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COLLEGE OF BUSINESS AND ECONOMICS

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A Thesis paper on:

Factors affecting supply chain management performance of selected green coffee bean exporters in Addis Ababa

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Factors that affect supply chain management performance of selected green coffee bean exporters in Addis Ababa

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A Thesis Submitted to the Graduate School of Addis Ababa University, School of Commerce in Partial Fulfillment of the requirements for the Master of Art in Logistics and Supply Chain Management

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Declaration

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted at any university for a degree.

Signature: _____ Date: _____

Signature page

Addis Ababa University

School of Graduate Studies

This is to Certify that the thesis prepared by *Ruth Ketsela*, entitled: *Factors that affect supply chain management of selected green coffee bean exporters in Addis Ababa)* submitted in partial fulfillment of the requirements for the Master of Arts in *Logistics and Supply Chain Management (Extension)* complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Abstract

This primary objective of this study was to investigate the factors affecting supply chain management of selected green coffee bean exporters in Addis Ababa. SCM performance is further expressed in terms of variables. The research has focused on the factors effect on SCM performances. Supply chain management is a systematic analysis that covers the coordination and synchronization of the flow of resources in the network of suppliers, production facilities, distribution centers and customers. In the study mixed research approach was applied. Both qualitative and quantitative data was used. Also descriptive and explanatory research design was adopted. Infrastructure, market and environmental uncertainties are the most important and statistically significant factors that influence SCM in the study area.

Key words: Supply Chain Management, Market, Infrastructure Environmental Uncertainties, Coffee Exporters

Contents

Acronym

DADO:	District Agriculture Development Office
DCPO:	District Cooperative Promotion Office
ECC:	Ethiopia Customs Commission
ECQIC:	Exported Coffee Quality Inspection Center
ECTA:	Ethiopian Coffee and Tea Authority
ECX:	Ethiopia Commodity Exchanges
EU:	Europe Union
GDP:	Gross Domestic Product
ICO:	International Coffee Organization
IMF:	International Monetary Fund
ITC:	International Trade Center
MOT:	Ministry of Trade
NBE:	National Bank of Ethiopia
SPSS:	Statistical Package for the Social Sciences
SWOT:	Strength, Weakness, Opportunities and Threats
UNCTD:	United Nations Conference on Trade and Development
UNDP:	United Nations Development Program
WB:	World Bank

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CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Supply chain management is a systematic analysis that covers the coordination and synchronization of the flow of resources in the network of suppliers, production facilities, distribution centers and customers. The components of this network play different roles in the supply chain. Hey receive raw materials from suppliers, turn the materials into end products in the manufacturing facilities and distribute the end product through distribution centers among customers (Daneshyan et al, 2014).

Supply chain management aims to run the aforementioned process in a way that customers are enabled to receive reliable services or products at the lowest cost and quickly. Supply chain management is responsible for integration of organizational units throughout the supply chain and coordination of the flows of materials, information and finances so as to meet the end customer's demand and improve supply chain competitiveness (Shahbandarzadeh and Peykam, 2012).

The actors or units in the supply chain management of selected green coffee bean in Ethiopia as depicted in the study of (Mohammedsani, 2014) are the input suppliers, local collectors, primary farmer cooperatives, traders, Ethiopia Commodity Exchanges (ECX), exporters, cooperative union, retailers and consumers. And, as per Fair trade and coffee, 2012 cited in (Alemayehu, 2014) the pivotal figures in advancing the coffee industry include coffee cultivators, manufacturers, farmer unions, associations, suppliers of inputs, logistics providers, financial entities, coffee exporters, non-governmental organizations (NGOs), international bodies, governmental departments and agencies, the Ethiopian Commodity Exchange (ECX), and research institutions.

With scientific and rational management of the chain of suppliers, as the important elements of strategic management, it is possible to obtain competitive advantage. In recent years, the emergence of new technologies and massive evolutions in the global markets has added to the necessity of supply chain management (Soheila and Alireza, 2015, p. 440). As a result, different organizations have to use supply chain management to achieve and establish their competitive status.

1.2. Problem Statement

In Ethiopia, Coffee is one of the most important sectors. Since around 25 percent of Ethiopia's foreign trade is attributed to this product, and the production process engages almost 25 percent of the working population (Tamiru, 2016).

Currently, Ethiopia is the leading Arabica coffee producer in Africa, the fifth largest coffee producer and tenth coffee exporter worldwide. The Ethiopian coffee sector, is very important for the country and for its economic development due to the reasons that: (i) as a major source of cash income and provider of employment, it supports millions of farming families (about 25 million) and, (ii) coffee is the first item in terms of revenue generated from export with a share of about 25 percent (UNDP, 2014).

There are many studies employed on the supply chain management of coffee at international, national and local level. However, none of them have tried to answer which factors significantly affect the supply chain management of coffee exporters in Ethiopia.

According to (Fitrac, 2017) not less than of 95% of Ethiopian coffee is produced by smallholders. It has been observed that current coffee production is decreasing due to insufficient use of improved inputs, with fewer than 5% of producers utilizing fertilizers or pesticides. This study is delimited to the value chain analysis of coffee exporters; it is not focused on the determinants of supply chain management.

The papers of (Alemayehu, 2014) and (Abiy, 2016) are focused on the actors of value chain and on the factors affecting coffee export performance.

Other researchers (for example, (Berihun, 2021); (Teshale, 2018) ; (Habtamu, 2019); (Engida, 2020); and, (Ibrahim, 2021) are limited the determinants of the coffee price; quality of coffee; or limited to one of the actors/small holders/ in the chain.

The study of (Apostolos et al, 2022) was the coffee supply chain (SC) (Greek company), revealed that improvements in the operations positively impact companies and this is reflected in improved supply chain indicators, better financial results, and enhanced brand image. Results show that most of the company's primary stakeholders also have positive effects (employees, suppliers, partners with stores, final consumers).

However, this study is conducted in Greek and it could not be practical in Ethiopia. Thus, there is contextual gap. To fill this gap this study were considered as a response by contextualizing the factors determine the supply chain management of coffee exporters.

(Neeraja et al, 2020) Studied the "Factors affecting Coffee Value Chain in Cooperative Union' and found that market related factors have highest positive impact on Coffee value chain. Cooperative related factors have second highest impact on Coffee value chain. Infrastructure related factors have third highest impact on Coffee value chain. Financing related factors have fourth highest impact on Coffee value chain.

The study is focused on the cooperative unions and categorized the factors as

(1) Infrastructure related factors;
(2) Marketing related factors;
(3) Cooperative related issues;
(4) Financial Related Factors; and,
(5) Government Regulation Factors.

Though it is delimited on the cooperative unions, in the current study the factors like infrastructure, marketing, financial and government regulation were adopted from the study.

In addition to these factors such as

(1) environmental uncertainty (environment, government support, and uncertainty); .and,

(2) information technology (communication tools, resource planning tools, and supply chain management tools) were adapted from (Henry et al, 2012).

It is hard to find previous studies employed on the factors affecting supply chain management with special emphasize on the coffee exporters in Ethiopia. This implied that there is knowledge gap in the area. Additional study is needed for the knowledge gap, therefore, the current study can be considered as a remedy to fill the gap. The argument here is which factors could significantly affect the supply chain performance of the coffee bean exporters in Ethiopia.

Thus, the researcher is motivated to employ a study on the factors affecting supply chain management of selected green coffee bean exporters in Addis Ababa.

1.3. Research Objectives

1.3.1 The Study's General Objective

The general objective of the study was to investigate the factors affecting supply chain management of selected green coffee bean exporters in Addis Ababa.

1.3.2 The Study's Specific objectives

Specific objectives of this study were:

1. To examine the influence of the infrastructure related factors on the supply chain management of green coffee bean exporters.
2. To assess the effect of marketing related factors on the supply chain management of green coffee bean exporters.
3. To investigate the influence of financial related factors on the supply chain management of green coffee bean exporters.
4. To examine the effect of government regulation on the supply chain management of green coffee bean exporters.
5. To assess the influence of environmental uncertainty on the supply chain management of green coffee bean exporters.

6. To investigate the influence of information technology on the supply chain management of green coffee bean exporters.

1.4. Research Questions

1. Who are the actors in the supply chain management of green coffee bean exporters in Addis Ababa?
2. What are the supply chain management performances of selected green coffee bean exporters in Addis Ababa?
3. Which factors influence the supply chain management of selected green coffee bean exporters in Addis Ababa?

1.5. Significance of the Study

The outcome of this research project work is expected to serve various purposes by investigating the factors affecting SCM performances of selected green coffee bean exporters in Addis Ababa. Furthermore, the results of this study have the following importance:

- Coffee exporters in Ethiopia can use this study to overlook their SCM structure based on the factors that has highly effect to improve their market value internationally.

- The findings of the current study could serve as a stepping stone for further researchers who are interested to make further investigation on the topic.

1.6. Scope of the Study

Geographically, the current study was delimited to the coffee green coffee bean exporters which are found in Addis Ababa. Thematically, this study has dependent variable (performance of supply chain management of green coffee bean exporters) and six independent variables (infrastructure, marketing, financial and government regulation, environmental uncertainty information technology. This study examines the impact of six independent variables on the dependent variable. The research was conducted in 2024, focusing on coffee exporters located in Addis Ababa as the target population. Data collection was carried out through questionnaires. The study utilized a descriptive-

explanatory research design, employing a combination of qualitative and quantitative research methods. Data analysis involved simple descriptive statistics and multiple regression techniques.

1.7. Limitation

This study focuses exclusively on factors such as infrastructure, marketing, financial aspects, government regulations, environmental uncertainties, and information technology. Future studies could expand by incorporating additional factors that might influence the supply chain management of coffee bean exporters. Data for this study were gathered from a sample of 75 respondents, resulting in a response rate of 76.53%. This was due to the inability to collect data from the remaining 98 intended respondents.

And, the questionnaire it was proposed to translate to Amharic or other local languages, but the questionnaire was distributed using Google form. Therefore it only used English language.

1.8. Operational Definitions of Key terms

Actors of Supply Chain Management: Included the collector, local traders, primary cooperatives, coop. unions, exporters, importers, domestic wholesalers and retailers, service providers and consumers

Infrastructural Related Factors: The nature of transport facility and services; the access to agricultural production input; standard road; and storage facility.

Government Related Factors: it is about the favorable regulation in place that improves the supply chain management of coffee.

Financial Related Factors: are the way that the financial institutions are encouraging, providing credits, providing the necessary loan and subsidy for the effectiveness of supply chain management.

Market Related Factors: these includes price that could benefited the actors, market information, having updated information about the coffee market.

Environmental uncertainty: is about the environment, government support, and uncertainty

Information Technology: includes issues like communication tools, resource planning tools, and supply chain management tools

1.9. Organization of the Paper

The thesis is structured into five chapters. Chapter One introduces the topic, provides background information, explains the rationale and significance of the study, outlines research objectives, and details the organization of the thesis. Chapter Two reviews both theoretical and empirical literature relevant to the research, presenting the theoretical and conceptual framework adopted for the study. Chapter Three discusses the research methodology employed, including data sources, data collection tools, sampling procedures, data analysis methods, triangulation of data sources, and ethical considerations. Chapter Four presents the main research findings and their discussion. The final chapter summarizes the key findings of the study, presents the main conclusions and recommendations derived from the research, identifies study limitations, and suggests directions for future research

CHAPTER TWO

REVIEW OF RELATED LITERATURES

2.1. Review of Theoretical Literatures

2.1.1. Supply Chain of Coffee

Coffee-related businesses present new opportunities in branding, processing, and marketing. However, achieving product quality standards that meet consumer needs is challenging in practice, necessitating effective management for sustainable benefit to all stakeholders. Collaboration among suppliers, manufacturers, and consumers is crucial to enhance supply chain performance and networks (Gibson, 2011).

These supply chain networks are expected to serve as central hubs for sustainable business activities aimed at meeting customer demands (David, 2011). Effective management throughout the coffee supply chain—from suppliers (farmers and gatherers) to processors (gatherers and manufacturers), and distributors (exporters and retailers)—is essential for global market competitiveness (Sharma et al., 2011).

Supply chain management plays a pivotal role in enhancing performance and quality, focusing not only on market improvements but also on sustainability and organizational enhancement within the supply chain (Huo et al., 2017). Understanding supply chain excellence is critical for gaining competitive advantage in the supply chain.

To enhance business optimality and continuity, supply chain management adopts a dynamic approach system that integrates economic, social, and environmental aspects (Jaya et al., 2015).

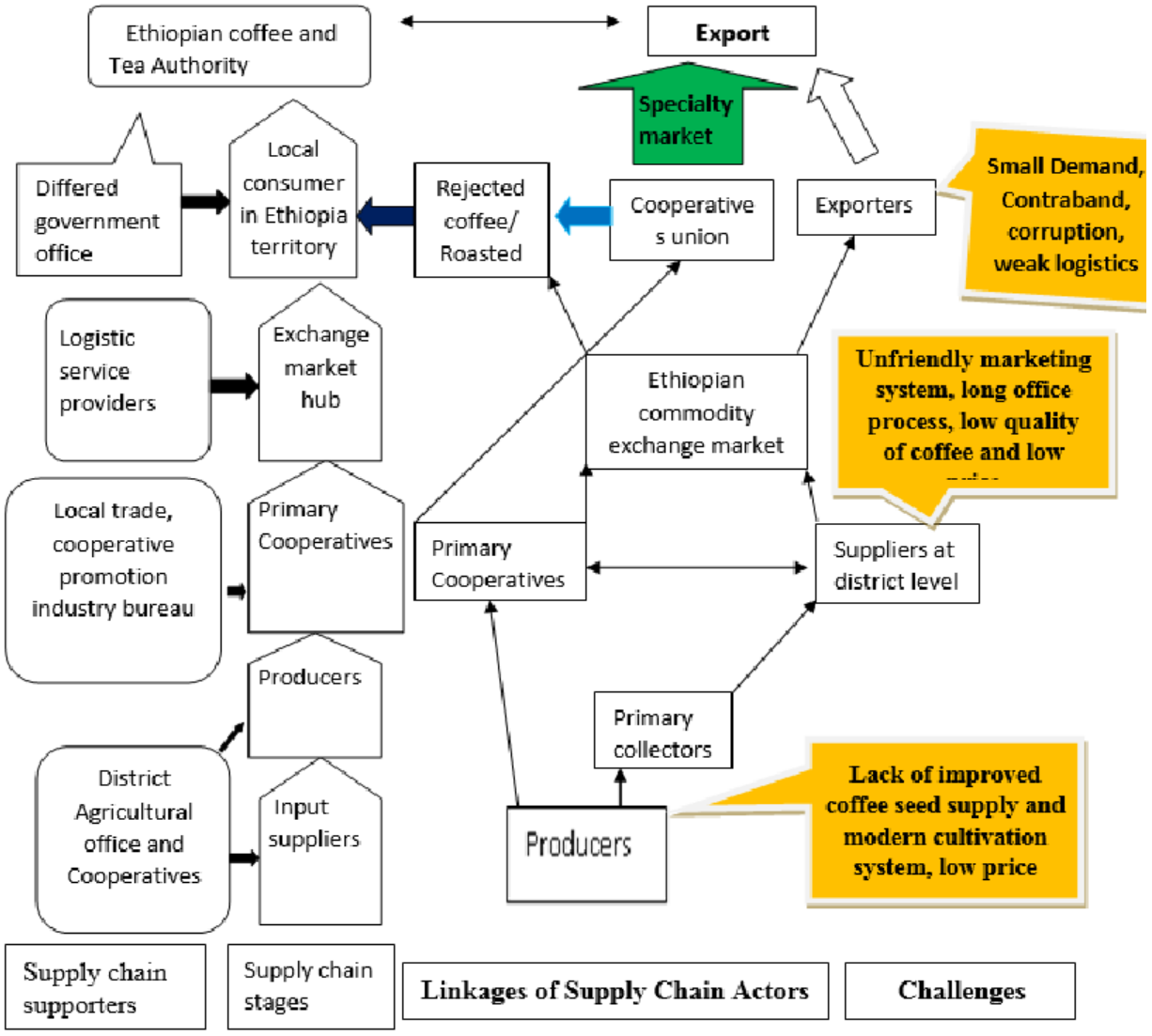
2.1.2. Actors and their Functions in the Chain of Coffee

According to (Mohammedsani, 2014) the major stakeholders in coffee value chains in the study area are farmers, collectors, primary farmer cooperative, traders/processors, cooperative union and exporters as the actors and ECX, ECQIC, DADO, DCPO and MOT as supporters. Its value chain actors are collector, local traders, primary cooperatives, coop. unions, exporters, importers, domestic wholesalers and retailers, service providers and consumers. Its supply chain is complex and small farmer's sale to

local traders, local trader's sale to big coffee milers and exporters, after processing local trader sale to international exporters and primary cooperatives purchase a number of coffees and sale to cooperative union the union process it and sale to exporters on behalf of cooperatives (Alemayehu, 2014).

The following map shows the supply chain of coffee.

Figure 1. Coffee's Supply Chain Map



(Source: (Abdulaziz et al, 2023)

2.1.3. Factors Affecting the Supply Chain Management

The factors that have influence in the supply chain management are like infrastructure, marketing, financial and government regulation were adopted from the study of (Neeraja et al, 2020); and, environmental uncertainty (environment, government support, and uncertainty); .and, information technology (communication tools, resource planning tools, and supply chain management tools) has been adapted from (Henry et al, 2012). From these points of view the tentative hypothesis of the study were:

H1: Infrastructure related factors have significant influence in the supply chain management of green coffee bean exporters.

H2: Marketing related factors have significant influence in the supply chain management of green coffee bean exporters.

H3: Financial related factors have significant influence in the supply chain management of green coffee bean exporters.

*H4: G*overnment regulation *has significant influence in the supply chain management of green coffee bean exporters.*

H5: Environmental uncertainty has significant influence in the supply chain management of green coffee bean exporters.

H6: Information technology has significant influence in the supply chain management of green coffee bean exporters.

To comprehend the functioning of a supply chain, it is crucial to identify the factors that impact supply chain management, drawing on previous research by Li (2002) and Quesada and Menses (2010). These factors include environmental uncertainty, which refers to challenges within the product chain due to unforeseen changes in customer preferences, supplier dynamics, competitor actions, and technological advancements (Dwivedi and Buther, 2009; Ettlie and Reza, 1992, p. 495). This factor encompasses three key sub-factors: company environment, government support, and international uncertainties.

The company environment pertains to relationships with suppliers, levels of trust and commitment, quality expectations, on-time delivery, sector competition, and intra-industry rivalry (Wu, 2006, p. 849). Effective response to demand often involves importing goods for flexibility, despite the inherent uncertainties associated with overseas operations.

Government support refers to the assistance provided by governments in facilitating imports, establishing norms, regulations, policies, and sector-specific advice (Henry et al., 2012; Elzarka et al., 2011). Supportive government policies can enhance competitiveness in global markets by addressing logistics competencies and regulatory frameworks.

International uncertainties encompass various risks associated with sourcing materials or products from overseas, including political instability, investment risks, strategic shifts, and cultural differences (Quayle, 2006; Bhattacharyya et al., 2010). These uncertainties can profoundly influence supply chain strategies and decision-making processes.

Information technology plays a crucial role in mitigating these challenges by enabling seamless communication among supply chain actors—suppliers, manufacturers, distributors, retailers, and customers. IT facilitates reduced lead times, streamlined paperwork, enhanced information flow, and improved inventory management, benefiting both domestic and international operations (Handfield and Nicholas, 1999).

For (Neeraja et al, 2020) factors affecting Coffee Value Chain management are (1) Infrastructure related factors; (2) Marketing related factors; (3) Cooperative related issues; (4) Financial Related Factors; and, (5) Government Regulation Factors.

2.2. Review of empirical studies

Abdulaziz et al. (2023) conducted a study focusing on the supply chain of coffee cooperatives in Bedeno district, East Harrarghe zone, Ethiopia. The research aimed to identify and categorize the various actors within the cooperatives' coffee supply chain, analyzing their roles and relationships. Data was gathered through questionnaires and interviews, utilizing both qualitative and quantitative analysis methods. The findings revealed inefficiencies in the supply chain, with 20% of coffee remaining unsold due to delays in revenue collection from final customers, reflecting overall inefficiency. Factors contributing to these challenges included inadequate seed supply, insufficient knowledge about cooperative benefits and modern coffee production, poor coffee quality leading to low prices, and logistical issues such as high costs and inadequate government support for exports. Recommendations emphasized the need for government attention to the sector and collaborative efforts among stakeholders to improve supply chain performance.

Alemayehu (2014) reviewed the coffee production and marketing value chain in Ethiopia, highlighting its complexity and the involvement of various actors such as collectors, local traders, cooperatives, exporters, and international markets. The study noted challenges including low productivity due to competing crops like Khat, traditional farming practices, and limited extension support. It also addressed issues of low quality coffee in the local market, price volatility, and the impact on livelihoods dependent on coffee. Recommendations focused on improving production practices, enhancing value addition through processing, and ensuring gender-sensitive approaches to benefit women participants in the value chain.

Abiy (2016) assessed the coffee marketing chain and export performance in Ethiopia, emphasizing coffee's significant role in the country's economy as a major export commodity. The study highlighted declining export performance and identified factors affecting it, such as coffee quality, international market conditions, prices, and supply. Recommendations included promoting organic and specialty coffee production to enhance export revenues.

UNCTD (2021) analyzed the challenges faced by Ethiopian coffee exporters, particularly in diversifying from exporting green beans to roasted coffee, which could add value. The report focused on identifying key export markets such as the European Union, Saudi Arabia, South Africa, China, and the Republic of Korea, providing insights into consumer preferences, market trends, distribution channels, and transportation options. It drew comparisons with successful strategies employed by Colombian coffee exporters and offered recommendations to strengthen Ethiopian exporters' access to these markets.

Each study contributes to understanding the complexities and challenges within Ethiopia's coffee industry, offering insights and recommendations aimed at improving efficiency, quality, and market access for Ethiopian coffee.

Cherkos and Yestedaw (2018) studied the export competitiveness of Ethiopian coffee using data from UNCTAD-ITC from 1991-2016. They found Ethiopia has a comparative advantage in coffee exports, with factors like domestic consumption negatively affecting competitiveness.

Mohammedsani (2014) focused on factors affecting the quality of Hararge coffee in Ethiopia, identifying issues like improper management and post-harvest practices affecting coffee quality and prices.

Mandefro (2020) explored challenges and opportunities for Ethiopian coffee exporters, highlighting issues like fluctuating export values despite increasing volumes, and the need for quality improvements and market promotion.

Fitrac (2017) analyzed Ethiopia's coffee value chain, emphasizing its economic significance and the role of smallholders, with recommendations including enhancing productivity and market access.

Berihun (2021) investigated macroeconomic factors affecting coffee export prices in Ethiopia, finding significant impacts from inflation, exchange rates, and buyer incomes on coffee prices.

Singh (2022) examined factors influencing coffee cooperatives' effectiveness in Ethiopia's Ilubabor Zone, emphasizing cooperative roles in enhancing coffee marketing and value chain efficiency.

Ibrahim (2021) analyzed the coffee value chain in Ethiopia's Kombolcha district, focusing on market dynamics, actor roles, and factors influencing coffee supply and market outlet choices.

Neeraja et al. (2020) studied factors affecting the coffee value chain in Kellem Wollega Zone, finding infrastructure, cooperative, and financial factors significantly influencing coffee chain dynamics.

Teshale (2018) assessed pre and post-harvest factors affecting coffee quality in Ethiopia's Chole District, identifying issues like inadequate fertilization and improper post-harvest practices impacting coffee quality.

Edgar et al. (2017) explored a supply chain management model for organic coffee in Peru, highlighting supply chain inefficiencies and proposing models to enhance supply chain performance.

Apostolos et al. (2022) discussed technology's role in optimizing the coffee supply chain in Greece, emphasizing the benefits of digitalization in improving efficiency and profitability across supply chain stages.

Habtamu (2019) reviewed factors affecting coffee quality in southwestern Ethiopia, focusing on genetic, environmental, and management factors influencing coffee quality over the value chain.

Engida (2020) analyzed factors affecting coffee market supply in Ethiopia's Gewata District, finding education levels, cooperative membership, and infrastructure accessibility influencing coffee market supply dynamics.

Ikhwana and Andri (2018) described the elements and relationships in the coffee supply chain, emphasizing the importance of coordination among suppliers, manufacturers, exporters, and consumers for quality and efficiency.

Dorota (2021) studied factors affecting supply chain performance across industries in Poland, highlighting how competitive strategy impacts supply chain adaptability and performance dimensions.

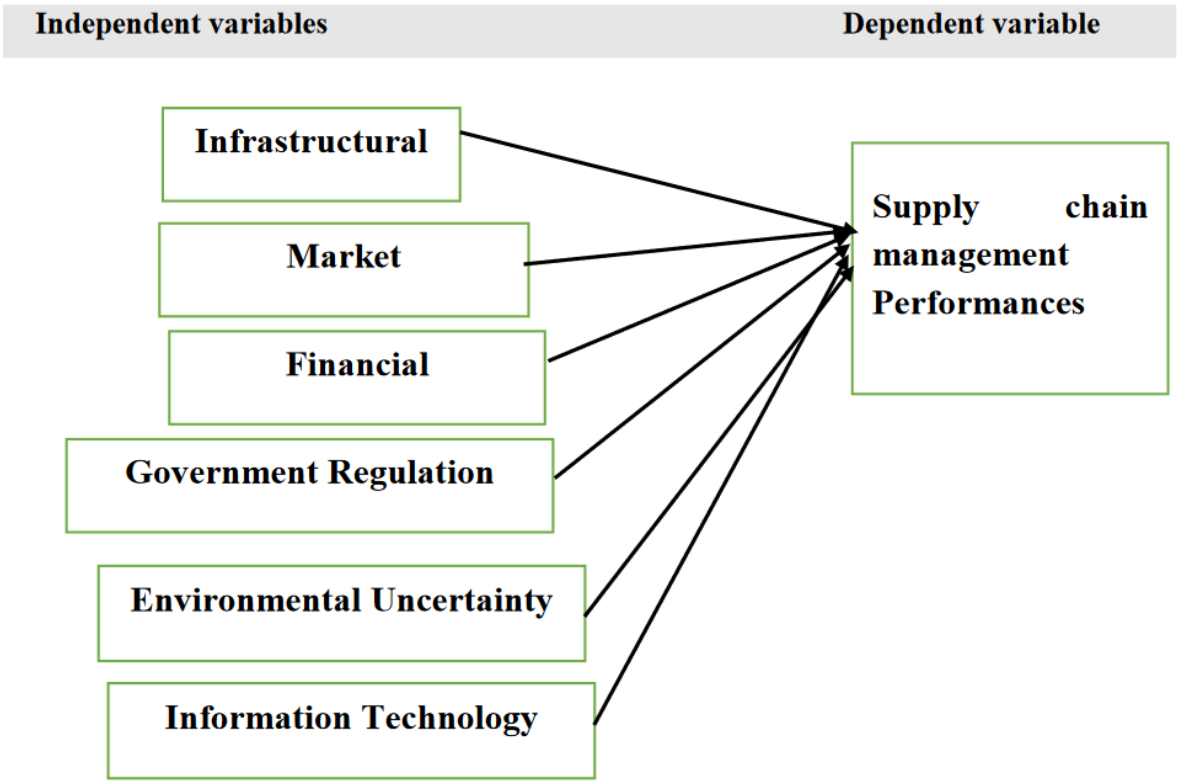
These studies collectively highlight various aspects of Ethiopia's coffee industry, including competitiveness, quality management, supply chain dynamics, and the role of technology and cooperatives in enhancing efficiency and profitability.

2.3. Conceptual Framework of the Study

Independent variables and dependent variables are utilized to build a conceptual framework. This conceptual framework was conceived and designed in a logical manner. SCM performances is the dependent variable in this study, while infrastructure, marketing, financial, government regulation, environmental uncertainty and information technology are the independent variables, with the goal of determining the effect of infrastructure, marketing, financial, government regulation, environmental uncertainty and information technology factors on the SCM performances of green coffee bean exporters in Ethiopia.

The factors that have influence in the supply chain management are like infrastructure, marketing, financial and government regulation were adopted from the study of (Neeraja et al, 2020); and, environmental uncertainty (environment, government support, and uncertainty); .and, information technology (communication tools, resource planning tools, and supply chain management tools) has been adapted from (Henry et al, 2012). Based on the literatures the current research followed the following conceptual framework.

Figure 2. Conceptual Framework



(Source: adapted from of (Neeraja et al, 2020); and, (Henry et al, 2012).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research Design

The current research utilized a combination of descriptive and explanatory research designs. Descriptive research aims to gather data to provide insights into the current status or characteristics of the subject under study. This type of study involves specific steps such as identifying research questions, choosing suitable methods for data collection, selecting appropriate sampling techniques, and analyzing and presenting findings (Kothari, 2004). On the other hand, explanatory research design was employed to explore causal relationships between dependent and independent variables. Its purpose is to investigate and test the factors that influence the relationships among variables.

Considering the purpose of this particular study, the researcher used both descriptive and explanatory type of research.

3.2. Research Approach

The study employed a quantitative research approach, which emphasizes numeric information and is confirmatory in nature. In this method, researchers classify and count features, then use statistical methods to interpret and explain observed facts (Abate, 2018:63, citing Babbie and Mouton). Quantitative research focuses on isolating variables to establish causal relationships between them and quantifying the strength and frequency of these relationships. This approach aligns with a positivist perspective, assuming that there are cause-and-effect relationships among the variables studied.

And by considering the purpose of this particular approach, the researcher used quantitative research approach to measure the cause and effect relationships among the dependent and independent variables.

3.3. Population

3.3.1. Target Population

The population of interest in this study were all the coffee exporters found in Addis Ababa which are registered in the ECX accounted 796 exporters ((ECX, 2024). These

registered exporters were the target population for the study. However, the active coffee bean exporters in the year 2023/24 were 131 coffee exporters, therefore the samples were driven from the 131 coffee bean exporters.

3.4. Sampling Technique

For the purpose of this study the researcher used both non-probability (for the participants or the coffee exporters in the quantitative/questionnaires) and probability (for the participants in the qualitative/interview or the managerial bodies of ECX and Tea and Coffee Authorities) sampling technique.

To draw the samples that were participated in the questionnaire simple random sampling were employed. To select the informants from the ECX and Tea and Coffee Authorities in the interview that were participated in the interview, purposive sampling technique were employed.

3.4.1. Sample Size

In the determination of sample size the three criteria (level of precision, the level of confidence or risk and the degree of variability) were very important to gather the required data from sample respondents. The target population is above 100 so it wasn't considered as small population. Hence, by considering these issues sample size to collect data through questionnaire for this research; to select teachers has determined by using Yemane (1967) formula.

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{131}{1+(131(0.05)^2)}$$

$$n = \frac{131}{1.3275}$$

$$n = 98$$

Where:

n = the sample size

N=the study population

e = the level of precision (for this study 0.05)

1=designates the probability of the event occurring

Therefore:

n= 98

Thus, 98 exporters were proposed to be participated in the questionnaire. This table summarizes the different parts of the population studied, the specific sampling units within each group, the data collection instruments used (such as survey questionnaires or interviews), and whether the sampling represented a portion of the target population or the entire population (census). Adjustments can be made based on specific details or additional information available.

Table 1. . Samples of the present Study

No	Part of the population	Target population	Sample	Sampling Technique	Data collection instrument
1.	Coffee Exporters	131	98	Simple random Sampling	Questionnaire
2.	ECX	4	4	Purposive	Interview
3.	Tea and Coffee Authority	4	4	Purposive	Interview

(Source: Compiled by the Researcher, 2024)

3.5. Data Source

There are two common types of source of data namely primary data source and secondary data source. Both primary and secondary data was used in the study.

3.5.1 Primary Data Source

Primary data are firsthand information collected by the surveyor. Collected data are original, pure and collected to a specific purpose. They are not used for a statistical treatment by other body before. Primary data were collected specifically for the research being undertaken (Saunders *et al*, 2007). These types of data are collected by using survey, interview, telephone and photograph, personal investigation methods. In this research primary data will be collected by using questionnaires. The respondents were selected green coffee bean exporters in Addis Ababa.

3.5.2 Secondary Data Source

Secondary data are collected and published already by some organization. They refer to the data which have already been collected and analyzed by someone else before. Secondary data were collected for purposes other than the immediate study by someone (Churchill & Brown, 2007) that may be published or unpublished. In this research secondary data was gathered from newspaper, annual report and website.

3.6. Method of Data Collection

3.6.1. Questionnaire

The data collection instrument used in this study was a structured questionnaire, which was pre-tested with a subset of the target respondents representing various roles within the field. The questionnaire aimed to engage 98 coffee exporters, but ultimately 75 participants were included. It consisted of four main sections: the first part focused on respondent profiles, the second explored actors in the supply chain management of green coffee bean exporters in Addis Ababa, the third section delved into the supply chain management practices of selected exporters, and the fourth part examined factors influencing supply chain management.

Questions in the questionnaire were designed using a Likert scale with five response

options: Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. This scale was chosen for its ability to provide quantitative data, facilitating straightforward analysis and interpretation. It was selected to ensure consistency and clarity in data collection, enabling the researcher to draw conclusions, present results, and create graphical representations from the responses.

3.6.2. Interview

Additionally, interviews were conducted as part of the data collection process. These interviews involved eight management personnel (four from ECX and four from the Tea and Coffee Authority), focusing on topics related to actors in the supply chain and factors affecting supply chain management. Interviews were recorded with the consent of the participants

3.7. Measurement of Variables

Table2 displayed variables' measurement.

Table 2. Measurement of Variables

Variables	**Notion**	Measurement	Source
Infrastructure	I	Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree	(Neeraja et al, 2020) with some modification
Marketing	A		
Financial	F		
Government Regulation	G		
Environmental uncertainty	EU		(Henry et al, 2012)
Information Technology	IT		
Supply Chain Management Performance	SCM		

(Source: Compiled by the Researcher, 2024)

3.8. Method of Data Analysis

3.8.1. Qualitative Data Analysis

Qualitative data collected from interviews underwent thematic analysis. This involved reviewing and transcribing the data.

3.8.2. Quantitative Data Analysis

Quantitative data from the questionnaires were entered into SPSS version 26 for analysis. Simple descriptive statistics were used to summarize the data and provide an overview. Additionally, simple and cross-tabulation tables were employed to present the quantitative findings.

3.9. Model Assumptions and Model Specification

3.9.1. Model Assumption Tests

Various assumptions of regression analysis were assessed:

1. Linearity Test: This test examined the relationship between the dependent variable and the independent variables by analyzing plots of regression residuals in SPSS V26.

2. Normality Test: Normality tests were conducted to evaluate whether the standardized residuals followed a normal distribution, as assumptions typically require normally distributed error terms.

3. Multi collinearity Test: To assess multi collinearity among the study variables:

- A correlation matrix was computed to examine Pearson's Bivariate Correlation coefficients among all independent variables, ensuring coefficients were less than 1.
- Tolerance values were calculated, which measure the influence of one independent variable on all others; a higher tolerance indicates lower multicollinearity.
- Variance Inflation Factor (VIF) was computed as VIF = 1/T, where T is the tolerance. VIF values greater than 10 indicate possible multicollinearity, and values exceeding 100

suggest significant multicollinearity in the sample.

These steps ensured that both qualitative and quantitative data were rigorously analyzed to derive meaningful conclusions from the study.

3.9.2. Model Specification

Multiple regression analysis is a statistical evaluation tool. It's an extension of linear regression, a process that predicts the value of a variable where that value depends on another variable to influence it. This makes the predictive variable a dependent variable since it depends on another variable to affect it. In multiple regression, two or more external variables affect the value of the dependent variable. Multiple regression analysis is simply a method for evaluating the information that comes from measuring data using regression.

For the multiple regression, the model is specified.

$$\mathbf{SCM=\beta_1 I+ \beta_2 A+ \beta_3 F+ \beta_4 G+ \beta_5 EU+ \beta_6 IT+ E}$$

Where

I	Infrastructure
M	Marketing
F	Financial
G	Government Regulation
EU	Environmental uncertainty
IT	Information Technology
SCM	Supply Chain Management Performance
E	Is the error term explains the dependent variables not included in the study

3.10. Reliability and Validity

3.10.1. Validity

Validity determines whether the findings are accurate from the perspective of the researcher, the participant, or the readers (Jhon, W.C. 2009). In this study, some measures were taken to ensure the validity of the measurement scales. Theoretical and empirical literature review was conducted. Also opinion from the research advisor ensured the content validity, whether the item measures the area of interest or the concept it tends to measure which were advanced its validity.

3.10.2. Reliability

The reliability of the study's instruments was assessed using Cronbach's Alpha, a widely recognized measure ranging from 0 to 1. A higher coefficient indicates greater internal consistency among the variables within a scale. After data coding and entry into SPSS version 26, the first analysis conducted was to evaluate the reliability of the scales used. The results indicated strong reliability, with Cronbach's Alpha values exceeding 0.9, and in most cases approaching 1. This confirms that the scales used in data collection were reliable.

Table 3.3 Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	Variables
.967	.969	33	9

(Source: Own Survey, 2024)

Cronbach's Alpha is a measure of internal consistency, indicating how closely related a set of items are as a group. It's often used to assess the reliability of a questionnaire or test.

In this case, Cronbach's Alpha for the given set of items is .967. This high value suggests that the items have a very high level of internal consistency, meaning the items are highly correlated and measure the same underlying construct effectively.

Additionally, the value of Cronbach's Alpha based on standardized items is slightly higher at .969. This adjustment takes into account the standardization of items, which can sometimes provide a more accurate reflection of internal consistency by controlling for variance differences across items.

The dataset consists of 33 items, which were evaluated across 9 variables. The high Cronbach's Alpha values for both raw and standardized items indicate that the test or questionnaire in question is highly reliable.

Table 3. Cronbach's Alpha if Item Deleted

	Cronbach's Alpha if Item Deleted
Dependent Variable SCM	.956
Infrastructure	.952
Market	.967
Finance	.942
Environmental Uncertainty (Company environment)	.944
Environmental Uncertainty (Government)	.947
Environmental Uncertainty (Social environment)	.944
Technology	.942
Legal and Governmental	.946

(Source: Own Survey, 2024)

Table 4 presents the Cronbach's Alpha values if specific items are deleted from the set, providing insight into the contribution of each item to the overall internal consistency of the scale.

For the "Dependent Variable SCM," the Cronbach's Alpha if deleted is .956, indicating that removing this item would still result in an excellent level of internal consistency. This suggests that while this item contributes positively to the overall reliability, its removal would not significantly diminish the scale's reliability.

The "Infrastructure" item shows a Cronbach's Alpha of .952 if deleted, also indicating an excellent level of internal consistency. This implies that the item is well integrated into the scale but not indispensable for maintaining high reliability.

The "Market" item has a Cronbach's Alpha of .967 if deleted, which is equivalent to the overall Cronbach's Alpha of the scale. This means that this item is very consistent with the rest of the scale, and its removal would not impact the reliability, highlighting its strong contribution to the internal consistency.

For the "Finance" item, the Cronbach's Alpha if deleted is .942, demonstrating an excellent reliability level. This item is beneficial for the scale's consistency, though its removal would slightly lower the overall reliability.

The "Environmental Uncertainty (Company environment)" item shows a Cronbach's Alpha of .944 if deleted, indicating that it is an important contributor to the scale's internal consistency. Similarly, the "Environmental Uncertainty (Government)" item has a Cronbach's Alpha of .947 if deleted, reflecting its strong contribution to the scale's reliability.

The "Environmental Uncertainty (Social environment)" item has a Cronbach's Alpha of .944 if deleted, underscoring its positive impact on the scale's internal consistency. Removing it would still maintain an excellent level of reliability.

The "Technology" item shows a Cronbach's Alpha of .942 if deleted, indicating its significant role in maintaining the scale's reliability. Despite this, the overall internal consistency remains excellent if this item is removed.

Lastly, the "Legal and Governmental" item shows a Cronbach's Alpha of .946 if deleted, indicating its significant role in maintaining the scale's reliability. Despite this, the overall internal consistency remains excellent if this item is removed.

3.11. Ethical Consideration

Ensuring ethical considerations was paramount in safeguarding participants' privacy and safety in this study. The researcher diligently communicated all pertinent details, including the study's purpose and objectives, to obtain informed consent from participants. This approach underscored the voluntary nature of participation, emphasizing the significance of their contribution without coercion. Confidentiality was rigorously maintained by omitting participants' names and personal details in the research documentation, including only relevant information essential for addressing research queries. Overall, the study prioritized participant welfare, avoiding harm to individuals or organizations while upholding strict confidentiality.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Response Rate

Table 4. Response Rate

Distributed questionnaire	Returned Questionnaire	Response Rate
98	75	76.53%

(Source: Own Survey, 2024)

As shown in the above Table, it was proposed to participate 98 coffee exporters. To this effect, through google form questionnaire were distributed via their emails. After three weeks, it was 75 (76.53%) responded. The student researcher was tried to communicate the samples using phone to fill the questionnaire using their email address, the respondents were unable to fill the questionnaire. Thus, the response rate makes only 76.53%.

4.2. Profile of the Respondents

The respondent's sex, age, marital status were compiled so as to show who the participants are.

Table 5. Profile of the respondents

		Frequency	Percent
Sex	Female	22	29.3
	Male	53	70.7
	Total	75	100.0
Age	18-27	11	14.7
	28-35	33	44.0
	34-41	11	14.7
	42-49	10	13.3
	50-57	10	13.3
	Total	75	100.0
Marital Status	Married	52	69.3
	Unmarried	21	28.0
	Divorced	2	2.7
	Total	75	100.0

Educational Background	Primary	1	1.3
	Secondary	4	5.3
	Level	10	13.3
	Diploma	8	10.7
	Degree	43	57.3
	MA/ MSc	9	12.0
	Total	75	100.0

(Source: Own Survey, 2024)

Table 6 displayed the demographic profile of the respondents provides valuable insights into the characteristics of the individuals who participated in the survey. The sample consisted of 75 respondents, whose sex, age, marital status, and educational background were documented to offer a comprehensive understanding of the participant pool. The majority of the respondents were male, accounting for 70.7% (53 respondents), while females comprised 29.3% (22 respondents). This indicates a higher representation of males in the survey, which might reflect the gender distribution in the context of coffee exporters or the specific demographic targeted for this study. The age distribution of the respondents shows a diverse range of participants, with the largest group being those aged 28-35 years, making up 44.0% (33 respondents) of the sample. Both the 18-27 and 34-41 age groups each accounted for 14.7% (11 respondents each). The 42-49 and 50-57 age groups each represented 13.3% (10 respondents each) of the sample. This spread indicates a broad age range among participants, suggesting varied levels of experience and perspectives within the industry. The majority of respondents were married, constituting 69.3% (52 respondents) of the sample. Unmarried individuals accounted for 28.0% (21 respondents), while divorced respondents made up a small fraction at 2.7% (2 respondents). The educational background of the respondents reveals a high level of educational attainment among the participants. The majority held a degree, with 57.3% (43 respondents) having completed undergraduate education. Those with a Master's degree (MA/MSc) constituted 12.0% (9 respondents). Other educational levels included primary education (1.3%, 1 respondent), secondary education (5.3%, 4 respondents), and diploma holders (10.7%, 8 respondents). Additionally, 13.3% (10 respondents) reported having completed an unspecified "Level" of education. This high educational attainment suggests that the respondents are likely well-informed and capable of providing valuable insights into supply chain management practices. The demographic profile of the

respondents indicates a predominantly male, well-educated participant pool with a significant proportion being married and falling within the 28-35 age range. This profile is reflective of a diverse and experienced group, potentially contributing rich and varied insights into the factors affecting supply chain management among coffee exporters. The demographic characteristics can help contextualize the survey findings and highlight the perspectives of a knowledgeable and experienced cohort within the industry.

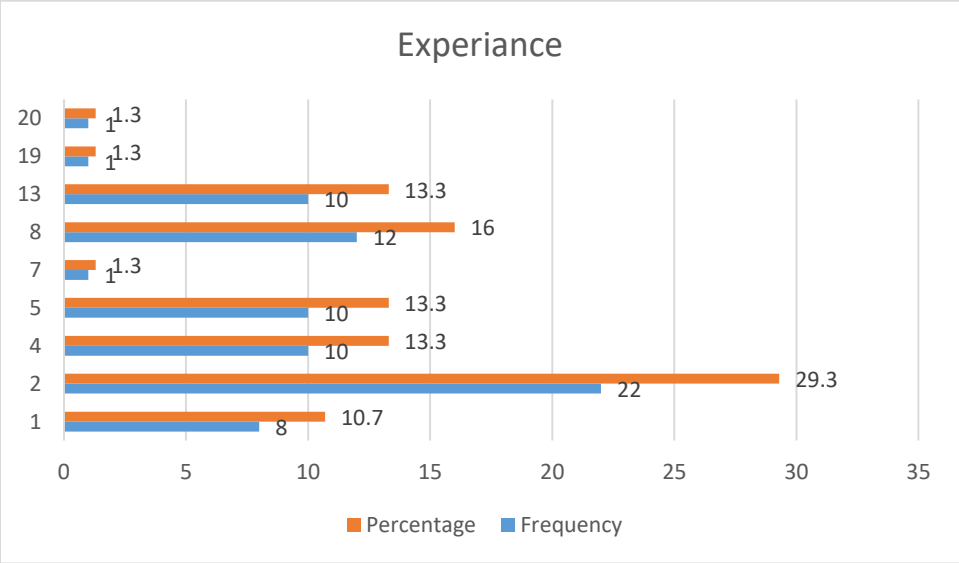


Figure 3. Experiences

(Source: Own Survey, 2024)

As per the above paragraph, most of the respondents having 2 years of work experience (29%); four years (13%); five years (13%); and, eight years (16%).

Table 6. The respondent's position

		Frequency	Percent
Valid	Export documentation Officer	43	57.3
	Manager	32	42.7
	Total	75	100.0

As shown in the Table 5, the respondent's position were either Export documentation Officer with a value of 43(57.3%) and Manager with a share of 32 (42. 7%).

4.3. Actors

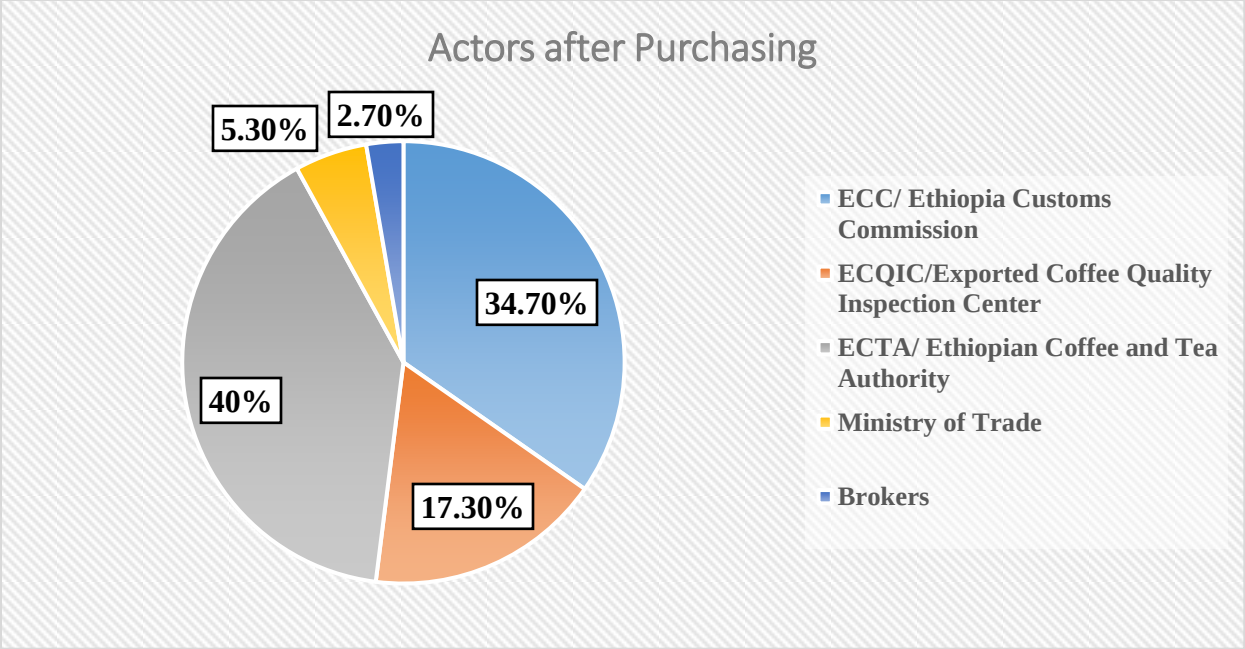
Table 7. . From whom do you purchase the coffee bean frequently?

		Frequency	Percent
	Coffee Collectors	3	4.0
	Cooperative Union	22	29.3
	Mixed	4	5.3
	Other Exporters	18	24.0
	Self-coffee farm	4	5.3
	Traders/processers	24	32.0
	Total	75	100.0

(Source: Own Survey, 2024)

According to the above Table 6, 3 (4%), 22(29.3), 4(5.3%), 18(24.0%), 4 (5.3%) and 24 (32.0%) of the participant coffee exporters purchase from coffee Collectors, Cooperative Union, mixed, Other Exporters, Self-farm and Traders/processers respectively. Similarly the informants in the interview replied that the actors that the coffee exporters can obtained the coffees could be, from the coffee farmers in the area (this could be limited to the road infrastructure, market line created before and information). Coffee cooperatives established by government and privately have the lion share on providing coffee for the exporters. Even some of the cooperatives are also exporters. To this effect some exporters also obtained the coffee to export from other exporters.

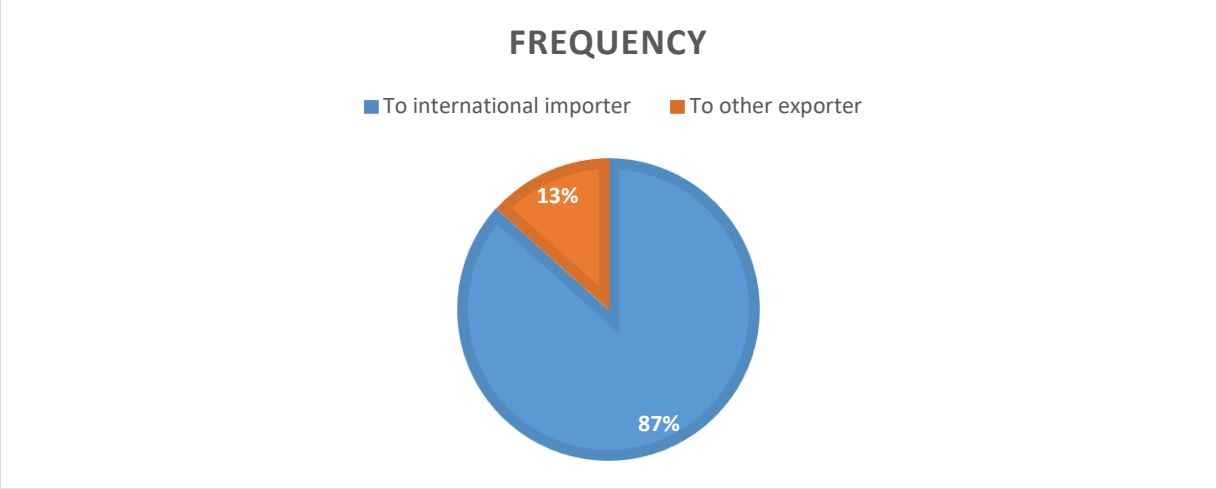
Figure 4. Actors play a role after Purchasing the Coffee Bean



(Source: Own Survey, 2024)

The above pie chart displayed that the actors plays a role after the exporters purchase the coffee to. As per their responses, ECC/ Ethiopia Customs Commission with a share of 26 (34.7%); ECQIC/Exported Coffee Quality Inspection Center with an account of 13(17.3%); ECTA/ Ethiopian Coffee and Tea Authority with a share of 30(40.0%); Ministry of Trade accounted 4(5.3%); and brokers 2 (2.7%). Consistency, the informants replied that there are governmental actors like Ethiopia Customs Commission, ECX, Exported Coffee Quality Inspection Center, Ministry of Finance, Ethiopian Coffee and Tea Authority, Ministry of Trade.

Figure 5. For whom are you providing the coffee?



(Source: Own Survey, 2024)

As shown Figure 5, the survey results regarding the export destinations of coffee beans reveal a significant focus on international markets. Out of the 75 respondents, 65 (86.7%) indicated that their coffee beans are primarily exported to international importers. In contrast, only 10 respondents (13.3%) reported exporting to other exporters. The overwhelming majority of respondents exporting to international importers underscores the global nature of the coffee trade. This high percentage suggests that coffee exporters in the sample are deeply integrated into international supply chains, catering to the demand from global markets. The reliance on international importers indicates that these exporters likely adhere to international standards and practices, aiming to meet the quality and regulatory requirements of diverse markets around the world.

As per the informant in the interview reply: exporting to international importers can offer several advantages like market access or access to a broader customer base and the potential for higher sales volumes. Revenue Generation Potentially higher revenues due to premium prices in international markets. Brand Recognition, Building a global reputation can enhance brand recognition and market positioning.

The 13.3% of respondents exporting to other exporters represents a smaller but still significant portion of the sample. These respondents may be involved in a supply chain where intermediary exporters play a role in aggregating and distributing coffee beans to various destinations, including international markets. This strategy can be part of a

broader business model where smaller exporters leverage the networks and logistical capabilities of larger, established exporters to reach international buyers.

The informants reply for the reason “Exporting to other exporters might be chosen were’” one, Risk Mitigation, diversifying export partners can reduce dependency on a single market or buyer. Operational Flexibility, smaller exporters might benefit from the logistical and marketing expertise of larger exporters. And, market penetration, utilizing established exporters can facilitate entry into new or more challenging markets where direct access might be difficult.

To sum up, the export destination data highlights the global orientation of coffee exporters in the sample, with a strong emphasis on international importers. This indicates a strategic focus on tapping into global markets to maximize revenue and growth opportunities. At the same time, a smaller segment of exporters prefer working with other exporters, possibly to leverage existing networks and mitigate risks associated with direct international trade. This dual approach showcases the varied strategies adopted by coffee exporters to navigate the complexities of the global coffee market.

Concerning the bodies that the coffee bean are exported to, the respondents with an account of 65 (86.7%) was to international importer followed by the 10 (13.3%) to other exporter.

4.4. Descriptive Results

The intervals used to interpret variables measured on a 5-point Likert Scale, ranging from Strongly Disagree (5) to Strongly Agree (1), are calculated as follows: first, subtract the smallest value (1) from the largest value (5) to get 4, then divide this by 5 (the number of scale points), resulting in 0.8. Adding 1 to this interval determines the upper limit of each category. Therefore, the descriptive statistics were categorized as follows: 1-1.80 for strongly disagree, 1.81-2.60 for disagree, 2.61-3.40 for neutral, 3.41-4.20 for agree, and 4.21-5 for strongly agree.

4.4.1. Supply Chain Management Performance of Exporting Coffee Bean

Table 8 Supply Chain Management Performance of Exporting Coffee Bean.

	Min	Max	Mean	Std. Deviation
1. There is improvement on the supply chain performance of exporting green coffee bean	1	5	3.07	1.266
2. There is improvement in the quality of the supply chain performance of exporting green coffee bean	2	5	3.07	1.107
3. There is market improvement of exporting green coffee bean	1	5	2.43	1.387
4. There is sustainable improvement of the organizations involved in the supply chain of exporting green coffee bean	2	5	2.96	.965
5. Exporting green coffee bean is increasing the optimal of a business	2	5	3.27	1.119
6. Exporting green coffee bean preserve its continuity through dynamic approach system	2.00	5.00	3.360	.93923
7. Exporting green coffee bean involving aspect such as economy, social value, and environment	2	5	3.47	1.143

(Source: Own Survey, 2024)

Concerning the supply chain management performance of exporting coffee bean seven items were provided. To this effect, the score mean of the item stipulated that there is improvement on the supply chain performance of exporting green coffee bean was 3.07. The SD for the item was 1.266 implied that the participants were relatively consistence in their responses. Then, the participants were neither agreed nor disagreed that there is improvement on the supply chain performance of exporting green coffee bean.

It was also neither agreed nor disagreed with a mean value of 3.07 on the item i.e. there is improvement in the quality of the supply chain performance of exporting green coffee bean. The respondents with a mean value of 2.43 disagreed with the item reads as "there is market improvement of exporting green coffee bean". This revealed that, they are not perceived that market improvement of exporting green coffee bean. The participants were neutral in their responses (score mean= 2.96) that, there is sustainable improvement of the organizations involved in the supply chain of exporting green coffee bean. The participants were agreed that exporting green coffee bean is increasing the optimal of a business (score mean= 3.27). Exporting green coffee bean preserve its continuity through dynamic approach system was also agreed by the participants with a score mean value of 3.36. And, exporting green coffee bean involving aspect such as economy, social value, and environment was agreed with an account of 3.47 mean value.

4.4.2. Factors affecting the SCM

4.4.2.1. Infrastructure related Factors

Table 9. Infrastructure related Factors ***(n=75)***

	Mean	Std. Deviation
1. The nature of transport facility and services is good	3.16	1.434
2. There is access to agricultural production input	3.04	.687
3. There is standard road positively determine suppliers to participate in the exporting practices of coffee bean exporting	2.84	1.040
4. The storage facility is good	3.16	1.220

(Source: Own Survey, 2024)

Regarding the infrastructural related factors, the participants were neutral with the responses i.e. the nature of transport facility and services is good (score mean=3.16; and SD=1.434); There is access to agricultural production input (score mean=3.04; and, SD=.687); There is standard road positively determine suppliers to participate in the

exporting practices of coffee bean exporting (score mean=2.84; and, SD=1.04); and, the storage facility is good (score mean=3.16; and, 1.22).

4.4.2.2. Market Related Factors

Table 10. Market Related Factors (N=75)

	Min	Max	Mean	Std. Deviation
1. Coffee is sold with price that benefits all actors	1	5	2.03	1.498
2. Exporters get market information at the right time	2	5	3.27	1.119
3. Exporters are updated with the prices of coffee	2	5	3.79	1.069
4. Exporters choose exporting market outlet choice	2	5	3.28	.938

(Source: Own Survey, 2024)

Vis-à-vis the market related factors, the participants were disagreed that "coffee is sold with price that benefits all actors" 2.03; neutral Exporters get market information at the right time with a mean value of 3.27. On the other hand, they were agreed that exporters are updated with the prices of coffee (mean=3.79); and, exporters choose exporting market outlet choice with the responses i.e. the nature of transport facility and services (mean=3.28).

4.4.2.3. Finance related Factors

Table 11. Finance related Factors (N=75)

	Min	Max	Mean	Std. Deviation

1. Financial institutions encourage modern farming of Coffee by providing the necessary loan and subsidy	1	5	2.88	1.335
2. Coffee exporters have the experience of using credit	2	5	3.51	.554
3. Farmers have credit access for coffee production and marketing	1	5	3.03	1.365
4. The timing of the credit for the coffee exporters is just on time	1	5	2.83	1.045
5. Financial institutions like Banks and Credit and Saving Institutions provide enough credit to run the business	2	5	3.41	1.140

(Source: Own Survey, 2024)

Among the financial related factors, the participant coffee exporters were neutrally perceived (mean=2.88) on the item i.e. *financial institutions encourage modern farming of Coffee by providing the necessary loan and subsidy*. Agreed (mean=3, 51) on the item *coffee exporters have the experience of using credit*. The item (coffee producing farmers have credit access for coffee production and marketing) was neutral (mean=3.03). Also neutrally perceived on the timing of the credit for the coffee exporters is just on time. And, financial institutions like Banks and Credit and Saving Institutions provide enough credit to run the business valued a mean of 3.41 (agreed).

4.4.2.4. Government Regulation related Factors

Table 12. Government Regulation related Factors

	Min	Max	Mean	Std. Deviation
1. There is a supportive policy in place to improve the volume and quality of exporting Coffee in Ethiopia	1	5	2.85	.692
2. There is proper government regulation in place	1	5	2.11	.847

that contributes to adequate supply of inputs				
3. There is favorable regulation in place that improves market efficiency at the output side	1	5	2.25	.824
4. Coffee exporting areas have full attention and support from concerned government body	2	5	2.84	.610

(Source: Own Survey, 2024)

Among the government related four items, the participants it was disagreed with the prevalence of proper government regulation in place that contributes to adequate supply of inputs (mean=2.11) favorable regulation in place that improves market efficiency at the output side (mean=2.25). On the other hand, it was neutrally perceived with the availability of supportive policy in place to improve the volume and quality of exporting Coffee in Ethiopia with a mean value of 2.85 and coffee exporting areas have full attention and support from concerned government body (mean 2.84).

4.4.2.5. Environmental Uncertainty (Company environment) related Factors

Table 13. Environmental Uncertainty (Company environment) related Factors

	Mean	SD
1. There is unexpected changes of supplier	2.63	1.383
2. There is unexpected change in the desire of quality	4.16	.789
3. There is unexpected changes on time delivery	3.39	1.089
4. There is unexpected changes of competitor	2.93	1.398
5. There is unexpected changes of Technology	3.28	1.329

(Source: Own Survey, 2024)

As depicted in the above Table, the responders were disagreed (mean=2.63) with the unexpected changes of supplier; neutral (mean=2.93) unexpected changes of competitor with; agreed (mean=4.16) with the unexpected change in the desire of quality; agreed (mean=3.39) with the unexpected changes on time delivery; and, also agreed (mean=3.28) with the unexpected changes of Technology.

4.4.2.6. Environmental Uncertainty (Government support) related Factors

Table 14. Environmental Uncertainty (Government support) related Factors

	Mean	SD
1. The level of support that your firm receives from the government is good	2.88	1.335
2. The norms, regulations, policies of government towards coffee exporters is encouraging	2.69	1.507
3. The reforms made by government towards coffee exporters is encouraging	2.99	1.059
4. The current exchange rates does not affect the coffee exporting business	2.05	1.550
5. The tariff laid in the coffee exporting business is fair	2.52	1.277
6. Administrative practices encourages the coffee exporting business	2.53	1.298

(Source: Own Survey, 2024)

Considering the Environmental Uncertainty (Government support) related Factors as shown in Table 11, it was neutrally perceived: with the level of support that the exporter's firm receives from the government is good was neutral (mean=2.88), with the norms, regulations, policies of government towards coffee exporters is encouraging it was also (mean=2.59; the reforms made by government towards coffee exporters is encouraging (mean=2.99). On the other hand, the respondents were disagreed with the items reads as *the current exchange rates does not affect the coffee exporting business* (mean=2.05); *the tariff laid in the coffee exporting business is fair* (mean=2.52); and, *Administrative practices encourages the coffee exporting business* (mean=2.53).

4.4.2.7. Environmental Uncertainty (Social) related Factors

Table 15. Environmental Uncertainty (Social) related Factors

	Min	Max	Mean	SD
1. There are religious related factors affects coffee exporting business	1	5	2.51	1.455
2. There is no limitations of communication in the coffee exporting business	2	5	3.13	1.223
3. There is no Uncertainty aspects from overseas	1	5	2.19	1.430

4. The political uncertainties in other countries increase risk for coffee exporters	2	5	4.37	.912
5. There is uncertainty to provoke decisions of no investment	2	5	3.36	.782
6. There is uncertainty in change business strategies	2	5	3.71	.653

Concerning the environmental Uncertainty (Social) related factors, it was disagreed that there are religious related factors affects coffee exporting business (mean=2.51). There is no limitations of communication in the coffee exporting business was neutrally perceived by a mean value of 3.13. The participants were disagreed with the absence uncertainty aspects from overseas (mean=2.19). It was strongly agreed with the political uncertainties in other countries increase risk for coffee exporters. The participants were agreed with score mean values of 3.36 and 3.71 on the items reads as "There is uncertainty to provoke decisions of no investment" and "There is uncertainty in change business strategies"

4.4.2.8. Technology related Factors

Table 16. Technology related Factors

	Mean	Std. Deviation
1. There is ability to use the computer technology that allow all the actors in the supply chain to communicate among each other.	3.88	.944
2. There is adequate information technology which allows suppliers, manufacturers, distributors, retailers, and customers to reduce lead time, paperwork, and other unnecessary activities.	3.47	1.143
3. There is good flow of information in a coordinated manner	2.96	1.071
4. There is high access to information and data interchange	3.16	1.434

(Source: Own Survey, 2024)

The respondents were agreed with score mean values of 3.88 and 3.47 with the issues postulates the ability to use the computer technology that allow all the actors in the supply chain to communicate among each other and the adequate information technology which allows suppliers. The two items i.e. *there is good flow of information in a coordinated manner* and *there is high access to information and data interchange* scored 2.96 and 3.16, implied that the participants were neutral with the items.

4.4.3.. Summary of the Descriptive Results (Grand Mean)

Table 17. Summary of the Descriptive Results

Variable name		No	Mean	SD
Dependent Variable	SCM	75	3.0876	.86988
Independent Variables	Infrastructure	75	2.8033	.79938
	Market	75	2.9933	.82504
	Finance	75	3.1307	.75873
	Environmental Uncertainty (Company environment)	75	3.2778	.89045
	Environmental Uncertainty (Government)	75	2.7143	1.16
	Environmental Uncertainty (Social environment)	75	2.4867	.82417
	Technology	75	3.3667	.82644
	Legal and Government	75	2.51	.493

(Source: Own Survey, 2024)

To summarize the results Table 13 displayed the mean and SD results of the variables. As a result, the score mean value of the dependent variable i.e. SCM computed 3.087, revealed that the respondent's perception on the performance of supply chain management in exporting coffee is neutral. This mean by in average the participants were neither agreed nor disagreed on the SCM.

When we see the factors affecting SCM, the score mean value of infrastructure related factors was 2.83, shown that it was neutral. The score mean value for the market related

factors were 2.99, this also revealed neutral. The finance related factors valued a score mean of 3.1307 (neutral). However, the agreed with the prevalence of environmental Uncertainty (Company environment) with a value of 3.27 and SD of .89. The environmental Uncertainty (Government) computed 2.71 score mean value implied the participants averagely disagreed with the items. Similarly they were disagreed with the environmental uncertainty (Social environment) factors with a score mean value of 2.48. The respondents agree with the prevalence of technology 3.36 (mean) but disagreed (with a score mean value of 2.51) with the legal and government related issues.

Thus, amongst the independent variables the participants were neutrally perceived with the prevalence of infrastructure, market, finance. And, they agreed with the prevalence of environmental uncertainty of good company environment and ability to go with modern technology. Contrarily, they disagreed with the environmental uncertainty of having supportive government, good social environment) and availability of supportive legal and government related issues.

Supporting this the informants in the interview replied that infrastructure, market and environmental uncertainties of affect the supply chain management of exporting coffee beans.

4.5. Correlation and Regression Inferential

4.5.1. Correlation

Correlations were used to measure the linear relationship among the variables, with values ranging from -1 to +1. In this study, the correlation assessed the relationship between the dependent variable (performance of supply chain management of green coffee bean exporters) and six independent variables (infrastructure, marketing, financial factors, government regulation, environmental uncertainty, and information technology). Pearson Correlation values close to ±1 indicate a strong correlation, while values near zero suggest little or no correlation

Table 18. Correlation

		SCM	Infrastructure	Market	Finance	Environment	Environmental Uncertainty (Government)	Environmental Uncertainty (Social environment)	Technology Related Factors
SCM	Pearson Correlation	1							
	Sig. (2-tailed)								
Infrastructure	Pearson Correlation	.621**	1						
	Sig. (2-tailed)	.000							
Market	Pearson Correlation	.762**	.433**	1					
	Sig. (2-tailed)	.000	.000						
Finance	Pearson Correlation	.657**	.363**	.638**	1				
	Sig. (2-tailed)	.000	.001	.000					
Company environment	Pearson Correlation	.046	-.046	-.076	-.063	1			
	Sig. (2-tailed)	.695	.696	.518	.594				
Environmental Uncertainty (Government)	Pearson Correlation	.963**	.552**	.737**	.793**	.060	1		
	Sig. (2-tailed)	.000	.000	.000	.000	.609			
	N	75	75	75	75	75	75		
Social environment	Pearson Correlation	-.755**	-.322**	-.580**	-.738**	-.256*	-.769**	1	
	Sig. (2-tailed)	.000	.005	.000	.000	.027	.000		
Technology	Pearson Correlation	.603**	.242*	.407**	.620**	.497**	.693**	-.800**	1
	Sig. (2-tailed)	.000	.036	.000	.000	.000	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).									
*. Correlation is significant at the 0.05 level (2-tailed).									

(Source: Own Survey, 2024)

To indicate the strength of the correlation, this study adopted the thresholds from Andy (2006): ±0.1 represents a small effect, ±0.3 a medium effect, and ±0.5 a large effect. Correlation analysis reveals the relationship between the variables of interest. Therefore, to address the proposed research questions, the following correlation analysis was conducted by the researcher. Therefore, Infrastructure's Pearson Correlation with SCM is .621** mean it has large effect on SCM. Market valued a Pearson Correlation of .762** it has large effect on SCM. Finance's Pearson Correlation was .657** revealed that it has large effect. Company environment accounted Pearson Correlation .046 shown that it has small effect. Environmental Uncertainty (Government) valued a Pearson Correlation of .963** large effect on SCM. The Social environment accounted Pearson Correlation of -.755** revealed that it has negative but large effect on SCM. Technology's Pearson Correlation was .603** meant by it has large effect.

4.5.2. Tests of Assumptions of Regression Analysis

According to Field (2009) to run a linear regression, checking critical assumptions is essential and it is helpful to draw conclusion about the population under study. In this regard, normality of the residuals variables Homoscedasticity and Multi co linearity between variables were checked, and the results presented as follows.

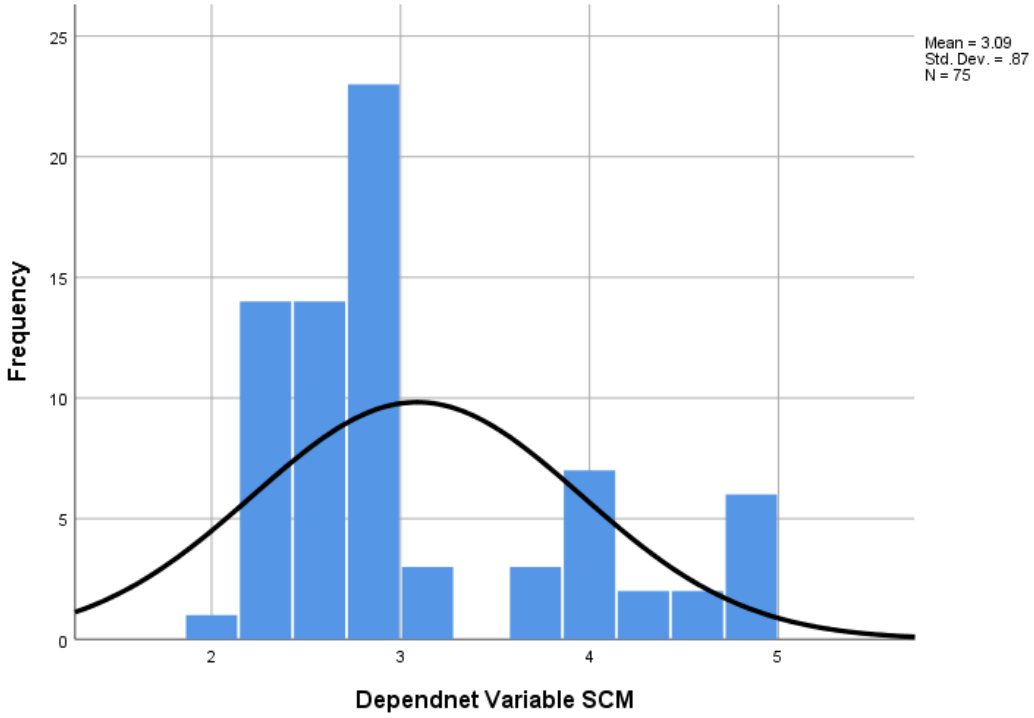
Table 19. Multi collinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	(constant)		
	Market Related Factors	.648	1.544
	Finance Related Factors	.414	2.416
	Environmental Uncertainty (Company environment) related Factors	.281	3.563
	Environmental Uncertainty (Government) related Factors	.514	1.947
	Environmental Uncertainty (Social environment) related Factors	.170	5.880
	Technology Related Factors	.241	4.155
	Market Related Factors	.207	4.822

(Source: Own Survey, 2024)

The result shows that the tolerance value for each independent variable is ranged from .170 to .040 which is less than 1. This shown that the multicollinearity assumption is not violated. This is also supported by the VIF values which are well below the cut-off 10 as shown in the multi collinearity table.

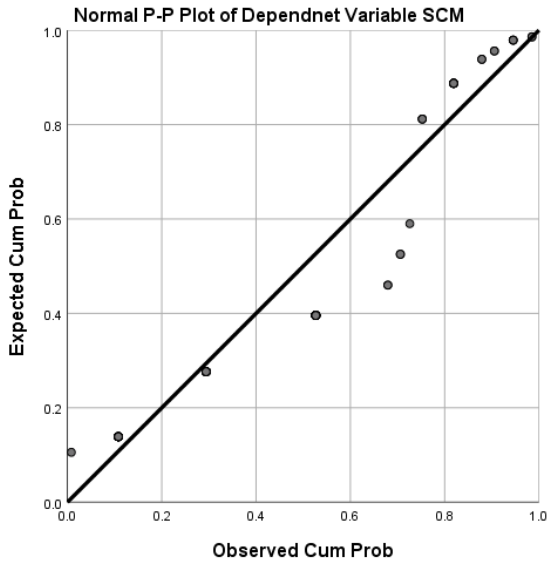
Figure 6. Histogram, Normality test



(Source: Own Survey, 2024)

The histogram shown that, most of the data are fallen within the histogram normal curve.

Figure 7. Normality P-P plot



(Source: Own Survey, 2024)

According to the p-p plot result revealed the little circle almost follow the normality line, which means the predictor variable in the regression have a straight line relationship and the normal distribution appear to be good fit to the data

4.5.3. Model Summary

Table 20. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.886[a]	.786	.767	.420
a. Predictors: (Constant), Environment, Finance , Legal and Governmental, Infrastructure , Market , Technology				

(Source: Own Survey, 2024)

The above table 21 presents the results of a regression analysis where multiple predictors are considered to explain the variance in a dependent variable. The predictors included in the model are Environment, Finance, Legal and Governmental, Infrastructure, Market, and Technology.

Firstly, the correlation coefficient (R) is reported as 0.886. This value indicates a strong positive linear relationship between the combined predictors and the dependent variable. In other words, when the predictors change, the dependent variable tends to change in the same direction, and the strength of this relationship is relatively high.

R-Squared (R^2 or the coefficient of determination) is a statistical measure in a regression model that determines the proportion of variance in the dependent variable that can be explained by the independent variable. In other words, r-squared shows how well the data fit the regression model (the goodness of fit). A higher r-squared indicates more variability is explained by the model.

The R Square (R^2) value is 0.786. This statistic represents the proportion of the variance in the dependent variable that can be explained by the independent variables included in the model. An R^2 of 0.786 implies that approximately 78.6% of the variation in the dependent variable is accounted for by the predictors. This high value suggests that the model has a good fit and the predictors are collectively strong in explaining the outcome.

The Adjusted R Square, which is slightly lower at 0.767, accounts for the number of predictors in the model relative to the number of observations. It provides a more accurate measure of the model's explanatory power by adjusting for the potential inflation of R^2 due to the addition of more predictors. An Adjusted R^2 of 0.767 indicates that after considering the number of predictors, around 76.7% of the variance in the dependent variable is still explained by the model.

4.5.4. ANOVA[a]

Table 21. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	166.941	7	23.849	4946.752	.000[b]
	Residual	1.046	217	.005		
	Total	167.987	224			
a. Dependent Variable: Supply Chain Management Performance of selected green coffee bean						
b. Predictors: (Constant), Technology Related Factors, Information Related Factors, Environmental Uncertainty (Company environment) related Factors , Market Related Factors, Finance Related Factors, Environmental Uncertainty (Social environment) related						

Factors, Environmental Uncertainty (Government) related Factors

(Source: Own Survey, 2024)

In the Model, the regression sum of squares is 166.941 with 7 degrees of freedom (df), resulting n a mean square of 23.849. This model yields an F value of 4946.849 with a significance (Sig.) level of .000, indicating a highly significant regression model. The predictors, which include Technology Related Factors, Information Related Factors, Environmental Uncertainty (Company environment) related Factors, Market Related Factors, Finance Related Factors, Environmental Uncertainty (Social environment) related Factors, and Environmental Uncertainty (Government) related Factors. The residual sum of squares is 1.046 with 217 df, leading to a mean square error of .005. The total sum of squares for this model is 167.987 with 224 df.

4.5.5. Coefficients [a]

Table 22. Coefficients a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.507	.590		-2.555	.013
	Infrastructure	.322	.071	.296	4.565	.000
	Market	.465	.081	.441	5.753	.000
	Finance	.114	.103	.100	1.110	.271
	Technology	.242	.099	.230	2.457	.017
	Legal and Governmental	.056	.116	.032	.481	.632
	Environment uncertainties	.349	.183	.137	1.910	.002
a. Dependent Variable: SCM						

(Source: Own Survey, 2024)

In a multivariate linear regression model, the beta coefficient represents the estimated change in the dependent variable for a one-unit change in a predictor variable, while holding all other predictors constant. It represents the strength of the relationship between each predictor variable and the dependent variable and the direction of the relationship (positive or negative).

Table 23 depicted the regression analysis results of the factors influencing Supply Chain Management (SCM) for coffee exporters. The table presents both unstandardized and standardized coefficients, along with the significance levels for each predictor variable.

The constant term (B = -1.507, Sig. = .013) is statistically significant. This indicates that when all independent variables are zero, the SCM score is -1.507. However, this value might not have a practical interpretation since all variables being zero might not be realistic.

The unstandardized coefficient for Infrastructure is 0.322, with a standard error of 0.071. The standardized coefficient (Beta) is 0.296, and it is highly significant (t = 4.565, Sig. = .000). This implies that a one-unit increase in Infrastructure is associated with a 0.322 unit increase in the SCM score, holding other variables constant. The standardized coefficient indicates that Infrastructure has a moderate positive effect on SCM.

The Market variable has an unstandardized coefficient of 0.465 (Std. Error = 0.081) and a standardized coefficient of 0.441. It is highly significant (t = 5.753, Sig. = .000), indicating that it is a crucial factor. A one-unit increase in Market conditions leads to a 0.465 unit increase in SCM, making it the strongest predictor among the variables, as reflected by its Beta value.

Finance shows an unstandardized coefficient of 0.114 with a standard error of 0.103. Its standardized coefficient is 0.100, and it is not statistically significant (t = 1.110, Sig. = .271). This suggests that Finance does not have a significant direct impact on SCM for coffee exporters within this model.

The unstandardized coefficient for Technology is 0.242 (Std. Error = 0.099) with a standardized coefficient of 0.230. It is statistically significant (t = 2.457, Sig. = .017). Thus, a one-unit increase in Technology leads to a 0.242 unit increase in SCM, indicating that technological advancements positively and significantly affect SCM.

Legal and Governmental factors have an unstandardized coefficient of 0.056 (Std. Error = 0.116) and a standardized coefficient of 0.032. This variable is not statistically significant (t = 0.481, Sig. = .632), indicating that these factors do not have a meaningful impact on SCM in this context.

Environmental uncertainties have an unstandardized coefficient of 0.349 (Std. Error = 0.183) and a standardized coefficient of 0.137, with a significance level (t = 1.910, Sig. = .002) suggesting statistical significance. This implies that environmental uncertainties have a moderate positive impact on SCM, although the exact nature of this impact requires further exploration.

The results suggest that Market and Infrastructure are the most influential factors on the SCM of coffee exporters, with Market conditions having the highest impact. Technology also plays a significant role in improving SCM. In contrast, Finance and Legal and Governmental factors do not show a significant direct influence. The significant effect of Environmental uncertainties indicates that external, unpredictable factors can moderately affect SCM, highlighting the need for adaptability and risk management in the supply chain.

In conclusion, to enhance SCM performance, coffee exporters should focus on improving market conditions, infrastructure, and technological advancements. Although Finance and Legal and Governmental factors are essential in business operations, their direct impact on SCM might be less pronounced in this specific context. Addressing environmental uncertainties by developing robust risk management strategies could also benefit SCM.

Therefore, the model was specified as follows:

$$\mathbf{SCM=\beta_1 I+ \beta_2 A+ \beta_3 F+ \beta_4 G+ \beta_5 EU+ \beta_6 IT+E}$$

SCM= .276*I+.441* M+.100*F+.032*G+.137*EU+.230*IT

4.5.6. Hypothesis test

Table 23. Hypothesis test

Hypothesis	P-value	Decision
H1: Infrastructure related factors have significant influence in the supply chain management of green coffee bean exporters.	.000	Accepted
H2: Marketing related factors have significant influence in the supply chain management of green coffee bean exporters.	.000	Accepted

H3: Financial related factors have significant influence in the supply chain management of green coffee bean exporters.	.271	Rejected
*H4: G*overnment regulation *has significant influence in the supply chain management of green coffee bean exporters.*	.632	Rejected
H5: Environmental uncertainty has significant influence in the supply chain management of green coffee bean exporters.	.002	Accepted
H6: Information technology has significant influence in the supply chain management of green coffee bean exporters.	.017	Rejected

(Source: Own Survey, 2024)

4.6. Qualitative data analysis, presentation and interpretation

The previous section reported the empirical findings from the quantitative component of this study. This part of the study gives an overview of the qualitative analysis of 8 interviews that were conducted with participants of 8 managerial bodies of ECX and Tea and Coffee Authorities.

4.6.1 Actors in the supply chain management of green coffee bean exporters

4.6.1.1 From whom do Exporters purchase the coffee bean frequently?

The informants in the interview replied that the actors that the coffee exporters can obtain the coffee could be, from the coffee farmers in the area (this could be limited to the road infrastructure, market line created before and information). Coffee cooperatives established by government and privately have the lion share on providing coffee for the exporters. Even some of the cooperatives are also exporters. To this effect some exporters also obtained the coffee to export from other exporters.

4.6.1.2 Which Actors play a role after exporters Purchase the Coffee Bean?

The informants replied that there are governmental actors like Ethiopia Customs Commission, ECX, Exported Coffee Quality Inspection Center, Ministry of Finance, Ethiopian Coffee and Tea Authority, Ministry of Trade and so many regulatory bodies.

4.6.1.3 For whom are the exporters providing the coffee?

As per the informant in the interview replied exporting to international importers can offer several advantages like market access or access to a broader customer base and the potential for higher sales volumes. Revenue Generation Potentially higher revenues due to premium prices in international markets. Brand Recognition, Building a global reputation can enhance brand recognition and market positioning.

The informants reply for the reason “Exporting to other exporters might be chosen where’” one, Risk Mitigation, diversifying export partners can reduce dependency on a single market or buyer. Operational Flexibility, smaller exporters might benefit from the logistical and marketing expertise of larger exporters. And, market penetration, utilizing established exporters can facilitate entry into new or more challenging markets where direct access might be difficult.

To sum up, the export destination data highlights the global orientation of coffee exporters in the sample, with a strong emphasis on international importers. This indicates a strategic focus on tapping into global markets to maximize revenue and growth opportunities. At the same time, a smaller segment of exporters prefer working with other exporters, possibly to leverage existing networks and mitigate risks associated with direct international trade. This dual approach showcases the varied strategies adopted by coffee exporters to navigate the complexities of the global coffee market.

4.6.2 Supply Chain Management Performance of Exporting Coffee Bean

Concerning the supply chain management performance of exporting coffee bean the informants replied that there is improvement

1. on the supply chain performance of exporting green coffee bean
2. in the quality of the supply chain performance of exporting green coffee bean
3. There is sustainable improvement of the organizations involved in the supply chain of exporting green coffee bean
4. Exporting green coffee bean is increasing the optimal of a business
5. Exporting green coffee bean preserve its continuity through dynamic approach system
6. Exporting green coffee bean involving aspect such as economy, social value, and environment

While they are not perceived that there is market improvement of exporting green coffee bean.

As we can see from the above response we can see that there is some improvement in most of the supply chain performances while the market is not as much improving.

4.6.3 Factors affecting the SCM

Correlation analysis is used to investigate the effect of Infrastructure, Market, Finance, Technology, Legal & Governmental and Environment uncertainties on SCM performance. The correlation analysis result shows that Market and Infrastructure are the most influential factors on the SCM of coffee exporters. Technology also plays a significant role in improving SCM. In contrast, Finance and Legal and Governmental

factors show less significance to direct influence. The significant effect of Environmental uncertainties can moderately affect SCM, highlighting the need for adaptability and risk management in the supply chain.

As the above response shows that to enhance SCM performance, coffee exporters should focus on improving market conditions, infrastructure, and technological advancements. Therefore, the interview discussion confirms the quantitative result is reliable.

4.7. Discussion

The summary of the results indicates a neutral perception of respondents on the performance of supply chain management (SCM) in exporting coffee, with a mean score of 3.087. This neutrality extends across various factors influencing SCM, with some exceptions noted in specific areas such as environmental uncertainty and technology. Let's discuss these findings in the context of previous empirical studies. The overall neutral perception (mean score 3.087) suggests that respondents neither strongly agree nor disagree on the effectiveness of SCM in coffee exporting. This aligns with studies in emerging economies where SCM practices are still evolving and facing numerous challenges (Mwale et al., 2014; Kamau & MacGregor, 2018). The neutrality may reflect ongoing adjustments and improvements in the supply chain processes that have yet to yield clear positive or negative perceptions among stakeholders.

Infrastructure Factors

The neutral score (mean 2.83) for infrastructure-related factors aligns with findings from studies in similar contexts, where infrastructure development is often seen as inconsistent or underdeveloped (World Bank, 2017). For example, inefficient transport networks and inadequate storage facilities are common bottlenecks that can lead to such neutral perceptions (Shepherd & Gálvez-Nogales, 2017). Despite efforts to improve infrastructure, these studies indicate that progress is slow and mixed, leading to neither a wholly positive nor negative consensus among respondents.

Market Factors

With a mean score of 2.99, the market-related factors also reflect a neutral stance, resonating with research that highlights fluctuating market conditions and varying levels of market access as ongoing issues in the coffee industry (Daviron & Ponte, 2005). Market volatility and the dynamic nature of global coffee prices can contribute to this neutrality, as stakeholders experience both opportunities and constraints in market interactions (Gilbert, 2007).

Finance Factors

Finance-related factors scored a mean of 3.1307, again indicating neutrality. Previous studies have noted that access to finance in the agricultural sector, including coffee exporting, is often characterized by significant challenges such as high interest rates, limited availability of credit, and stringent lending criteria (Miller, 2011; UNCTAD, 2015). These constraints can lead to a balanced view where the benefits and drawbacks of financial access are equally weighted.

Environmental Uncertainty

Respondents agreed with the prevalence of environmental uncertainty in the company environment (mean 3.27) and technology (mean 3.36), while disagreeing with the government (mean 2.71) and social environment (mean 2.48). These results are consistent with studies emphasizing the critical role of internal organizational environments and technological adoption in enhancing SCM performance (Christopher, 2016; Gunasekaran et al., 2017). Conversely, dissatisfaction with government and social environment factors reflects findings that highlight regulatory and social challenges as major impediments to effective SCM (Schmitz Whipple et al., 2015).

Legal and Government Issues

The disagreement with legal and government-related issues (mean 2.51) is supported by empirical evidence pointing to regulatory hurdles, bureaucratic inefficiencies, and lack of supportive policies as significant barriers in many developing countries' SCM frameworks (Hollweg & Wong, 2009). These issues can stifle innovation, slow down

processes, and create an unfavorable business environment, leading to a generally negative perception.

Regression Analysis and Hypotheses

The regression results highlight infrastructure (β = .296), market (β = .441), and environmental uncertainties (β = .137) as significant factors influencing SCM. This finding corroborates studies showing that robust infrastructure, efficient market mechanisms, and managing environmental uncertainties are pivotal for successful SCM (Min & Mentzer, 2004; Singh & Teng, 2016).

Infrastructure: Critical for smooth logistics and reducing costs (Lynch et al., 2000).

Market: Effective market strategies and access can significantly enhance SCM efficiency (Porter, 1985).

Environmental Uncertainty: Navigating uncertainties, particularly within the organizational and technological realms, are essential for resilience and adaptability in SCM (Christopher & Peck, 2004).

Therefore, the findings from this study align with previous empirical research, indicating that while stakeholders maintain a neutral perception of SCM performance overall, specific factors like infrastructure, market conditions, and environmental uncertainties play crucial roles. The acceptance of the hypotheses that infrastructure, market, and environmental uncertainty factors significantly influence SCM underscores the need for targeted improvements in these areas to enhance the efficiency and effectiveness of supply chain operations in the coffee exporting sector.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary

To summarize the results, the score mean value of the dependent variable i.e. SCM computed 3.087, revealed that the respondent's perception on the performance of supply chain management in exporting coffee is neutral. This mean by in average the participants were neither agreed nor disagreed on the SCM. When we see the factors affecting SCM, the score mean value of infrastructure related factors was 2.83, shown that it was neutral. The score mean value for the market related factors were 2.99, this also revealed neutral. The finance related factors valued a score mean of 3.1307 (neutral). However, the agreed with the prevalence of environmental Uncertainty (Company environment) with a value of 3.27 and SD of .89. The environmental Uncertainty (Government) computed 2.71 score mean value implied the participants averagely disagreed with the items. Similarly they were disagreed with the environmental uncertainty (Social environment) factors with a score mean value of 2.48. The respondents agree with the prevalence of technology 3.36 (mean) but disagreed (with a score mean value of 2.51) with the legal and government related issues. Thus, amongst the independent variables the participants were neutrally perceived with the prevalence of infrastructure, market, finance. And, they agreed with the prevalence of environmental uncertainty of good company environment and ability to go with modern technology. Contrarily, they disagreed with the environmental uncertainty of having supportive government, good social environment) and availability of supportive legal and government related issues. The regression result shown that, Table, Infrastructure with Beta value of .296, Market (with Beta value of .441), Finance (Beta .100), technology (beta=.230), legal and Government (beta=.481) and Environmental Uncertainties (beta .137). Thus, infrastructure, market and environmental uncertainties are the most important and statistically significant factors influenced SCM in the study area. Then, the hypothesis i.e. infrastructure, market and environmental uncertainty related factors have significant influence in the supply chain management of green coffee bean exporters are accepted.

5.2. Conclusion

From the findings it is concluded that:

Infrastructure related factors such as the goodness of the nature of transport facility and services, accessibility to agricultural production input, standard roads and adequacy of coffee bean storage facility are significantly affected supply chain management of green coffee bean exporters.

Marketing related factors have found determinants of the supply chain management of green coffee bean exporters. This meant by scenarios such as selling coffee with price that benefits all actors, obtaining updated market information and creating conditions to exporters to choose market out lets are vital for the supply chain management of green coffee bean performance.

Though literatures shown financial related factors are significant, in the study area there is no little chance of providing loans, subsidy credits for the coffee bean exporters. Besides, coffee farmers, coffee cooperatives at different level and coffee traders/processors are not accessible to financial institutions for loans and subsidy.

Government regulation or legal frameworks enacted on coffee exporters is important, but there is no or little a supportive policy endorsed to improve quality of exporting Coffee in Ethiopia. There is inadequate government regulation and less attention and support from concerned government body. This impedes supply chain management of green coffee bean exporters

The unexpected changes of supplier, change in the desire of quality, changes on time delivery, changes of competitor, and changes of Technology are critical factors of supply chain management of green coffee bean exporters. These environmental uncertainty can be by the company itself, governance and social related factors has significant influence in the supply chain management of green coffee bean exporters.

Information technology was another hypothesized factors they could determine the supply chain management of green coffee bean exporters. The coffee exporters in the study area are able to use the computer technology that allow all the actors in the supply

chain to communicate among each other and they are accessible to data that allows suppliers, manufacturers, distributors, retailers, and customers to reduce lead time, paperwork, and other unnecessary activities. Also, it is perceived that there is good flow of information and good access to information and data interchange.

5.3. Recommendations

Recommendation for government bodies

- Since Coffee is the backbone of the country Infrastructure related factors such as the goodness of the nature of transport facility and services, accessibility to agricultural production input, standard roads and adequacy of coffee bean storage facility should be accessed easily.
- There have to be a supportive policy for financial institutions to provide loans subsidies and credits for the coffee farmers, coffee cooperatives and coffee exporters.
- There have to be supportive policy that can be endorsed to improve quality of exporting Coffee in Ethiopia.
- The price settled for selling coffee should benefit all actors, obtaining updated market information and creating conditions to exporters to choose market out lets.

Coffee exporters

- Coffee exporters have to be familiar and being informed about the unexpected changes of supplier, change in the desire of quality, changes on time delivery, changes of competitor, and changes of Technology.

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Annex 1: Questionnaire

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

OFFICE OF GRADUATE STUDIES

Dear Respondent:

My name is **Ruth Ketsella** candidate of MA student in Addis Ababa University, College Of Business and Economics, School Of Commerce, and Office of Graduate Studies. This questionnaire is designed with the aim of gathering information to investigate "**Factors affecting supply chain management performance of selected green coffee bean exporters in Addis Ababa**." The only purpose of this study is academic i.e., for the fulfilment of Master's Degree. Your responses were kept confidential. Therefore, your genuine and timely responses are the main determinants of the success of this study. So, I kindly request your co-operation in filling the questionnaire honestly.

Thank you for your time and co-operation!

(if you have any question please contact using the Phone number:

……)

General Direction

- No need of writing your name
- Put the X mark in the space provided for choices of your answers
- Please attempt all the questions as accurately as possible

By agreeing to participate in the study, it is implied that you have read and understand the above information. Please do not write any identifying information on the survey.

Part 1: Respondent's Profile

1. Sex Male ☐ Female ☐

2. Age: 18 to 27 ☐ 28 to 35 ☐ 34 to 41 ☐ 42 to 49 ☐ 50 and 57 ☐ 58 and above ☐

2. Marital Status: Unmarried ☐ married ☐ Divorced ☐

3. Education level:

   Primary ☐ Secondary ☐ Levels ☐ Diploma ☐ Degree ☐ MA/MS ☐ Others ☐

4. Your experience in the industry?

   < 1 Year ☐ 1- 3 Years ☐ 3 - 5 Years ☐ > 5 Years ☐

5. Your position …….

Part II. Actors in the supply chain management of green coffee bean exporters

1. From whom do you purchase the coffee beans from? (Multiple response is possible)

Coffee collectors ☐ cooperative union ☐ Traders/processors ☐ mixed ☐ from self-farm ☐ other exporters ☐

If other, Specify……

2. Actors plays a role after you purchase the coffee? (Multiple response is possible)

   ECC/ Ethiopia Customs Commission ☐ ECQIC/Exported Coffee Quality Inspection Center ☐ ECTA/ Ethiopian Coffee and Tea Authority ☐

   Ministry of Trade ☐ Brokers ☐ If other, Specify……

3. You are selling the coffee to? (Multiple response is possible)
   1. ----------
   2. ----------
   3. ----------

Part Three: Supply Chain Management Performance of selected green coffee bean

From the listed indicators, tick the appropriate choice from the given alternatives:

1= strongly disagree 2= Disagree 3= Neutral 4=Agree 5=strongly agree

Items		1	2	3	4	5
1.	There is improvement on the supply chain performance of exporting green coffee bean					
2.	There is improvement in the quality of the supply chain performance of exporting green coffee bean					
3	There is market improvement of exporting green coffee bean					
4.	There is sustainable improvement of the organizations involved in the supply chain of exporting green coffee bean					
5.	Exporting green coffee bean is increasing the optimality of a business					
6.	Exporting green coffee bean preserve its continuity through dynamic approach system					
7.	Exporting green coffee bean involving aspect such as economy, social value, and environment					

8. The overall supply Chain Management Performance of the selected green coffee bean Supply**?**

Very high ☐ high ☐ Moderate Low ☐ very Low ☐

Part IV: Factors affecting supply chain management of selected green coffee bean

From the listed indicators, tick the appropriate choice from the given alternatives:

1= strongly disagree 2= Disagree 3= Neutral 4=Agree 5=strongly agree

Infrastructure related Factors		1	2	3	4	5
1.	The nature of transport facility and services affect coffee value is encouraging					
2.	Access to agricultural production input					
3	Lack of standard road determinants suppliers to participate					

4	Poor storage facility					

5. Specify if there is/are other infrastructural factors constrained affecting supply chain management of selected green coffee bean? ----------

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Market related Factors		1	2	3	4	5
1.	Coffee is sold with price that benefits all actors					
2.	Exporters get market information at the right time					
3	Exporters are updated with the prices of coffee					
4	Exporters choose exporting market outlet choice					

5. Specify if there is/are other Market related Factors constrained affecting supply chain management of selected green coffee bean? ----------

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Finance related Factors		1	2	3	4	5
1.	Financial institutions encourage modern farming of Coffee by providing the necessary loan and subsidy					
2.	Coffee exporters have the experience of using credit					
3	Farmers have credit access for coffee production and marketing					
4	The timing of the credit for the coffee exporters is just on time					
5	Financial institutions like Banks and Credit and Saving Institutions provide enough credit to run the business					

6. Specify if there is/are other finance related Factors constrained affecting supply chain management of selected green coffee bean? ----------

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Government Regulation related Factors		1	2	3	4	5
1.	There is a supportive policy in place to improve the volume and quality of exporting Coffee in Ethiopia					
2.	There is proper government regulation in place that contributes					

	to adequate supply of inputs					
3	There is favorable regulation in place that improves market efficiency at the output side					
4	Coffee exporting areas have full attention and support from concerned government body					

5. Specify if there is/are other government related Factors constrained affecting supply chain management of selected green coffee bean? ----------

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Environmental Uncertainty (Company environment) related Factors		1	2	3	4	5
1.	The unexpected changes of supplier					
2.	The unexpected change in the desire of quality					
3	The unexpected changes on time delivery					
4	The unexpected changes of competitor					
5	The unexpected changes of technology					

6. Specify if there is/are other Environmental Uncertainty (Company environment) related Factors constrained affecting supply chain management of selected green coffee bean? ----------

Environmental Uncertainty (Government support) related Factors		1	2	3	4	5
1.	The level of support that your firm receives from the government					
2.	The norms, regulations, policies of government					
3	The reforms made by government					
4	Language barriers					
5	Transportation and transportation costs					
6	Exchange rates					
7	Tariffs					
8	Administrative practices					

9. Specify if there is/are other Environmental Uncertainty (Government support) related Factors constrained affecting supply chain management of selected green coffee bean? ---

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Environmental Uncertainty (Social) related Factors		1	2	3	4	5
1.	There are religious related factors affects coffee exporting business					
2	There is no limitations of communication in the coffee exporting business					
3	There is no Uncertainty aspects from overseas					
4	The political uncertainties in other countries increase risk for coffee exporters					
5	There is uncertainty to provoke decisions of no investment					
6	There is uncertainty in change business strategies					

6. Specify if there is/are other Environmental Uncertainty (Social) related Factors constrained affecting supply chain management of selected green coffee bean? --------

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Technology related Factors		1	2	3	4	5
1.	Unable to use the computer technology that allow all the actors in the supply chain to communicate among each other.					
2.	The use of information technology allows suppliers, manufacturers, distributors, retailers, and customers to reduce lead time, paperwork, and other unnecessary activities.					
3	Less flow of information in a coordinated manner					
4	Less access to information and data interchange					

5. Specify if there is/are other Technology related Factors constrained affecting supply chain management of selected green coffee bean? ----------

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