The effectiveness of Coffee Cooperative Unions and Coffee Value Chain Performance of coffee cooperatives in greater Bushenyi

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A dissertation submitted to Graduate studies, Research and Innovations in Partial Fulfillment of the requirements for the Award of Master's

Degree in Agribusiness and Value Chain Management

of Bishop Stuart University

September, 2025

Declaration

I, **Ahikire Ambrose,** do declare that this dissertation is my original work and that no part or the whole of it has ever been submitted to any other institution for any award.

Signature ..... Date: 29/09/2025

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Approval

This is to certify that this dissertation has been done under the supervision of the following supervisors and is now ready for submission to directorate of Graduate studies, Research and Innovations for further examination.

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Dedication

This work is dedicated to my beloved parents and my family who have been the pillars behind my success today because of their social, financial and moral support rendered to me, their constant prayers and comfort all contributed greatly towards the end of my research report.

Acknowledgements

First, I extend great thanks to the almighty God for his invaluable support and kindness towards my success. God has given me good health, comfort and encouragement during this report writing.

My great thanks go to my supervisors, Mr. Nkuuhe Douglas and Mr. Kahoza Richard for their endless positive guidance during my dissertation writing process. Without your support, I would not have completed this report. May the almighty God reward you richly.

I cannot forget the general support from my friends and class mates particularly for their academic sharing, moral support through group discussions and for standing with me in efforts to finalize my research report.

I finally extend my sincere gratitude to my respondents for providing me with valid data without hesitation. May God bless you for me abundantly.

Table of contents

Declaration i

Approval ii

Dedication iii

Acknowledgements iv

Table of contents v

List of tables ix

List of figures x

Abstract xi

Chapter one 1

Introduction 1

1.0 Introduction 1

1.1 Background of the study 1

1.2 Problem statement 5

1.3 Objectives of the study 6

1.3.1 Main objective 6

1.3.2 Specific objectives 6

1.4 Research questions 6

1.5 Scope of the study 7

1.5.1 Geographical scope 7

1.5.2 Subject scope 7

1.5.3 Time scope 7

1.6 Justification of the study 7

1.7 Significance of the study 9

1.8 Conceptual frame work 10

Chapter Two 14

Literature Review 14

2.1 Concept of Value Chain Performance 14

2.2 Principles of cooperatives 15

2.3 The role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance 18

2.4 Factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance 21

2.5 The effect of coffee cooperative unions on coffee value chain performance 25

Chapter Three 29

Research Methodology 29

3.1 Research design 29

3.2 Study area 29

3.3 Target population 30

3.4 Sample size determination 31

3.5 Sampling techniques 32

3.5.1 Stratified sampling 32

3.5.2 Purposive sampling 33

3.6 Data Collection Methods 33

3.6.1 Survey method 33

3.6.2 Interview Method 34

3.6.3 Data collection procedure 34

3.7 Data collection tools 34

3.7.1 Questionnaires 34

3.7.2 Interview guide 35

3.8 Data quality control 35

3.9 Data analysis and processing 36

3.10 Model specification 37

3.11 Research ethical considerations 39

3.12 Scientific Limitations and delimitations of the study 40

3.13 Dissemination of study results to participants and public 42

Analysis, Presentation and Interpretation of Results 45

4.0 Introduction 45

4.1 Response rate 45

4.2. Bio-data of respondent 45

4.3 The role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance in greater Bushenyi 50

4.4 Factors influencing the effect of coffee cooperative unions in improving the coffee value chain performance 55

4.5 The effect of coffee cooperative unions on value chain performance 58

Discussion, Conclusion, Recommendations, Areas for further Research 63

5.1 Discussion of study findings 63

5.1.1 The role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance 63

5.1.2 Factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance 65

5.1.3 Effect of coffee cooperative unions on value chain performance 68

5.2 Study conclusion 70

5.3 Study recommendations 71

5.4 Areas for further research 72

References 74

Appendices 79

Appendix 1: Questionnaire for respondents 79

Appendix 2: Interview guide for key informants 89

Appendix 3: Study work plan 91

Appendix 4: Research Implementation Budget 92

List of tables

Table 4.1 : How frequently value chain actors provide market information to coffee farmers 50

Table 4.2 : The extent to which coffee cooperative unions promote value addition ... 51

Table 3 : Multi-linear regression output on roles of value chain Actors on value chain performance 54

Table 4 .4: Factors influencing the effectiveness of coffee cooperative unions in improving coffee value chain performance 57

Table 4.5 : Extent to which coffee cooperative unions succeeded in reducing post-harvest losses and improving the quality of coffee in Greater Bushenyi district 58

Table 4.6 : The influence of government regulations on the ability of cooperative unions to improve the coffee value chain 59

Table 4.7 : Regression results on effect of coffee cooperative unions on value chain performance 62

List of figures

Figure 4.1 : Responses rate 45

Figure 4.2 : Sex of respondents 46

Figure 4.3 : Age group 47

Figure 4.4: Marital status 48

Figure 4.5 : Level of education 49

Figure 4.6 : Rate of the availability of financial resources provided by cooperative unions 55

Figure 4.7 : Collaboration between coffee cooperative unions and other value chain actors in improving performance 60

Abstract

The study investigated the effectiveness of coffee cooperative unions on improving coffee value chain performance in greater Bushenyi district. It was limited to; identifying the role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance in the study area, analyzing factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance and examine the effect of coffee cooperative unions on coffee value chain performance. The study employed a cross-sectional research design and primary data was collected from 208 respondents. The data was analysed using SPSS version 22.0. The study used questionnaires and interview guide to collect data.

The study reveals that value chain actors and cooperative unions play a critical role in enhancing coffee value chain performance particularly training, quality enhancement, market access and input access lead to significant improvements in value chain performance. The results show that the effect of coffee cooperative unions in improving coffee value chain performance is significantly influenced by access to financial resources, market accessibility, provision of quality inputs, collaboration with value chain actors, and strong member engagement. The study concludes that market linkage, input support, training access, and credit services all have a statistically significant positive effect on performance, with market linkage having the strongest impact. The study recommends that; cooperative unions should foster transparency, democratic governance, regular meetings, and inclusive decision-making processes to encourage active member involvement, efforts should still be made to advocate for clear coffee sector policies, subsidies, and regulatory frameworks to create an enabling environment, Government in partnership with private sector actors should collaborate with cooperative unions to build their institutional capacity and accountability, and provide a policy environment that enables cooperatives to thrive as effective agents in improving coffee value chain performance

Chapter one

Introduction

1.0 Introduction

This chapter presents the background of the study, problem statement, research objectives, research questions, scope, justification significance and conceptual frame work.

1.1 Background of the study

Coffee cooperatives are organizations formed by coffee farmers to collectively market their produce, negotiate prices, and access resources such as financing, inputs, and technical assistance (World Bank, 2019). These cooperatives play a crucial role in empowering smallholder farmers and enhancing their bargaining power within the coffee industry. Value chain can be defined as the full range of activities which are required to bring a product or service from conception, through the different phases of production, delivery to the final consumer and final disposal after use (Miller, 2021).

Globally, coffee cooperative unions play a crucial role in improving the performance of the coffee value chain by empowering smallholder farmers, enhancing quality standards, and facilitating market access (Pérez et al., 2018). According to Pérez et al., (2018), cooperative organizations are instrumental in addressing challenges along value chains such as price volatility and market access faced by coffee farmers worldwide. By pooling resources, negotiating collectively, and implementing sustainable practices, coffee cooperative unions contribute to the resilience and sustainability of the global coffee industry (Pérez et al., 2018).

In Africa, coffee production is a significant contributor to the economies of several African countries, including Ethiopia, Kenya, Rwanda, and others (Gitonga & Nyariki,

2021). It is often a major source of foreign exchange earnings and supports millions of smallholder farmers and their families in Africa. Cooperative unions in Africa serve as intermediaries between smallholder farmers and the global coffee market. They aggregate coffee produce from individual farmers, provide extension services, facilitate access to finance, inputs, and technology, and negotiate better prices with buyers (Gitonga & Nyariki, 2021).

Ethiopia is Africa's largest coffee producer and is renowned for its high-quality Arabica coffee (Belachew & Recha, 2020). The country has a long history of coffee cultivation, and cooperative unions have played a crucial role in organizing farmers and improving the quality and market access of Ethiopian coffee (Shiferaw et al., 2021). For example, the Oromia Coffee Farmers Cooperative Union (OCFCU) has helped Ethiopian coffee farmers gain Fair trade certification, which has enabled them to fetch premium prices in the international market (Belachew & Recha, 2020). Cooperative unions provide smallholder farmers with access to international markets that they would otherwise struggle to reach independently. By pooling resources and volumes, cooperative unions can negotiate better prices and terms of trade with buyers, thereby improving the income of coffee farmers (Imai, 2019).

The coffee sector is dominated by smallholder farmers organized into cooperative societies. The Kenya Cooperative Coffee Exporters (KCCE) is one of the largest cooperative unions in the country, representing thousands of smallholder farmers (Karanja, 2020). Through initiatives like direct trade relationships with international buyers and investments in quality improvement programs, cooperative unions in Kenya have contributed to enhancing the competitiveness of Kenyan coffee in the global market (Karanja, 2020). Cooperative unions often invest in training programs and infrastructure to improve the quality of coffee produced along the coffee value chain

(USAID, 2017). This includes providing guidance on best agricultural practices, investing in processing facilities, and implementing quality control measures to improve quality of coffee along coffee value chain (USAID, 2017). Improved quality not only commands higher prices but also enhances the reputation of African coffee in the global market.

In Uganda, Cooperative unions play a crucial role in organizing smallholder coffee farmers, providing them with access to markets, inputs, extension services, and financial support to enhance performance of coffee value chain (Mukasa, 2018). These unions serve as intermediaries between farmers and buyers, helping to improve market access and bargaining power for the farmers. For example, The Uganda Coffee Farmers Alliance (UCFA) is one of the prominent cooperative unions in Uganda (Mukasa, 2018). It represents over 1.5 million coffee farmers across the country. The Uganda Coffee Farmers Alliance works to empower smallholder farmers by providing training on sustainable farming practices, facilitating access to inputs such as fertilizers and pesticides, and connecting farmers to international markets thus improving coffee value chain performance (Abraham, 2020).

The Gumutindo Coffee Cooperative, located on the slopes of Mount Elgon in Eastern Uganda, is another example of a successful cooperative union (Otim & Ochola, 2017). It has implemented initiatives to improve the quality of coffee produced by its members through training in proper harvesting and processing techniques. Gumutindo has also secured Fair trade certification, allowing its members to command premium prices for their coffee in the global market (Otim & Ochola, 2017).

Cooperative unions in Uganda, such as UCFA and Gumutindo, play a vital role in providing smallholder farmers with access to international markets (Turyahabwe et al.,

2020). By consolidating the coffee produced by individual farmers, these unions can negotiate better prices and contracts with buyers, ensuring a more stable income for their members which improve value chain performance (Mukasa, 2018). Through training and capacity-building programs, cooperative unions help farmers improve the quality of their coffee beans. This includes proper harvesting, processing, and storage techniques to meet international quality standards. Improved coffee quality not only fetches higher prices but also enhances the reputation of Ugandan coffee in global markets (UCDA, 2020).

The Greater Bushenyi District in Uganda is a prominent coffee-growing region known for its robust coffee production. Coffee cooperative unions in this district play a crucial role in enhancing the value chain performance by providing various services and support to coffee farmers (Kiyingi, 2022). These cooperatives aim to improve production, processing, and marketing of coffee, thereby increasing incomes and livelihoods of the farmers.

However, the interventions and services provided by cooperative unions in Greater Bushenyi have led to several improvements in the coffee value chain. For example, through training and better access to inputs, farmers have reported higher yields (Nakimbugwe, 2020). This increased productivity has strengthened the supply side of the value chain (Nakimbugwe, 2020) and also by adopting best practices and utilizing cooperative processing facilities, the quality of coffee has significantly improved (Nakatudde, 2023). Higher quality coffee fetches better prices on the international market.

In Greater Bushenyi district, Ankole Coffee Producers Cooperative Union has been a model of success, demonstrating how organized efforts can lead to substantial improvements in the coffee value chain. Their initiatives in training, market access, and

value addition have set a benchmark for other cooperatives in the region (Nakatudde, 2023).

1.2 Problem statement

In an ideal scenario, Coffee Cooperative Unions would play a pivotal role in driving positive change within the coffee value chain (Turyahabwe et al., 2020). They would effectively coordinate and support coffee farmers, ensuring access to markets, inputs, extension services, and financial resources (Turyahabwe et al., 2020). Through collective action and collaboration, cooperative unions would facilitate the adoption of best practices in coffee farming, quality assurance, and sustainable production methods to enhance the performance of coffee value chain (UCDA, 2018). This would lead to increased productivity, improved coffee quality, higher incomes for farmers, and overall development of the coffee value chain.

However, the reality often presents various challenges and constraints that hinder the effectiveness of coffee cooperative unions as these may include inadequate resources and capacity within the union, limited market access, poor infrastructure, low adoption of modern farming techniques, and governance issues (UCDA, 2020). Additionally, external factors such as price fluctuations, climate change, and market volatility further exacerbate the factors that affect coffee farmers and cooperative unions which affect value chain performance (UCDA, 2020).

Although literature exists on the general benefits of agricultural cooperatives, a specific knowledge gap persists regarding the effectiveness of Coffee Cooperative Unions (CCUs) in improving coffee value chain performance in Uganda (Kibirige, 2022). Many studies focus on cooperatives' broad role in agriculture without specifically addressing the contributions of CCUs (Muwanga et al., 2021). Additionally,

comprehensive studies that examine both internal dynamics (such as governance, capacity, and member participation) and external factors (such as market access, regulatory environment, and international trade requirements) influencing CCU effectiveness are lacking (Nuwagaba & Mutenyo, 2022). This study sought to fill this gap by providing empirical evidence on the effectiveness of Coffee Cooperative Unions (CCUs) in improving the coffee value chain performance in Uganda with reference to coffee cooperative unions in greater Bushenyi.

1.3 Objectives of the study

1.3.1 Main objective

To investigate the effectiveness of coffee cooperative unions on improving coffee value chain performance in greater Bushenyi district.

1.3.2 Specific objectives

i) To identify the role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance in the study area

ii. To analyze factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance in greater Bushenyi district.

iii. To examine the effect of coffee cooperative unions on coffee value chain performance

1.4 Research questions

i. What are the roles of value chain actors and coffee cooperative unions on enhancing coffee value chain performance in the study area?

ii. What are factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance in Greater Bushenyi district?

iii. What is the effect of coffee cooperative unions on coffee value chain performance?

1.5 Scope of the study

This was categorized into three; geography, subject and time scope as discussed below;

1.5.1 Geographical scope

This study was carried in greater Bushenyi district

1.5.2 Subject scope

The study focused on effectiveness of coffee cooperative unions as (independent variable) and coffee value chain performance as (a dependent variable). This study specifically looked at; the role of value chain actors (input suppliers, farmers, local traders, cooperatives, processors and consumers) and coffee cooperative unions on enhancing coffee value chain performance in the study area, factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance and the effect of coffee cooperative unions on coffee value chain performance.

1.5.3 Time scope

The study used a period of nine months to be completed that is from October, 2024 to June, 2025. The researcher used this period to develop concept paper, write a proposal, collect data, analyze and compile final dissertation. The study used references from 2017 to date because the references from this time frame ensure that the study is based on the most current and up-to-date research and information available. This helps to ensure that the findings are relevant to the current context and reflect the latest developments in the field of management of cooperative unions and coffee value chain performance analysis.

1.6 Justification of the study

Coffee remains Uganda's leading agricultural export and a major source of income and livelihood for millions of smallholder farmers, especially in regions such as Greater

Bushenyi, which includes districts like Bushenyi, Sheema, Mitooma, Rubirizi, and Buhweju. Despite its potential, Uganda's coffee sector continues to face challenges related to low farm-gate prices, poor value addition, limited access to export markets, and weak farmer bargaining power (International Coffee Organization [ICO], 2023; Uganda Coffee Development Authority [UCDA], 2024). These challenges underscore the importance of strengthening collective action mechanisms such as coffee cooperative unions, which have historically played a central role in empowering farmers, promoting fair trade, and improving participation in the coffee value chain.

Coffee cooperative unions are critical in mobilizing producers, facilitating access to agricultural inputs, enhancing quality control, promoting post-harvest handling, and linking farmers to national and international markets. They also contribute to capacity-building, financial inclusion, and sustainability practices, all of which are essential components for value chain upgrading (Baffoe & Matsuda, 2023). However, the extent to which these unions have effectively contributed to improving the performance of the coffee value chain in Uganda, particularly in Greater Bushenyi, remains insufficiently studied and documented.

Greater Bushenyi is one of Uganda's key coffee-growing regions with a long-standing history of cooperative involvement. Yet, empirical evidence assessing the effectiveness of these cooperatives in enhancing value chain performance is limited. Understanding the strengths and weaknesses of existing cooperative structures will provide a basis for policy formulation and development interventions aimed at revitalizing Uganda's coffee sector. Moreover, with the Uganda Coffee Roadmap targeting an increase in annual coffee exports from 6 million to 20 million 60kg bags by 2030, strengthening

local cooperatives is seen as a strategic tool for achieving this ambitious goal (UCDA, 2024).

1.7 Significance of the study

The study will be significant to different stakeholders;

Coffee farmers

Understanding the effectiveness of Coffee Cooperative Unions is crucial for coffee farmers as it directly impacts their livelihoods. By identifying the challenges and opportunities within the coffee value chain, farmers can better leverage the support and services provided by coffee cooperative unions to improve their productivity, access to markets, and income. Insights from this study can empower farmers to make informed decisions about their farming practices, leading to improved livelihoods and resilience against external shocks.

Coffee cooperative unions

This study will provide valuable insights into its performance and areas for improvement. By identifying challenges and opportunities, Coffee cooperative unions will tailor its programs and interventions to better meet the needs of its members and enhance its effectiveness in supporting coffee farmers. The findings of this study will inform strategic planning, resource allocation, and capacity-building efforts within Coffee cooperative unions, ultimately strengthening its role as a key player in the coffee value chain.

Local community members

The significance of this study extends to the broader local community in Greater Bushenyi District. A thriving coffee sector benefits not only coffee farmers but also other community members who may be indirectly involved in coffee production, processing, or trade. More effective coffee cooperative unions would mean increased

economic opportunities, improved infrastructure, and overall socio-economic development in the local community.

Government/policy makers

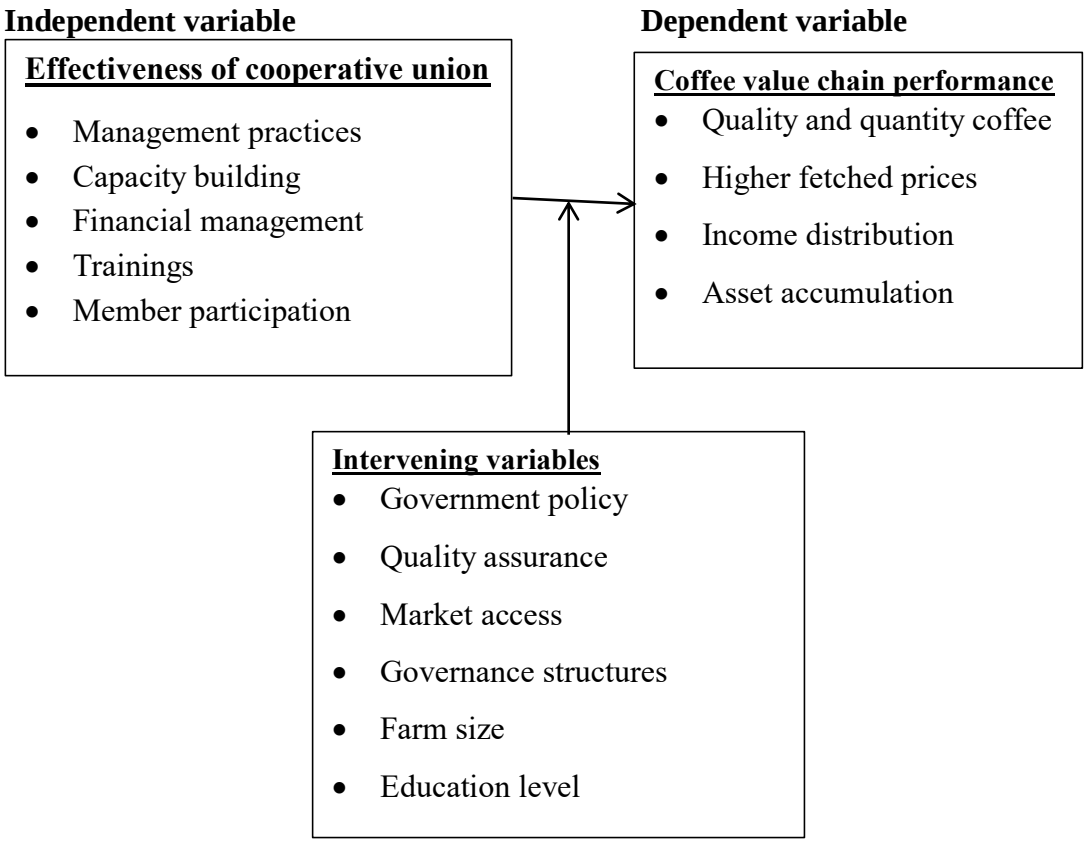
For government officials and policy makers, understanding the effectiveness of Coffee Cooperative Unions is crucial for shaping policies and programs that support the sustainable development of the coffee sector. Insights from this study can inform policy interventions aimed at addressing systemic challenges, strengthening institutional capacities, and promoting inclusive growth within the coffee value chain.

Future researchers

This study will serve as a foundation for future research endeavors in the field of coffee value chain development and cooperative management. Researchers will build upon the findings of this study to explore specific aspects of coffee cooperative union's performance, conduct comparative analysis with other cooperative unions, or investigate the long-term impacts of interventions aimed at enhancing the effectiveness of cooperative unions in improving value chain performance with in the coffee sector.

1.8 Conceptual frame work

In the conceptual framework for studying the effectiveness of coffee cooperative unions (CCUs) in improving coffee value chain performance, there are three main types of variables: independent, mediating, and dependent variables as shown below;



Source: Researcher's own construct, 2024

Independent variable

This is the main independent variable in the framework. It represents the presence and activities of cooperative unions within the coffee industry. This variable encompasses factors such as technology and innovation, management practices, social capital, financial resources, capacity building and strategic initiatives undertaken by Coffee Cooperative Unions (ICO, 2023). Capacity-building initiatives implemented by the cooperative unions can empower farmers with the skills, knowledge, and resources needed to improve their productivity, efficiency, and resilience in order to strengthen coffee value chain performance (ICO, 2023).

Intervening variables

These variables collectively mediate the relationship between coffee cooperative unions and value chain performance through influencing how the actions and initiatives

of cooperative unions translate into tangible outcomes within the value chain. For example; governance structure: The governance structure within the cooperative unions can significantly influence their effectiveness in improving the coffee value chain performance (Fairtrade Foundation, 2023; ILO, 2024). Factors such as transparency, accountability, decision-making processes, and representation of stakeholders play a crucial role.

Market access: The ability of cooperative unions to facilitate market access for coffee farmers can directly impact the performance of the value chain. A more effective coffee cooperative union is expected to have better market linkages and bargaining power, leading to improved market access for coffee farmers (FAO, 2021). This also includes market linkages, certification processes, access to information, and negotiation power in the market.

Quality assurance: An effective cooperative union can provide training, resources, and support to farmers to enhance the quality of their coffee, ensuring compliance with international standards (ICO, 2023).

Dependent variable

Coffee Value Chain Performance: This is the dependent variable, representing the overall efficiency, productivity, and profitability of the coffee value chain. It includes indicators such as coffee quantity and quality, price received by farmers, income distribution along the value chain, and overall economic sustainability (UCDA, 2024).

Intervening variables will be measured and included as control variables in statistical analyses such as multiple regression. This allows for isolation of the true effect of cooperative union effectiveness on value chain performance. For example The regression model may include education level, household income, and farm size as

covariates. This ensures that the variations in the dependent variable are primarily explained by the independent variable, not the intervening ones.

Chapter Two

Literature Review

2.1 Concept of Value Chain Performance

Value chain performance refers to the efficiency and effectiveness with which a series of activities and processes transform raw materials into final products and deliver them to consumers, generating value at each stage (Porter, 2023). It encompasses various dimensions, including productivity, quality, speed, cost-effectiveness, sustainability, and customer satisfaction. Value chain performance is crucial for gaining competitive advantage, improving profitability, and ensuring long-term sustainability. The key dimensions Value chain performances are described below;

Efficiency; refers to the optimal use of resources to achieve the desired output with minimal waste. Productivity measures the output generated per unit of input, such as labor or capital. For example, Advanced manufacturing technologies, such as automation and robotics, improve the efficiency of the production process, reducing labor costs and increasing output (Porter, 2023).

Quality; this pertains to the degree to which a product or service meets customer expectations and regulatory standards. High-quality products lead to higher customer satisfaction and repeat business. Implementing stringent quality control measures and continuous improvement processes can lead to higher product standards and customer loyalty (Kaplinsky, 2023).

Speed and responsiveness; refers to the time taken to move products from the initial stages of production to the final consumer. Responsiveness involves the ability to adapt to market changes and customer demands swiftly. Companies like Amazon have

revolutionized supply chain speed and responsiveness with sophisticated logistics and inventory management systems, ensuring quick delivery times (Christopher, 2023).

Cost-effectiveness involves minimizing costs while maintaining quality and efficiency. It includes managing expenses related to production, transportation, labor, and materials. For example, lean manufacturing principles, which focus on waste reduction and efficient use of resources, can significantly reduce production costs (Womack & Jones, 2022).

Sustainability in the value chain involves environmentally and socially responsible practices that ensure long-term viability without compromising future resource. Companies are increasingly adopting sustainable practices, such as using renewable energy and sustainable sourcing of materials, to reduce their environmental footprint and appeal to eco-conscious consumers (Elkington, 2023).

Customer satisfaction; this measures how well a product or service meets or exceeds customer expectations. High levels of satisfaction lead to repeat purchases and brand loyalty. Personalized customer experiences and high-quality customer service can significantly enhance customer satisfaction and retention (Gallo, 2023).

2.2 Principles of cooperatives

Cooperatives are member-owned and democratically controlled enterprises designed to meet common economic, social, or cultural needs. They operate based on a set of principles that guide their organization, governance, and functioning. These principles, originally developed by the Rochdale Society of Equitable Pioneers in 1844, have evolved over time and were formalized by the International Cooperative Alliance (ICA). The latest iteration of these principles includes the following.

Voluntary and Open Membership

Cooperatives are open to all individuals who are willing to accept the responsibilities of membership, without any form of discrimination (Chibanda et al., 2023). This principle ensures inclusivity, meaning that membership is voluntary and not restricted by gender, social class, race, political affiliation, or religion.

Democratic Member Control

Cooperatives are democratic organizations, controlled by their members, who actively participate in setting policies and making decisions. Each member has one vote, regardless of the amount of capital they contribute (ICA, 2020). This principle ensures equal participation and shared governance, where power is equally distributed among members (Cornforth, 2021).

Member Economic Participation

Members contribute equitably to, and democratically control, the capital of the cooperative. This means that profits (surpluses) are allocated in ways that benefit members. Surpluses are either reinvested into the cooperative, used to develop community services, or distributed to members based on their transactions rather than their capital shares (ICA, 2020). The reinvestment of surpluses strengthens the cooperative's sustainability and growth (Chibanda et al., 2023).

Autonomy and Independence

Cooperatives must remain autonomous and independent from government or external organizations. Even when they enter agreements with external parties, the cooperative must retain control and operate according to the will of its members (Birchall, 2021). This principle is critical for ensuring that cooperatives do not lose their focus on member needs or fall under external influence.

Education, Training, and Information

Cooperatives provide education and training for their members, elected representatives, managers, and employees (Cornforth, 2021). This ensures that all stakeholders can effectively contribute to the development of the cooperative. Furthermore, they promote public awareness about the nature and benefits of cooperation (ICA, 2020). This principle underscores the importance of knowledge in the sustainability of cooperatives (Cornforth, 2021).

Cooperation among Cooperatives

Cooperatives strengthen themselves and contribute to the movement by working together through local, national, and international structures. This cooperation among cooperatives enables them to achieve economies of scale, share resources, and address challenges collectively (Birchall, 2021). It is a strategic principle that fosters unity and broader development within the cooperative movement.

Concern for Community

Cooperatives work to improve the social, economic, and environmental well-being of their communities (Chibanda et al., 2023). This principle emphasizes that cooperatives should not only focus on maximizing profit but also prioritize their impact on the community (Chibanda et al., 2023). Many cooperatives engage in social responsibility initiatives such as community development projects, environmental conservation, and local job creation.

2.3 The role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance

2.3.1 Value chain actors

Farmers/producers: Coffee farmers are the primary producers, responsible for cultivating and harvesting coffee beans. They play a crucial role in determining the quality of the raw product. In developed countries, farmers often adopt advanced agricultural practices, participate in certification programs (for example, Fair Trade, Rainforest Alliance), and use technology to improve yield and quality. For instance, in countries like the U.S., some farmers use precision agriculture tools to optimize production (Borrell, 2022).

In Uganda, coffee farmers are the primary producers, responsible for cultivating and harvesting coffee beans. They typically grow two main types of coffee: Robusta and Arabica. Ugandan farmers benefit from training programs provided by organizations such as the Uganda Coffee Development Authority (UCDA), which help improve farming practices and increase yield and quality. For example, the UCDA's initiatives to promote good agricultural practices have resulted in higher quality beans and increased productivity (UCDA, 2023).

Processors: Processors are involved in milling, hulling, and processing coffee beans. They ensure the beans are prepared for export or further processing. Investment in modern processing facilities can reduce post-harvest losses and enhance bean quality. For example, companies in Europe invest in sustainable processing technologies to minimize environmental impact (Smith, 2021).

Exporters and importers: These actors facilitate the movement of coffee from producing countries to consuming countries. They handle logistics, trade regulations, and quality control. Developing efficient supply chains and leveraging trade agreements help in

reducing costs and ensuring timely delivery. In Germany, importers often collaborate with logistics companies to streamline the supply chain (Müller, 2023).

Exporters in Uganda have adopted certifications like Fair Trade and Organic to access premium markets. Companies such as Kyagalanyi Coffee Limited work with farmers to meet these certification standards, thereby improving market access and prices (Kyagalanyi Coffee Limited, 2023).

Roasters: these are responsible for transforming green coffee beans into the roasted coffee that consumers purchase. They influence the flavor profile and quality of the final product. Using advanced roasting technologies and maintaining high standards can enhance product consistency and quality. Specialty coffee roasters in the U.S. focus on small-batch roasting to maintain control over quality (Davis, 2022).

While most Ugandan coffee is exported as green beans, there is a growing trend towards local roasting. For example, Good African Coffee roasts its coffee locally, adding value and creating a premium product for both local and international markets (Good African Coffee, 2023).

Retailers: these sell coffee to the end consumers through various channels, including supermarkets, coffee shops, and online platforms (Johnson, 2023). Implementing effective marketing strategies and ensuring product traceability can attract quality-conscious consumers. For instance, coffee shops in the UK often highlight their direct trade relationships and sustainability efforts (Johnson, 2023).

Effective branding and marketing strategies help differentiate Ugandan coffee. Retailers like Endiro Coffee emphasize their direct trade relationships and commitment to social impact, attracting quality-conscious consumers (Endiro Coffee, 2023).

Consumers: these drive demand and influence trends in the coffee market. Their preferences shape production and marketing strategies. Increasing consumer awareness about quality and sustainability through education and marketing can boost demand for higher-quality coffee. In countries like Canada, consumer preference for ethical and high-quality coffee has led to a rise in specialty coffee consumption (Lee, 2022). Increasing consumer awareness about the quality and origins of Ugandan coffee through marketing and education can boost demand. Initiatives such as the annual Uganda Coffee Day aim to promote Ugandan coffee to both local and international audiences (UCDA, 2023).

2.3.2 Coffee cooperative unions

Aggregation and collective bargaining: Cooperatives aggregate the produce of multiple small-scale farmers, providing them with greater bargaining power and access to larger market (Cooperative Coffees, 2023). By pooling resources, cooperatives can negotiate better prices for their members. For example, the Cooperative Coffees network in North America enables small producers to reach larger markets and secure fair trade prices (Cooperative Coffees, 2023). In Uganda, Cooperatives like the Ankole Coffee Producers Cooperative Union help farmers achieve better prices and access to services. By pooling resources, they can negotiate better deals and reduce costs (Ankole Coffee Producers Cooperative Union, 2023).

Training and capacity building: Cooperatives often provide training and capacity-building programs to their members, helping them improve farming practices and product quality (La Revancha, 2023). Offering workshops on sustainable farming practices and quality control can lead to higher-quality yields. In Italy, cooperatives like La Revancha offer regular training sessions on organic farming and quality improvement (La Revancha, 2023). For example, Starbucks has established Farmer

Support Centers in several coffee-producing countries to provide farmers with access to resources and training to improve coffee quality and sustainability (Stank et al., 2023).

Access to financing: Cooperative unions can facilitate access to credit and financing for small-scale farmers, enabling them to invest in better farming practices and technologies. Providing low-interest loans and financial planning assistance helps farmers improve their operations. The Co-op Impact Fund in the UK offers financial support for infrastructure improvements and sustainable projects (Co-op Impact Fund, 2023). In Uganda, the National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE) has programs that offer financial support for infrastructure improvements and sustainable projects (NUCAFE, 2023).

Market access and branding: Cooperatives help members access new markets and develop strong branding strategies to differentiate their products. Developing unique branding and certifications (for example, organic, fair trade) helps in marketing premium products. For example, the Pachamama Coffee Cooperative in the U.S. markets its coffee as farmer-owned and emphasizes its direct trade model (Pachamama Coffee, 2023).

2.4 Factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance

Leadership and governance: Effective leadership and governance are essential for the success of coffee cooperative unions. Well-trained and experienced leaders can make informed decisions, manage resources efficiently, and build strong relationships with stakeholders. In Kenya, the Kenyan Coffee Cooperative Union (KCCU) has a strong

leadership structure that has enabled the union to negotiate better prices for its members and improve their overall livelihoods (Kipkoech et al., 2020).

Effective governance and management structures are crucial for the success of coffee cooperatives. Strong leadership and transparent governance structures are crucial for the success of cooperative unions. Effective leaders can make strategic decisions that benefit the members, foster trust, and ensure accountability within the union. In Ethiopia, the Oromia Coffee Farmers Cooperative Union (OCFCU) has implemented robust governance structures, leading to improved quality control and market access for its members. This has resulted in higher incomes and better livelihoods for the farmers (Fana, 2023). In south western Uganda, the Ankole Coffee Producers Cooperative Union is known for its strong governance and leadership, which has helped in improving the quality of coffee and expanding market access (Fairtrade Foundation, 2022).

Access to financial resources

Access to financial resources, technical assistance, and training is vital for improving productivity and quality in the coffee value chain. Cooperatives that provide these resources to their members can significantly enhance their performance (Niwagaba, 2021). Access to finance allows cooperatives to invest in better farming techniques, processing facilities, and market expansion. Proper financial management ensures that funds are used efficiently and transparently (Niwagaba, 2021). Financial support can come from both internal sources (member contributions) and external sources (loans and grants).

For example, the Kenya Cooperative Coffee Exporters (KCCE) has facilitated access to credit for smallholder farmers, enabling them to purchase inputs and improve production techniques. This financial support has increased the volume and quality of

coffee produced, enhancing overall value chain performance (Karanja, 2022). Financial management and resource allocation are critical for the success of coffee cooperative unions. Effective financial management can help ensure that resources are used efficiently and effectively.

Access to financial resources enables cooperative unions to invest in better farming practices, processing facilities, and marketing efforts. Proper financial management ensures that funds are used efficiently and transparently. Good infrastructure, including roads, processing facilities, and storage, is essential for reducing post-harvest losses and ensuring that coffee reaches markets in good condition. In Uganda, the National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE) has invested in modern processing and storage facilities. This has significantly reduced post-harvest losses and improved the quality of coffee, making Ugandan coffee more competitive in international markets (Mukasa, 2023).

Market access and competition: impact the effectiveness of coffee cooperative unions. Access to competitive markets can help improve prices for farmers, while competition among unions can lead to improved services and benefits for members.
Cooperatives play a critical role in facilitating market access for smallholder farmers by aggregating their produce and cooperatives that establish strong linkages with buyers, exporters, and other stakeholders in the coffee value chain can access better market opportunities and negotiate favorable prices (Nzeyimana, 2022). The Rwanda Coffee Farmers Cooperative Federation (RCCF) has established direct trade relationships with international buyers, bypassing middlemen and securing higher prices for their members. This direct market access has increased farmers' incomes and incentivized quality production (Nzeyimana, 2022).

In Uganda, cooperative unions that can establish direct links with international buyers or fair-trade organizations often secure better prices for their coffee. This not only improves the income of farmers but also ensures sustainability in the value chain. For example, the Bukonzo Joint Cooperative Union has established partnerships with fair trade organizations, allowing them to export coffee directly to international markets, thereby fetching higher prices (Fairtrade Africa, 2023).

Training and capacity building in best agricultural practices, financial management, and marketing are vital for the sustainability of coffee cooperatives (ICO,2022). Capacity building and training programs can help improve the skills and knowledge of coffee farmers, which can lead to improved coffee quality and increased income. The Tanzania Coffee Board (TCB) collaborates with cooperatives to provide training on sustainable farming practices and quality control. This capacity-building effort has led to improved coffee quality and higher export earnings for Tanzanian farmers (Mwanga, 2023).
In Uganda, the Uganda Coffee Cooperative Union (UCCU) has implemented a capacity building program that has improved the skills of its members in coffee production, processing, and marketing (Musoke et al., 2019). The Uganda Coffee Development Authority (UCDA) conducts regular training sessions for cooperative members on sustainable coffee farming practices, which has led to an increase in coffee quality and yields (UCDA, 2023).

External support and partnership; Support from government and international organizations can enhance the effectiveness of coffee cooperatives by providing technical assistance, funding, and policy support. External support often complements local efforts and enhances the capacity of cooperative unions (ICO, 2023). The International Coffee Organization (ICO) has partnered with the African Fine Coffee Association (AFCA) to support coffee cooperatives in various African countries. This

partnership includes initiatives on market promotion, quality improvement, and capacity building, which have collectively improved the performance of the coffee value chain (ICO, 2022).

Government support and policies can significantly impact the effectiveness of coffee cooperative unions. Supportive policies can help create an enabling environment for cooperatives to operate effectively. In Rwanda, the Rwandan government has implemented policies that support coffee cooperatives, including providing financing and training to farmers (Nzeyimana, 2022).

Government policies that support cooperatives through subsidies, tax incentives, or infrastructure development can significantly impact their effectiveness (MAAIF, 2022). Supportive policies create an enabling environment for cooperatives to thrive. For example, the Ugandan government's National Coffee Policy aims to support cooperatives through initiatives like the Coffee Rehabilitation Program, which provides inputs and extension services to coffee farmers (MAAIF, 2022).

While finance is repeatedly shown as necessary, the literature lacks detailed micro-level evidence on how loan design, interest rates, repayment schedules and linked training affect cooperative outcomes especially in Uganda coffee unions.

Much recent work is multi-country or focused on project sites; fewer rigorous studies examine coffee cooperative unions at sub-national levels (for example., Greater Bushenyi) with the combination of roles and outcomes you measure. This creates a gap for contextually-grounded union-level analysis.

2.5 The effect of coffee cooperative unions on coffee value chain performance

Policy advocacy and representation; Cooperative unions often represent the interests of their members at national and international forums, advocating for policies that support

coffee farmers. This can include lobbying for better prices, subsidies, and infrastructure development.

The National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE) actively engage with the Ugandan government to advocate for favorable policies for coffee farmers. Their efforts have led to the implementation of supportive policies that enhance the coffee value chain (NUCAFE, 2023).

The Ethiopian Coffee Growers Cooperative Union (ECGCU) has been instrumental in lobbying for policies that support coffee farmers, such as access to better infrastructure and favorable export regulations. This advocacy has contributed to the overall development of the coffee value chain in Ethiopia (Tefera & Tegegne, 2020).

Provision of financial support; Effective financial management and access to credit are critical for cooperatives to invest in infrastructure, technology, and training. These investments are essential for improving production efficiency and product quality, which are key components of value chain development (World Bank, 2022). The Kenya Cooperative Coffee Exporters (KCCE) has facilitated access to credit for its member cooperatives, allowing them to invest in modern processing equipment and improve coffee quality. This has enhanced the value chain by enabling higher productivity and better market positioning (World Bank, 2022).

Training and education programs provided by cooperatives help farmers adopt best practices in coffee cultivation, processing, and marketing. Capacity building enhances the skills and knowledge of farmers, leading to improved quality and higher yields. The Cooperative Union of the Luweero Triangle in Uganda has focused on capacity building by providing extensive training to its members on sustainable farming practices and quality control. This has resulted in improved coffee quality and higher market prices, positively impacting the value chain (UCDA, 2023).

Quality control and certification; Cooperative unions play a crucial role in quality control by setting standards and providing the necessary resources to meet these standards (FAO, 2021). They also facilitate certifications like Fair Trade and organic, which can attract premium prices in the global market.

The Bukonzo Joint Cooperative Union has implemented strict quality control measures and achieved Fair Trade certification. This has significantly improved the quality of coffee, enabling the cooperative to access high-value markets and earn better prices for its members (Fairtrade Foundation, 2023).

The Kilimanjaro Native Cooperative Union (KNCU) in Tanzania has established quality control labs to ensure that the coffee meets international standards. The union's focus on quality has helped it secure lucrative export contracts, thereby enhancing the value chain (FAO, 2021).

Coffee Cooperative unions establish direct market linkages that can bypass intermediaries, leading to better prices and more stable income for farmers. Direct access to international markets is particularly beneficial as it often involves fair trade practices. For example, the Kagera Cooperative Union in Tanzania has successfully linked its members directly with international buyers. By obtaining Fair Trade certification, the cooperative has ensured higher prices for its coffee, which has improved the livelihoods of its members and promoted sustainable practices along the value chain (FAO, 2021).

The literature acknowledges that training programs improve skills and practices (e.g., Luweero Triangle Union), but there is a lack of quantitative measurement of training outcomes, for example, how adoption rates of improved practices directly enhance yields, quality, and prices.In Bushenyi, the link between cooperative-led training and actual farmer performance in the coffee value chain is still under-researched.

While Kagera Cooperative Union (Tanzania) shows strong international linkages, the literature does not compare unions with strong vs. weak market linkages.In Greater Bushenyi, little is known about how unions' ability to link members to export markets affects competitiveness, income stability, and resilience to price shocks compared to reliance on middlemen.

Studies recognize that unions like NUCAFE advocate for favorable policies, but evidence on the actual impact of these policies on household incomes, production efficiency, and long-term value chain competitiveness is thin.

For Bushenyi, there is no detailed empirical assessment of how policy advocacy by cooperative unions influences farmers' day-to-day experiences (e.g., access to subsidies, infrastructure use, or export opportunities).

Chapter Three

Research Methodology

3.1 Research design

The study employed cross-section design which was applied to all objectives. This approach combined both quantitative and qualitative methods to provide a more comprehensive understanding of a research problem (Creswell & Plano Clark, 2018). Mixed-methods research was conducted in sequential phases, where one type of data collection follows the other, or concurrently, where both types were collected simultaneously. Quantitative methods were applied to coffee farmers to collect numerical data while qualitative methods were applied to key informants to qualitative data which was in form of verbatim statements.

This design leveraged the strengths of both methodologies to address complex research questions, allowing for a more nuanced analysis and richer insights than either method alone could provide (Tashakkori & Teddlie, 2017). This design was suitable for the study because it provided a comprehensive picture of the research problem by capturing both numerical trends and detailed narratives. The mixed-methods design also provided a more complete picture of the cooperative union's impact by combining numerical data with rich, contextual information.

3.2 Study area

The study was conducted around greater Bushenyi District, located in the western region of Uganda. It encompasses five districts: Bushenyi, Buhweju, Rubirizi, Sheema, and Mitooma. The district is positioned between approximately 0.4°S to 1.2°S latitude and 30.1°E to 30.4°E longitude. To the north, it is bordered by the districts of Kasese and Kamwenge, Mbarara and Ibanda Districts to the east, to the south, it is adjacent to

Ntungamo and Rukungiri Districts, to the west, it borders the Democratic Republic of Congo, separated by Lake Edward and Queen Elizabeth National Park (UBOS, 2023). The District experiences a tropical highland climate characterized by two rainy seasons; March to May and September to November. The average annual rainfall ranges from 1200 mm to 1600 mm, which supports robust agricultural activities(MWE, 2021). The district has soils which are predominantly deep, well-drained, and have relatively high clay content. They are suitable for perennial crops like coffee.

The district was chosen because it is a significant coffee-producing region in Uganda with estimated 6000 registered coffee growers, making it an ideal location to study the coffee value chain (Uganda Coffee Development Authority, 2021). The presence of a well-established coffee sector allows for a comprehensive analysis of cooperative unions' impact on value chain performance. The district also had several active cooperative unions that have been instrumental in the agricultural sector. Studying these existing cooperatives provided practical insights into their operations, challenges, and successes in improving the coffee value chain (Uganda Cooperative Alliance, 2018).

3.3 Target population

The target population for a study on the effectiveness of coffee cooperative unions on improving the coffee value chain performance in Greater Bushenyi District should include various stakeholders involved in the coffee value chain. This diverse group provided comprehensive insights into the cooperative unions' impact on different aspects of the value chain. According to UBOS, (2021) projected population of Bushenyi district was estimated to be **250,400.** The study targeted different stakeholders which include;

Coffee farmers (both cooperative and non-members): Coffee farmers were the primary beneficiaries of cooperative activities. Comparing cooperative members and

non-members helped to assess the direct impact of cooperative unions on productivity, income, and market access.

Cooperative Leaders and managers: These provided strategic insights into the cooperative's operations, policies, and strategies aimed at improving the coffee value chain. Their perspectives on challenges and successes were crucial for understanding the cooperative's effectiveness.

Local government officials and extension workers: Government officials and extension workers played a significant role in supporting agricultural activities and cooperative movements. Their views on policy impacts and support mechanisms can highlight external factors influencing cooperative effectiveness.

Coffee processors and buyers: Processors and Buyers are key stakeholders in the coffee value chain. Their interactions with cooperatives can provide insights into the market access, quality control, and value addition facilitated by all coffee cooperative unions in greater Bushenyi district.

3.4 Sample size determination

The sample size was derived from a formula by Anderson et al. (2008) as follows. . The Anderson et al. (2008) approach provides an optimal middle ground by recommending a sample size that adequately reflects the characteristics of the study population while remaining manageable within available research resources. Therefore, the selection of this formula was justified as it enhanced the validity and reliability of the findings on how coffee cooperative unions contribute to improving coffee value chain performance. It also ensured that conclusions drawn from the sample can be meaningfully generalized to the entire population of coffee farmers and cooperative unions in Greater Bushenyi.

$$n=z^2(pq)/d^2$$

Where n is the minimum sample size; Z is 1.96 at 95% confidence level; P is the population proportion i.e. assume that the proportion of coffee producers in the area 85%. While d is the margin of error (acceptable error) which is assumed to be 0.05 and q is a weighting variable computed as (1-P, 1-0.85).

$$n=\frac{1.96^2 x(0.85x0.15)}{(0.05)^2}$$

Total number of respondents (n) =208

3.5 Sampling techniques

3.5.1 Stratified sampling

From each stratum, a random sample is drawn in a way that ensures each subgroup is adequately represented in the final sample. Stratified sampling technique was chosen because ensures that all subgroups of coffee farmers are represented in the sample. This was crucial if the population was heterogeneous and farmers from different strata might have different characteristics or experiences and it also further ensured that the sample was not biased towards any particular group and resources were utilized efficiently by focusing on key segments of the population. Below is how it was used to select farmers;

- The researcher determined the characteristics by which the coffee farmers were stratified. For example, this could include, farm size, geographic location that was high land or low land, farming methods that was organic versus conventional and among others.
- The researcher divided the entire population of coffee farmers into these strata. For example, if stratifying by geographic location, list all farmers in the highlands, lowlands, list farmers who used organic and conventional methods e.t.c.
- Decide on the number of farmers to sample from each stratum. This could be proportional to the size of each stratum in the population. For instance, if 30% of

the farmers were from the highlands, then 30% of the total sample came from this stratum.

- Random selection with in the strata; randomly selected farmers from each stratum. This ensured each subgroup is properly represented in the overall sample.

3.5.2 Purposive sampling

Purposive sampling was used to select key informants as discussed below;

- Identification of key informants: Local leaders, cooperative leaders, and agricultural extension agents who were knowledgeable about coffee farming and have experience in working with farmers were identified.
- Key informants were selected based on their expertise, experience, and relevance to the study objectives.
- Selected key informants was invited to participate in key informant interviews, providing insights and perspectives on support systems, market access, and policy implementation and implications.

3.6 Data Collection Methods

The researcher used two methods of collecting data and they included questionnaire and interviews.

3.6.1 Survey method

Under this method, questionnaires were administered to farmers who directly participated in coffee farming. Questionnaires were structured and semi-structured in nature with both open and closed questions in order to capture quantitative responses from respondents. This method was used because it allowed collection of data from a large number of respondents in a relatively short period. Compared to other methods like in-depth interviews, questionnaires were more cost-effective and required fewer resources.

3.6.2 Interview Method

According to Fink, (2018), an interview is the verbal conversation between two people or a group of individuals with the objective of collecting relevant information for the purpose of research. This method was used widely to supplement and get knowledge about individual(s) thoughts, feelings and behaviours from key informants. Interviewing was done with the help of an interview guide. This method involved selecting individuals who had significant experience and insight into the coffee farming industry. These could include farm owners, agricultural experts, local leaders, and representatives from coffee cooperatives. Under this method, an interview guide with questions tailored to extract detailed information on specific topics, such as farming practices, the role of cooperatives, relationship between coffee cooperative unions and value chain development, market conditions, and challenges faced by coffee farmers.

3.6.3 Data collection procedure

Prior to data collection, the researcher obtained ethical clearance from Bishop Stuart University Research Ethics Committee, there after researcher also secured permission from local authorities and key stakeholders in the study area. Research assistants were recruited and trained on the objectives of the study, data collection tools, and ethical considerations such as informed consent, confidentiality, and voluntary participation. The researcher and research assistants embarked on actual data collection.

3.7 Data collection tools

3.7.1 Questionnaires

Questionnaires are a valuable data collection tool for gathering quantitative information from coffee farmers as it allowed data collection from a large number of respondents in a relatively short time. It also enabled the collection of quantifiable data that can be statistically analyzed. The questionnaire briefly described the objective of the survey,

emphasizing the focus on effectiveness of coffee cooperative unions on value chain performance. It further collected information on demographic characteristics like age, gender, education level, and household size, the size of the farm, type of coffee grown, and years of farming experience and finally gathered information on specific objectives.

3.7.2 Interview guide

An interview guide is a crucial tool in qualitative research, designed to ensure systematic and comprehensive data collection from key informants. When investigating the effectiveness of Coffee cooperative unions on value chain performance, an interview guide ensured that all interviews cover the same topics, allowing for comparability of response, guarantees that all relevant aspects of the topic were addressed and allowed for probing where respondents don't give adequate answers and follow-up questions to explore issues in depth. This instrument was used to obtain qualitative data that was reported in form of verbatim statements. This tool targeted, cooperative leaders, agricultural extension agents and local government official leaders.

3.8 Data quality control

3.8.1 Validity

Content validity; the content of questionnaires and interview guides were reviewed by subject matter experts to ensure that they adequately captured the study variables and objectives.

Construct validity; Pilot testing of the instruments was conducted with a small group of respondents to assess the clarity and relevance of questions. Pretesting was done by both the researcher administering questionnaires to twenty (20) respondents within the study population. The content validity ratio was used to calculate the Content Validity Index is computed using Amin's (2005) formula as:

$$CVI = \frac{\text{Total number of items rated relevant by experts}}{\text{Total number of items}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

The CVI obtained for this study was compared to the recommended value of content validity index that should be greater than 0.7 as recommended by Amin (2005) for the instrument to be considered valid for data collection.

3.8.2. Reliability

Internal consistency**;** Cronbach's alpha coefficient was calculated for scales or multiple-item measures to assess the internal consistency of the tool/instruments

Inter-rater reliability; for qualitative data collection methods such as interviews, training was provided to interviewers to ensure consistency in data collection and interpretation.

Cronbach's Alpha coefficient expected to be greater than 0.7 for the instrument to be considered reliable for use in data collection from the formula.

$$\alpha = \frac{N * \bar{c}}{\bar{v} + (N-1) * \bar{c}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (8)$$

Where N is equal to the number of items, $\bar{c}$ is the average inter-item covariance among the items and $\bar{v}$ equals the average variance.

3.9 Data analysis and processing

Data was analyzed using two methods that is qualitative and quantitatively.

Statistical Package for Social Sciences (SPSS version 22.0) was used for analyzing quantitative data. Basic descriptive statistics such as means, frequencies, and percentages were calculated to summarize demographic characteristics and key variables. Inferential statistics; Statistical tests such as t-tests were used to analyze differences between groups or to assess the relationship between variables. Quantitative data was analyzed by computing statistics such as Mean, Percentage, and Frequency distribution. Descriptive statistics measures such as means, standard deviation and

frequency distribution were used to analyze continuous and nominal data at Univariate level. Inferential statistics were applied to generate and interpret any significant associations between dependent and independent variables at both bivariate and multivariate level. Qualitative data was analyzed in verbatim statement form based on study themes.

Objective i; To identify the role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance.

Analysis methods used: descriptive statistics (frequencies, percentages,) were used to profile the different actors (farmers, traders, processors, exporters, cooperatives, input suppliers). Linear regression analysis was also done to best to describe "who does what" and "how actors interact".

Objective ii; To analyze factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance in Greater Bushenyi district

Analysis method used: Multiple linear regression analysis was used to assess relationships between categorical factors and also in identifying statistically significant factors that explain cooperative effectiveness.

Objective iii; To examine the effect of coffee cooperative unions on coffee value chain performance

Anlaysis method: Multiple regression analysis was also used to test the impact of cooperative services (independent variable) on outcomes like farmer income, prices received, market access, and quality (dependent variables).

3.10 Model specification

The Binary Logit Model was selected for this study. This is a type of regression used when the dependent variable is binary (dichotomous). The Binary Logit Model is

deemed appropriate for this study because it was flexible in that it can accommodate a mix of continuous, categorical, and binary independent variables. For example, the study included variables such as the size of the cooperative union (continuous), the type of governance structure (categorical), and whether the CCU has access to international markets (binary). The model can handle these diverse types of predictors effectively, making it suitable for the complex nature of the factors influencing CCU effectiveness. One of the key advantages of the Binary Logit Model was its ability to predict the probability of the binary outcome occurring. In this study, the model could be used to estimate the probability that a CCU will be effective in improving coffee value chain performance given a set of conditions or characteristics. These probabilities can be valuable for making informed decisions and targeting interventions to enhance CCU performance.

The Binary Logit Model can be specified as follows:

Logit $P(Y=1)=\beta_0+\beta_1X_1+\beta_2X_2+\ldots+\beta_kX_k$

Where; [P(Y=1)] ; is the probability that the cooperative union is effective

X_1, X_2,…. X_K are independent variables

$\beta_0,\beta_1,\ldots,\beta k$ are the coefficients to be estimated

X_1: Access to Market Information (1 = Yes, 0 = No). This variable measured whether the Coffee Cooperative Union (CCU) has access to up-to-date and relevant market information. Access to market information is crucial for making informed decisions about pricing, marketing strategies, and quality improvements.

X_2: Quality improvement (1=Yes, 0= No). This variable captured the extent to which the CCU engages in initiatives aimed at improving the quality of coffee, such as training farmers on best practices, quality control measures, and access to improved inputs.

X_3: Access to credit(1=Yes, 0= No). This variable measured whether the CCU members had access to credit facilities, which could be used for investments in production, processing, and marketing.

Objective i: To identify the role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance.The binary logit helped to test whether membership in a cooperative or support from other actors (input suppliers, processors, exporters) significantly increases the probability of improved performance.

Objective ii: To analyze factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance. A binary logit allowed researcher to identify which factors significantly determine effectiveness. For example; effectiveness of unions (Effective = 1, Not effective = 0) was modeled against variables like governance, access to markets, provision of extension services, collective bargaining power, and financial support.

This helped to quantify the likelihood that unions are effective depending on these predictors.

Objective iii: To examine the effect of coffee cooperative unions on coffee value chain performance.The binary logit was suitable because it tested the causal effect of being a cooperative member on performance outcomes. The model estimated whether cooperative membership significantly increases the probability of improved value chain performance.

3.11 Research ethical considerations

Firstly, the ethical approval for the study was obtained from the Research and Ethics Committee of Bishop Stuart University.

Informed consent: Participants must be fully informed about the nature, purpose, and

potential risks and benefits of the research before agreeing to take part. This included detailed information, voluntary participation, and the ability to withdraw at any time without penalty.

Confidentiality and anonymity; Researcher protected participants' data and personal information from unauthorized access and disclosure. Ensuring that participants' identities are not linked to their data in any public report.

Minimizing harm: Researcher strived to minimize any potential physical, psychological, or social harm to participants through identifying and mitigating potential risks associated with the research.

Respect for respondents: Respecting the autonomy and dignity of all participants, including special considerations for vulnerable populations (for example, children, prisoners, individuals with cognitive impairments).

Conflict of interest: Researcher disclosed any potential conflicts of interest that could affect the research process or findings through managing and mitigating conflicts to maintain objectivity and trustworthiness.

3.12 Scientific Limitations and delimitations of the study

Scientific limitations in a research study refer to factors that may constrain the validity, reliability, or generalizability of the findings. Here are several examples of scientific limitations commonly encountered in this research study.

Sampling bias; the study sample might not be representative of the broader population, leading to sampling bias. The population was divided into meaningful strata (e.g., by gender, age group, or geographic location) and samples were drawn proportionally from each stratum to ensure representativeness.

Measurement error; Inaccuracies in measurement tools or procedures may introduce measurement error, leading to biased or imprecise results. For instance, self-reported data collected through surveys or questionnaires might be subjected to recall bias or social desirability bias. Questionnaires and other tools were pre-tested on a small subset of the population to identify unclear questions or inconsistent responses. Research assistants were trained to ensure consistent administration and clarification of questions without leading respondents.These measures minimized the likelihood of measurement errors and enhanced the reliability of the data.

Sample size error; Too Small or too big sample size may lack statistical power to detect meaningful effects or relationships. Consequently, the findings might be prone to errors, where true effects were not detected due to insufficient or extraneous sample size.The study used established formulas (e.g., Anderson et al. formula) to calculate an appropriate sample size based on population size, confidence level, and margin of error.

Validity and reliability measurement; the validity and reliability of measurement instruments might be compromised, leading to biased or inconsistent results. Researcher assessed the validity and reliability of their measures and addressed any limitations through pilot testing and validation procedures.

Low response rates or non-response bias; such bias in this survey-based research might affect the representativeness of the sample and introduce bias into the findings. Multiple contacts, such as phone calls or in-person visits, were used to encourage participation.Small incentives or tokens of appreciation were provided to increase willingness to respond.

3.13 Dissemination of study results to participants and public

Participants:

Individual feedback; Researcher provided individual feedback to study participants, especially if the study involved interventions or personal data collection. This could be done through follow-up meetings, phone calls, or personalized letters. Past research in clinical and health studies often provided individualized feedback to participants. For example, Shalowitz and Miller (2018) argued that sharing individual results respects participants' contribution and fosters trust. In randomized controlled trials, individual clinical results were commonly shared through phone calls.

Group meetings/workshops; Organizing group meetings or workshops with study participants facilitated interactive discussions about the research findings. Researchers presented the results, answer questions, and sought feedback from participants.

Cargo and Mercer (2018) emphasized workshops and participatory dissemination in community-based participatory research (CBPR), where researchers and participants jointly discussed findings and implications.

Providing plain language summaries of the research findings helped participants better understand the results. These summaries should avoid technical jargon and use clear, accessible language. Terry and Terry (2021) highlighted the importance of plain language summaries in health communication, showing that non-technical summaries improved comprehension among participants.

Public dissemination:

Peer-review publications; Publishing research findings in peer-reviewed journals ensured that the results undergo rigorous review and validation by experts in the field. Researcher also shared pre-prints or post-prints of their articles to make the findings

accessible to a wider audience. The traditional gold standard is peer-reviewed journal articles. For instance, Ioannidis (2015) noted that scientific credibility is enhanced by peer review. Researchers in global health and agriculture, such as Pretty et al. (2018)**,** frequently publish findings in peer-reviewed outlets to ensure rigor and wide accessibility.

Presentations at conferences and seminars; presenting research findings at academic conferences, seminars, or workshops allowed research to reach a diverse audience of academics, practitioners, policymakers, and stakeholders. Brownson et al. (2017) documented that dissemination at professional conferences accelerates the uptake of research by policymakers and practitioners.

Press releases; Issuing press releases about the research findings to media outlets can help generate public interest and coverage. Researcher worked with their institution's press office or communications team to draft press releases and engage with journalists. Brechman et al., (2019) analyzed how research press releases influence media coverage and public understanding.

Social media and websites; Sharing research findings on social media platforms (for example., Twitter, Facebook, watsup) and research websites (Academia.edu) helped to reach a broader audience, including the general public, policymakers, and other researchers. Sugimoto et al. (2017) noted Twitter and ResearchGate enhance the visibility of research articles, reaching policymakers and the public. Sugimoto et al. (2017) also confirmed the role of social media in knowledge dissemination, especially for early-career researchers.

Community engagement events; Organizing community engagement events, such as public lectures, panel discussions, can provide opportunities for researchers to interact with the public, discuss research findings, and address questions or concerns.

Israel et al. (2020) documented that community forums, public lectures, and panel discussions enhance dialogue between researchers and community stakeholders. For example, in agricultural extension, Kroma (2016) showed that farmer engagement events improved adoption of research-based practices.

Chapter Four

Analysis, Presentation and Interpretation of Results

4.0 Introduction

The main objective of the study was to investigate the effectiveness of coffee cooperative unions on improving coffee value chain performance in greater Bushenyi district. This chapter comprises of analysis, presentation and interpretation of results in accordance to bio-data of respondents and study objectives.

4.1 Response rate

The researcher distributed 208 questionnaires and received only 200 completed ones. The results show a response rate of 96% and 4% of the targeted sample never responded. The response rate was quite high as statistical scholars like Kothari (2004) has recommended a response rate of at least 51% in an open study. As shown in figure 4.1 below;

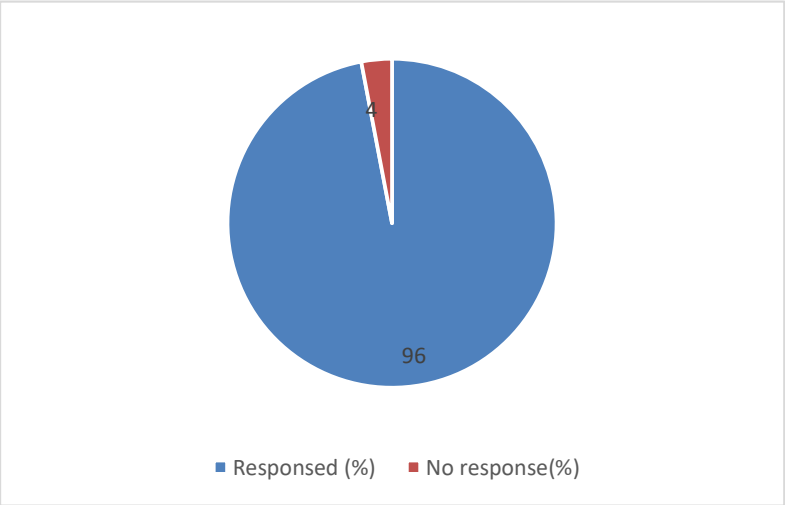


Figure 4.1: Responses rate

4.2. Bio-data of respondent

4.2.1 Sex of respondents

Respondents during survey were asked their sex, responses were captured and presented in figure 4.2 below;

As shown in figure 4.2, 65% of the respondents were males and 35% were female. The dominance of male respondents means that men are more actively involved in coffee cooperative unions. This could indicate that coffee production, processing, or decision-making roles in the coffee value chain are male-dominated. The results also imply that lower representation of females points a gender gap in access to membership and leadership in cooperatives. Females also face barriers such as land ownership issues, limited access to extension services, or cultural norms that restrict their full participation in cooperatives.

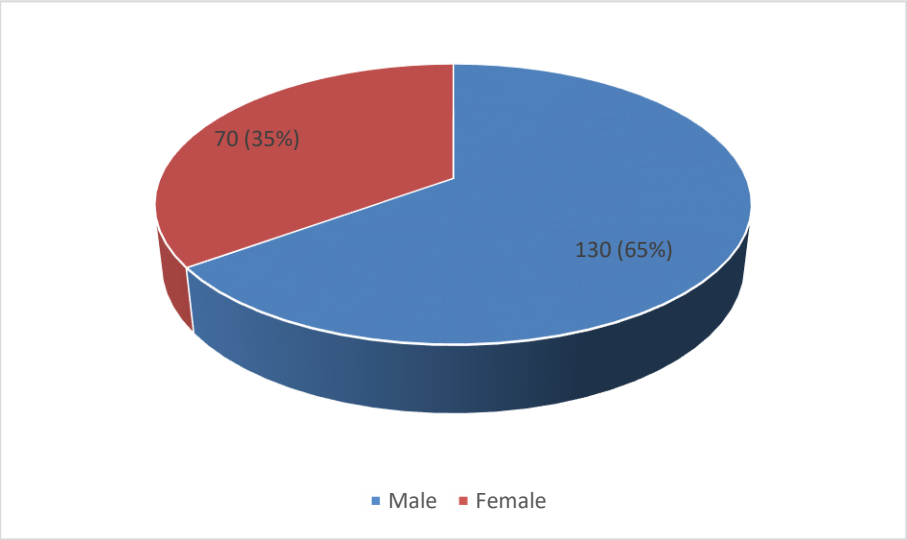


Figure 4.2: Sex of respondents

Source; Field data, 2023

4.2.2 Age of respondents

The results show that the majority of the respondents (37.5%) fall within the 41–50 years age group, followed by 27.5% in the above 51 years group, and 20% in the 31–40 years group. Only a small fraction of respondents were below the age of 30 (15% combined).This distribution reveals that cooperative unions and the coffee value chain is largely dominated by older adults, particularly those above 40 years. Youth participation in cooperative activities and the coffee value chain appears to be minimal.

The results imply that dominance of older age groups means that cooperative union activities are mainly driven by experienced farmers, which could positively impact the effectiveness of cooperative operations due to accumulated knowledge and long-term engagement in coffee value chain activities like coffee production and marketing.

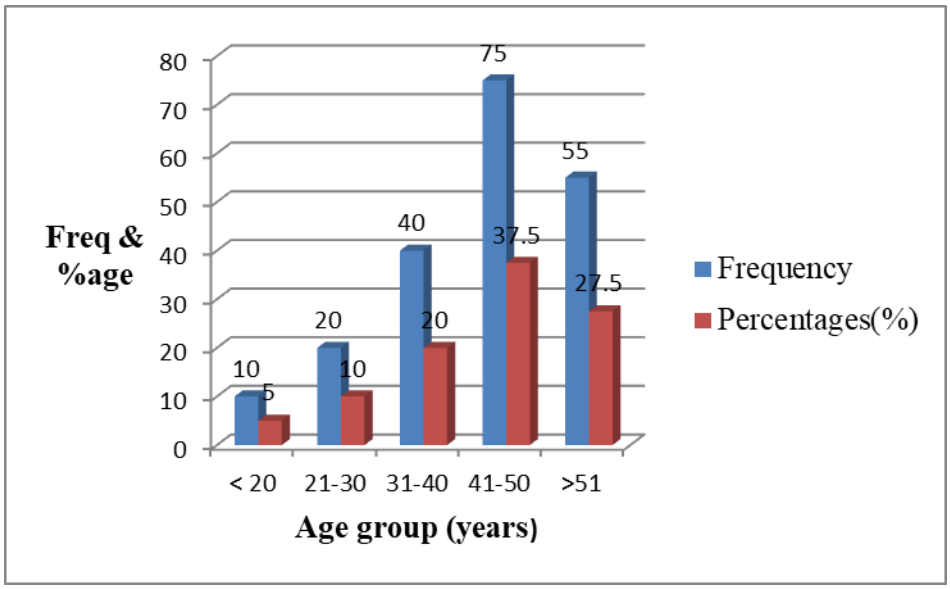


Figure 4.3: Age group

4.2.3 Marital status

Respondents were also asked their marital status, responses were also captured and presented in figure 4.4 below;

According to the results in figure 4.4; majority of respondents were married (140, 70%). This implies that married individuals are likely to have more responsibilities and more invested in long-term benefits like improved market access, better prices, training, and financial stability provided by coffee cooperatives.

Single (50, 25%). An implication that the group are more open to innovation and technology adoption introduced by cooperatives. Their involvement reflects an opportunity for unions to attract younger members, thus ensuring sustainability of the coffee sector in the district.

Divorced (7, 3.5%). The results show that a small portion of the respondents is divorced. If they are members of cooperatives, it shows the unions' potential in offering social and economic support to marginalized groups, which enhances inclusiveness and equity in coffee value chain.

Widow (3, 1.5%).This is the smallest group, showing limited participation. Their low representation points to a need for cooperative unions to enhance outreach and tailor interventions for more vulnerable household heads, promoting gender equality and social protection.

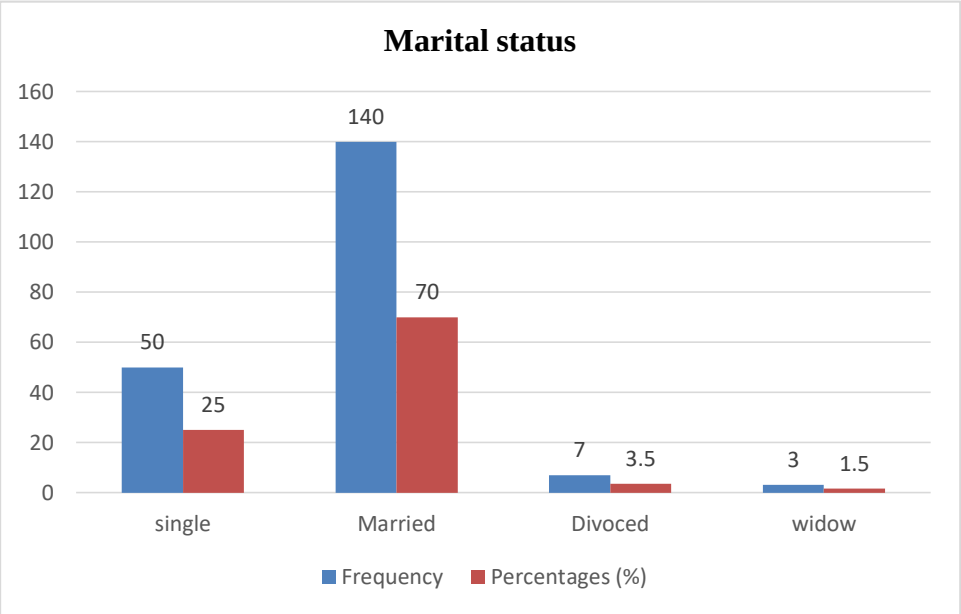


Figure 4.4: Marital status

4.2.4 Level of education

The results revealed that secondary forms the majority of the respondents with 50%. The results imply that the effectiveness of coffee cooperative unions is higher among farmers with secondary education, as they are more empowered to engage actively and productively.

Tertiary education 25%. This implies that dominance of farmers with tertiary education shows that the cooperative movement has a strong foundation of educated members who actively participate in value chain development.

No formal education (10%).This group struggles to understand cooperative documentation, financial records and agronomic training. The results imply that there is a risk of exclusion and inequality in accessing cooperative services, reducing overall effectiveness due to relying heavily on oral communication.

Primary education (8%).This group partially engage with cooperative services but still need support to understand market dynamics and cooperative governance.

University education (7%).This group though small in number, serve as managers, policy formulators, innovators linking cooperatives to export markets, certification schemes, and sustainable practices.

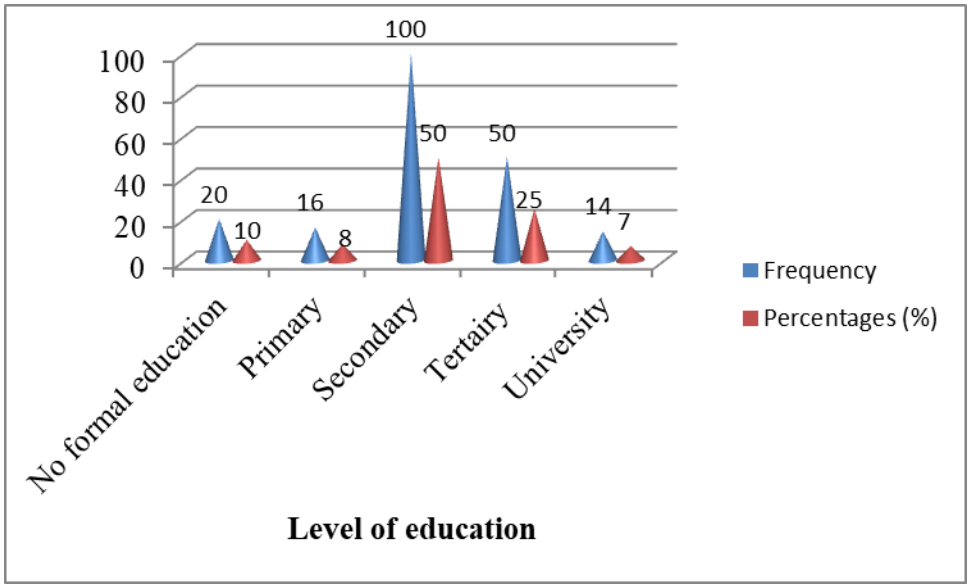


Figure 4.5: Level of education

4.3 The role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance in greater Bushenyi

Respondents were also questioned how frequently value chain actors provide market information to coffee farmers, responses were captured, analysed and presented in the table 4.1 below;

The study results in table 4.1 revealed that majority of respondents (42%) reported receiving market information occasionally. A significant number (29%) receive it rarely, while 11% never receive such information. Only 18% of the respondents are consistently updated by value chain actors. This implies that market information dissemination is irregular and inconsistent. Therefore farmers struggle to make informed decisions about when and where to sell their coffee, which can negatively affect income.

Table 4.1: How frequently value chain actors provide market information to coffee farmers

Response Category	Frequency (n)	Percentage (%)
Very frequently	36	18.0
Occasionally	84	42.0
Rarely	58	29.0
Never	22	11.0
Total	**200**	**100.0**

Source: Field data, 2025

During questionnaire survey, respondents were also asked the extent to which they believe coffee cooperative unions help in promoting value addition among coffee farmers, responses were also captured, analysed and presented in table 4.2;

The majority (44%) believe that cooperative unions support value addition to some extent, and 26% say to a great extent. However, 30% (combining "to a little extent" and "not at all") show that cooperatives contribute little or nothing to value addition. An implication that while cooperative unions are somewhat effective in supporting value addition, there is a gap in coverage or effectiveness and therefore more training, equipment, and value addition initiatives (like roasting, branding, packaging) are needed.

Table 4.2: The extent to which coffee cooperative unions promote value addition
Source: Field data, 2025

Response Category	Frequency (n)	Percentage (%)
To a great extent	52	26.0
To some extent	88	44.0
To a little extent	40	20.0
Not at all	20	10.0
Total	**200**	**100.0%**

According to the results in table 4.3**,** all the p-values are below 0.05, indicating that each role of value chain actors has a statistically significant positive relationship with coffee value chain performance in Greater Bushenyi District.

Unstandardized Coefficient (B);This shows the actual change in the dependent variable (Coffee Value Chain Performance) for every one-unit increase in the independent variable (actor role), holding other variables constant.

This indicates the average distance the observed values fall from the regression line. Smaller standard errors mean more precise estimates of the coefficient.

Regression output showed $R^2 = 0.684$**,** this means that 68.4% of the variation in coffee value chain performance is explained by the roles of value chain actors.

(Constant) (B; 0.94, p-value;.001).the results show that even in the absence of actor roles, there is a baseline level of performance support.

Facilitate movement from farm to market; (B; 0.194, p-value;.002). A value of 0.194 indicates that for every one-unit increase in efforts to facilitate movement of coffee (for example through better transport the performance of the coffee value chain improves by 0.194 units, holding other factors constant. Since the coefficient is positive, it shows that actors who actively support transportation and movement from farm to market contribute positively to the performance of the value chain.

The result is highly significant at the 5% level. This means there is a very low probability (0.2%) that the observed relationship occurred by chance, this reveals that facilitation of movement has a real and meaningful impact on value chain performance.

Enhancing coffee quality: (B;0.246, p-value;0.000).This has the strongest positive significant effect among all predictors. This implies that actors who invest in post-harvest handling, sorting, drying, and quality grading significantly increase the chances of premium pricing and national market competitiveness.

Cooperatives encourage members to invest in quality-enhancing activities (washing stations, drying yards, quality grading). Through shared infrastructure, members access premium markets, reflecting the principle of contributing equitably to shared benefits and receiving returns based on patronage.

Access to resources: (B; 0.253, p-value; 0.004). The results indicate that one unit increase in resource access leads to a 0.25 unit increase in performance. This implies

that extension agents and cooperatives that support access to credit, land inputs, and information play a vital enabling role in improving performance.

Through open membership after joining cooperative, farmers access collective credit schemes, input loans, and shared information. This reflects how cooperatives enable members, regardless of their background, to pool resources for mutual benefit, ensuring inclusivity and empowerment.

Reducing transaction costs: (B;0.138,p-value;0.013). the results show that this role has statistical significant positive effect on value chain performance. This implies that value chain actors who streamline transactions through cooperatives, group marketing reduce time and financial losses for farmers.

Through joint marketing and bulk selling, cooperatives reduce the cost of negotiating individually. Farmers collectively decide on pricing, selling strategies, and buyers, which reinforces democratic governance and the principle of "one member, one vote.

Agricultural input provision: (B;0.203,p-value; 0.003).the results show significant positive impact on performance. This implies that availability of quality seedlings, fertilizers, pesticides, and tools from actors like input dealers leads to higher productivity and better quality coffee beans.

Cooperatives pool funds to procure quality seedlings, fertilizers, and tools at lower costs, supplying members fairly. This reduces dependence on middlemen and aligns with the principle of members controlling their cooperative to meet shared needs.

Extension and training services: (B;0.221, p-value; 0.000).This is the top predictor of performance with strong significant relationship. This implies that training provided by cooperative union officials equips farmers with agronomic knowledge, post-harvest practices, and market strategies, boosting their competitiveness and productivity.

This predictor reflects the cooperative principle most directly. Regular training sessions and capacity-building workshops improve farmer knowledge, leading to better yields, quality, and competitiveness. Continuous learning empowers members to participate meaningfully in cooperative governance and decision-making.

Table 4.3: Multi-linear regression output on roles of value chain Actors on value chain performance

Predictor (Role of Actor)	**Unstandardized Coefficient (B)**	**Std. Error**	**Sig.**
(Constant)	0.947	0.287	.001
Facilitate movement of coffee from farm to market	0.194	0.063	.002
Enhancing coffee quality	0.246	0.058	.000
Access to resources	0.253	0.071	.004
Reducing transaction costs	0.138	0.055	.013
Agricultural input provision	0.203	0.067	.003
Extension and training services	0.221	0.061	.000
R^2	0.684		

Dependent Variable: Coffee Value Chain Performance

In an interview held with one of the key informants on role of coffee cooperative unions; it was reported that *"coffee cooperative unions often organize trainings, workshops, and farmer field schools to improve agronomic practices and post-harvest handling. These trainings help farmers reduce post-harvest losses and maintain coffee bean quality during storage and transportation, thereby increasing the market value of their produce"*

In another interview conducted with another key informant, it was reported that "*coffee cooperative unions often provide financial services such as savings and credit facilities, enabling farmers to invest in their farms and manage income fluctuations. By stabilizing incomes and reducing dependency on exploitative credit sources, cooperative unions enhance the economic resilience of coffee-producing households*".

4.4 Factors influencing the effect of coffee cooperative unions in improving the coffee value chain performance

Respondents during survey were asked rate of the availability of financial resources provided by cooperative unions to support them, responses were recorded, analysed and presented in figure 4.6;

The results revealed that the largest proportion of farmers rated financial resources as moderate constituting to 34.3%.This suggests that while cooperatives provide support, it is not always sufficient to fully meet farmers' financial needs

High (22.9%). About one-fifth of respondents feel that financial resources are readily available.

Very high (11.9%). This indicates that only a few farmers feel fully supported in terms of financial access from the cooperatives.

A significant portion of farmers perceive access to financial resources as low constituting to 21%).This indicates gaps in cooperative support, which may limit farmers' ability to invest in coffee production.

Very low (10%). This highlights that some members are largely underserved and face challenges in sustaining coffee farming without external support.

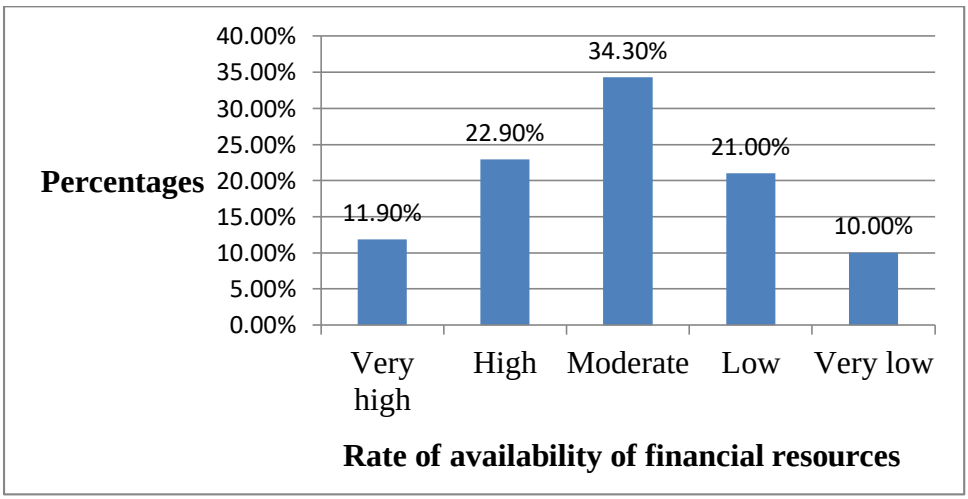


Figure 4.6: Rate of the availability of financial resources provided by cooperative unions

Respondents were also asked factors influencing the effectiveness of coffee cooperative unions in improving coffee value chain performance, the results are presented in table 4.4;

Access to financial resources has a p-value of 0.0014, which is statistically significant ($p < 0.05$). This means coffee cooperative unions with better access to financial resources are more likely to be effective in improving coffee value chain performance

Market accessibility shows a p-value of 0.0049, which is also significant. This implies that unions with improved access to markets are more likely to enhance value chain performance

Quality inputs have a p-value of 0.0235, which is significant. Therefore, unions with better access to quality inputs are more likely to be effective in improving value chain performance.

Collaboration with other actors has a p-value of 0.0328, which is significant. This means that strong collaboration with stakeholders makes coffee cooperative unions more likely to improve performance.

Government support has a p-value of 0.0650, which is not significant. Thus, coffee cooperative unions receiving government support are currently less likely to show a statistically confirmed effect on improving value chain performance.

Membership engagement and participation has a highly significant p-value of 0.0003. This means that cooperatives with active member participation are more likely to be effective.

Infrastructure has a p-value of 0.1023, which is not significant. Therefore, infrastructure factors are less likely to have a meaningful impact on the effectiveness of coffee cooperative unions.

Table 4.4: Factors influencing the effectiveness of coffee cooperative unions in improving coffee value chain performance

Factor	Chi-square (χ^2)	df	p-value	Sig ($p < 0.05$)
Access to financial resources	10.24	1	.0014	Significant
Market accessibility	7.89	1	.0049	Significant
Quality inputs	5.13	1	.0235	Significant
Collaboration with other actors	4.56	1	.0328	Significant
Government support	3.41	1	.0650	Not significant
Membership engagement and participation	12.88	1	.0003	Significant
Infrastructure	2.67	1	.1023	Not significant

Respondents were asked during survey about extent to which coffee cooperative unions succeeded in reducing post-harvest losses and improving the quality of coffee in greater Bushenyi, responses were captured, analysed and presented in the table 4.5 below;

Very Low ($\beta = -2.197$, $p = 0.05$).Respondents who rated the success of coffee cooperatives as very low are significantly less likely to perceive cooperatives as effective. Statistically significant at the 5% level.

Low ($\beta = -1.099$, $p = 0.03$).the results revealed low still indicate a lower perception of success, though not as severe as very low. Statistically significant at ($p < 0.05$).

Respondents who selected moderate show a slightly increased likelihood of perceiving cooperatives as successful, but this increase is not statistically significant.

High (β = 1.386, p = 0.01).Respondents who rated coffee cooperative unions as high success are much more likely to view them positively. Strongly statistically significant.

Very High (β = 1.23, p = 0.001).The highest perception of success is associated with even greater odds of reporting success. Highly significant at (p = 0.001), showing strong confidence in this result.

Table 4.5: Extent to which coffee cooperative unions succeeded in reducing post-harvest losses and improving the quality of coffee in Greater Bushenyi district

Predictor variable	Coefficient (β)	p-value
Very low	-2.197	0.05
Low	-1.099	0.03
Moderate	0.200	0.06
High	1.386	0.01
Very high	1.23	0.001

In an interview held with agricultural extension agents, it was revealed that; *"The impact of cooperative unions has been significant. They offer storage facilities and drying equipment that smallholder farmers could not afford individually. This reduces post-harvest handling mistakes and mold contamination, which are common causes of loss".*

4.5 The effect of coffee cooperative unions on value chain performance

Respondents were also asked during survey**,** how significant is the influence of government regulations on the ability of cooperative unions to improve the coffee value chain, responses were captured , analysed and presented in table 4.6;

The results revealed very significant (40%).These respondents strongly agree that government regulations significantly boost the performance of cooperative unions in

the coffee value chain. This implies that many stakeholders likely benefit from policy interventions like fair trade laws, quality control, access to extension services, cooperative registration, and marketing support

Significant (30%).This group believes regulations are useful but may not be fully consistently enforced. The results imply that the effectiveness of policies might vary by region or implementation level, but are still considered valuable by many.

Slightly significant (20%).These respondents are not fully convinced of the impact; they see only limited benefits from government policies. The results imply that there are issues like issues such as lack of awareness of existing laws, or limited coverage of policies at cooperative level.

Not significant (10%).This minority believes that government regulations are not useful or impactful in improving cooperative efforts. The results indicate a gap between policy and practice.

Table 4.6: The influence of government regulations on the ability of cooperative unions to improve the coffee value chain

Response Category	Frequency (n)	Percentage (%)
Very significant	80	40.0
Significant	60	30.0
Slightly significant	40	20.0
Not significant	20	10.0
Total	**200**	**100.0**

Respondents during survey were asked about collaboration between coffee cooperative unions and other value chain actors in improving performance, responses were captured, analysed and presented in figure 4.7 below;

Good (40%).Most respondents believe the collaboration is positive and productive. This indicates functional relationships between cooperative unions and actors like processors, input suppliers, and financial institution.

Excellent (25%).A strong portion of respondents see collaboration as very effective and impactful.

Fair (25%).A significant number feel collaboration is moderate, with room for improvement.

Poor (10%). A small group reports dysfunctional collaboration.the results imply that there is exclusion of actors, lack of trust, or competition over cooperation among cooperative unions and actors.

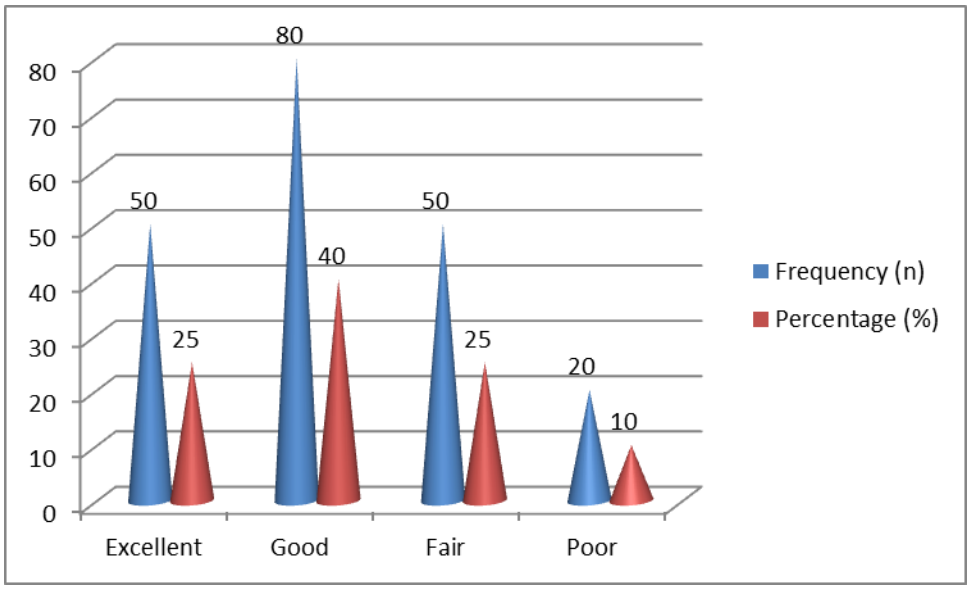


Figure 4.7: Collaboration between coffee cooperative unions and other value chain actors in improving performance

During survey respondents were also questioned on effect of coffee cooperative unions on value chain performance, responses were captured, analysed and presented in table 4.7 below;

Adjusted $R^2 = 0.679$ shows that after adjusting for the number of predictors, about 67.9% of the variation in value chain performance is reliably explained by the variables included. This implies that the model has strong explanatory power, meaning that coffee cooperative union interventions (input support, training, credit, and market linkages) together account for a significant portion of the improvements in value chain performance.

Input support ($B = 3.21$, $p < 0.001$). A one-unit increase in perceived input support increases value chain performance by 3.21 units**.** This implies that providing inputs like fertilizers and seedlings is a key contributor to improved performance.

Training access ($B = 2.74$, $p < 0.001$). Training access significantly boosts value chain performance by nearly 2.74 units.This implies that extension training is crucial to improving quality and yields.

Credit access ($B = 1.08$, $p = 0.029$). Access to affordable credit has a smaller but significant effect. An implication that credit access is important but may need to be bundled with training or technical support to yield stronger impacts.

Market Linkage ($B = 4.60$, $p < 0.001$). Market linkage is the strongest factor, each unit increase leads to 4.6 units improvement in performance. Implying that helping farmers enable them sell directly to buyers reduces losses and increases prices.

Table 4.7: Regression results on effect of coffee cooperative unions on value chain performance

Variable	B (Unstandardized Coeff.)	Std. Error	t-test	p-value
(Constant)	34.26	2.87	11.93	0.000
Input Support	3.21	0.51	6.29	0.000
Training Access	2.74	0.67	4.09	0.000
Credit Access	1.08	0.49	2.20	0.029
Market Linkage	4.60	0.59	7.80	0.000
R^2	**0.685**			
Adjusted R^2	**0.679**			

In an interview conducted with key informant on how cooperative unions contributed to promoting fair trade and ethical practices within the coffee industry in Greater Bushenyi, it was said that, "*Coffee Cooperative unions in Greater Bushenyi have played a major role in promoting fair trade by ensuring transparency in pricing and transactions. He further reported that they provide farmers with clear information about market prices, weighing processes, and payment terms, which reduces exploitation by middlemen and private buyers. This transparency builds trust and encourages ethical practices across the coffee value chain"*

In another interview held with cooperative union manager on how have cooperative unions contributed to promoting fair trade and ethical practices within the coffee industry in Greater Bushenyi, it was reported that *"One of the most significant contributions of coffee cooperative unions is their effort to secure fair prices for coffee*

*growers. By organizing farmers into strong groups, unions increase their bargaining power and negotiate better deals with buyers, including access to fair trade market*s"

Discussion, Conclusion, Recommendations, Areas for further Research

5.1 Discussion of study findings

5.1.1 The role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance

The study findings also established that extension and training services is top predictor of performance with strong significant relationship with (p-value;0.000). The respondents further reported that extension agents offer training, capacity building, and technical guidance, helping farmers adopt sustainable practices and improve farm productivity. It was indicated that government agencies like the Uganda Coffee Development Authority (UCDA) also played a regulatory and promotional role by setting quality standards, supporting research, enforcing policies, and marketing Ugandan coffee abroad. Together, these actors form a network of support that, when well-coordinated, leads to improved value chain performance. This finding can be compared with La Revancha, (2023) who reported that actors and cooperatives often provide training and capacity-building programs to their members and farmers in particular, helping them improve farming practices and product quality, Offering workshops on sustainable farming practices and quality control which leads to higher-quality yields.

The study results revealed agricultural input provision that showed significant positive impact on performance. Respondents further revealed inputs provided to them like seedlings, fertilizers, pesticides which leads to higher productivity and better quality coffee beans. Suppliers are fundamental to the productivity of farmers, as the timely provision of appropriate inputs can significantly influence both yield and quality of the

coffee. When inputs are affordable, accessible, and suited to local agro-ecological conditions, farmers are more likely to adopt improved farming practices that contribute to a stronger value chain.

The study respondents revealed that they are helped in facilitating movement of coffee from farm to market. This meant that improving road infrastructure and logistics by actors directly improves market access, reduces spoilage, and increases farmer profits. They further explained that coffee cooperative unions help to connect them to premium markets and facilitate group certifications such as organic and fair trade. These certifications not only improve income but also require adherence to environmental and social standards, thereby fostering sustainable coffee production. This finding shares the same thinking with Pachamama Coffee, (2023) which reported that Cooperatives help members access new markets and develop strong branding strategies to differentiate their products for example, the Pachamama Coffee Cooperative in the U.S. markets its coffee as farmer-owned and emphasizes its direct trade model.

The study results also revealed coffee cooperative unions often provide financial services such as savings and credit facilities, enabling farmers to invest in their farms and manage income fluctuations. This stablises income and reduces dependency on exploitative credit sources, cooperative unions enhance the economic resilience of coffee-producing households. This finding can be compared with Co-op Impact Fund, (2023) in UK which reported that coffee cooperative unions facilitate access to credit and financing for small-scale farmers, enabling them to invest in better farming practices and technologies. The Co-op Impact Fund in the UK also offers financial support for infrastructure improvements and sustainable coffee related projects.

5.1.2 Factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance

The results indicate that access to financial resources is strongly associated with perceived effectiveness which means that financially empowered unions are more likely to perform well in the value chain. They are therefore better positioned to invest in activities like hiring skilled labor, marketing, procurement of inputs,providing timely payments to its members and among others that enhance their performance in the coffee value chain. This concurs with the finding of Niwagaba, (2021), in his study reported that cooperatives provide financial resources to their members which significantly enhance their performance and proper financial management ensures that funds are used efficiently and transparently which can speed up value chain activities.

However, Bongers *et al.* (2020) argued that access to finance alone does not guarantee improved performance, since misuse of funds, low repayment rates, and weak financial literacy may undermine cooperative effectiveness.

The results also revealed that market access positively influences performance of cooperative unions and are seen as more effective and that investment in market linkages and buyer partnerships is highly needed. When cooperative unions secure better markets, farmers earn higher with more stable prices**.** This increases member satisfaction and loyalty, encouraging farmers to remain in and contribute to the union. Direct market access reduces reliance on exploitative middlemen and price fluctuations. Cooperatives negotiate better terms on behalf of members, including contracts.Stronger price control increases union effectiveness in stabilizing member earnings and building trust. This finding is in line with Nzeyimana, (2022) who in their study carried out in Rwanda revealed that cooperatives play a critical role in facilitating market access for smallholder farmers by aggregating their produce and cooperatives that establish strong

linkages with buyers, exporters, and other stakeholders in the coffee value chain can access better market opportunities and negotiate favorable prices.

This finding however, disagrees with Mutonyi et al. (2016) who argued that while market access is important, middlemen dominance, limited transport facilities, and weak cooperatives nullifies these benefits, leaving farmers with low profits.

The study findings also revealed that government support enhances coffee cooperative union's effectiveness in improving value chain performance.Government support helps when paired with strong governance and market orientation, but results revealed insignificance due to being ineffective or distortive when poorly targeted or politicized.

Government establishes favorable policies and regulations that promote the formation, operation, and accountability of coffee cooperatives. The government invests in rural infrastructure such as roads, electricity, and irrigation systems to reduce transport costs and spoilage, electrification supports mechanized processing and storage. Government also helps coffee cooperative unions access domestic and international markets. This finding is comparable to the finding of Nzeyimana, (2022) whose study was carried out in Rwanda and his results reported that government supportive policies can help to create an enabling environment for cooperatives to operate effectively. In Rwanda, the Rwandan government has implemented policies that support coffee cooperatives, including providing financing and training to farmers. This can also be compared with MAAIF, (2022) which reported that Ugandan government's National Coffee Policy aims to support cooperatives through initiatives like the Coffee Rehabilitation Program, which provides inputs and extension services to coffee farmers.

In contrast, Kuit et al. (2019) in Latin America showed that consistent government support in extension, subsidies, and export promotion significantly strengthened coffee

cooperatives. The lack of its impact in Greater Bushenyi would therefore reflect weak policy implementation rather than irrelevance of government support.

The study results reported that membership engagement and participation which showed high significant relationship as this influences cooperative performance. When members are actively involved, they develop a sense of ownership and responsibility for the cooperative's success. High participation fosters mutual trust, reduces internal conflicts, and encourages long-term commitment. This unity improves institutional stability and resilience, which are essential for sustained value chain improvements. Cooperatives with an engaged membership can set minimum price thresholds, refuse exploitative buyers, and access direct trade agreements.

This is in agreement with (ICO, 2022) which reported that it has partnered with the African Fine Coffee Association (AFCA) to support coffee cooperatives in various African countries. This partnership includes initiatives on market promotion, quality improvement, and capacity building, which have collectively improved the performance of the coffee value chain.

This finding also disagrees with Fischer and Qaim (2019) who noted that in some African cooperatives, elite capture and lack of transparency discourage member participation, thereby reducing effectiveness. This suggests participation is critical, but quality and inclusiveness of participation matter most.

The study respondents also established that infrastructure affect coffee value chain performance. Good roads enable easier and faster transportation of coffee from farms to collection centers, processing units, and markets as this minimizes post-harvest losses due to delays or damage during transit and facilitates timely delivery of inputs (fertilizers, equipment) and outputs (coffee beans). Access to reliable electricity enables

coffee cooperative unions to process coffee efficiently and add value through drying, hulling, roasting, and packaging and this supports operation of wet mills and drying machines, improving coffee quality. This finding is in agreement with Mukasa, (2023) who study results established that good infrastructure, including roads, processing facilities, and storage, is essential for reducing post-harvest losses and ensuring that coffee reaches markets in good condition. Mukasa further explained that in Uganda, the National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE) has invested in modern processing and storage facilities which has significantly reduced post-harvest losses and improved the quality of coffee, making Ugandan coffee more competitive in international markets.

Conversely, Opolot et al. (2022) found in Uganda that poor road networks and lack of rural electrification were major bottlenecks that significantly reduced cooperative efficiency. The insignificance in your study may be due to ongoing infrastructure improvements in Greater Bushenyi, reducing its current role as a binding constraint.

5.1.3 Effect of coffee cooperative unions on value chain performance

The results revealed that cooperative unions help value chain actor**s** access affordable credit to run value chain activities. Access to financial services enables farmers to hire labor at peak times, invest in proper post-harvest tools like drying racks, tarpaulins, and storage facilities. This reduce post-harvest losses and improve quality due to hygienic handling and proper drying. Financial support further allows farmers to purchase high-quality inputs (seeds, fertilizers, pesticides, and tools), adopt improved farming technologies, and invest in farm management practices. Thus increases coffee yields per acre, improve quality of cherries due to better agronomic practices and reduce reliance on middlemen for input purchases. This finding concurs with World Bank, (2022) who report noted that effective financial management and access to credit are

critical for cooperatives to invest in infrastructure, technology, and training. These investments are essential for improving production efficiency and product quality, which are key components of value chain development.

The study results indicated that training access through coffee cooperative unions significantly boosts value chain performance. Coffee Cooperative unions provide platforms for training, governance, and accountability, and promote inclusive decision-making. These unions also attract NGO, government, and private sector partnerships that improve services and investments in the value chain. Therefore stronger institutional support and capacity leads to better management of the chain and responsiveness to market demands and shocks. This finding is comparable to the findings of UCDA, (2023) which reported that training and education programs provided by cooperatives help farmers adopt best practices in coffee cultivation, processing, and marketing. UCDA further reported that capacity building enhances the skills and knowledge of farmers, leading to improved quality and higher yields. UCDA gave an example of Coffee Cooperative Union of the Luweero Triangle in Uganda that has focused on capacity building by providing extensive training to its members on sustainable farming practices and quality control.

The results also established that coffee cooperative unions often support farmers to meet certification requirements. Cooperatives invest in branding that differentiate their coffee in the market. Branded coffee fetches higher prices, enters premium markets, and builds reputation for quality. This finding is in agreement with FAO, (2021) and Fairtrade Foundation, (2023) whose reports revealed that cooperative unions play a crucial role in quality control by setting standards and providing the necessary resources to meet these standards. FAO also noted that unions facilitate certifications like Fair Trade and organic, which can attract premium prices in the global market. This has

significantly improved the quality of coffee, enabling the cooperative to access high-value markets and earn better prices for its members.

The results also indicated that market linkage leads to improvement in performance, implying that helping farmers enable them sell directly to buyers. Cooperative unions help farmers access both local and international market which reduces reliance on middlemen who often exploit smallholder farmers. Through collective action, cooperative unions, negotiate better terms of trade for their members, influence coffee pricing by dealing in bulk and therefore coffee farmers receive fair prices and are less vulnerable to market fluctuations. This finding can be compared with FAO, (2021) which reported that coffee cooperative unions establish direct market linkages that can bypass intermediaries, leading to better prices and more stable income for farmers. FAO further revealed that direct access to international markets is particularly beneficial as it often involves fair trade practices. FAO (2021) also revealed that by obtaining Fair Trade certification, the cooperative has ensured higher prices for its coffee, which has improved the livelihoods of its members and promoted sustainable practices along the value chain.

5.2 Study conclusion

The study concludes that value chain actors and cooperative unions play a critical role in enhancing coffee value chain performance. Roles particularly training, quality enhancement, market access and input access lead to significant improvements in value chain performance.

In relation to objective 2, the study concludes that the effectiveness of coffee cooperative unions in improving coffee value chain performance is significantly influenced by Access to financial resources with p-value = 0.0014, Market accessibility with p-value = 0.0049, Quality inputs with p-value = 0.0235, Collaboration with other

actors has a p-value of 0.0328,membership engagement and participation has p-value of 0.0003 . Government support has a p-value of 0.0650 and infrastructure has a p-value of 0.1023, though important but did not show a statistically significant impact on value chain performance.

The study concludes that coffee cooperative unions have a significant impact in enhancing coffee value chain performance. The regression analysis reveals that market linkage, input support, training access, and credit services all have a statistically significant positive effect on performance, with market linkage having the strongest impact.

5.3 Study recommendations

The study recommends the following based on results;

Cooperative unions, in collaboration with agricultural extension officers and NGOs, should invest in farmer education programs that cover good agronomic practices, climate-smart coffee production, and post-harvest handling. Using radio, digital platforms, and demonstration farms could expand outreach and enhance effectiveness.

Cooperative unions should develop reliable supply chains for certified inputs, supported by government subsidies or private–public partnerships. This will improve both productivity and quality, thus enhancing overall value chain efficiency.

Financial institutions, cooperatives, and government programs should enhance access to affordable credit, farm inputs, and modern technologies. Innovative financing models, such as group lending through cooperatives, mobile banking, and microcredit, should be scaled up to reach more farmers, especially women and youth who often face resource limitations.

5.4 Areas for further research

The study recommends the following areas for further research based on the study results;

Based on the findings of this study, it is recommended that future research explores the role of government support in coffee value chain activities. While this study highlighted the contributions of coffee cooperative unions, it is crucial to understand how policy frameworks, subsidies, extension services, and other forms of government intervention influence the overall performance and sustainability of the coffee value chain.

Another important area for further investigation is the impact of infrastructure on value chain efficiency and performance. Infrastructure such as road networks, storage facilities, processing plants, and transport systems, plays a critical role in reducing post-harvest losses, improving market access, and enhancing the competitiveness of coffee products. Therefore understanding how infrastructure bottlenecks affect the operational efficiency of cooperative unions and overall value chain performance can inform targeted investments and strategic planning aimed at boosting productivity and profitability for all actors involved.

The influence of climate change on coffee cooperative union activities is another critical area for further study. Given the vulnerability of coffee production to changing weather patterns, temperature shifts, and extreme climate events, it is essential to assess how cooperative unions and farmers adapt to these challenges. Research could focus on resilience-building measures, adoption of climate-smart agricultural practices, and the role of unions in supporting mitigation and adaptation efforts, thereby safeguarding livelihoods and ensuring long-term sustainability of the coffee value chain.

Further research should be carried out to examine gender and youth engagement in coffee cooperative union activities. This study suggested varying levels of participation, but a deeper understanding of the factors that encourage or limit women's and youth involvement is necessary. Investigating issues such as access to resources, decision-making power, capacity-building opportunities, and social or cultural barriers can help design inclusive strategies that empower underrepresented groups, thereby strengthening human capital and fostering equitable development within the coffee sector.

Evaluating the role of digitalization and information and communication technology (ICT) in coffee cooperative unions is highly recommended. Digital tools, including mobile applications, market information systems, e-payment platforms, and online training resources, have the potential to enhance operational efficiency, transparency, and market linkages.

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Appendices

Appendix 1: Questionnaire for respondents

Dear Sir/Madam,

My name is **Ahikire Ambrose,** a student of Bishop Stuart University, Mbarara pursuing Master's degree in Agribusiness and Value chain management, conducting a research study on " **The effectiveness of Coffee Cooperative Unions and Coffee Value Chain Performance: A case of coffee cooperatives in greater Bushenyi ".** The study is purely for academic reasons and you are kindly requested to honestly fill this questionnaire by providing your true answers to all questions. There is no pledged compensation for participating in this study. At all stages of the study, there will be no mention of your personal identity details.

Therefore, you are kindly requested to answer the questions as instructed and for more information feel free to contact.

Instructions: (Please tick or circle or fill in the blank spaces where necessary)

Section A: Bio-data of respondent

1. Respondent's Sex

a. Female ( ) b. Male ( )

2. Age

a. $\leq$20 ( ) b. 21-30 ( ) c. 31-40 ( ) d. 41-50 ( )

e. 51 and above ( )

3. Marital status

a. Single ( ) b. Married ( )

c. Widowed ( ) d. Divorced ( )

4. Level of education

a. No formal education ( ) b. Primary ( ) c. Secondary ( )

d. Tertiary ( ) e. University ( )

5. Years of cooperative existence ……

Section B: The role of value chain actors and coffee cooperative unions on enhancing coffee value chain performance

6. How frequently do value chain actors provide market information (e.g., prices, demand trends) to coffee farmers?

a. Very frequently ( ) b. Occasionally ( ) c. Rarely ( ) d. Never ( )

7. To what extent do you believe coffee cooperative unions help in promoting value addition (e.g., roasting, packaging) among coffee farmers?

a. To a great extent ( ) b. To some extent ( ) c. To a little extent ( )

d. Not at all

8. How accessible are training programs on sustainable farming practices offered by value chain actors and cooperative unions?

a. Very accessible ( ) b. Moderately accessible ( ) c. Slightly accessible ( )

d. Not accessible ( )

9. What roles do value chain actors play in enhancing coffee value chain performance in greater Bushenyi district

a. Facilitate the movement of coffee from the farm to the market ( )
b. Enhancing coffee quality ( )
c. Supporting access to inputs and resources ( )
d. Reducing transaction costs ( )
e. Agricultural input provision ( )
f. Any other (specify)……

….……..

10. What roles do cooperative unions play in enhancing coffee value chain performance in greater Bushenyi district?

a. Help farmers aggregate their coffee into larger volumes ( )
b. Advocate for fair pricing ( )
c. facilitate access to credit and financial services ( )
d. Facilitating training and capacity building ( )
e. Promoting value addition ( )
f. Strengthening farmer's bargaining power ( )
g. A platform for information dissemination on market updates ( )
h. Any other (specify)……

……

Section C: Factors influencing the effectiveness of coffee cooperative unions in improving the coffee value chain performance

11. How would you rate the availability of financial resources provided by cooperative unions to support you as coffee farmers?

a. Very high ( ) b. High ( ) c. Moderate ( ) d. Very low ( )

e. Low ( )

12. To what extent do leadership and management practices within coffee cooperative unions influence their effectiveness?

a. To a great extent ( ) b. To some extent ( ) c. To a little extent ( )

d. Not at all ( )

13. What is your level of satisfaction with the access to agricultural inputs (e.g., seeds, fertilizers) provided by cooperative unions?

a. Very satisfied ( ) b. Satisfied ( ) c. Neutral ( )

d. Dissatisfied ( )

14. To what extent have coffee cooperative unions succeeded in reducing post-harvest losses and improving the quality of coffee in Greater Bushenyi District?

…..……
…….

15. Could there be factors influencing the effectiveness of coffee cooperative unions in improving coffee value chain performance?

a. Yes ( ) b. No ( )

15. If yes, mention the factors?

a. Access to financial resources ( )

b. Market accessibility ( )

c. Quality inputs ( )

d. Collaboration with Other Value Chain Actors ( )

e. Government support ( )

f. Membership engagement and participation ( )

g. Infrastructure ( )

h. Any other (specify)……

……

Section D: The effect of coffee cooperative unions on value chain performance

16. How significant is the influence of government regulations on the ability of cooperative unions to improve the coffee value chain?

a. Very significant ( ) b. Significant ( ) c. Slightly significant ( )

d. Not significant ( )

17. How would you rate the collaboration between coffee cooperative unions and other value chain actors in improving performance?

a. Excellent ( ) b. Good ( ) c. Fair ( ) d. Poor ( )

18. What impact do cooperative unions have on the transparency and efficiency of the coffee value chain?

a. High impact ( ) b. Moderate impact ( ) c. Low impact ( )

d. No impact ( )

19. Briefly explain the the relationship between the effectiveness of coffee cooperative unions and value chain performance?

……

……

……

……

……

……

Thank you for your participation. May god bless you

Ebibuzo bya'bakugarukamu

Ahari Sebo/Nyabo,

Eizina lyange nibanyeta **Ahikire Ambrose**, omwegyi aha **Bishop Stuart University**, Mbarara, ninshoma diguri yobwobuhingyi omu **kwongyera omutindo nokugukuma omubihingwa**. Ninkora okukyondoza omu "*Ebirugyire omubigombe byetereine omukuhinga nokuguza omwani hamwe nokwongyera omutindo omumwani : okukwozesa ekyokureberaho omuri eyabire eri empango Bushenyi* ."

Okukyondoza oku nikwija kunyamba omukushoma kwenka. Mbwenu nimushabwa kwijuzaebibuzo na ansa ezihikyire. Tinyine kyinkubaraganisa kubahereza ahabwa okwejumbira omukukyondoza oku. Kandi buri sitegyi eyitwahikeho tinkwija kugamba/kuhandika ebikukwasireho nkwomuntu. Ninkushaba kugarukamu ebibuzo omundagyiriro kandi kubuza ebikukyiraho tihariho shonga nobasa kumbuza.

Engyenderwaho: kyebera omukabokusi ninga oyijuze omu layinizi ezihirwe ehikyikwetagyisa.

Ekyicweka kyokubanza (A): Ebikukwasireho

1. Obuhangwa bwawe

a. Omwishikyi/omukazi ( ) b. Omwojo/Omushaija ( )

2. Emyaka

a. $\leq$20 ( ) b. 21-30 ( ) c. 31-40 ( ) d. 41-50 ( )

e. 51 nokweyongyerayo ( )

3. Obushwere

a. Nkyiri nyeka ( ) b. Nshwirwe/Nshwire( )

c. Nkaferwa omukazi/omushaija ( ) d. Nkahukana nomukundwa ( )

4**.** Okashoma kyikwinganakyi

a. Tindashomire ( ) b. Nka mara purayimare ( ) c. Nkamara sekendure ( )

d. Nkamara koregyi ( ) e. Univasite ( )

5. Emyaka yekyigombe kyawe kyimazire ……

Ekyicweka kyakabiri (B): Omurimo gwabakwongyera omutindo hamwa ne'bibinabyokwegyita byomwani omukwongyera kuhamya omutindo

6. Nemirundi erkwinganakyi obu abakwongyera omutindo omumwani bakurondera abahingyi akatare?

a) obwire obwingyi ( ) b. Rimwe narimwe ( ) c. Tikyikukyira kubaho ( ) d. Tibakukaronda ( )

7. Nikyinaganakyi omukwikyiriza kwawe ngu omukweterana kwabahingyi nikubasa kuyamba omukutungura okwogera omutindo omubahingyi ?

a) Kyirya ahiguru munonga ( ) b). Tikyaburijo ( ) c). Nikakye munonga ( )

d. Tikyiriho ( )

8. Nibafuna bata okushomesibwa puroguramuzi ezo'byobuhingyi abo abakwongyera omutindo nana ebigombe ebyetereine?

a) Nibazifuna jjuba ( ) b). Nibazifuna obumye nabumye ( ) c). nimpora mpora ( ) d). Timukufuna ( )

9. Nimurimo kyi ogu abakwongyera omutindo bakukwora kwendegyeza okwongyera omutindo omumwani omuri Bushenyi disiturikiti?

a. Okushashura omwani kuruga aha famu kuhika omukatare ( )

b. Okurebeka ngu omwani noguboneire ( )

c. Okubayamba kuffuna ebyokukwozesa ( )

d. Okukyendez enshohoza ( )

e. Okubaha ebyokukwozesa omukuhinda ( )

Nebindi (bigambeho)……

….……..

13. Nimugasho kyi ogu okwetara kwabahingyi bakukora omukwongyera omutindo omumwani omuri bushenyi disiturikiti?

a. Kuyamba abahingyi kubabaikyira omwani omubwingyi ( )
b. Kubayamba kubarondera ebeyi eboneire ( )

c. Kubayamba omukufuna loni ( )
d. Kubashomesa empinga yomurembe ( )
e. Kubayamba kwongyera omutindo ahamawani gwabo ( )
f. Kubamba omukubaramuriza baba nibaguza omwani gwabo( )
g. Okubakorera orutindo rwokumanya ebikufa omubutare ( )
h. Ebindi (bigambeho)……

Ekyicweka kyakashatu (C): Ebikubasa kuretera ebigombe byakweterana byaremwa kwongyera omutindo omumwani

14. Noreba ota okubaho kwobuyambi bwesente ezikuhebwa abahingyi kuruga omu bigombe ebyetereine?

b. Kurya'higuru munonga ( ) b. Kurya'higuru ( ) c. kuri rwagati nagati ( )
d. kurya'hansi( )

15. Nirurengokyi oryobwebembezi kuruga omubigombe byokweterana kureba ngu' omutindo gwarebeka omumwani?

a) Kyirya ahiguru munonga ( ) b). Tikyaburijo ( ) c). Nikakye munonga ( )

d. Tikyiriho ( )

13.Nirurengokyi orwokumarwa kwanyu orumukufuniraho ebyokukwozesa omukihinga (kembibo, nko'rwezo) kuruga omubigombe ebyetereine?

a. Nitumarirwa kyimwe munonga( ) b. Nitumarwa ( ) c. Rwagat nagati ( )
d. Titukumarwa ( )

14.Notekateka nguhariho ebikubasa kuretera ebigombe byakweterana byaremwa kwongyera omutindo omumwani?

b. Apaana ( ) b. Yego ( )

19. Iwe wabanogyira ngu yego, bigambe?

i. Okufuna esente zokukwozesa ( )

j. Okufuna obutare ( )

k. Ebyokukwozesa byomurembe ( )

l. Enkwatinisa nabakwongyera omutindo ( )

m. Obuyambi omu gavumenti ( )

n. Okukwanitisa naba memba omukukora ( )

o. Ebyenguto ( )

p. Ebindi (bigambe)……

……

Ekyicweka kyakana D: Relationship between the effectiveness of coffee cooperative unions and value chain development

20. Engyenderwaho za gavumenti ziyambirehkyi ahabigombe ebyetereine omu kwongyera omutindo omumwani?

b. Biyambire kyihango munonga( ) b. Biyambire ( ) c. Biyambireho kakye ( )

d. Tiheine ekyibiyambire ( )

21. Norebe ota enkwatagana yebigombe ebeyetereine nana abakwongyera omutindo omumwani?

b. Ninungyi munonga ( ) b. Eboneire ( ) c. Erimu hakyiri ( ) d. Nimbi ( )

22. Ebigombe ebyetereine bitereho mpindukakyi omukureba ngu habaho oburinganiza nenkora nungyi omu kwongyera omutindo omumwani?

a. Empinduka eryahiguru ( ) b. erirwagati nagati ( ) c. erya'ahansi( )

d. Teriho empinduka ( )

19. Omubugufu shoborora enkwatagana erirwagati yebikwozirwe ebigombwe byo'mwani byetereine nana okutungura omutindo gwo'mwani?

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Webare enkwatanisa. Mukama akuhe omugyisha

Appendix 2: Interview guide for key informants

Dear Sir/Madam,

Myname is **Ahikire Ambrose,** a student of Bishop Stuart University, Mbarara pursuing Master's degree in Agribusiness and Value chain management, conducting a research study on " **The effectiveness of Coffee Cooperative Unions and Coffee Value Chain Performance: A case of coffee cooperatives in greater Bushenyi "**

The study is purely for academic reasons and you are kindly requested to honestly provide your true answers to all questions. There is no pledged compensation for participating in this study. At all stages of the study, there will be no mention of your personal identity details.

Therefore, you are kindly requested to answer the questions as instructed and for more information feel free to contact.

1. What is your age?
2. What is your marital status?
3. What is your level of education?
4. How would you describe the role of coffee cooperative unions in enhancing the overall performance of the coffee value chain in Greater Bushenyi?
5. In what ways have coffee cooperative unions influenced the quality of coffee produced by farmers in this area?
6. What specific support do coffee cooperative unions provide to farmers to help improve their access to both local and international markets?
7. How have cooperative unions facilitated training and capacity building among coffee farmers to improve value addition and post-harvest handling?
8. What challenges do coffee cooperative unions face in improving the coffee value chain, and how have these challenges impacted their effectiveness?
9. In your opinion, how have cooperative unions contributed to promoting fair trade and ethical practices within the coffee industry in Greater Bushenyi?
10. How do coffee cooperative unions collaborate with other stakeholders (e.g., exporters, processors, financial institutions) to enhance value chain development?
11. What role do cooperative unions play in improving farmers' access to financial resources and inputs, and how has this impacted coffee production and value addition?

12. To what extent have coffee cooperative unions succeeded in reducing post-harvest losses and improving the quality of coffee in Greater Bushenyi District?
13. What recommendations would you provide to improve the effectiveness of coffee cooperative unions in enhancing the coffee value chain performance in this study area?

Thank you for your participation. May god bless you

Appendix 3: Study work plan

This illustrates the process under which research will take to be completed

S/n	Task	Time frame (month/year)	Responsible person
1	Research Concept development and presentation.	January-May 2024	Student
2	Proposal write up	June-September, 2024	Student
3	Proposal presentation	October, 2024	Student
4	Submission of proposal to BSU-REC for ethical clearence	February, 2025	
5	Handling REC comments	March-April, 2025	Student
6	Field data collection and analysis	April-May, 2025	Research Assistants and Student
7	Submission of the first draft dissertation	June, 2025	Student
8	Handing in Final dissertation	June-July, 2025	Student
9	Publishing research outcomes	July-August, 2025	Student

Appendix 4: Research Implementation Budget

This shows the expenditure that will be incurred during the whole research process

Items to use during research process	**Quantity**	**Unit cost/item (shs)**	**Total Amount (UGX)**
Typing, Printing and photocopying	…..	150,000	150,000
Research assistants for data collection	3	150,000	450,000
Transport to the field (too and flow)	3 (times)	50,000	150,000
Soda and water for participants	208	3000	624,000
Binding	3 copies	20,000	60,000
Feeding research assistants	3	30,000	90,000
Manuscript development and publication	…	…	12,00,000
Car fuel	18 liters	5500	99,000
Contingency	….	….	400,000
Total			**3,223,000**