was analysed to show the representativeness of the sample size. A response rate is very important to the credibility of the research results. A low response rate may decrease the statistical power of the data collected and undermine the reliability of the results. It may also undermine the ability of the researcher to generalise the results to the larger target audience. The study administered 350 questionnaires to the respondents and the results were as shown in Table 5.

Table 5: Response rate

Category	Total
Administered Questionnaires	350
Returned	232
Unreturned	118
Response Rate	66.28%

Results in Table 5 show that 350 respondents were administered with the questionnaire. A total of 232 respondents successfully filled and returned their questionnaires translating to a 66.26% response rate. Babbie (2004) also asserted that return rates of above 50% are acceptable to analyse and publish, 60% is good and 70% is very good. Thus, 66.28% was considered good for the study based on Babbie (2004).

4.2 Demographic Characteristics of the Respondents

Demographics are characteristics of a population. Demographic information provides data regarding research participants and is necessary for the determination of whether the individuals in a particular study are representative samples of the target population for generalisation purposes. Demographic analysis was done to study the nature in which the population changes over time, and this is important as it allows us to study how changes to the population. The demographic characteristics include position held, age, gender, education type, level of education, marital status, main source of income and area of residence.

4.2.1 Respondents' age and sex distribution

The respondents' age distribution (Table 6) provides a glimpse into the generational representation in the study. The age group with the highest participation was the 36-55 category, accounting for 53.9% of the total respondents. This suggests that middle-aged individuals were more actively involved in the research, possibly indicating their prominent role in the cashew nuts farming sector and their interest in co-operative societies. The next significant group was between the ages of 56-69, comprising 26.3% of the respondents. This shows that there was also substantial participation from older individuals. The age groups of 18-35 and above 70 constituted 9.9% each, indicating a relatively lower representation of younger and older individuals in the study.

Table 6: Age, sex and marital Status Distribution of respondents

Age	Frequency	Percent
18-35	23	9.9
36-55	125	53.9
56-69	61	26.3
Above 70	23	9.9
Total	232	100
Sex		
Female	67	28.9
Male	165	71.1
Total	232	100

These statistics signify that all age groups were considered during data collection, however, a large number of members who were half of the sample size were from the age group between 36 to 55 years. This implies that the age group between 36 to 55 years are the ones who are at the product level and available in the labour market also require more support from AMCOS. These statistics were also described during the FGD session it was described that:

“Most of our members ages range from 35-60, because most of that age they meet qualification of being AMCOS members such as owning the land and cultivating cashew nut, most of the youth ranging from 18-30 ages are still in school and they don't own land, furthermore most of them they're not interested in agriculture activities as their main source of income” (FGD, Makumbea AMCOS, 27 June 2023)

These findings are supported by Bwabo, Mchopa and Huka (2018) who found most of the farmers fall within the age group of 36 to 50 years which is the most active group -

as most of them are young and energetic to deal with coffee production activities. Furthermore, on the relationship between age and loyalty, previous scholars such as Dendup and Aditto (2021) found that older farmers are more likely to be loyal to agricultural co-operatives than young farmers who did farming as alternative source of income to employment or anticipated future employment.

In terms of sex distribution, male participants dominated the study, constituting 71.1% of the total respondents. In contrast, female respondents represented 28.9% of the participants. This sex imbalance could indicate that male farmers might have been more accessible or more willing to participate in the research compared to their female counterparts. A similar situation was reported by a female respondent at Nasibugani AMCOS focused group discussion.

“Most of AMCOS members are men who are the one with courage to join co-operative, but many women especially in our Pwani region lack courage and have no education about co-operative, most of them consider co-operative as the men institution” (FGD, Nasibugani AMCOS, 29 June 2023)

The findings also supported by Awoke (2021) reported a significant and positive relationship between sex and member participation in governance of AMCOS. Awoke (2021) found that men were more likely to attend AMCOS meetings than women. The study attributed nonparticipation of women in governance of AMCOS to culture that requires them to stay at home and provide care to the family.

4.2.2 Respondent’ marital status

The marital status of the respondents provides insights into their family and social dynamics, which could influence their engagement with agricultural co-operative societies. The majority of the participants were married, comprising 84.9% of the total. This suggests that married individuals were more likely to take part in the study, possibly indicating their higher involvement in the agricultural sector. Single individuals constituted 5.2% of the respondents, while divorced and widowed respondents made up 6.5% and 3.4%, respectively (Table 7). These findings supported by Leornard (2019) in his study found most members of AMCOS were married couples and these people are more loyal rather than single. Findings contrary to Bwabo, Mchopa and Huka (2018) revealed that the majority of farmers were active

members of cooperative societies as single members or double members who can quit AMCOS because of their mobility compared to other group Status.

Table 7: Distribution of respondents' marital status

Marital Status	Frequency	Percent
Married	197	84.9
Single	12	5.2
Divorced	15	6.5
Widow and widower	8	3.4
Total	232	100

4.2.3 Position, education type and level of the respondents

Under the positions they held within the agriculture marketing co-operative societies, the majority of the respondents were farmers who are members with no leadership position held, comprising 58.6% of the total. Following this, board members accounted for 28% of the respondents, indicating their significant involvement in the decision-making process. The chairperson and deputy chairperson held relatively smaller proportions, at 7.3% and 5.6%, respectively, suggesting that the leadership positions were less represented among the participants. The remaining respondents belonged to other positions, with a marginal percentage of 0.8% (Table 8).

Table 8: Distribution of respondents' held position, education type and level

Education Type	Frequency	Percent
Formal	190	81.8
Informal	42	18.2
Total	232	100
Level Of Education		
Primary	176	75.8
Secondary	17	7.3
Certificate	2	0.9
Vocation training	35	15.6
Degree	2	0.9
Total	232	100
Position Held		
Chairperson	17	7.3
Deputy chairperson	13	5.6
Board members	65	28
Body representative	1	0.4
Members	136	58.6
Total	232	99.6

Regarding the type of education, the majority of the respondents had a formal education, accounting for 81.8% of the total (Table 7). This demonstrates that a

significant proportion of the participants had received structured and institutionalised education, which might influence their perceptions and decision-making within the co-operative societies. On the other hand, 18.2% of the respondents had informal education, which could refer to traditional or non-formal learning experiences. Understanding the impact of different education types on farmers' loyalty to co-operative societies could yield valuable insights into the role of education in shaping their attitudes and behaviours.

Under the level of education among the respondents, most of them had primary education, making up 75.8% of the total. This suggests that a substantial proportion of the farmers might have basic literacy and numeracy skills, which could be relevant for their participation in co-operative activities. A smaller percentage of the respondents had secondary education (7.3%), and an even lower percentage possessed vocational training (15.6%). Only a negligible proportion had achieved a degree (0.9%), which indicates that higher formal education was relatively uncommon among the participants. The above findings are in line with key informants who asked about social demographic characteristics of AMCOS members, he said that;

“Most of our AMCOS members have education level up to standard seven, some didn't even complete primary education, however currently we are receiving members with degree and diploma education such as teachers, who are interested in joining AMCOS after its good performance especially in selling members and farmers produce” (Key informant, Makumbea AMCOS, 23 June 2023).

Different farmers have different needs and preferences based on their age, education, and farm size. So, AMCOS should tailor their services and programs to cater to these differences and make sure every member feels valued and understood.

These findings were also supported by Cukur and Cukur (2022) who conducted a study on the determinants of co-operative membership of beekeepers in the Milas region in Turkey. The study found a significant relationship between beekeepers with elementary education and co-operative membership. Farmers with low levels of education were likely to be loyal to AMCOS to benefit from training and marketing

activities unlike highly educated farmers who could get these services elsewhere or are either trained in agriculture.

4.2.4 Areas of residence and sources of income

The geographical distribution of the respondents' residence highlights their rural and urban representation. The majority of the participants (81.5%) were rural area residents, which is consistent with the focus on cashew nuts farming in the study. Rural areas are typically the primary locations for agricultural activities. A smaller proportion (16.8%) of the respondents were from sub-urban areas, indicating a presence of farmers in peri-urban regions. A negligible percentage of the respondents resided in urban and sub-rural areas, signifying minimal representation from these settings. The summary is as shown in Table 9.

Table 9: Respondents' areas of residence and sources of income

Main Source of Income	Frequency	Percent
On farm activities	215	92.7
Off-farm activities	11	4.7
Other sources of income	6	2.6
Total	232	100
Area Of Residence		
Urban area resident	2	1.3
Rural area resident	189	81.5
Sub-rural area resident	1	0.4
Sub-urban area resident	39	16.8
Total	232	100

The study investigated the primary sources of income for the respondents. The vast majority of the participants (92.7%) identified on-farm activities as their main source of income. This result aligns with the focus of the research on cashew nuts farmers and underscores the importance of farming in sustaining livelihoods in the District. A smaller percentage of respondents (4.7%) derived their main income from off-farm activities, indicating some diversification of income sources. Only 2.6% of the participants relied on other sources of income, which might include various non-agricultural activities.

4.2 Socio-Demographic Factors Affecting Members Loyalty to AMCOS

The first objective was to determine the influence of socio-demographic factors and was analysed using a multinomial regression model. The model was used to predict

cause and effect relationship between socio-demographic characteristics consisting for age, gender, level of education and marital status on independent variables; members loyalty on AMCOS. The multinomial logistic regression model was used to identify which socio-demographic factor is associated with a high level of member loyalty.

Table 10: Multinomial regression outputs on socio-demographic factors affecting member loyalty to AMCOS

Goodness-of-Fit				
	Chi-Square	Df	Sig.	
Pearson	30.858	66	1.000	
Deviance	29.134	66	1.000	
Pseudo R-Square				
Cox and Snell		.129		
Nagelkerke		.321		
McFadden		.268		
Likelihood Ratio Tests				
Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	43.445 ^a	.000	0	
Age	47.130	3.686	3	.029
Gender	44.433	.988	1	.320
Level of Education	49.806	6.361	4	.017
Marital Status	44.588	1.144	3	.766
Family Size	61.408	17.963	15	.265
Farm Size	53.534	12.64	4	.033

The goodness-of-fit tests assess how well the model fits the observed data. As shown on Table 10, in this case, two goodness-of-fit measures are presented: Pearson Chi-Square and Deviance Chi-Square. The values for both statistics are relatively high, with Pearson Chi-Square at 30.858 and Deviance Chi-Square at 29.134. However, the significance level (Sig.) for both measures is 1.000, indicating that the model does not significantly deviate from the expected values. This implies that the model adequately fits the data, and there is no strong evidence to suggest a lack of fit. The likelihood ratio test for the predictor variable "age" shows a chi-square value of 47.130 with 3 degrees of freedom and a significance level of 0.029. This suggests that the "age" variable has a significant impact on cashew nuts members' loyalty. The lack of gender's significance in predicting loyalty among members, contrary to expectations, could be attributed to several factors. It is likely that within the specific context of the study and the AMCOS, gender may not play a central role in shaping members'

loyalty, as other socio-demographic factors like age, education, and farm size might exert stronger influences. Furthermore, the AMCOS environment itself, including its policies, services, and leadership, may be structured in a way that minimises gender-related disparities, resulting in similar loyalty levels among male and female member

Dendup and Aditto (2021) found that older farmers are more likely to be loyal to agricultural co-operatives than young farmers who did farming as an alternative source of income to employment or anticipated future employment. The specific age groups may have different levels of loyalty to agriculture marketing co-operative societies. The p-value (0.320) is greater than the conventional significance level of 0.05, indicating that gender may not be a significant predictor of farmers' loyalty in this context. The likelihood ratio test for the predictor variable "level of education" shows a chi-square value of 49.806 with 4 degrees of freedom and a significance level of 0.017. This suggests that the "level of education" variable significantly influences cashew nuts farmers' loyalty. Different levels of education may lead to varying levels of commitment to agriculture marketing co-operative societies. The findings are in line with Cukur and Cukur (2022) who found a significant relationship between beekeepers with elementary education and co-operative membership. Further, farmers with low levels of education were likely to be loyal to AMCOS to benefit from training and marketing activities unlike highly educated farmers who could get these services elsewhere or are either trained in agriculture.

The likelihood ratio test for the predictor variable "marital status" shows a chi-square value of 44.588 with 3 degrees of freedom and a significance level of 0.766. The high p-value (0.766) suggests that marital status may not have a significant impact on farmers' loyalty. The likelihood ratio test for the predictor variable "family size" shows a chi-square value of 61.408 with 15 degrees of freedom and a significance level of 0.265. This indicates that family size may not be a significant predictor of cashew nuts farmers' loyalty. The likelihood ratio test for the predictor variable "farm size" shows a chi-square value of 53.534 with 4 degrees of freedom and a significance level of 0.033. The p-value (0.033) is below the 0.05 threshold, indicating that farm size may have a significant influence on farmers' loyalty to co-operative societies. The first hypothesis was stated that socio-demographic factors do not significantly affect members' loyalty

to AMCOS. The results indicated that socio-demographic factors do significantly affect members' loyalty to AMCOS and thus the null hypothesis was rejected.

Although Dendup and Aditto (2021) found that literacy increased membership in AMCOS, their study did not distinguish the level of literacy. Awoke (2021) reported a significant and positive relationship between gender and member participation in governance of AMCOS. Awoke (2021) found that men were more likely to attend AMCOS meetings than women. The study attributed nonparticipation of women in governance of AMCOS to culture that requires them to stay at home and provide care to the family. In summary, the multinomial logistic regression results suggest that age, level of education, and farm size are significant predictors of cashew nuts farmers' loyalty to agriculture marketing co-operative societies.

Corroborating these findings with field theory, we can observe that socio-demographic factors such as age, education level, and farm size act as integral components of the agricultural cooperative society (AMCOS) members' field. Field theory posits that individuals' behaviour is influenced by the interplay between personal characteristics and their environment. In this context, age, education, and farm size shape the farmers' perceptions, opportunities, and needs within their agricultural landscape. On the other hand, gender, marital status, and family size do not have a significant impact on farmers' loyalty.

One respondent indicated that; *"Absolutely! Age, education, and farm size can influence how farmers perceive and engage with the cooperative. By understanding these factors, AMCOS can design targeted initiatives that resonate with different groups. For example, they can offer specific training sessions for young farmers or provide educational materials for those with limited schooling. This will show that AMCOS cares about our specific needs and wants us to succeed."* (FGD, 29 June 2023)

Respondent suggests that AMCOS can design targeted initiatives based on these factors. For example, they can provide specialised training sessions for young farmers or offer educational materials for those with limited schooling. This approach

demonstrates that AMCOS cares about meeting the unique needs of its members, ultimately contributing to their success.

Another respondent “agrees that recognizing farmers' distinct backgrounds and circumstances is vital. By acknowledging these differences and adjusting their services accordingly, AMCOS can cultivate trust and loyalty among members. The respondent stressed that when members perceive AMCOS's consideration of their individual situations, they are more likely to maintain their commitment and active participation. In a slightly different approach” (FGD, 02 July 2023).

Overall, the farmers participating in the focus group discussion unanimously agree that AMCOS should take active steps to address social demographic factors that can impact members' loyalty. They believe that tailoring services and programs to meet the specific needs of different groups will foster a stronger sense of belonging and commitment among the farmers, leading to increased loyalty to the cooperative. Collecting and utilising data about members' socio-demographic characteristics is seen as essential in identifying potential areas for improvement and ensuring that all members feel valued and supported by AMCOS.

4.3 Influence of Services Provided by AMCOS on Members Loyalty

They also had to determine the influence services provided by AMCOS on cashew nuts members' loyalty. This was assessed using a Likert scale of 1-3 where (1) strongly disagree, (2) Neither Agree nor Disagree, (3) Strongly agree. The average scores were used for each statement. Starting with the service of "linkage to financial institutions," the findings reveal a mean score of 2.84. The credit facilities include the Input Loans, Working Capital Loan and Farm Equipment Loans. This indicates that, on average, cashew nut farmers perceive AMCOS as moderately successful in their efforts to enhance access to credit facilities that are affordable. The relatively high standard deviation of 1.425, which suggests a considerable dispersion of opinions among farmers. This divergence could stem from differing experiences, as some farmers might have reaped substantial benefits, while others might not have witnessed the same level of improvement in credit accessibility, leading to a range of viewpoints.

Timely Extension Services," had a mean score of 2.05 signifies that cashew nut farmers, on average, hold the belief that AMCOS has been relatively effective in providing extension services in a timely manner. Nevertheless, the standard deviation of 1.406 indicates a moderate level of variability in the perceptions of farmers. This divergence might arise from the varying quality and efficacy of the extension services received by different farmers. The findings are in line with Cukur and Cukur (2022) who found that beekeeping farmers in Milas Turkey were likely to become a member of co-operative society that provides credit facilities to farmers.

Access to Farm Inputs had an average mean score of 2.92 suggests that cashew nut farmers regard AMCOS as moderately successful in improving their access to affordable agricultural inputs. The higher standard deviation of 1.447 underscores a wide spectrum of opinions within the farming community. This variation might be attributed to differences in the availability and pricing of inputs across different geographical regions. Moving on to "Enhanced Marketing Services," the mean score of 2.15 indicates that, on average, cashew nut farmers perceive AMCOS as being relatively successful in providing enhanced marketing services for their produce. However, the standard deviation of 1.351 reveals significant diversity in farmers' opinions. This could emanate from the varying degrees of success achieved in marketing endeavours and AMCOS's effectiveness in reaching diverse markets. This finding contradicted those of Anibogu *et al* (2017) in Nigeria who reported a nonsignificant relationship between access to credit and AMCOS membership. Anibogu *et al.* (2017) study also revealed that subsidised farm inputs also significantly but negatively related with the decision of becoming AMCOS member.

Storage Facilities had a mean score of 3.00 suggests that, on average, cashew nut farmers find AMCOS's storage facilities satisfactory for their crops. The standard deviation of 1.410 points to a moderate level of diversity in farmers' opinions. It's plausible that some farmers have experienced excellent storage services, while others might have encountered challenges, contributing to the observed variance. Regarding "Cooperative Training and Education," the mean score of 2.96 implies that cashew nut farmers perceive AMCOS as moderately successful in providing training and education. However, the standard deviation of 1.424 indicates a significant range of opinions among farmers. This variability might stem from differences in the perceived

effectiveness of the training programs offered by AMCOS. "Grading and Sorting Services," had a mean score of 2.84 signifies that cashew nut farmers, on average, view AMCOS as moderately successful in providing grading and sorting services. The relatively lower standard deviation of 1.264 suggests a somewhat narrower range of opinions among farmers compared to other services. The study by Chen (2019) in Hangzhou, China found that co-operative ability to provide high income to farmers was a significant factor that influenced increased loyalty. Chen (2019) found that the members' loyalty increased by 2.519 times with every unit increase in the income they were earning from the co-operative. The study concluded that the benefits farmers get from joining a co-operative are key determinants of their participation. Unlike other studies that examined just becoming a member, Chen (2019) focused on participation of members on co-operative activities.

The results suggest that while certain services, such as enhanced availability of farm input, enhanced crops storage and co-operative training and education garner higher mean scores, indicating positive perceptions among farmers, other services, like linkage to affordable credit from financial institution, enhanced timely extension services, marketing services, grading and sorting receive slightly lower mean scores. The variability in farmers' opinions underscores the diversity of experiences and viewpoints, shedding light on the effectiveness of the services offered by AMCOS from a range of perspectives. This is as shown in Table 11.

Table 11: Descriptive statistics for services provided

Services Offered	N	Mean	Std. Deviation
AMCOS have enhanced linkage of affordable credit.	232	2.84	1.425
AMCOS have enhanced access to timely extension service	232	2.05	1.406
AMCOS have increased access to cheap and farm inputs	232	2.92	1.447
AMCOS enhanced marketing services for cashew nuts	232	2.15	1.351
AMCOS provide good storage of crops	232	3.00	1.410
Provision of Cooperative training education	232	2.96	1.424
Grading and sorting	232	2.84	1.264

Multiple linear regression analysis was used to analyse how different services provided by AMCOS influence farmers' loyalty. Specifically, the study regressed the relationship between AMCOS services such as linkage to financial institutions,

subsidised farm inputs, training and education and marketing services on farmers' loyalty to AMCOS. The coefficient of determination is 0.51, indicating that approximately 51% of the variance in the dependent variable (cashew nuts farmers' loyalty) can be explained by the independent variables included in the model. A p-value below the typical significance level of 0.05 suggests that the model is statistically significant.

The results indicated that for every unit increase in "credit facility," we would expect an increase in "cashew nuts farmers' loyalty" by 0.075 units. For every unit increase in "subsidised farm inputs," we expect an increase in "cashew nuts farmers' loyalty" by 0.025 units. For every unit increase in "training and education," we would expect an increase in "cashew nuts farmers' loyalty" by 0.193 units. For every unit increase in "marketing services," we would expect an increase in "cashew nuts farmers' loyalty" by 0.065 units. The t-value of 5.4167 indicates that this coefficient is statistically significant at the 0.05 significance level (p-value of 0.006). The second hypothesis was stated that AMCOS services do not significantly affect members' loyalty. The study results indicated that AMCOS services do significantly affect members' loyalty and thus the null hypothesis was rejected.

The findings are in line with Cukur and Cukur (2022) who found that beekeeping farmers in Milas Turkey were likely to become a member of co-operative society that provides credit facilities to farmers. This finding contradicted those of Anibogu *et al.* (2017) in Nigeria who reported a nonsignificant relationship between access to credit and AMCOS membership. Anibogu *et al.* (2017) study also revealed that subsidised farm inputs also significantly but negatively related with the decision of becoming AMCOS member. Another study by Chen (2019) in Hangzhou, China found that co-operative ability to provide high income to farmers was a significant factor that influenced increased loyalty. Chen (2019) found that the members' loyalty increased by 2.519 times with every unit increase in the income they were earning from the co-operative. The study concluded that the benefits farmers get from joining a co-operative are key determinants of their participation. Unlike other studies that examined just becoming a member, Chen (2019) focused on participation of members on co-operative activities. This is as shown in Table 12.

Table 12: Linear Regression Outputs services provided

Model Summary						
	R	R Square	Adjusted R Square	Std. Error of the Estimate		
	.54^a	.051	.047	.247		
ANOVA^a						
	Sum of Squares	df	Mean Square	F	Sig.	
Regression	.216	4	.054	27.88	.047	
Residual	13.814	227	.061			
Total	14.030	231				
	Unstandardized Coefficients		Standardised Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	0.962	0.073		13.1781	0.000	
Credit Facility	0.075	0.011	0.043	6.8182	0.005	
Subsidised farm inputs	0.025	0.012	0.009	2.0833	0.009	
Training and Education	0.193	0.011	0.114	17.5455	0.029	
Marketing services	0.065	0.012	0.035	5.4167	0.006	

$$Y = 0.962 + 0.075X_1 + 0.025X_2 + 0.193X_3 + 0.065X_4$$

Where:

Y = dependent variable which is members loyalty to AMCOS

α = intercept

$\beta_1 - \beta_4$ = Regression coefficients

X_1 = Credit Facility

X_2 = Subsidised farm inputs

X_3 = Training and Education

X_4 = Marketing services

The respondents were asked on how they think the services provided by AMCOS are influencing member loyalty. A respondent indicated that;

"I believe the services provided by AMCOS play a significant role in influencing our loyalty as members. For instance, their timely extension services and marketing support have helped us improve our crop yields and get better prices for our produce. When we see such positive results, it strengthens our trust and confidence in the cooperative, making us more loyal to AMCOS." (FGD, 03 July 2023)

Respondents expressed that AMCOS's timely extension services and marketing support significantly influence the loyalty of its members. These services, which enhance crop yields and improve the prices received for produce, not only provide tangible benefits to members but also foster trust and confidence in the cooperative. When members witness such positive outcomes, it strengthens their commitment to AMCOS, reinforcing the cooperative's role as a vital partner in their agricultural endeavours.

Another respondent also indicated that;

"The availability of affordable credit facilities is very crucial for farmers. When they get financial support for inputs or cultivating farms, knowing that they can rely on AMCOS for credit helps it build loyalty. It makes farmers feel like AMCOS truly cares about their well-being and wants them to succeed." (Key informant, 05 July 2023)

Respondent highlights the importance of affordable credit facilities for farmers and how it fosters loyalty. The availability of financial support for inputs and cultivation through AMCOS is seen as a crucial aspect. This perspective aligns with the idea that AMCOS plays a vital role in supporting farmers' livelihoods and well-being. By providing accessible credit, AMCOS not only aids in improving agricultural practices but also builds a sense of trust and care among farmers.

The participants agree that the services provided by AMCOS have a significant impact on their loyalty. To meet the changing needs of members and maintain their loyalty, AMCOS should improve extension services, offer advanced training, enhance communication and transparency, personalise services, streamline payment processes, embrace technology, and organise farmer-focused events. These improvements will not only attract new members but also strengthen the bond between AMCOS and its existing members, leading to long-term loyalty and support.

Corroborating these findings with field theory, the results of the multiple linear regression analysis align with the core tenets of field theory, which posit that individuals' behaviours are influenced by the interplay between personal characteristics and their environment. In this context, the services provided by AMCOS represent a

significant component of the farmers' environment or 'field.' The positive regression coefficients for services like "credit facility," "subsidised farm inputs," "training and education," and "marketing services" indicate that these elements within the AMCOS environment play a crucial role in shaping farmers' loyalty. When AMCOS offers valuable services that enhance farmers' agricultural practices and financial well-being, it strengthens their commitment to the cooperative.

4.4 Effect of AMCOS Service Quality on Members Loyalty

The third objective was to examine the effect of AMCOS service quality on members' loyalty. Based on the SERVQUAL Model, the study utilised the model to test whether there is a casual relationship between the quality of services offered by AMCOS and members loyalty.

Table 13: SERVQUAL Outputs on members loyalty

	Dimension	Statement	Expectation Score in Percentage	Perception Score in Percentage	Gap Score in Percentage	Overall Gap Score
Tangibles	T1	Physical office facilities are visually appealing e.g. office, chairs tables etc	3	1	-2	
	T2	Office always has staff available, e.g. manager.	3	2	-1	
	T3	Godown for crop storage	3	2	-1	-4
Reliability	RL1	The AMCOS provide services according to by-laws	3	2	-1	
	RL2	AMCOS pay as per receipt provided to farmers	3	1	-2	
	RL3	Transport cashew timely to warehouse	3	2	-1	
	RL4	Dependably on services provision	3	2	-1	
	RL5	Provide their services at the times promised	3	1	-2	-7
Responsiveness	RN1	They always keep members informed	3	2	-1	
	RN2	Able to make follow-up when payment delay	3	1	-2	
	RN3	Willingness of AMCOS to assist farmers	3	1	-2	-5
Assurance	AS1	Employees are knowledgeable about the sector and provide accurate information	3	1	-2	
	AS2	Making farmers feel safe during crop weighing and inspection	3	1	-2	
	AS3	Making farmer feel trust and confident during waiting for payment	3	1	-2	
	AS4	Conflicting information or solutions provided by AMCOS	3	2	-1	
	AS5	Trust and confidence about available fund	3	2	-1	-8
Empathy	EM1	AMCOS managers and leaders consider customer care for the farmers.	3	1	-2	
	EM2	Employees take seriously farmers' problem and needs	3	2	-1	-3

SERVQUAL = Tangibles (-4) + Reliability (-7) + Responsiveness (-5) + Assurance (-8) + Empathy (-3)

The SERVQUAL model was applied to analyse the effect of AMCOS (Agricultural Marketing Co-operative Society) service quality on members' loyalty. It consists of five dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy. Each dimension represents a set of statements that customers use to evaluate their expectations and perceptions of service quality. The model calculates the gap between these two measures, providing valuable insights into areas where improvements are needed. The percentages provided under "Expectation Score," "Perception Score," and "Gap Score" represent the customers' expectations, perceptions, and the gap between the two, respectively. The "Overall Gap Score" is the cumulative gap score for each dimension.

Tangibles refer to the physical aspects of service delivery. The statements here indicate that the framers expected visually appealing office facilities, staff availability, and a godown for crop storage. However, their perceptions fell short of these expectations, resulting in a negative gap score of -4. This suggests that improvements are needed in the tangible aspects of the service to meet farmers' expectations and enhance their satisfaction.

Reliability pertains to the ability to provide services consistently and accurately. The statements in this dimension address adherence to by-laws, timely payment according to receipts, and dependable services provision. Farmers perceived a negative gap in these areas (-7), indicating that the AMCOS needs to work on meeting its promises and providing more reliable services to farmers.

Responsiveness refers to the promptness and willingness to assist customers. The statements evaluate how well the AMCOS keeps members informed, follows up on payment delays, and assists farmers. Again, there is a negative gap score (-5), suggesting that the AMCOS should focus on being more responsive and attentive to farmers' needs and concerns.

Assurance involves providing confidence and trust to customers. The statements in this dimension assess employees' knowledge, making farmers feel safe during inspection and weighing, and ensuring trust during payment processes. The AMCOS scored a negative gap of -8 in this dimension, indicating a significant need to improve the level of assurance and instil confidence in farmers.

Empathy refers to understanding and caring for customers' concerns and needs. The statements evaluate whether AMCOS managers and employees consider customer care and take farmers' problems seriously. While there is a negative gap in this dimension (3), it is relatively smaller compared to others, suggesting that there is some level of empathy present but still room for improvement.

The SERVQUAL analysis reveals that the AMCOS service quality falls short of farmers' expectations in multiple dimensions, leading to a cumulative negative gap score. These gaps suggest that AMCOS should focus on improving physical facilities, timeliness of services, payment processes, information-sharing, and building trust and confidence among farmers. The findings are in line with Uwaramutse (2023) who reported a low level of farmers' satisfaction with farming services from co-operatives, forcing some farmers' exit from Irish potato farming activities. The study by Rwela (2023) found a statistically significant and positive relationship between the amount of credit facility offered and AMCOS membership decision. The study also revealed that quality of marketing services provided by AMCOS significantly and positively influenced farmers' membership decision. However, given that Rwela (2023) examined farmers of various crops including sugar cane that are largely consumed in the local market, it might be difficult to generalise these findings on cashew nuts that is majorly exported in its raw form.

The results indicate the weights assigned to each dimension of the SERVQUAL model concerning their significance in influencing the overall service quality perception. The weights are represented as percentages, and the total of all weights sums up to 85.42%, suggesting that these dimensions together contribute significantly to the overall service quality assessment.

Table 14: Weighted Average

S/N	Dimension	Weight by percent
1	Tangible	16.75
2	Reliability	17.69
3	Responsiveness	17.07
4	Assurance	17.09
5	Empathy	16.82
	Total	100

Tangibles entail the physical aspects of the service provider, including office facilities, equipment, and appearance. The assigned weight of 16.75% suggests that tangibles

have a relatively moderate impact on the overall service quality perception. While still important, the physical attributes alone do not dominate the customers' assessment of service quality. AMCOS should maintain visually appealing office facilities and other tangible elements to create a positive impression, but they should also focus on other dimensions to improve overall service quality and customer loyalty. Reliability entails the ability of the AMCOS to perform promised services accurately and dependably. With a weight of 17.69%, it indicates that reliability is a crucial aspect in influencing customers' perception of service quality. Timely and accurate payment, adhering to by-laws, and dependable service provision are vital factors in building trust and loyalty among cashew nut farmers. AMCOS should prioritise efforts to enhance reliability to further improve customer satisfaction and loyalty.

Responsiveness entails the willingness of AMCOS to provide prompt assistance, keep farmers informed, and address their needs effectively. The weight of 17.07% emphasises that being responsive is highly significant in influencing customers' perceptions of service quality. Efficient communication, timely follow-ups, and active support during payment delays are crucial in building positive relationships with farmers. AMCOS should prioritise responsiveness in their service approach to enhance customer satisfaction and loyalty. Assurance involves instilling confidence, trust, and credibility in the farmers during service interactions. With a weight of 17.09%, assurance is deemed as highly impactful in shaping customers' perception of service quality. Knowledgeable employees, transparency in fund management, and making farmers feel safe during crop weighing and inspection are vital aspects to focus on. By improving assurance, AMCOS can foster stronger trust and loyalty among cashew nut farmers. Empathy entails the ability of AMCOS employees to understand and address the farmers' concerns and needs with care and consideration. With a weight of 16.82%, empathy is seen as a crucial factor in shaping customers' perception of service quality. AMCOS should emphasise training and developing their employees' empathetic skills to create a positive emotional connection with farmers. Demonstrating genuine concern for farmers' problems and needs can lead to increased satisfaction and loyalty. The third null hypothesis was stated that AMCOS service quality does not significantly affect members loyalty. The results indicated that AMCOS service quality does significantly affect members loyalty and thus the null hypothesis was rejected.

A respondent indicated that;

"The provision of quality services by AMCOS is extremely important in influencing our loyalty to the co-operative. When AMCOS offers reliable and timely services, it builds trust among us farmers, and we feel confident in our decision to be part of the cooperative. For instance, when they fulfil their promises of delivering inputs and paying for our produce promptly, it shows that they value us as members, and that encourages us to remain loyal and committed to AMCOS." (FGD, Sangalani AMCOS, 20 June 2023).

Respondent emphasises the crucial role of quality services in influencing farmer loyalty to the cooperative. They highlight that when AMCOS consistently delivers reliable and timely services, it fosters trust among the farmers. This trust, in turn, boosts the confidence of members in their decision to remain part of the cooperative. RSP6 specifically mentions the importance of AMCOS fulfilling promises related to input delivery and prompt payments for agricultural produce.

Another respondent indicated that;

"To improve the quality of services, AMCOS should invest in upgrading their facilities and equipment. The physical office and storage facilities need improvements to make them more appealing and functional. Also, AMCOS should focus on streamlining their payment processes to ensure timely payments to farmers, which will enhance our confidence and loyalty. Furthermore, regular communication and feedback mechanisms should be established to address any concerns or suggestions from the members." (FGD, Nasibugani AMCOS, 29 June 2023)

The respondent suggests that AMCOS should invest in upgrading their facilities and equipment, addressing physical office and storage facilities' appeal and functionality. Additionally, respondents highlight the importance of streamlining payment processes to ensure timely payments to farmers, which can enhance confidence and loyalty.

Lastly, they propose establishing regular communication and feedback mechanisms to address member concerns and suggestions.

The distribution of weights among the SERVQUAL dimensions reveals that all five dimensions Tangibles, Reliability, Responsiveness, Assurance, and Empathy are essential in shaping the overall service quality perception. This suggests that AMCOS should adopt a comprehensive and balanced approach to improve their service quality and enhance customer loyalty among cashew nut farmers.

While tangibles have a moderate weight, they still play a role in creating a favourable first impression and setting the tone for subsequent interactions. AMCOS should ensure that their physical facilities are visually appealing and well-maintained to establish credibility and professionalism. Reliability and Responsiveness have higher weights, indicating that AMCOS should focus significantly on delivering services as promised, being punctual, and promptly addressing farmers' concerns. Timely payment and efficient communication are crucial to building trust and satisfaction among farmers. Assurance, with a relatively high weight, underscores the importance of instilling confidence in farmers. AMCOS should strive to provide accurate information, be transparent in their processes, and ensure farmers feel safe during various interactions. Empathy, while slightly lower in weight, should not be overlooked. AMCOS should train their staff to actively listen to farmers, show genuine concern for their problems, and provide personalised assistance when needed. An empathetic approach can lead to stronger emotional connections with customers, ultimately driving loyalty and long-term satisfaction.

4.5 Effect of AMCOS Leadership on Members Loyalty

The fourth objective was to examine the effect of AMCOS leadership on members' loyalty. Table 15 statistics show the mean and standard deviation of the responses for each leadership-related item, which are categorised into three levels: poor, fair, and good. Transparency in management of AMCOS had Mean = 2.47, Std. Deviation = 0.632. The average rating for transparency in AMCOS management is close to 2.5, which falls under the category of "fair" (2) on the scale. This suggests that the farmers' perception of transparency is somewhat positive. Leaders care for the farmers' concerns and listen had a Mean = 2.47, Std. Deviation = 0.632. The mean score for leaders' attentiveness to farmers' concerns and listening is approximately 2.5,

indicating a "fair" (2) rating. Members involved in decision-making had a Mean = 2.48, Std. Deviation = 0.618. The mean score of 2.48 falls within the "fair" (2) category, suggesting that farmers feel moderately involved in the decision-making processes within AMCOS. This aspect is relatively positive but could benefit from further efforts to enhance farmer participation.

Leaders' adherence to AMCOS by-laws had a Mean = 2.48, Std. Deviation = 0.653. The mean score of 2.48 again corresponds to a "fair" (2) rating, indicating that the leaders tend to adhere to the AMCOS by-laws to a certain extent. While there is compliance, there might be some variations or exceptions that affect loyalty. Management adherence to AMCOS by-laws had a Mean = 2.44, Std. Deviation = 0.652. The mean score of 2.44 is also categorised as "fair" (2), suggesting that the overall adherence to AMCOS by-laws by the management is moderately good. Clear demarcation of duties - leading to accountability had a Mean = 2.46, Std. Deviation = 0.631. The mean score of 2.46 falls within the "fair" (2) category, implying that there is a reasonable level of clarity regarding duties within AMCOS, which in turn fosters some degree of accountability.

Table 15: Descriptive statistics for Leadership

Leadership	N	Mean	Std. Deviation
There is transparency in management of AMCOS	232	2.47	.632
The leaders care for the farmers concern and listen	232	2.47	.632
Members are involved in decision making	232	2.48	.618
Leaders adherence to AMCOS by-laws	232	2.48	.653
Management adherence to AMCOS by - laws	232	2.44	.652
There is clear demarcation of duties-leading to accountability	232	2.46	.631

Ordinal logistics regression model was used to analyse the relationship between AMCOS leadership and farmers loyalty. Under the ordinal logistic regression, the results indicate that a one-unit increase in Transparency in Leaders is associated with an increase in the odds of higher loyalty by a factor of 0.75 (approximately 75%). The p-value (Sig.) is 0.008, suggesting that this variable is statistically significant in predicting loyalty. A one-unit increase in Transparency in Management is associated with an increase in the odds of higher loyalty by a factor of 1.46 (approximately 46%).

The p-value is 0.008, indicating statistical significance. A one-unit increase in Concern and Listen is associated with an increase in the odds of higher loyalty by a factor of 0.40 (approximately 40%). The p-value is 0.038, indicating statistical significance. The study by Chen (2019) examined how members' understanding of the management style affected their level of participation in a farmers' co-operatives in Hangzhou, China and reported that increased understanding of management mode, governance style and their role in decision making among co-operative members increased their level of participation (Chen, 2019).

A one-unit increase in Involvement in Decision is associated with an increase in the odds of higher loyalty by a factor of 0.55 (approximately 55%). The p-value is 0.006, indicating statistical significance. A one-unit increase in Leaders Adherence to by Law is associated with an increase in the odds of higher loyalty by a factor of 0.05 (approximately 5%). The p-value is 0.017, indicating statistical significance. A one-unit increase in Management Adherence to by Law is associated with an increase in the odds of higher loyalty by a factor of 0.19 (approximately 19%). The p-value is 0.018, indicating statistical significance. A one-unit increase in Demarcation of Duties is associated with an increase in the odds of higher loyalty by a factor of 1.16 (approximately 16%). The p-value is 0.009, indicating statistical significance. Awoke (2021), also found a significant and positive relationship between low power distance between the senior leadership and members', transparent operations and members participation in decision making.

Corroborating these findings with field theory, the ordinal logistic regression results reveal a significant relationship between AMCOS leadership attributes and farmers' loyalty, reflecting the interplay between leadership practices and the farmers' cooperative environment. Transparency in leadership, involvement in decision-making, adherence to bylaws, and other leadership qualities serve as integral components within the farmers' field, influencing their commitment and trust.

The fourth hypothesis was stated that AMCOS leadership does not significantly affect members' loyalty to AMCOS. The results indicated that AMCOS leadership does significantly affect members' loyalty to AMCOS and thus the null hypothesis was rejected. This is as shown in Table 16.

Table 16: Ordinal Results on AMCOS leadership and members loyalty

Goodness-of-Fit								
Chi-Square				Df	Sig.			
14.284				32	.00997			
14.602				32	.00996			
Pseudo R-Square								
Cox and Snell					.140			
Nagelkerke					.328			
McFadden					.271			
	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
Intercept	4.266	0.758	31.70	1	0.000			
Transparency in Leaders	0.275	1.383	0.04	1	0.008	0.75	0.05	11.42
Transparency in Management	0.38	1.213	0.098	1	0.008	1.46	1.136	15.768
Concern and Listen	0.896	1.009	0.788	1	0.038	0.40	1.056	2.952
Involvement in Decision	0.583	1.002	0.338	1	0.006	0.55	1.078	3.978
Leaders adherence To By Law	2.954	2.134	1.915	1	0.017	0.05	2.001	3.419
Management Adherence to by Law	1.631	1.218	1.792	1	0.018	0.19	2.018	2.131
Demarcation of Duties	0.150	0.917	0.027	1	0.009	1.16	1.193	7.005

The respondents were asked if the leaders of AMCOS influence members loyalty, which good information or bad information from AMCOS leaders that impacted your loyalty to AMCOS and what should be done by AMCOS to improve the leadership of AMCOS in order to increase members loyalty. A respondent indicated that;

"The leaders of our AMCOS play a crucial role in influencing our loyalty. When they show genuine concern for our needs and actively engage with us, it makes us feel valued as members. For example, when they visit our farms regularly to understand our challenges and offer support, it builds trust and loyalty towards the co-operative." (FGD, Makumbea AMCOS 12 July 2023)

Respondent emphasises the importance of leaders in AMCOS in influencing member loyalty. They highlight that leaders who show genuine concern for the needs of members and actively engage with them contribute to members feeling valued. The example of leaders visiting farms to understand challenges and offer support is

mentioned as a trust-building measure. This response underscores the significance of leadership behaviours and actions in fostering loyalty among AMCOS members.

Another respondent indicated that;

"To improve leadership and increase members' loyalty, AMCOS should invest in leadership development programs for their leaders. They should provide training on communication, problem-solving, and decision-making skills. Also, the leaders should be more accessible to us, open to feedback, and responsive to our concerns. When they actively involve us in decision-making, it strengthens our loyalty."(FGD Tunduni Magawa. 05 July 2023)

Respondents suggest specific strategies to improve leadership and enhance member loyalty. They propose investing in leadership development programs for leaders, focusing on skills like communication, problem-solving, and decision-making. Additionally, respondents advocate for leaders being more accessible, open to feedback, and responsive to member concerns. Involving members in decision-making processes is also seen as a way to strengthen loyalty. This response offers actionable suggestions for AMCOS to improve its leadership and, consequently, member loyalty.

The participants highlighted the significant role that AMCOS leaders play in influencing their loyalty. Good and transparent communication, trustworthiness, involvement in decision-making, and a positive work environment were identified as essential factors for improving leadership and increasing members' loyalty. By addressing these aspects, AMCOS can foster stronger connections with their members and enhance overall cooperative loyalty.

4.6 Summary Qualitative Findings

The below is the summary of the qualitative findings.

Table 17: Summary of the qualitative findings

Objective	Key Themes	Outputs
1. Influence of socio-demographic factors	<ul style="list-style-type: none"> - Importance of age, education, and farm size - Need for targeted initiatives by AMCOS 	<ul style="list-style-type: none"> - Specialised training for young farmers - Educational materials for those with limited schooling - Tailored services to meet diverse needs
2. Influence of services provided by AMCOS on members' loyalty	<ul style="list-style-type: none"> - Impact of timely extension services and marketing support - Importance of affordable credit facilities 	<ul style="list-style-type: none"> - Improved crop yields and better produce prices - Enhanced trust and confidence in AMCOS - Financial support leading to increased loyalty
3. Effect of AMCOS service quality on members' loyalty	<ul style="list-style-type: none"> - Reliability and timeliness of services - Need for facility upgrades and efficient payment processes - Importance of regular communication and feedback 	<ul style="list-style-type: none"> - Stronger trust and commitment to AMCOS - Better physical infrastructure and streamlined processes - Enhanced confidence and loyalty through improved service quality
4. Effect of AMCOS leadership on members' loyalty	<ul style="list-style-type: none"> - Role of leaders in engaging and supporting members - Need for leadership development and member involvement 	<ul style="list-style-type: none"> - Increased trust and loyalty through active leadership engagement - Improved leadership skills and decision-making processes

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the findings, conclusions, recommendations, limitations and ends with the areas for further research.

5.1 Summary

The first objective was to determine the influence of socio-demographic factors and was analysed using a multinomial regression model. The model was used to predict cause and effect relationship between socio-demographic characteristics consisting for age, gender, level of education and marital status on dependent variable; members loyalty on AMCOS. The multinomial logistic regression model was used to identify which socio-demographic factor is associated with a high level of farmers' loyalty. The multinomial logistic regression results suggest that age, level of education, and farm size are significant predictors of members' loyalty to cashewnut agriculture marketing co-operative societies. On the other hand, gender, marital status, and family size do not have a significant impact on members' loyalty.

The second objective was to determine the influence services provided by cashewnut AMCOS on members loyalty. The study found that while some services, such as marketing and timely extension services, have relatively higher mean scores, indicating positive perceptions among farmers, others, like affordable credit facilities and provision of co-operative training, receive slightly lower mean scores. The coefficient of determination (R-squared) revealed that approximately 51% of the variation in farmers' loyalty could be explained by the included independent variables (credit facility, subsidised farm inputs, training and education, and marketing services). The ANOVA table indicated that the overall model was statistically significant, with an F-statistic of 27.88 and a p-value of 0.047. The regression coefficients showed that each unit increase in "credit facility" corresponded to a 0.075 unit increase in members loyalty, while each unit increase in "subsidised farm inputs" led to a 0.025 unit increase. "Training and education" had a more substantial positive impact, with a one-unit increase associated with a 0.193 unit increase in loyalty. Similarly, "marketing services" had a positive influence, with a one-unit increase corresponding to a 0.065 unit increase in loyalty. All these relationships were statistically significant at the conventional 0.05 significance level. The intercept term

had little direct interpretation but was necessary to define the regression line. Overall, the findings suggested that AMCOS services, particularly training and education, had a significant and positive effect on cashew nut farmers' loyalty.

The third objective was to examine the effect of AMCOS service quality on members' loyalty. Based on the SERVQUAL Model, the SERVQUAL analysis reveals that the AMCOS service quality falls short of members expectations in multiple dimensions, leading to a cumulative negative gap score. These gaps suggest that AMCOS should focus on improving physical facilities, timeliness of services, payment processes, information-sharing, and building trust and confidence among farmers. The results indicated the weights assigned to each dimension of the SERVQUAL model concerning their significance in influencing the overall service quality perception. The weights are represented as percentages, and the total of all weights sums up to 85.42%, suggesting that these dimensions together contribute significantly to the overall service quality assessment.

The fourth objective was to examine the effect of AMCOS leadership on members loyalty, an ordinal logistic regression model was used to analyse the relationship between AMCOS leadership and farmers loyalty. The findings of the study indicate that the model explains around 14% to 33% of the variance in the dependent variable. The results indicate that a one-unit increase in Transparency in Leaders is associated with an increase in the odds of higher loyalty by a factor of 0.75, one-unit increase in Transparency in Management is associated with an increase in the odds of higher loyalty by a factor of 1.46 and one-unit increase in Concern and Listen is associated with an increase in the odds of higher loyalty by a factor of 0.40, while one-unit increase in Leaders Adherence to by Law is associated with an increase in the odds of higher loyalty by a factor of 0.05 (approximately 5%), one-unit increase in Management Adherence to by Law is associated with an increase in the odds of higher loyalty by a factor of 0.19. The findings reviewed transparency in leaders and involvement in decisions having the most substantial impact on members' loyalty.

5.2 Conclusion

The study concluded that socio-demographic factors, including age, level of education, and farm size, significantly influence members' loyalty to agricultural marketing co-operative societies (AMCOS). On the other hand, gender, marital status, and family

size were found to have no significant impact on farmers' loyalty. These findings indicate that AMCOS should tailor their strategies and services based on the demographic characteristics of their farmer members to enhance loyalty.

Regarding the influence of services provided by AMCOS on cashew nut farmers' loyalty, the study revealed that services like co-operative training and education, subsidised farm inputs, credit facilities, and marketing services significantly affect farmers' loyalty. Among these, co-operative training and education had the most substantial positive effect on loyalty. These results suggest that AMCOS should prioritise and invest in providing high-quality co-operative training and educational programs to foster stronger loyalty among farmers.

The examination of AMCOS service quality on members loyalty using the SERVQUAL model revealed significant gaps between farmers' expectations and perceptions in various dimensions. To improve members' loyalty, AMCOS should focus on enhancing physical facilities, timeliness of services, payment processes, information-sharing, and building trust and confidence among farmers. The dimensions of the SERVQUAL model collectively contribute significantly to the overall service quality assessment, with physical facilities, reliability, and assurance being particularly critical factors.

Concerning AMCOS leadership's effect on members loyalty, the study demonstrated that the independent variables, including transparency in management, Transparency In management, concern and listen, involvement in decision, adherence to by law, Management and demarcation of duties, these variables were found to have a positive influence on farmers' loyalty, transparent in leaders and involvement in decision having the most substantial impact. AMCOS should thus emphasise effective leadership and management practices, particularly in areas such as providing training and educational opportunities, to foster stronger loyalty among members.

5.3 Recommendations

To enhance loyalty, AMCOS should collaborate with the Ministry of Agriculture to develop targeted programs that cater to the unique needs of farmers across different age groups, educational backgrounds, and farm sizes. This partnership should include the design of specialised training sessions, provision of educational materials, and

access to subsidised inputs. Additionally, LGAs can support AMCOS by conducting regular surveys to track demographic changes and providing valuable data for informed decision-making.

For improved loyalty, AMCOS should work closely with LGAs and financial institutions to provide marketing services, cooperative training, and access to affordable credit for farmers. These efforts should align with the Ministry's agricultural development initiatives. AMCOS can collaborate with agricultural experts to develop comprehensive training modules that empower farmers. LGAs can facilitate these collaborations and help in creating a conducive environment for such initiatives.

To address service quality gaps, AMCOS should partner with LGAs and the Ministry to upgrade their physical facilities and ensure timely service delivery. LGAs can support AMCOS in enhancing communication channels and resolving conflicting information promptly. Furthermore, AMCOS should promote transparency and trust-building efforts in partnership with the Ministry, fostering a customer-centric approach. LGAs can facilitate communication between AMCOS and farmers to ensure their needs are met effectively.

To strengthen leadership and management practices, AMCOS should collaborate with the Ministry and LGAs to provide leadership training and educational opportunities for their leaders. The Ministry can support the development of leadership capabilities and conflict resolution skills among AMCOS leaders. LGAs can facilitate transparency in decision-making processes, fostering trust and loyalty among farmers..

5.4 Limitations of the Study

Therefore, the findings may not be directly applicable to other regions or districts with potentially different socio-economic, cultural, or agricultural characteristics. The methodology of the study employed a cross-sectional research design, which provides a snapshot of data at a single point in time. While this approach can identify associations between variables, it may not capture the dynamics and changes over time. Longitudinal studies could offer deeper insights into the evolution of member loyalty and its determinants. The study did not explicitly account for external factors that could influence member loyalty, such as changes in market conditions,

government policies, or global economic trends. These external variables can play a significant role in co-operative dynamics.

5.5 Areas for Further Research

The study recommends that further study could be done on impact of cashewnut farmer loyalty to Agriculture marketing co-operative performance and members livelihood improvement. The current study's scope was also limited to Mkuranga District Council therefore, the extent to which study findings can be generalised to all AMCOS within and outside Tanzania is limited. It is therefore recommended that similar studies, constituting a wider scope by focusing on several other AMCOS dealing with cotton, coffee and sisal across Tanzania should be conducted. Future studies should compare external and internal aspects causing members loyalty. This is because the current study focused on internal aspects (i.e. services quality issued by AMCOS to members) and ignored the external aspects (i.e. changes in the macro level of marketing and political environment).

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APPENDICES

Appendix I: Questionnaire

Preliminary

Dear Respondent,

My name is Lawi Daudi Magoko, Master of Arts in Co-operative and Community development student at Moshi Co-operative University, Tanzania. I am currently carrying out a study on “**Determinants of cashew nuts farmers’ loyalty to Agriculture Marketing Co-operative Societies in Mkuranga district, Tanzania**” as a requirement for partial fulfilment of my master’s degree Programme. I kindly request that you take a few minutes of your time to respond to the questions herein. All information collected was used for academic purposes only and treated with utmost confidentiality. Thank you for your cooperation.

Name of AMCOS..... Date.....

Mobile number of respondents.....

SECTION A: SOCIO-DEMOGRAPHIC FACTORS AFFECTING CASHEW NUTS FARMERS’ LOYALTY TO AMCOS (Tick the correct answer)

1) Year joined AMCOS

2) Number of shares you have.....

3) Indicate the leadership position you have/held in AMCOS

- | | |
|---------------------------|--------|
| a) Chairperson | () |
| b) Deputy chairperson | () |
| c) Board members | () |
| d) Body representative | () |
| e) Farmers representative | |
| f) Other | () |

4) Kindly indicate your age

- | | |
|-------------|--------|
| a) 18-35 | () |
| b) 36-55 | () |
| c) 56-69 | () |
| d) above 70 | () |

5) Sex:

- a) Male ()
- b) Female ()

6) Type of education,

- a) Formal ()
- b) Informal ()

7) If it is formal what is highest level of education you have

- a) Primary ()
- b) Secondary ()
- c) Certificate ()
- d) Vocation training ()
- e) Diploma ()
- f) Degree ()
- g) Masters ()
- h) PhD ()

8) Marital status

- a) Married ()
- b) Single ()
- c) Divorced ()
- d) Widow ()
- e) Widower ()

13) Main source of income

- a) On farm activities ()
- b) off-farm activities ()
- c) Other sources of income ()

14) Home of residence

- a) Urban area resident ()
- b) Rural area resident ()
- c) Sub-rural area resident ()
- d) Sub-urban area resident ()

SECTION B: INFLUENCE OF AMCOS SERVICES ON CASHEWNUTS FARMERS' LOYALTY.

1) Kindly indicate your level of agreement with the following statements where (1) strongly disagree, (2) Neither Agree nor Disagree, (3) Strongly agree

	Services	1	2	3
a	AMCOS have enhanced linkage of affordable credit facilities.			
b	AMCOS have enhanced access to timely extension service			
c	AMCOS have increased access to cheap and high-quality farm inputs			
d	AMCOS enhanced marketing services for cashew nuts			
e	AMCOS provide good storage of crops			
f	Provision of Cooperative training education			
g	Grading and sorting			

SECTION C: EXAMINE THE EFFECT OF AMCOS SERVICE QUALITY ON CASHEW NUTS FARMERS LOYALTY.

1) In this scale, please assign any number from 1 to 3 (lowest to highest), regarding your **perceptions and expectations** on services provided by AMCOS ranging from 1) poor, 2) fair, 3) good.

Dimension	Your perception(experience) on services provided	Your expectation on services provided
Tangibles		
Physical office facilities are visually appealing e.g. office, chairs tables etc		
Office always has staff available, e.g. manager.		
Godown for crop storage		
Reliability		
The AMCOS provide services according to by-laws		
AMCOS pay as per receipt provided to farmers		
Transport cashew timely to warehouse		
Dependably on services provision		
Provide their services at the times promised		
Responsiveness		
They always keep members informed		
Able to make follow-up when payment delay		

Willingness of AMCOS to assist farmers		
Assurance		
Employees are knowledgeable about the sector and provide accurate information		
Making farmers feel safe during crop weighing and inspection		
Making farmer feel trust and confident during waiting for payment		
Conflicting information or solutions provided by AMCOS		
Trust and confidence about available fund		
Empathy		
AMCOS managers and leaders consider customer care for the farmers.		
Employees take seriously farmers' problem and needs		

2)With reference to question one (1) section c allocate weight on how you consider each of the five-dimensions important to you. The total points should not exceed 100 percent use the table below to allocate the weight.

S/N	Dimension	Weight by percent
1	Tangible	
2	Reliability	
3	Responsiveness	
4	Assurance	
5	Empathy	
	Total	

SECTION D: EXAMINE THE EFFECT OF AMCOS LEADERSHIP ON CASHEW NUTS FARMERS' LOYALTY.

Kindly indicate your level of agreement with the following statements where (1) poor, 2) fair, 3) good.

Statement	1	2	3
There is transparency in management of AMCOS			
The leaders care for the farmers concern and listen			
Members are involved in decision making			
Leaders adherence to AMCOS by-laws			
Management adherence to AMCOS by -laws			
There is clear demarcation of duties- leading to accountability			

SECTION E: MEMBERS LOYALTY TO AMCOS

Kindly indicate how loyal you're in the following activities related to AMCOS

- 1) Attending AMCOS meetings
- a) Yes ()
- b) No ()

If yes how many times in the past 3 years.....

If No kindly indicate the reason for not attending meeting

- i) Other commitment ()
- ii) Lack of interest ()
- iii) Distance to meeting area ()
- iv) Poor communication ()
- v) Conflict among members and leaders ()
- vi) Health problem ()
- vii) Other ()

Mention.....

- 2) Vying for leadership position
- a) Yes ()
- b) No ()

If Yes, how many times in the past 3 years.....

If No kindly indicate in the bracket the reason for not vying for leadership position

- i) Lack of confidence ()
- ii) Time commitment ()
- iii) Family responsibility ()
- iv) Lack of incentives ()
- v) Fear of conflict ()
- vi) Lack of interest ()
- vii) Others ()

Mention.....

- 3) Vote for leaders
- a) Yes ()
- b) No ()

If yes, how many times in the past 3 years.....

If No kindly indicate the reason in bracket of not voting for leaders

- i) Low trust to candidates ()
- ii) Lack of perceived impact ()
- iii) Lack of information about election ()
- iv) Dissatisfaction with the candidates ()
- v) Fear of retribution ()
- vi) Lack of incentives ()
- vii) Others ()

Mention.....

4) Sell cashew nuts through AMCOS

- a) Yes ()
- b) No ()

If yes, how many in the past 3 years.....

If No kindly indicate the reason of not selling cashew nut through AMCOS

- i) Better price market ()
- ii) Quality concern ()
- iii) Payment concern ()
- iv) Distance ()
- v) Lack of trust ()
- vi) Incentives ()
- vii) Others ()

Mention.....

5) Are you buying shares

- a) Yes ()
- b) No ()

If yes, how many shares do you have.....

If No kindly indicate the reasons

- i) Not make different ()
- ii) No emphasis from leaders ()
- iii) Security of shares ()
- iv) Lack of information ()
- v) Lack of fund ()
- vi) Price of shares ()
- vii) Others ()

Mention.....

6) Have you bought additional shares

- a) Yes ()
 b) No ()

If Yes, how many shares do you have.....

If No kindly indicate in the bracket the reason of not buying additional shares

- i) Limited benefit ()
 ii) Uncertainty ()
 iii) Alternative investment ()
 iv) Lack of trust in cooperative ()
 v) Lack of fund ()
 vi) Lack of understanding ()
 vii) Other ()

Mention.....

7) Have you ever thought about terminating AMCOS membership?

Yes () No ()

If Yes indicate the reasons

- i) Loss of trust
 ii) Conflict and disagreement with leaders or members
 iii) Change in economic activities
 iv) Lack of participation
 v) Dissatisfaction with services and benefit
 vi) Others

Mention.....

If No, indicate the reasons.

- i) Financial benefit
 ii) Access to resources
 iii) Voice and representation
 iv) Training and support
 v) Trust and confidence
 vi) Others

Mention.....

Appendix II: FGD Guide

1. Do you think AMCOS should take steps to address any social demographic factors that may impact members' loyalty?
2. Have you ever seen any changes in income and productivity as a result of being loyal to a cooperative?
3. How do you think the services provided by AMCOS are influencing member loyalty?
4. What do you think AMCOS should improve in its services provision to meet the changing needs of members and maintain their loyalty?
5. How AMCOS services provision have improved your farming business?
6. How important do you think provision of quality services influence members loyalty to AMCOS
7. Are the services provided by AMCOS satisfying your needs?
8. What should be done by AMCOS to improve the quality of services?
9. How do leaders of AMCOS influence members' loyalty?
10. Which good information or bad information from AMCOS leaders that impacted your loyalty to AMCOS?
11. What should be done by AMCOS to improve the leadership of AMCOS in order to increase members loyalty?
12. What is your opinions on Members loyalty to AMCOS
13. What are the challenges that members are facing to be loyal to AMCOS

Appendix III: Key Informants Guide

1. What are the services AMCOS provides to its members and farmers?
2. Do the current services meet the needs to influence members' loyalty?
3. Do you think members are satisfied with AMCOS services?
4. What improvement or changes do you suggest to be made on service provision, quality of services and leadership of AMCOS to enhance members loyalty?
5. What is your overall perception on members' loyalty to AMCOS?

Appendix IV: Document Review Guide

1. Meeting attendance register
2. Annual audit report
3. annual general meeting Agenda
4. Member register book
5. AMCOS by laws

Appendix V: Specific Objectives Based Matrix

Specific objective	Specific data required	Sources of data	Data collection methods	Data analysis methods
Examine socio-demographic factors affecting cashew nuts farmers' loyalty to AMCOS in the study area	Age Education level Marital status Sex	Cashew Nuts farmers	Questionnaire	Descriptive analysis (mean and standard deviation) Multiple Linear Regression Analysis
Determine AMCOS services influence on Cashew Nuts Farmers' loyalty	Credit facilities Extension service Farm input Marketing	Cashew Nuts farmers	Questionnaire, Focused Group Discussion, Documentary review	Descriptive (mean and standard deviation), Content Analysis, Multinomial Regression Analysis
Examine the effect of AMCOS service quality on cashew nuts farmers loyalty	Reliability Tangibility Responsiveness Assurance Empathy	Cashew Nuts farmers	Questionnaire, Focused Group Discussion, Documentary review	Descriptive (mean and standard deviation), Content Analysis, Servqual model
Examine the effect of AMCOS leadership on cashew nuts farmers' loyalty. Examine on farmers members satisfaction on AMCOS provided services	Transparency Involvement in decision Separation of duties Adherence to by-law	Cashew Nuts farmers	Questionnaire, Focused Group Discussion, Documentary review	Descriptive analysis (mean and standard deviation), Content Analysis, ordinal regression

Appendix VI: Validity CVI Indices

Categories	CVI
linkage to financial institutions	0.55
Subsidised farm inputs	0.66
Training and education	0.60
Marketing services	0.62
Separation of duties	0.83
Adherence to by-laws	0.71
Transparency	0.58
Involvement in decision-making	0.51
Attending meetings	0.85
Vying for leadership position	0.78
Crop collection.	0.67
Buying additional of shares	0.79
Reliability	0.58
Responsiveness	0.64
Tangibility	0.66
Assurances	0.58
Empathy	0.76


Appendix VII: Sampling

SAMPLING							
N A	JINA LA CHAMA	M E	KE	TOTAL MEMBERS	TOTAL RESPONDENT	FEMALE RESPONDENT	MALE RESPONDENT
1	BINGA AMCOS	30	5	35	4	1	3
2	DONDO FARMERS	40	10	50	6	1	5
3	MPAFU	50	11	61	8	2	6
4	UMOJA NI NGUVU	39	11	50	6	1	5
5	BUPU AMCOS	58	12	70	9	2	7
6	KIMANZICHANA KASKAZINI	40	38	78	8	2	6
7	ICHUNGURO	45	16	61	8	2	6
8	JITEGEMEE KIKUNDI	32	16	48	6	1	5
9	UKOMBOZI	45	8	53	4	2	2
10	KIMANZICHANA KUSINI	83	35	118	11	2	9
11	KALOLE KISIJU AMCOS	40	8	48	8	3	5
12	KEREKESE AMCOS	40	23	63	0	0	0
13	MWAMBAO AMCOS	49	5	54	0	0	0
14	MAKUMBEA AMCOS	31	11	42	5	1	4
15	KIFUMANGAO AMCOS	41	12	53	9	4	5
16	MDIMNI	46	6	52	7	2	5
17	TUNDUNI MAGAWA	69	18	87	7	3	4
18	KILIMAHEWA KASKAZINI	50	5	55	7	2	5
19	KILIMAHEWA KUSINI	55	21	76	5	2	3
20	MKIU	45	10	55	7	2	5
21	MWAMKO	41	10	51	7	2	5
22	NYAMATO AMCOS	33	17	50	0	0	0
23	NYANDUTURU	30	5	35	4	1	3
24	KINGOMA-MAKUNGE	43	18	61	6	2	4
25	LUKANGA WARD	130	20	150	6	2	4
26	MISASA	43	17	60	5	2	3
27	NJOPEKA	30	21	51	7	2	5
28	NYAIMBA	41	20	61	0	0	0
29	KITOMONDO	36	14	50	6	1	5
30	KIZAPALA	45	10	55	7	2	5
31	MBULAMBEZINI	56	13	69	1	1	0

32	MKENGE	47	5	52	7	2	5
33	MKURANGA AMCOS	72	19	91	4	1	3
34	MSONGA AMCOS	47	8	55	7	2	5
35	NASIBUGANI AMCOS	81	58	139	9	2	7
36	NYAMIHIMBO	42	8	50	6	1	5
37	SANGALANI	30	9	39	3	3	0
38	SANGASANGA AMCOS	44	8	52	7	2	5
39	MTONGANI AMCOS	42	8	50	6	1	5
40	MUUNGANO FARMERS	60	11	71	0	0	0
41	MSORWA	30	14	44	4	1	3
42	NJIA NNE	57	15	72	5	2	3
43	SHUNGUBWENI	37	13	50	0	0	0
44	TUMAINI AMCOS	30	20	50	0	0	0
45	KISEGESE	46	16	62	0	0	0
	TOTAL	2,1 21	65 8	2779	232	67	165


Appendix VIII: Research Permit

UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY



MOSHI CO-OPERATIVE UNIVERSITY (MoCU)
CHUO KIKUU CHA USHIRIKA MOSHI

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Unapojibu tafadhali taja:
Kumb. Na. MoCU/UGS/3/41 **Tarehe: 11 Mei, 2023**

Katibu Tawala,
Mkoa wa Pwani,
S. L. P. 30080,
Kibaha - PWANI.

**YAH: KIBALI CHA KUFANYA UTAFITI KWA WANAFUNZI WA CHUO
KIKUU CHA USHIRIKA MOSHI (MoCU)**

Tafadhali husika na kichwa cha habari hapo juu.

Madhumuni ya barua hii ni kumtambulisha kwako **Ndugu Lawi Daudi Magoko** mwanafunzi wa Chuo Kikuu cha Ushirika Moshi ambaye kwa sasa anatarajia kufanya utafiti katika eneo lako.

Maombi haya yamezingatia Waraka wa Serikali wenye Kumb. Na. MPEC/R/10/1 wa tarehe 7 Julai, 1980 pamoja na Hati Idhini ya Chuo Kikuu Cha Ushirika Moshi (MoCU). Moja ya majukumu ya Chuo ni kufanya tafiti na kutumia matokeo ya tafiti hizo katika kufundishia. Aidha, wanafunzi hufanya tafiti kama sehemu ya masomo yao wakiwa Chuoni.

Ili kufanikisha utekelezaji wa tafiti hizo, Makamu Mkuu wa Chuo hutoa vibali vya kufanya tafiti nchini kwa wanataaluma na wanafunzi kwa niaba ya Serikali na Tume ya Sayansi na Teknolojia.

Hivyo basi, tunakuomba umpatie mwanafunzi aliyetajwa hapo juu msaada atakaouhitaji ili kufanikisha utafiti wake. Gharama za utafiti atalipia mwenyewe. Msaada anaouhitaji ni kuruhusiwa kuonana na viongozi na wananchi ili aweze kuzungumza nao kuhusiana na utafiti wake. Aidha, endapo kuna maeneo yanayozullwa kufanyika kwa shughuli hii, tafadhali mjulishe hivyo.

Mada ya utafiti wa mwanafunzi aliyetajwa hapo juu ni: **"Determinants of Cashew Nuts Farmers' Loyalty to Agriculture Marketing Co-operative Societies in Mkuranga District, Tanzania"**

Maombi haya ni kwa ajili ya utafiti utakaofanyika **Wilaya ya Mkuranga**
kuanzia tarehe 15 Mei, 2023 hadi 15 Mei, 2024.

Wako katika ujenzi wa Talfa,

.....*John Safari*.....

Prof. John G. Safari

Kny.: Makamu Mkuu wa Chuo

ja

Nakala kwa: Lawi Daudi Magoko (Mtafiti)

Appendix IX: Research Permit

**JAMHURI YA MUUNGANO WA TANZANIA
OFISI YA RAIS
TAWALA ZA MIKOA NA SERIKALI ZA MITAA**

Telagrams: "REGCOM COAST"
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Unapojibu tafadhali taja:
Kumb. Na. HA.270/325/01/109

2 Juni, 2023

Katibu Tawala Wilaya,
Wilaya ya Mkuranga,
S. L. P 10,
MKURANGA.

**Yah: KIBALI CHA KUFANYA UTAFITI KWA WANAFUZI WA CHUO KIKUU CHA
USHIRIKA MOSHI (MoCU)**

Tafadhali husika na somo hapo juu.

2. Napenda kumtambulisha Ndg. Lawi Daudi Magoko ambaye ni mwanafunzi wa Chuo kikuu cha Ushirika Moshi.
3. Ruhusa imetolewa kwa mwanafunzi tajwa ili aweze kufanya utafiti kuhusu "Determinants of Cashew Nuts Farmers' Loyalty to Agriculture Marketing Co-operative Societies in Mkuranga District".
4. Utafiti huo utafanyika kuanzia tarehe 2 Juni, 2023 hadi tarehe 15 Mei, 2024.
5. Tafadhali unaombwa kumpa ushirikiano unaohitajika ili aweze kufanikisha utafiti huo.

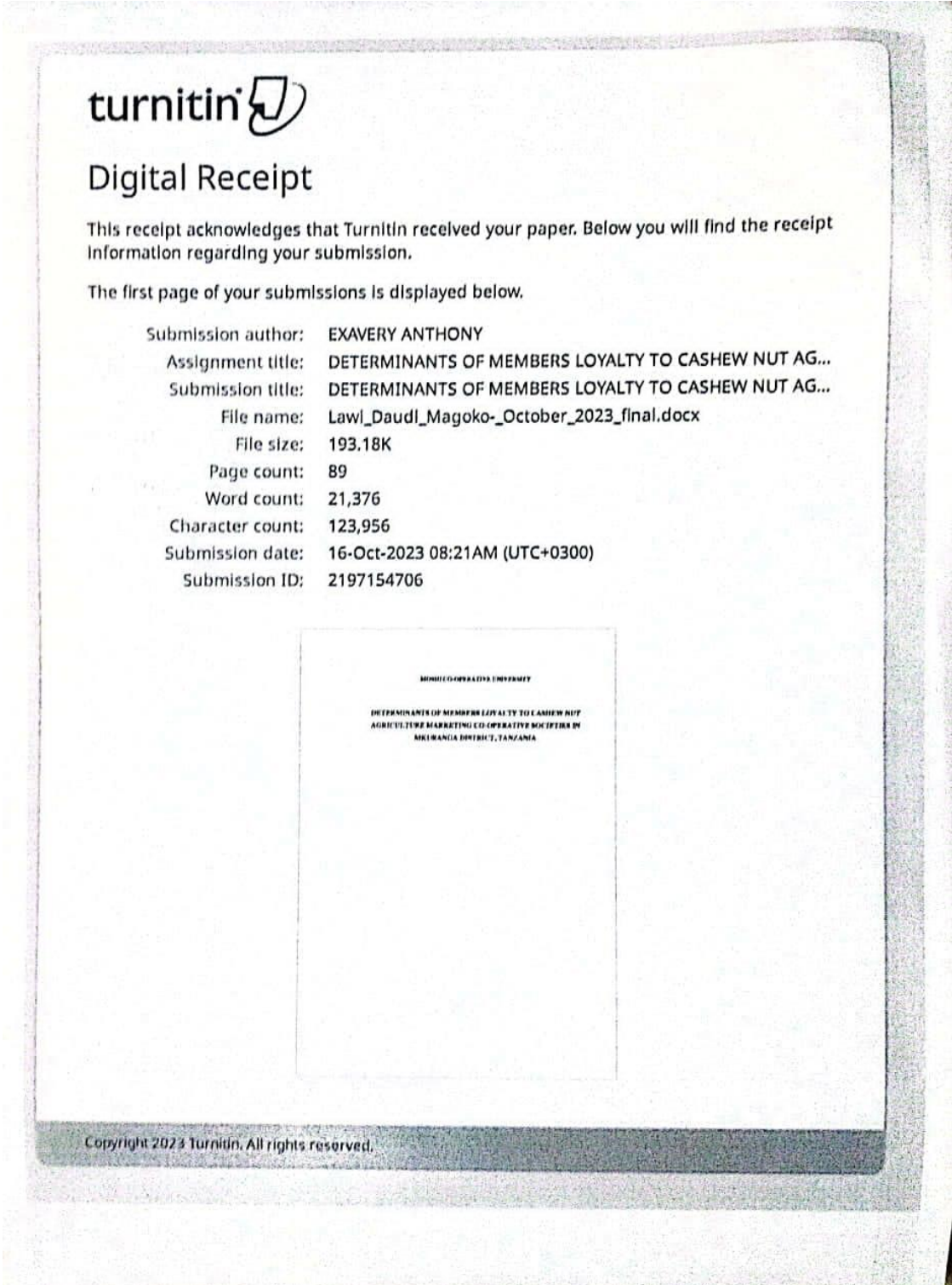
Nashukuru kwa ushirikiano.


Savera K. Salvatory

Kny: **KATIBU TAWALA MKOA**

Nakala: Makamu Mkuu wa Chuo,
Chuo Kikuu cha Ushirika Moshi,
S. L. P 474,
MOSHI.

Ndg. Lawi Daudi Magoko,
MTAFITI.

Appendix X: Plagiarism Report

turnitin 

Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author: EXAVERY ANTHONY
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AGRICULTURE MARKETING CO-OPERATIVE SOCIETY IN
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