ADDIS ABABA UNIVERSITY

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MASTER OF INTERNATIONAL BUSINESS

Major Determinants of Supply Chain performance in Ethiopia's Coffee Export Sector: In the case of High-Volume Exporters.

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A thesis submitted to the College of Business and Economics, Addis Ababa University in partial fulfilment of the requirements for the degree of Master of International Business (Import and Export).

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This is to certify that the thesis prepared by Ms. Meron Admasu, 'Major Determinants of Supply Chain performance in Ethiopia's Coffee Export Sector: In the case of High-Volume Exporters'**.** a thesis submitted to Addis Ababa University, College of Business and Economics, Department of Management in partial fulfilment of the requirements for the Degree of Master of science in international business (Import and Export), fulfils the regulation of the university and meets the accepted standards concerning originality and quality.

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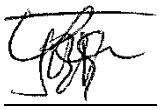
Yohannes Workeaferahu (PHD)	
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DECLARATION

I Meron Admasu declare that this thesis entitled "Factors Affecting Supply Chain Performance of Ethiopian Coffee Exporters: In the Case of High-volume Exporters" is the outcome of my effort and study and that all sources of materials used for the study have been duly acknowledged. I have produced it independently except for the guidance and suggestion of the Thesis Advisor.

The thesis is original and has not been submitted for the award of any degree or diploma to any university or institution. It is offered for the partial fulfilment of the Master of Arts in Logistics and Supply Chain Management Program.

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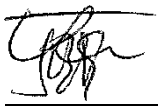
Yohannes Workeaferahu (PHD)	20/09/2024	

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Abstract

This thesis aims to examine the key constraints that affect the performance of the Ethiopian coffee supply chain especially on selected coffee exporters with high volume of export. This research also targeted revealing and examining the relevant factors that cause the supply chain performance to be effective in order to give a detailed background of the coffee supply chain system in Ethiopia. Scholars explore antecedents spanning strategic supplier relationships, customer interaction, capability development, physical infrastructure, logistics expenses, and information sharing. The method involves Descriptive analysis of the respondent's demographic characteristics, use of prerequisite statistical techniques like Mean, standard deviations, Chi-square test, and Trends analysis for hypothesis testing and validity of the research findings, and Linear regression and correlation analysis of the study's variables. The factors depicted above show areas of concern that were seen to significantly impact the coffee supply chain and may act as a guide to addressing challenges by the various stakeholders in endeavouring to make the coffee supply chain more efficient, cheaper, and better managed. Hence, the findings of the study enrich the existing academic body and also serve as a source of reference for policymakers, various stakeholders in the coffee industry, as well as the coffee exporters in their endeavour to increase the comparative advantage of Ethiopia in the global export of coffee.

Keywords: *Risks, effectiveness, supply chain, supplier, relationship management, customer, satisfaction, supplier, partnership, capacity, logistics, expenses, flow, information, assets.*

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List of Acronyms and Abbreviations

ANOVA- ANALYSIS OF VARIANCE

BRV- RESOURCE-BASED VIEW

CRM - CUSTOMER RELATION MANAGEMENT

EPL – ETHIOPIAN PERISHABLE LOGISTICS

KPI - KEY PERFORMANCE INDICATOR

OLS – ORDINARY LEAST SQUARES

TOC - THEORY OF CONSTRAINTS

SCC - SUPPLY CHAIN COUNCIL

SC - SUPPLY CHAIN

SCM - SUPPLY CHAIN MANAGEMENT

SPSS – STATISTICAL PACKAGE FOR THE SOCIAL SCIENCE

VIF - VARIANCE INFLATION FACTOR

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

For performance improvement as well as to stay competitive in the market, the most important and valuable way is to have efficient supply chain performance. Supply chain has become one of the top priorities on the strategic agenda of industrial and service businesses. Supply chain performance is crucial for businesses as it influences various aspects like operational costs (Anderson, 2018), financial performance (Kotzab 2021, and customer satisfaction (Storey, 2015). Organizations began to recognize that merely enhancing internal efficiencies is insufficient; the entire supply chain must be competitive (Anderson, 2008). Christopher (2019) highlighted that the ultimate objective of supply chain management performance is to achieve satisfaction in the most cost-effective way possible through supplier-buyer integration and collaboration ecosystem. He contended that a company with superior supply chain management performance can enhance and maintain its competitive edge over its rivals. Identifying factors that affect supply chain management performance has become crucial for remaining competitive in the global market and for increasing profitability (Storey, 2015). On account of this fact, the focus of the present study is to identify and recognize the elements that have a big effect on supply chain performance in context of Ethiopian coffee exporters.

Ethiopia is renowned for its high-quality grade coffee production and being one of the largest coffee producers in the world. The coffee industry plays a crucial role in the Ethiopian economy, contributing to export foreign currency earnings, employment generation, and rural livelihoods. However, the performance of Ethiopian coffee exporters' supply chains is influenced by various factors that impact their efficiency, effectiveness, and competitiveness in the global market. The Ethiopian coffee industry holds a historic and vital position in the global coffee trade, encompassing a rich cultural heritage and diverse coffee varieties that have garnered international recognition. Ethiopia is renowned as the birthplace of coffee, and its coffee supply chain plays a vital role in shaping the country's economy, social fabric, and global reputation. Coffee cultivation, processing, and exportation are significant economic activities, engaging millions of people and contributing significantly to foreign exchange earnings.

The coffee supply chain in Ethiopia is a complex and intricate network that involves various stages and stakeholders. Coffee is grown in diverse regions, from the mist-covered highlands to the fertile lowlands, reflecting the country's varied climate and topography. These regions produce a wide range of coffee types, each with its unique flavor profile and characteristics. The coffee supply chain encompasses a myriad of activities, including cultivation, harvesting, processing, grading, and exportation. Coffee beans traverse a labyrinthine path, from the hands of smallholder farmers to the international market, with each step influencing the final quality and value of the product. However, while the Ethiopian coffee industry boasts remarkable potential, it also grapples with a host of challenges that hinder the optimal performance of the supply chain. These challenges, spanning both internal and external dimensions, can exert a profound influence on the operations and outcomes of coffee exporters. Factors such as inadequate infrastructure, inconsistent quality control, fragmented supply chain management, pricing volatility, limited market access, and regulatory complexities pose formidable hurdles that impact the efficiency, sustainability, and competitiveness of the coffee supply chain.

Despite the significance of these challenges, there exists a critical knowledge gap regarding the precise interplay between these factors and their implications for coffee exporters. A comprehensive understanding of how these challenges cascade through the supply chain and subsequently affect coffee exporters' decisions, strategies, and performance is notably absent. Moreover, in the era of globalization and rapidly changing market dynamics, the coffee supply chain's resilience and adaptability are of paramount importance.

This study, therefore, seeks to bridge this knowledge gap by conducting an in-depth investigation into the factors affecting coffee supply chain performance in Ethiopia and their intricate linkages with the operations of coffee exporters. By unraveling the complexities of the Ethiopian coffee supply chain and deciphering the cause-and-effect relationships that permeate it, the research aims to contribute valuable insights to both academic scholarship and practical industry considerations.

1.2. Statement of the problem

In today's highly competitive global business environment, supply chain performance is considered a critical success factor for companies. As stated by Walfried et al. (2019), true rivalry occurs across supply networks rather than individual organizations, highlighting the potential for businesses to gain

competitive advantages. Consequently, supply chain management remains a hotly debated academic issue.

(Hoang and Nguyen, 2019), with countless analyses conducted worldwide. However, in developing countries like Ethiopia, the concept and implementation of supply chain management are not well understood (Mohammed, 2021). Like other countries with intense competition, Ethiopia faces similar challenges. Export organizations, whose performance heavily relies on the quality and standards of their supply chains, must improve product quality, reduce costs, offer better services, and provide a wider variety of products simultaneously (Dangayach, 2018).

The Ethiopian coffee industry has a long-standing and significant presence in the global coffee trade, contributing to the country's economy and international reputation (Dilebo, 2019). The coffee supply chain, a complex and intricate network of activities involving coffee producers, processors, traders, exporters, and other stakeholders, serves as the backbone of this industry (Mohammed, 2021). The effectiveness and efficiency of this supply chain play a pivotal role in determining the success and competitiveness of Ethiopian coffee in international markets.

While the Ethiopian coffee supply chain is recognized for its cultural heritage and diverse coffee varieties, it also faces a range of challenges that can impact its performance (Mohammed, 2021). For example, Tolera (2015) identified several factors that negatively impact coffee supply chain management in Ethiopia. These include a lack of physical infrastructure, inadequate services such as credit, inputs, and equipment, low price shares and benefits for farmers, and insufficient sustainability and information sharing. These challenges are particularly critical for coffee exporters, who serve as the vital link between the domestic volume coffee production and the global market. The success of coffee exporters is intricately linked to the performance of the overall supply chain.

However, despite the industry's importance and its potential for growth, there is a notable gap in our understanding of the precise factors that influence the coffee supply chain's performance in Ethiopia and, subsequently, how these factors reverberate through the operations and outcomes of coffee exporters (Mohammed, 2021). The coffee supply chain encompasses intricate interdependencies, involving issues such as logistics quality control, pricing mechanism. Government policies, market access, technological adoption, and sustainability practices (Thi & Hanh, 2024).

Prior research (Birhanu et al., 2013; Dereje, 2007; Minten et al., 2015; Dilebo, 2019; Mohammed, 2021)on the coffee s in Ethiopia has largely provided general information about the coffee industry, or focused on individual components of the coffee supply chain, such as, environment or land use (Dereje, 2007); the challenges faced by coffee exporters (Birhanu, et al., 2013; Tolera, 2015); production and processing (Dilebo, 2019); export performance (Minten, et al., 2015), without fully delving into the interconnectedness of these factors and their effects on the supply chain performance of coffee exporters. While Mohammed (2021) sought to explore the factors influencing coffee supply chain management performance, his study only focused on or explored specific aspects of the supply chain in Jimma Zone There is a scarcity of research that looks at how the entire supply chain ecosystem, including logistics, infrastructure, capacity building, supplier-customer relationship management, and information flow across the supply chain, affects coffee exporters' operations and success.

The research gap lies in the limited understanding of the intricate dynamics between the coffee supply chain in Ethiopia and its direct influence on the operations, strategies, and outcomes of coffee exporters. While the Ethiopian coffee industry is renowned globally and holds immense economic significance, there is a lack of comprehensive research that investigates the multifaceted factors that shape the performance of the supply chain and their subsequent impact on coffee exporters. This thesis aims to address this critical research gap by conducting an in-depth exploration of the multifaceted factors that affect the coffee supply chain's performance in Ethiopia and their direct and indirect implications for coffee exporters. By delving into this complex web of interactions, the study seeks to unravel the challenges faced by the supply chain actors and examine how these challenges cascade to influence coffee exporters' decisions, strategies, and outcomes.

Furthermore, the global coffee market is evolving, with changing consumer preferences, sustainability concerns, and technological advancements shaping industry dynamics. However, there is limited empirical research that investigates how these evolving trends interact with the Ethiopian coffee supply chain and influence the strategies and performance of coffee exporters.

Therefore, this thesis seeks to bridge research gaps by undertaking a comprehensive examination of the interplay between the coffee supply chain's performance in Ethiopia and its direct influence on coffee exporters. By exploring the intricate linkages, challenges, opportunities, and decision-making processes within this context, the study aims to contribute valuable insights that can help develop a

road map between the industry stakeholders, policymakers, and researchers buy formulating strategies to enhance the efficiency, sustainability, and global competitiveness of both the Ethiopian coffee supply chain and its exporting activities that have been a bottle neck for the country coffee market system in contrast to the leading global coffee exports like Brazil and Columbia.

1.3. Research Question

Based on the problem, the study framed to answer the following research questions:

1. To what degree do strategic partnerships affect Ethiopian coffee export supply chain performance?
2. To what degree do customer relationships affect Ethiopian coffee export supply chain performance?
3. What effect does capacity building have on Ethiopian coffee export supply chain performance?
4. To what degree does infrastructure affect Ethiopian coffee export supply chain performance?
5. What effect does logistics cost have on Ethiopian coffee export supply chain performance?
6. To what degree does information access affect Ethiopian coffee export supply chain performance?

1.4. Hypothesis of the study

Based on the above research questions and objectives the following four hypotheses are formulated.

H1. The effect strategic partnerships have on Ethiopian coffee export supply chain performance.
H2. The customer relationships effect on Ethiopian coffee export supply chain performance.
H3. The effect capacity building has on Ethiopian coffee export supply chain performance.
H4. The degree infrastructure affects Ethiopian coffee export supply chain performance.
H5. The effect logistics cost has on Ethiopian coffee export supply chain performance.
H6. The extent of information access affects Ethiopian coffee export supply chain performance.

1.5 Objectives of Study

The objectives of the study are divided into general and specific objectives.

1.5.1 General Objective

This study aims to investigate the challenges high-volume export faces and goes through and how these challenges affect the performance of the coffee supply chain in Ethiopia.

1.5.2 Specific Objectives

The specific objectives of this study are: -

1. To examine the effect of strategic supplier partnership on Ethiopian coffee export supply chain performance.
2. To examine the effect of customer relationships on Ethiopian coffee export supply chain performance
3. To investigate the effect of capacity building on Ethiopian coffee export supply chain performance.
4. To examine the effect of infrastructure on Ethiopian coffee export supply chain performance
5. To examine the effect of logistics cost on Ethiopian coffee export supply chain performance.
6. To investigate the effect of information access on Ethiopian coffee export supply chain effectiveness.

1.6 Significance of the study

This Analysis of factors affecting the coffee supply chain in Ethiopia, specifically focusing on selected coffee exporters, holds significant importance for multiple stakeholders. Here are some key aspects highlighting the significance of this study.

- **Contribution to Academic Knowledge**: This study ought to contribute to the existing academic literature on coffee supply chains by focusing specifically on Ethiopia. It provides valuable insights into the factors that affect the efficiency, effectiveness, and performance of the coffee supply chain in the country. By addressing this research gap, the study enhances the understanding of the unique challenges and opportunities faced by Ethiopian coffee exporters.
- **Empirical Evidence for Decision-Making:** The findings of this study provide empirical evidence that can inform decision-making processes for coffee exporters, industry stakeholders, and policymakers. Understanding the factors that influence the coffee supply chain in Ethiopia enables

these stakeholders to make informed decisions regarding technology adoption, infrastructure development, collaboration strategies, and sustainability practices.

- **Enhancing Supply Chain Efficiency:** By identifying the factors affecting the coffee supply chain in Ethiopia, the study would help identify inefficiencies and bottlenecks within the system. This knowledge can be utilized to develop strategies that enhance supply chain efficiency, such as streamlining processes, improving transportation networks, optimizing inventory management, and reducing post-harvest losses. Ultimately, improved supply chain efficiency benefit coffee exporters by reducing costs, improving product quality, and increasing customer satisfaction.
- **Policy Formulation and Government Support:** The findings of the study can inform policymakers and government agencies about the specific challenges faced by coffee exporters in Ethiopia. This knowledge can guide the formulation of policies and initiatives that provide the necessary support and infrastructure to enhance the coffee supply chain. By understanding the factors affecting the supply chain, policymakers can create an enabling environment that fosters technological innovation, infrastructure development, and stakeholder collaboration.
- **Economic Development and International Trade**: Coffee is a significant export commodity for Ethiopia, contributing to its economic development and international trade. By improving the efficiency and performance of the coffee supply chain, this study can enhance Ethiopia's position in the global coffee market. It can attract foreign investments, promote export growth, generate employment opportunities, and contribute to the overall economic development of the country.

1.7 Scope of the Study

The scope of this study is defined by both its subject matter (concept) and its geographical area. While factors affecting Supply Chain Management (SCM) performance cover a broad range, it is challenging and impractical to examine all areas comprehensively due to constraints of time, finances, and research manageability. Therefore, this study concentrates on the specifics and critical factors affecting the performance of the high-volume Ethiopian coffee exports' supply chain operation. Taking into consideration, this factor has an enormous effect on the country's yearly set export target and be able to determine the degree of supply chain performance.

After a thorough review and consolidation of existing literature, this study take six key factors (variables) that have been identified as key determinants of SCM performance in regard to high-

volume coffee export: strategic supplier partnership, customer relationship, capacity building, infrastructure, logistic cost, and information access flow across the supply chain.

In terms of geographical scope, the study focuses exclusively on Ethiopia, a country the origin and renowned for its significant contribution to the global coffee market. It aims is to identify the factors that impact the coffee supply chain within Ethiopia, considering the unique challenges and opportunities faced by selected coffee exporters. The research was specifically examine these factors as they pertain to a chosen group of coffee exporters within the country.

1.8 Limitations of the Study

Several constraints were expected when doing this investigation. The first was to teach the aim of the example organization, the study is exclusively limited to Ethiopia's top ten high-volume coffee exporters based on public statistics at the time of this research was conducted.

1.9 Organization of the Study

The study paper is divided into five chapters. The first chapter provides a brief introduction to the factors that meant to be researched, as well as a summary of the study topic and topics addressed. The study is divided into sections: background, definition of terminology, problem description, research aims, questions, importance, scope, limits, and data organization.
The second chapter discusses the literature reviews connected to the topic. This chapter is an important aspect of the study since it uses existing studies from published articles, books, and journals to discover theoretical holes in the research.

The third chapter outlines the study's approach. It includes a description of the study area, research methodology, research design, and study population, sample design, data collecting procedures, ethical considerations, and data analysis.
The fourth chapter discusses data processing and interpretation of findings. In this chapter of the study, data from survey questionnaires was analysed to understand the relationship and importance of the variables, hypotheses were evaluated using regression analysis to determine which independent actors influence the dependent variable.
Chapter five includes a summary, conclusion, and suggestions based on the research findings for

feature study references. Based on the study findings in Chapter 4, conclusions were drawn, and recommendations for further investigations on relevant issues were made.

Definition of Key Terms

To effectively use these terms in this study the following definitions have been adopted for the purpose of clarity and standardization.

Supply chain- with the flow of goods, information, funds, and returns is defined as a system consisting of players who transform, through physical and some service conversion and while forwarding the product downstream to the final customer, the basic product (upstream) into the finished product (downstream) which is deemed profitable for the end consumer by the Players in the supply chain (Harisson, 2008).

Supply chain management – Coordinating and monitoring all the business activities that connect buyers in a supply chain network to serve the final customer demands along the different phases of a particular supply chain that is made up of several partners (Harisson, 2008).

Customer Relationship: - It relates to the full range of techniques used to handle consumer complaints, create enduring connections with clients, and raise client satisfaction levels (Kalkidan, 2019).

Coffee Supply Chain: Coffee producers, manufacturers, connections, farmers' labor organizations, suppliers of inputs, transporters, financiers, exporters, non-governmental organizations, international groups, and the government are all crucial players in the development of the coffee industry (Sentayhu, 2013).

Logistics Costs: include all costs associated with product transportation, from obtaining raw materials to fulfilling orders from customers. Transportation, storage rent, product preservation, and distribution fees are some of these expenditures (Kalkidan, 2019).

CHAPTER TWO

LITERATURE REVIEW

A review of pertinent material that is crucial to the investigation is presented in this chapter. The initial section analyses the conceptual and theoretical literature on the study variables to set the groundwork for the investigation. This chapter also discusses relevant research on the elements that influence coffee supply chain performance. Finally, the research's conceptual framework is offered, along with illustrations of the main study variables.

2.1 Theoretical Literature Review

History of Coffee in Ethiopia

Ethiopia, the birthplace of coffee, is well-regarded around the world for the unique and diverse taste profiles of its Arabica coffee beans. However, despite Ethiopia's reputation for quality coffee, the sector has been viewed as underperforming with inefficient marketing and yields lower than global competitors.

Nevertheless, coffee has been the country's first or second-ranked export-earning commodity for the last five years, bringing in an average of 24 percent of Ethiopia's desperately needed foreign exchange earnings.

Furthermore, coffee is an important part of Ethiopian culture and domestic coffee consumption is high. The Ethiopian coffee market is influenced by both the global and domestic markets. Despite the government's efforts to encourage exports, including regulations that coffee of export quality must be exported, 54 percent of Ethiopia's coffee production was consumed domestically last year.

2.1.1. Overview of the Market

Price

The pricing strategy of the coffee market is largely influenced by the ECX which plays big part in influencing prices than the global market. Ethiopian export prices show seasonal waves with prices lower at harvesting period around November.

Domestic retail prices on the other hand do not show such seasonal volatility because sale of dry coffee is banned during harvest time to promote more profitable wet coffee. From July 2015 to March 2017,

export prices were 25 percent higher than global prices for comparable coffee while domestic prices were 19 percent higher than global prices.

The New York market prefers Arabica, whereas London goes for Robusta. Coffee prices are based on the differential between this price for a standard average grade and the actual grade of the coffee being traded. Futures are intended to hedge against price risks for Arabica or Robusta coffee. However, supply changes of one particular type of coffee can still affect prices independent of the coffee futures price. Another pricing model fixes the formula by which the price will relate to the future price upon delivery.

The Ethiopian government mandates that export quality coffee to not be sold locally, resulting in lower quality coffee on the local market. However, the domestic prices are often higher than the export because of high demand, high costs associated with multiple intermediaries and logistics, and the value of foreign currency, and because domestic roasters producing quality coffee have to discard a significant portion of beans to get the quality they want. Exporters may potentially take a loss to earn valuable foreign currency, depreciating export prices.

Production

In Ethiopia, coffee is cultivated by about 5 million farmers on an average of 0.12 hectares of land.8 In 2016/2017, Ethiopia was the world's fifth largest producer of coffee, producing about 400,000 MT. However, due to flat yields, production has remained stagnant over the last eight years after having doubled in the previous decade.9 Yields are still better than other African coffee producing countries such as Kenya, Rwanda, and Tanzania, but yields are significantly lower than many Latin American producers and have remained flat for the past 20 years.10 FTFE VCA baseline data from 2017 estimates Ethiopian coffee farmers produce 383 kilograms per hectare.

Arabica coffee beans are primarily produced in Latin America, as well as Ethiopia, and are used in high-end brewed coffee and espresso. Robusta beans, mostly from Asia, are used as a filler and in soluble instant coffee mixes such as Nescafe. In 2016, 63 percent of the world's coffee production was Arabica while 37 percent was Robusta. As of July, 2017, Arabica prices were between 23 and 45 percent higher than Robusta prices, depending on type.

Trade

Global coffee trade is dominated by large multinational trade houses such as Neumann, Ecom, and Olam, which have offices in exporting and importing countries. Nine such trade houses account for 60-70 percent of the world's coffee trade. The rapidly expanding specialty roaster segment has deconsolidated coffee trade somewhat, as they may buy directly or through smaller importers. Many specialty roasters also buy from these large trade houses.

Coffee is usually traded unroasted (roasted coffee has limited shelf life) and then sold to roasters with quality guaranteed by the supplier through a contract. Delivery of beans as per quality and timing requirements is vitally important for roasters. If the coffee does not meet the pre-negotiated quality specification, the supplier is obligated to find another batch that does.

2.1.2. Ethiopian Exports

In 2016, Ethiopia ranked tenth in the world in coffee exports with about 3 percent of the export market, exporting nearly 160,000 tons in 2016. The European Union is the largest importer of Ethiopian coffee, followed by Saudi Arabia, the US, and Japan. The US and EU markets import higher shares of more expensive washed coffee whereas Japan and Saudi Arabia import lower-priced dried coffee. Coffee exported to neighbouring Sudan is usually ungraded and sold at much lower price than to the other top five import markets. Only 0.03 percent of Ethiopia's coffee exports are roasted compared to 0.3 percent for the top five coffee exporting countries.

2012		2013		2014		2015		2016	
Top 5	**MT**	**Top 5**	**MT**	**Top 5**	**MT**	**Top 5**	**MT**	**Top 5**	**MT**
EU	116,061 (4.25)	EU	110,147 (3.46)	EU	119,492 (4.17)	EU	107,985 (4.35)	EU	61,198 (4.48)
Saudi Arabia	28,575 (4.51)	Saudi Arabia	33,125 (3.67)	Saudi Arabia	35,654 (4.32)	Saudi Arabia	44,358 (3.56)	Saudi Arabia	31,205 (3.95)
Japan	15,729 (3.93)	Japan	29,429 (3.15)	Japan	30,597 (4.10)	USA	24,640 (6.12)	USA	15,620 (6.72)
USA	11,198 (5.94)	USA	15,801 (4.66)	USA	19,856 (5.30)	Japan	20,293 (3.84)	Japan	14,148 (4.05)

Sudan	8,477 (3.15)	Sudan	9,842 (2.44)	Sudan	8,241 (3.02)	Sudan	11,081 (2.87)	S. Korea	9,712 (5.20)

Top 5 Destinations for Ethiopian Coffee Exports, 2012-2016 (price USD/KG in parenthesis)
Source: Comrade, Data Downloaded August 2017.

2.1.3. Global Imports & Exports

From 2012 and 2016, Ethiopia was between the 9th and 5th biggest exporter in the world, as shown in the figures below. Over that period, Brazil and Vietnam held the top two export positions and accounted for half of the world's coffee exports over that period. Globally, the EU dominates coffee imports with about half of all imports, and the US in second with less than 20 percent.

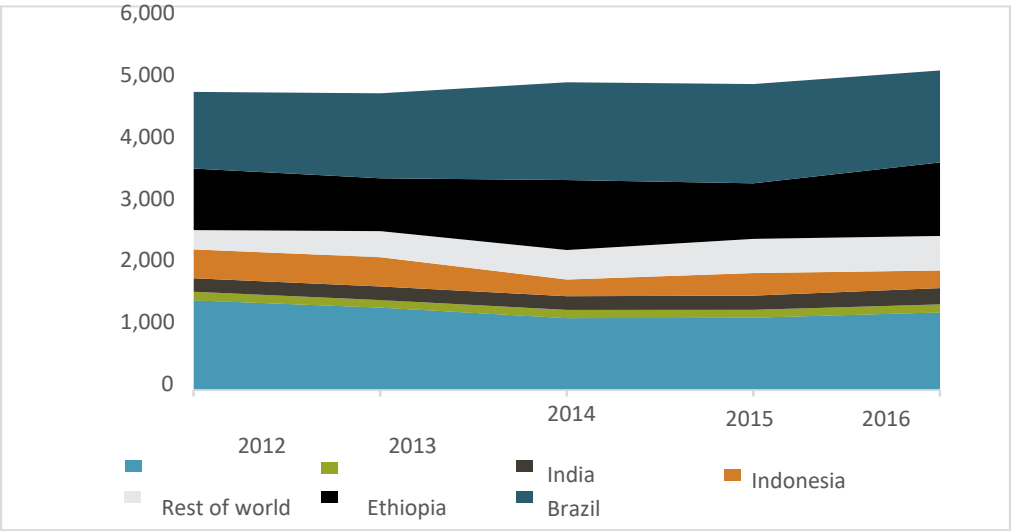


Figure 1: Top Five Coffee Exporters, 2012-2016

2.1.3.1. Grades & Standards

There is no universal global coffee grading system, so each country has its own standards. There are, however, some common criteria described below.

- Bean size – this is measured based on the size of holes beans can pass through in a grading screen. Measured in increments of 1/64 inches.
- Wet or dry processing – wet processing is preferred in American and EU markets because of taste consistency and usually earns a higher price. However, some buyers prefer dry processing for a more distinctive taste.

- Number of defects per sample, and number of permissible defects per sample.
- Bean shape and colour.
- Region and elevation.
- Botanical variety.
- Cup quality.

The ECX provides a formal grade to all Ethiopian coffee. These parameters fall under two categories: raw value and cup quality value. Parameters and points assigned to each are shown below for washed (wet processed) coffee.

Raw Value (40 percent)

- Primary defects (count) - 10 pts
- Secondary defects (percent weight) – 10 pts
- Shape and make (small to very good) – 5 pts
- Odour – 10 pts
- Odour – 10 pts
- Colour – 5 pts

Cup Quality (60 percent)

- Cup cleanness – 15 pts
- Acidity – 15 pts
- Body – 15 pts
- Flavour – 15 pts

Based on this scoring, washed coffee is assigned a grade from 1-5, and dry coffee is graded from 1 to 9. Coffees receiving the best grades (1-3) go through a specialty assessment based on various cup characteristics including flavour, body, and aftertaste. In addition to this 1-5 grade, a regional designation is attached to coffee descriptions. Grades also determine whether or not the coffee is export quality in which case it must legally be exported rather than consumed domestically. Below are some examples of grades and their descriptions.

Grade	Description
WYCA2	Washed coffee from Yirgachefe grade 2 (A denotes that it has Yirgachefe signature flavor)
WSB5	Washed coffee from Sidama, grade 5 (B denotes specific woredas or zones)
UHRC3	Unwashed coffee from Herar, grade 3 (C denotes specific woredas or zones)

Examples of ECX Grades and Descriptions

Source: Ethiopia Commodity Exchange (ECX), 2015, Coffee Contracts.

2.1.3.2. Actors involved in the Coffee supply chain ecosystem.

In the coffee export ecosystem, the supply chain process in compasses different parties that directly or indirectly affect the production volume. Quality and price. The value chain start from the farm were different quality and types of coffee are produced made ready for the local market up to export were these coffee beans are put to international and local market. In between there are collectors, Cooperative unions and suppliers who collect the coffee beans from the farm and distribute to exporters using Auction centre and Trend centres.

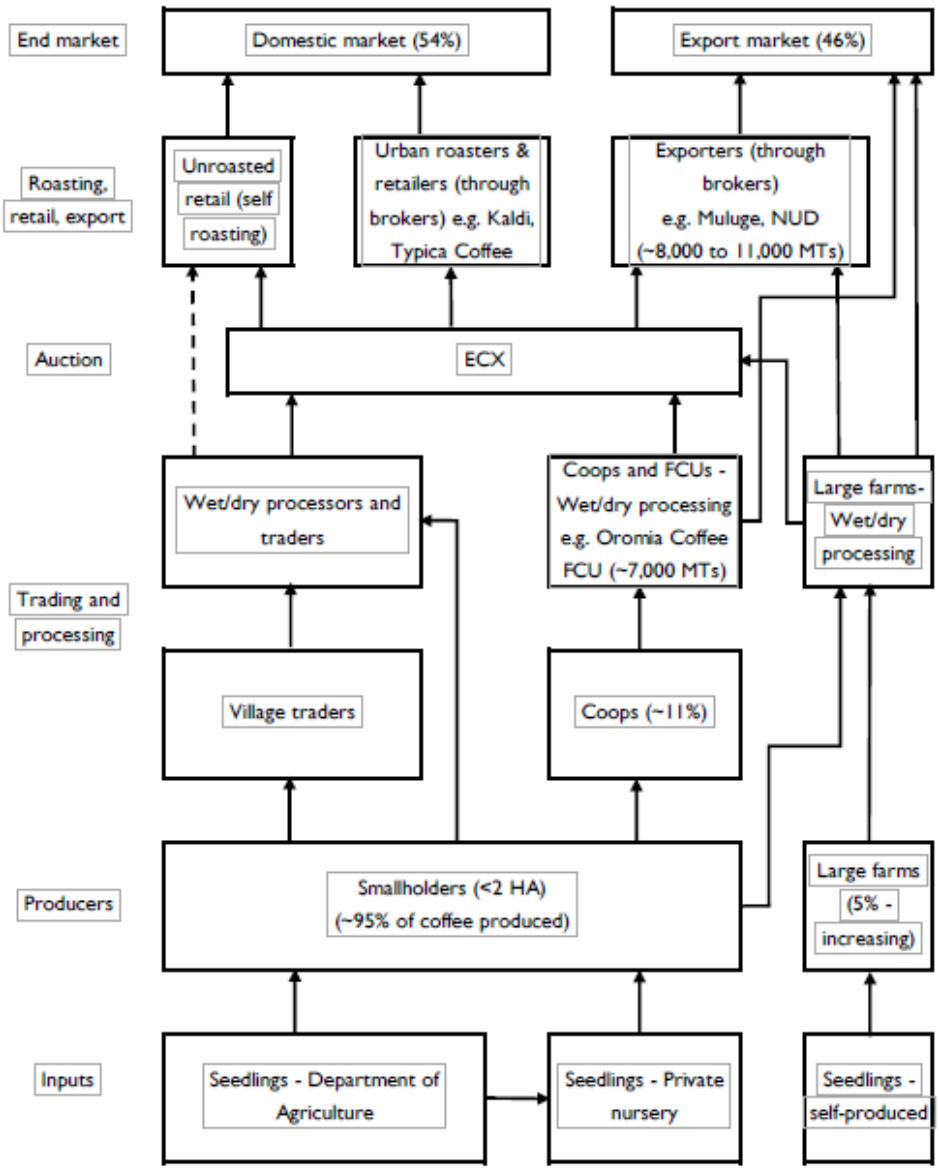


Figure 2: Coffee supply chain map

In supply chain of coffee production and sales volume of smallholders all the parties have their own contribution to quality and volume of coffee production.

1. **Farmer**. Coffee farmers are the main and pillars in the coffee supply chain, Smallholder coffee producers. The smallholder farmers supply their coffee beans either to cooperative unions where most of them are members or to private traders who offer them flexible prices to attract the farmers and compete on coffee markets. Farmers supply produced coffee to local traders either in the form of red cherry or sundried coffee in primary market.

2. Village collectors. Village collector traders are institutional actors who buy farmers' crops on a small scale because they have limited capital. Village collectors usually buy wet-processed and dry-processed coffee by visiting farmers directly during the coffee drying process.

3. **District collectors.** Sub-district collector traders are institutional actors who buy processed coffee in the form of dry processed coffee on a large enough scale and on average have a dry-processed coffee milling machine business so that coffee farmers sell their coffee directly to sub-district collectors.

4. Coffee Farmers' Cooperatives Unions: This cooperative unions are important vehicles for linking smallholder farmers to markets and for rural development more generally. They have become more market-oriented and are now becoming key players in the coffee value chain and are also democratic and member-owned business operating under the principles of the International Cooperative Alliance and Fair trade. The Unions play a central role in the Ethiopian coffee marketing chain. The farmer's members of cooperatives unions grow, process, and supply organic Arabica coffee for export. Primary cooperative associations are mostly responsible for gathering coffee beans from individual member farmers, then supply the aggregated produce to cooperative unions. The unions either export itself or sell to the exporters.

5. **Wholesalers.** Wholesalers are the highest institutional actors along the coffee value chain of the Empat Lawang community. Wholesalers also have a big role in determining coffee prices, purchasing coffee on a large scale, both wet-processed and dry-processed coffee. Wholesalers also play a role in marketing people's plantation coffee to traders outside the district.

6. Retailer. Retailers are small home-scale traders who market coffee products in the form of coffee powder to end consumers.

2.1.4. High-Volume Coffee Exporters in Ethiopia

In the ever-growing list of pioneer and upcoming coffee exports in the market, there is an increase in the number of Washed and unwashed volumes of coffee produced and exported by below mentioned top 10 (Volume) coffee exporters.

2016,EFY 12 MONTH COFFEE EXPORT PERFORMANCE BY EXPORTERS

NO	BUYERS	WASHED		UNWA
		VOL	VAL	VOL
1	ABDULHAKIM MOHAMED GELATO	3,263.41	16,526.04	29,580.00
2	TRACON TRADING PRIVATE LIMITED COM	4,536.08	27,831.11	10,268.97
3	HADEED TRADING PRIVATE LIMITED COMP	1,108.80	5,613.48	13,287.48
4	KERCHANSHE TRADING P.L.C	2,464.68	12,741.27	6,382.54
5	DAYE BENSA COFFEE EXPORT PRIVATE LI	2,717.99	17,918.95	2,628.15
6	SNAP TRADING & INDUSTRY PRIVATE LIM	2,281.72	16,944.71	2,804.47
7	TESTI TRADING PLC	1,398.30	10,485.15	2,548.08
8	MULLEGE PRIVATE LIMITED COMPANY	879.88	5,596.53	5,261.01
9	ADULINA COFFEE EXPORTER PLC	3,100.20	19,614.56	2,566.80
10	FAHM GENERAL TRADING P.L.C	3,946.80	18,536.26	2,733.00

1. Abdulhakim Mohamed Gelato (AMG) Coffee Export.

The largest coffee expert company in Ethiopia is AMG Coffee Export. They lead the coffee export market, earning awards and recognition for their outstanding contribution to Ethiopia's coffee export earnings. With over 13 years of experience in Ethiopia's coffee industry, they possess extensive knowledge of Ethiopian Coffee regions and culture. Additionally, they are one of the best companies with ISO 9001:2015 certification They continue to lead the industry, showcasing the rich Flavors of Ethiopian coffee to the world, Mainly to Europe such as Belgium, France, Germany, Italy, Spain, and the UK; North America, including Canada and the USA; Asia, with key markets being South Korea and the UAE; and Oceania, notably Australia. With special coffee beans, sourced from regions including Nekemte, Yirgacheffe, Sidamo, Guji, Djimma, Harrar, Limu, and more, offer a unique and delightful coffee experience for enthusiasts around the world.

2. Tracon Trading Plc

The company specializes in, utmost attention is given to the coffee export sector. We export the finest Ethiopian Arabica Coffee to different parts of the world. Coffee for Tracon is a second-generation business. Tracon has broken many local and international records for supplying traceable high-quality coffee. Tracon owns two different roasted coffee brands; Gera and Karmachi (Gesha). Products were introduced with innovative technology including dip and drip coffee, the only kind in Ethiopia to unveil this product which is best suited for home use as well as commercial purpose e.g., hotels & offices. Gera and Karmachi (Gesha) coffee also come in 500 grams and 1kg bags of roasted and ground coffee which are sold in supermarkets across the country.

Also the company owns two farms with a combined land of over 1500 hectares and source from 11 sources such as ANDERACHA, TEPI, LIMU, GESHA, and NEKEMETE.

3. Hadeed Trading Private Limited Company

Hadeed Trading private limited Company is one of the leading companies in Ethiopia. It was established in the year 2003 in Addis Ababa, Ethiopia with the aim of importing various construction items and eventually setting up steel manufacturing plant.

In 2018 Hadeed entered the coffee export sector and quickly became one of the top 5 exporters in the country. The company business has been built and run on the motto of "Best quality, Best price" and has exported high-quality coffee to Europe, Asia and the Middle East in just over 18 months of exporting raw coffee.

4. Kerchanshe Trading PLC

Kerchanshe Trading PLC is a prominent company primarily engaged in coffee production and export. Established in 2005, Kerchanshe It's as well the 4th largest coffee producer and exporter in Ethiopia as of their current exported volume of coffee, known for sourcing high-quality Ethiopian coffee beans. The company is deeply committed to community empowerment and sustainability, implementing programs in areas such as afforestation, watershed development, sustainable agriculture, and women's empowerment.

5. Daye Bensa

Daye Bensa Coffee is one of the major coffee exporting companies in Ethiopia exporting green coffee directly from its farms and farms of affiliated farmers. We export various coffee from all coffee regions of different grades from conventional to specialty with more than 20 years in the coffee business. The farm is at reachable distance to out-growers in Bombe, Shantawene and Keramo villages. It is surround by rivers one of them separating Shantawene from Bombe which runs from the hills above Karamo.

The second farm is in Keramo village in Bensa and one larger farm is in Kaffa region. Apart from getting coffee from these farms, it gives an opportunity to work with small coffee farm holders to reach out to the community in helping them in maintaining, expanding, and in providing training in addition to the provision of financial and technical support.

Its coffee export warehouse facilities are in Addis Ababa and Hawassa cities. Three warehouses with a total capacity of 4400 square meters are in Hawassa and five in Addis Ababa with a capacity of 5000 sq. m where a modern export coffee cleaning plant is situated.

6. Snap Trading and Industry Plc

Established in Addis Ababa in 2008, by coffee-passionate entrepreneur, Negusse. The company runs three coffee washing and processing stations in Chelelektu, Kochere District of the Gedeo Zone and a partnering washing station in Uraga, Guji and Nensebo, West Arsi exporting specialty Arabica Washed and Natural Grade 1 coffee beans to customers worldwide.

Currently, the company has undergone investments in a coffee warehousing and processing facility in Addis Ababa as well as a coffee cupping laboratory at the head office.

7. Testi Trading PLC

Testi Trading PLC & Feysel Abdosh Coffee Supplier are sister companies owned by Feysel Abdosh who has been in the coffee industry for close to 20 years.

It has coffee farmers in two regions Oromia and SNNP. In Oromia in Banti Korba kebele, Oddo Shakiso woreda, Guji zone it farms on an altitude of 1800-2200 meters above sea level working with about 500 farmers. In SNNP in Gura Ferda woreda, Bench Maji zone, farming at an altitude of 1300-1600 it grows the Gesha variety of coffee on its farm of 20 hectares. From both areas the company annually collects about 900,000 kilograms of red cherries from more than 200 hectares of land. These are processed into anaerobic and natural specialty coffees which are exported mostly to the USA, Europe, and Asia.

8. Mullege Coffee Exporter

Founded in the early 1990s Mullege was established as a local family business some 50 years ago in a well-known coffee growing region then called Wolaita Sodo, renamed as North Omo. The family business flourished through the years and got its present name from one of its pioneers and named Mullege PLC in the year 1996.Specializes in exporting high-quality Ethiopian coffee beans to international markets by offering a variety of coffee beans, including Sidamo, Yirgacheffe, and Harrar, which are some of the most renowned coffee-growing regions in Ethiopia.

Recognized globally for its premium coffee products, contributing to Ethiopia's reputation as a leading coffee producer. Playing a significant role in promoting Ethiopian coffee on the global stage, fostering relationships with international buyers and supporting local coffee farming communities.

9. Adulina Coffee Exporter PLC

Adulina Coffee Exporter is a sister company of Mullege, an internationally recognized multi-million dollar Ethiopian coffee exporting corporation. Adulina prides itself in carrying out the same business tactic adopted by Mullege in providing quality coffee and competitive rates. But unlike Mullege, Adulina focuses more on special, high premium coffee. With over 25 years of experience in coffee export, trust Adulina to provide you with quality coffee and quality service.

Adulina coffee exports green Arabica coffee beans from Ethiopia to the international market. With two processing plants in the capital city of Addis Ababa and coffee pulping stations in various parts of Ethiopia, the company provide the most refined coffee to coffee lovers throughout the globe. The Blue Nile and Discoverer have become the number one choice of gourmet coffee roasters in North America. In addition the top quality, with the assistance of our major coffee buyers, they built a bridge in the Areka coffee growing area and are working with coffee buyers on a coffee sustainable project in Kochere Yirgacheffe. The project provides potable water to the Hamma community, in addition to introducing eco-friendly coffee pulping machines to the area.

10. Fahem General Trading PLC

Establish in 2006 GC in Oromia Region Jimma Zone Mana Wereda Yebu City. With a capital of 5 million birr. Fahem Starts its opration in exporting commercial coffee and later in May 2008 inter in to investment and owned its first 200 hector land for Coffee plantation which is located in Oromia Region, Jimma zone Limmu seqa District Currently coffee were processed in 5 woredas in jimma zone (Maanna ,Gera , Gomma, Limu Kossa and Limu Genet) where wet processing site for red cherries where the beans quality is checked and received.

2.1.5. The concept of supply chain management

A chain of supply is a system that consists of people, companies, procedures, data, assets, and inventiveness that are used to transfer a Product or provider from vendor to buyer. Common assets, ingredients, and elements are transformed through supply chain operations into a finished product that is delivered to the final customer. Supply chain administrative “represents the preparation and

oversight of every operation that involve procurement, acquisition, modification, including coordination's administrator activities," according to the Association of Supply Chain Administrative Experts. Moreover, it involves collaborating and coordinating with channel partners, which may include clients, third-party benefit suppliers, intermediaries, and providers. (Sabry, 2015).

Various scholars have provided descriptions of supply chain management. As an example, Chopra (2007) described it as follows: "A supply chain consists of all parties involved, either directly or indirectly, in fulfilling a customer request. In addition to producers and suppliers, the supply chain also includes retailers, distributors, transporters, and even the customers themselves. The supply chain within any company, like a producer, includes all the resources needed to accept and fulfil a customer request. These roles include unutilized item advancement, marketing, operations, delivery, return, and customer service, among others (Sunil Chopra, 2007).

Martin (1998), referenced by Addis (2015), states that management of supply chains is a theory that stresses an integrated method of overseeing a route of distribution from the supplier to the final consumer (Ellram & Cooper, 1990). In order to provide value to important customers through an economical supply chain, it entails managing both upstream and downstream businesses and tying internal and external activities with suppliers and consumers (Martin, 1998).

Essentially, supply chain management combines both supply and demand management inside and between businesses. It is an integrating function with the primary responsibility of linking major business functions and processes within and across companies into a cohesive and high-performing business model (Ali et al., 2013). Supply chain management basically unifies demand and supply management both within and between businesses. According to Ali et al. (2013), it is an integrative role whose main duty is to connect important business operations both inside and between organizations to create a unified, highly effective business model.

The downstream as well as upstream parties, the merging of all of the organizations involved, and the internal activities of an organization constitute, in general, the essential components of the supply chain and its management as defined by the above definitions of management of supply chains. Manufacturers, producers, retailers, distributors, and clients are all included in the supply chain. Since meeting client wants while making a profit is the major goal of every supply chain, customers are the centre of attention. Inventory control within the supply chain was the main focus of the supply chain administration (SCM) at first. Over time, though, the idea has grown to encompass supply chain

management as a whole. Managing the flow of goods, data, and money between and within stages is part of supply chain management (SCM). (Mamun, 2010).

2.2. Supply chain Administration of the coffee Industry.

Numerous nations that produce coffee depend heavily on the export of coffee, which is a key crop for agriculture (Kittichotsatsawat et al., 2021). It is very well-liked because of its distinct flavor, scent, and stimulating properties (Giraldi-Díaz et al., 2018; Hameed et al., 2018). Coffee Supply Chain Management, also known as SCM, is an international tactic used by coffee businesses to boost their level of competition. Businesses are making adjustments to their operational approaches, such as using the SCM model, in an effort to improve their market position (Nguyen et al., 2017). Numerous parties with various goals and interests are involved in the cultivation process, which is the first step in the trip of a coffee bean (Bothiraj et al., 2020; Ikhwana, 2018). Three continents are home to different kinds of coffee plants: Asia, America, and Africa. Businesses such as the one in question adhere to a direct trade strategy in which professionals in coffee travel the world to meet with reputable growers in person. They go to farms, watch the stages of growth, picking, and processing, and sign agreements for the kinds and amounts needed. As a result, coffee beans, the main product, satisfy customer demand for coffee (Hanh et al., 2021)

Potential Threats to the Supply Chain

No matter how strong the coffee supply chain system is, and the tight the relationships are with partners, a number of threats always circle around the coffee ecosystem. There is unavoidable risk and uncertainty that can impact the volume production of coffee beans to the export market, these treats can be

- Pricing which limit exporters to allocate access to dollar from the banks and expedited the export operation from the farm to the global market.
- The threat of disease, significant rain or changing temperatures (as a result of climate change) mean coffee yields may vary substantially from year to year.
- Many farms are located in rural parts of Colombia where road conditions are poor and frequent landslides can cause delays.
- Similarly, a lack of technology and communication infrastructure in rural locations can make it harder for farmers to coordinate with exporters and buyers, meaning more traditional smallholder farms (which have excellent coffee!) find it hard to liaise with partners remotely.

- Issues with international shipping and transportation will always impact the speed of deliveries, and in many cases, the cost that importers face.
- Political instability such as protests and strikes can make it harder for products to be transported on time within Colombia. It also makes it difficult for international buyers to visit farms themselves.

2.2.1. Supply Chain Performance Metrics

Researchers have evaluated supply chain performance in various ways to help measure its effectiveness. The Supply Chain Council (SCC) developed the Supply-Chain Operations Reference (SCOR) model. This model offers a standardized, process-oriented approach for communication among different supply chain partners in areas such as planning, sourcing, making, and delivering (Gunasekaran, 2004). SC performance extends beyond business boundaries, encompassing material flows and distribution through multiple channels to the end consumer. It is also pertinent to typical organizational functions like procurement, production, distribution, marketing and sales, and research and development. Many firms lack a clear vision for developing effective performance metrics for supply chain performance (Shepherd & Günter, 2006). Additionally, Wong (2009) identified several issues with the metrics used to measure supply chain performance, arguing that the measurement is often fragmented within and across organizations. Sukati (2012) suggested that validating supply chain performance should include three types of performance measurement: Resources (how well resources are sourced), Output (how well value is delivered to the consumer), and Flexibility (how adaptable the system is to external uncertainties). Each of these types arecrucial for measuring supply chain performance. Several Key Performance Indicators (KPIs) have been introduced and widely adopted by academics and practitioners to monitor operational performance (Lima-Junior and).Luiz, 2017; Maestrini et al., 2018). Decision-makers must then take the necessary actions to achieve specific improvements (Vlachos et al., 2008). Key Performance Indicators (KPIs) are highlighted in the following section (Cohen and Roussel, 2013; Janeš and Faganel, 2013; Marziali et al., 2021; Roe et al., 2015; Tasdemir and Hiziroglu, 2019; Williams et al., 2008; Zhang et al., 2019).goods turnover indicates how successfully a firm moves its goods. It responds to the query of how frequently the organization sells its total stock during the year. This KPI may assist all relevant departments in optimizing all purchasing methods and policies while also gauging demand for all items. The capacity to transfer merchandise quickly is critical since it impacts storage expenses. It raises SC's efficiency and improves financial metrics (such as cash flow). It enables the commercial department to sell items

at premium pricing and make offers and promotions that serve strategic goals rather than clearing stock. Inventory management strikes the correct balance between adequate inventory levels, excellent customer service, and cost-effectiveness. Additionally, there are implications for inventory turnover data, and we intend to optimize and enhance the metrics for slow-moving items.

Delivery and shipment time frames: These are critical KPIs for any SC organizations. We might easily argue that these measures are more important in the period of last mile delivery, when a business must deliver an order to the end consumer. They influence satisfaction and overall experience. Delivery time is one of the most important aspects influencing a company's net promoter score, customer lifetime value, and loyalty. Delivery and shipment times and prices are also critical components of the SC from the firm warehouses to the places of sale.

Cash-to-cash cycle: time is another useful measure that can reveal a lot about a company's sustainability. It is the delay between paying suppliers for raw materials and components and receiving payment for the finished product. It is also a parameter that may assist businesses boost efficiency and allocate resources elsewhere rather than in SC.

Customer cycle time is one of the most important KPIs. It tracks the time it takes to complete an order, beginning with the placement of the order and ending with delivery. We may also use the SC cycle time, which is the same period as setting inventory levels to zero. This statistic has the potential to quantify SC's overall efficiency, however it is difficult to compute. The shorter the cycle time, the better for the firm, since it indicates that the processes are fluid and adaptable. High SC cycle time or customer cycle time must prompt the organization to take remedial action. The service rate is the percentage of received orders that were delivered on time. This KPI must be extremely near to 100%, and we focus on it as a need for our organization. It is also necessary to divide this rate into two parts: first, we compute the KPI for shipping orders, and second, we measure delivered on-time orders. This separation shows a low rate if there is an issue with stock or during the shipping-delivery process.

Customer satisfaction: It have great important indicators in the relationship management indicator. It monitor various indications, and by combining them, we may determine absolute satisfaction. Aside from attendance and indication improvement, the organization features a customer service section that handles all B2B interactions. The department also attends and records B2C communication and works continuously with the Marketing department on anything that happens in the company's social media.

Companies are increasingly involved in systematic attempts to enhance their SC performance. The coffee business, which is related with global SCs, tries to embrace solutions and interventions for all SC phases "from farm to cup". The monitoring and assessment of such activities broadens knowledge of the industry and provides valuable insights for academics and practitioners.

2.2.1.1. How Do We Measure Coffee Supply Chain Performance?

Performance elements in relation to the coffee export supply chain are critical metrics and factors that determine the efficiency and effectiveness of the supply chain operations. Here are key performance elements to consider. Measuring coffee supply chain performance involves evaluating various metrics that indicate how well the supply chain is functioning. Here are key performance indicators (KPIs) and methods used to measure the performance of a coffee supply chain:

1. Quality Metrics

- **Defect Rate**: The percentage of coffee beans that fail to meet quality standards. This can be measured through regular sampling and inspection.
- **Grade Consistency**: Tracking the consistency of coffee grades over time to ensure high-quality output.

2. Timeliness Metrics

- **Lead Time**: The time taken from harvesting to the final delivery to the customer. This includes processing, packaging, and shipping times.
- **On-time Delivery Rate**: The percentage of orders delivered on or before the agreed-upon delivery date.

3. Cost Metrics

- **Cost per Unit**: Total cost involved in producing, processing, and shipping a unit of coffee. This includes costs of raw materials, labour, transportation, and overheads.
- **Logistics Costs**: Specific costs related to transportation, warehousing, and handling.

4. Efficiency Metrics

- **Order Fulfilments Rate**: The percentage of orders that are completed without any shortages or delays.
- **Inventory Turnover Rate**: The rate at which inventory is used and replaced over a specific period. High turnover rates indicate efficient inventory management.

5. Sustainability Metrics

- **Carbon Footprint**: Measuring the environmental impact of the supply chain activities, including emissions from transportation and processing.
- **Sustainable Practices Adoption**: The percentage of supply chain partners adhering to sustainable farming and processing practices.

6. Traceability and Transparency Metrics

- **Traceability Accuracy**: The ability to accurately trace the journey of coffee from farm to cup. This can be measured through audits and the use of traceability systems.
- **Compliance with Standards**: Percentage of coffee batches meeting certification standards such as Fair Trade, Organic, or Rainforest Alliance.

7. Customer Satisfaction Metrics

- **Customer Complaints**: The number of complaints received related to the quality, delivery, or other aspects of the coffee supply chain.
- **Net Promoter Score (NPS)**: A measure of customer satisfaction and loyalty based on their likelihood to recommend the product to others.

8. Financial Metrics

- **Profit Margins**: The difference between the revenue generated from coffee sales and the costs incurred in producing and delivering the coffee.
- **Return on Investment (ROI)**: The profitability of investments made in the supply chain, such as new processing equipment or sustainable farming initiatives.

9. Collaboration Metrics

- **Supplier Performance**: Evaluating the reliability and quality of suppliers based on delivery times, defect rates, and overall cooperation.
- **Partnerships and Alliances**: The effectiveness of collaborations with cooperatives, exporters, and other stakeholders.

Data Collection Methods

- **Surveys and Feedback**: Gathering data from customers, farmers, and other stakeholders to assess satisfaction and identify areas for improvement.
- **Audits and Inspections**: Regular audits of farms, processing facilities, and warehouses to ensure compliance with quality and sustainability standards.
- **Management Information Systems**: Using software tools to track and analyse various aspects of the supply chain, such as inventory levels, lead times, and costs.
- **Benchmarking**: Comparing performance metrics against industry standards or competitors to identify best practices and areas for improvement.

2.2.2. Factors Affecting Coffee Export Supply Chain Management Performance

According to Haque (2013), supply chain management performance as a complex system faces several issues that impact the efficiency and success of a supply chain. The operational environment has gotten more sophisticated; thus it is critical for businesses to stay competitive while also minimising risks in order to produce good outcomes. There are several important factors influencing supply chain management performance. They may be classified as internal or external; moreover, difficulties can be divided into several areas of a supply chain such as procurement, production, logistics, and so on (Muhammad, 2004). There are several key determinants of supply chain management performance.

Determinants of supply chain management performance may be classified as internal or external; moreover, difficulties can be divided into different departments of a supply chain, such as procurement, production, logistics, and so on (Chandra, 2000). Effective SCM produces benefits that extend beyond the entities or the organisation itself on both of its upstream and downstream sides, and those businesses may understand their potential for integrating their external relationships, which include the firm's external suppliers, the firm itself, and the firm's customer, as well as the firm's internal

operational practices, in order to improve their level of competitiveness, performance, and customer satisfaction (Syahira, 2017). After evaluating and summarising the literature, four elements, including strategic supplier-customer relationships, capacity building, infrastructure, logistical costs, and information flow throughout a supply chain, were chosen as predictors of supply chain management success for this study.

- **Strategic Supplier Partnership**

Definition: Long-term relationship with suppliers aimed at achieving significant long-term advantages by leveraging strategic and operational capabilities. Enhanced collaboration with key suppliers can lead to more cost-effective designs, better component selection, and overall improved supply chain efficiency.

It refers to the everlasting connection between companies as well as suppliers. Its goal is to enable participating organizations to achieve significant long-term advantages by leveraging their strategic and operational skills (Stuart, 2007). Strategic alliances with suppliers allow organizations to collaborate more effectively with a few key suppliers who are ready to share responsibility for the products' success. Suppliers that participate early in the product design process can provide more cost-effective design options, backing in picking the best parts and know-hows, besides foster in plan evaluation (Tan et al, 2002). Strategically linked organizations can collaborate effectively and save time and effort (Balsmeier & Voisin, 2006). A successful supplier collaboration may be a crucial feature of a cutting-edge supply chain. According to Raps (2005), the key to success is to take an integrated approach to strategy implementation.

Researchers have emphasized the strategic necessity of bringing together suppliers, manufacturers, and customers. Christopher (2003) emphasizes the need to connect an innovative approach to the company's vision and broader business plan. Clients have been proven to be crucial drivers of performance improvement and innovation, as well as the most important aspect in supply chain integration.

- **Customer Relationship**

The word "customer relationship" refers to the full set of processes used to manage client criticisms, create long-lasting connections with consumers, and also improve client confidence level (Tan, Kannan, & Handfield, 2008). A close customer connection enables an organization to differentiate its

product from rivals, maintain customer loyalty, and significantly increase the value it gives to its consumers. According to Lambert (2005), the management of customer relationships is widely recognized as an essential component of an organization because of the expected benefits likely to occur if done well and the likely detriments to arise if neglected. However, the determination of what exactly constitutes CRM and its implementation remains a prominent point of contention in CRM literature and in practice has proven to be nothing short of extreme.

He goes on to say that technology is a tool, and that in order to be successful, management must prioritise the CRM process, the people, and the processes that enable the technology to function effectively. This is not to suggest that technology has no effect on CRM or cannot contribute to its success. Actually, it has been discovered that not all customers contribute equally to the firm's success; thus, the goal of every firm is to identify those customers who desire and deserve special treatment so that offerings can be tailored to meet their needs while achieving the firm's profit goals for the customer (Amanuel, 2018).

Role: A close customer relationship helps in product differentiation, maintaining customer loyalty, and adding value to the consumers.

- **Infrastructure Factors**

Availability and quality of transportation networks, communication systems, and energy sources. Infrastructure impacts supply chain efficiency and costs, with better infrastructure leading to improved supply chain performance.

Infrastructure issues are among the factors that affect a cooperative's performance. Infrastructure availability and quality, such as transportation networks, communication systems, and energy sources, have an impact on supply chain efficiency and cost. Organizational issues are mostly caused by a lack of facilities. Other elements include government-provided infrastructure such as roads and electricity. Finally, cooperatives are influenced by infrastructure such as autos, homes, and machineries (Mello 2005).

- **Capacity Building**

Definition: Capacity building is the process of developing and strengthening the skills, abilities, processes, and resources that organizations and communities need to survive, adapt, and thrive in the fast-changing world. It's crucial for operational efficiency, strategic and operational objectives, and overall supply chain performance.

Capacity building is one of the most important variables influencing supply chain management performance. They are critical elements that demand a comprehensive strategy to managing their impact. Capacity utilization is a crucial performance metric for supply chain efficiency, indicating how well a firm uses its existing resources to meet customer demand and maximize operational efficiency (Thi and Hanh, 2024). Employee capabilities, as well as management commitment and collaboration, are required for efficient supply chain management performance. Furthermore, capacity-building is crucial for cooperatives (Tony, 2007) in terms of altering the supply chain, as well as attaining strategic and operational objectives (Hoek et al., 2002).

- **Information flow across a supply chain**

Effective information sharing is essential for a seamless supply chain and can provide a competitive edge by enabling better decision-making and collaboration among partners.

Information sharing has two components: quantity and quality. Both elements are critical to supply chain management methods and have been handled as separate entities in previous supply chain management research (Tan et al., 2002).

The level (quantity) of data revealing implies towards the degree to which significant and restricted knowledge is disclosed to clients. Shared information can range from strategic to tactical, as well as from logistical activities to general market and consumer information (Tan et al., 2002). Many experts believe that providing undistorted current business information across each phase of the operation is critical to achieving a seamless supply chain (Croom et al. 1998). Information may be utilized to gain a competitive edge by analysing accessible data and sharing it with other stakeholders in the supply chain. According to Lalonde (2002), information exchange is one of the five building components that define a strong supply chain connection.

Agreeing to Stein and Sweat (2006), supply chain accomplices who routinely communicate data might work as a single organization. Together, they can superiorly comprehend the requests of the conclusion

client and consequently adjust to advertise changes more rapidly. Moreover, Tompkins and Ang (1992) see the effective utilization of significant and convenient data by all useful angles of the supply chain as a basic competitive and separating characteristic. Childhouse and Towill (2003) found that a streamlined fabric stream, counting streamlining and making all data stream over the chain, is the key to a coordinates and fruitful supply chain.

The correctness, timeliness, appropriateness, and reliability of information communicated are all factors that contribute to information sharing quality. While information sharing is crucial, its influence on supply chain management is determined by what information is exchanged, when, how, and with whom. Organizations tend to have a built-in aversion to provide more than basic information since it is viewed as a loss of authority. Given these predispositions, it becomes vital to ensure the quality of provided information. Component of great supply chain administration (Feldmann and Muller, 2003). Organizations must treat their data as a key resource, guaranteeing that it streams with small delay and twisting.

- **Logistic Cost**

Logistics expenses have a substantial influence on supply chain management performance. There are several transportation expenses in supply chain management that might impact supply chain management performance: Chopra et al. (2010) identify the following costs: (i) Transportation and Shipping Expenses: Costs associated with moving inventory from the manufacturer to the warehouse and from the warehouse to the customer; (ii) Inventory Management Costs: Expenses related to holding and managing stock of goods or materials in the supply chain; (iii) Warehouse Costs: Expenses associated with signing a lease, purchasing land, and storing inventory; (iv) Order Fulfilment Costs: Expenses associated with processing, picking, packing, and: Costs involved with balancing the number of units in production vs the number in demand, which has a direct influence on profitability; (vi) Warehousing Costs: Expenses associated with running a warehouse and maintaining its utilities. (vii) Packaging and Labelling Costs: Costs related to packaging and labelling items for shipping. (viii) Freight and Customs charges: Fees charged by carriers or middlemen to move products or services from one location to another, as well as charges levied by customs officials. (x) Insurance and Risk Management: The costs of insuring products and managing hazards connected with transportation and storage (Chopra et al. 2010). These fees may vary based on the mode of transportation, distance, volume, weight, and service quality of the package.

Companies may lower logistics and supply chain costs by consolidating stock purchases, optimising transportation routes, increasing truck/container utilisation, combining commodities to minimise multiple journeys, and implementing hybrid freight negotiating methods. Maintaining real-time insight into inventory levels across the supply chain is critical for avoiding overstocking and managing inventory carrying costs (Leonczuk, 2021). Companies must change their supply chain systems for different product categories based on demand fluctuation and margins in order to avoid incurring excessive logistical expenses. Warehouse and distribution centre procedures should be reviewed and optimised on a regular basis to suit changing client needs and ensure on-time delivery. Highlight the crucial role that logistic expenses play in supply chain management performance, as well as the tactics that may be used to optimise these costs for greater overall efficiency (Syahira, 2017).

2.3. Resource-based review (RBV)

This word underscores that each trade has unmistakable resources that, when accurately utilized, boost the firm's competitiveness. In any case, due to asset heterogeneity, businesses are persistently at threat of losing assets to competitors, yet this can be not continuously the case. As a result, operational points of interest can as it were be obtained when relative assets are rare and special (Barney, 1991, as cited in Karia and Wong, 2011). Advances in supply chain administrations have come about in a tall degree of interconnectivity over company exercises. Coordination and transportation integration produce more important assets than autonomous endeavours. Concurring to the guideline, associations that take part in asset integration get more preferences. Be that as it may, the impact of supply chain and coordination operations on operational execution will be compelled by the firm's available assets. The coordination interesting capability may be used to create time, area, amount, frame, and ownership utilities interior and between firms, with the objective of creating products/services that fulfil shoppers through esteem acknowledgment (Karia and Wong, 2011).

2.3.1 Transactions Theory

Williamson is a pioneer in offering Transaction Theory (1985). The idea aims to increase vertical integration and company trust. According to the hypothesis, many expenditures arise throughout the implementation of procedures. Many expenses emerge with the implementation of procedures. If these expenditures are not adequately controlled, they may result in losses rather than anticipated gains (Gunasekaran & Kobu, 2007). Only by lowering costs, particularly through asset specificity and uncertainty, can operational efficiency be achieved (Williamson, 1985).

Such hypothesis is significant because it highlights the potential benefits of incorporating integrated supply chain management strategies and methodologies into firms. As a result, supply chain management strategies will improve the company's operational performance by boosting efficiency and lowering operating costs.

In accordance with Platje (2013), three distinct kinds of logistical processes were identified: products, information, and cash. Transaction cost economics seeks to lower the costs of information access, processing, and utilization. This method combines pre-contractual data collection with post-contractual agreement monitoring. This flow combines pre-contractual information collecting and post-contractual agreement monitoring. The cost of transactions influences the flow of money. Money facilitates price comparison (lower market transaction costs) and development. On the other side, using money to pay for goods and services leads to post-contractual opportunistic behaviour (cheating). Tracking and compliance fees for late or failure to pay emerge when using various kinds of credit or if clients are not obligated to pay on time. Insurance and various other mechanisms are basically transaction fees that minimize the likelihood of payment obligations not being fulfilled. In this discipline, the development of logistics services aims to lower transaction costs by providing safeguards against potential opportunistic behaviour associated with incorrect information and cash flows.

The flow of commodities includes both the cost of transportation and the cost of production. When services and goods are sold between businesses, there are two types of transaction costs: management transaction costs (which are associated with internal production) and market transaction costs. Logistics is a method for decreasing marginal transaction costs. Logistics can also help to enhance the flow of commodities while lowering transportation and manufacturing expenses.

2.3.2. Theory of Constraints

The TOC was created by Goldratt to have applicability in several management fields (Cyplik et al., 2009). There is need to understand that, according to the CPM notion, each organization is bound to have at least one limiting factor which prevents it from achieving the set goals and objectives. For this reason, the theory not only begins with innovation but even strives to make it happen on the ground.

With regards to the hypothesis, it holds that corporations have some problems in their communicating their products to the relevant parties. Hence, when transportation and logistics comprise the supply

chain, it is guaranteed that all the players are linked. TOC is therefore helpful in assessing the impact of the transportation management process, inventory management process, and order processing process on manufacturing business performance.

In one way or the other, all the said theories are helpful; be that as it may, the current study is inclined to the transaction theory. The theory is more appropriate for the current study since it seeks to expand on the areas that impact logistics performance including transaction cost, information flow, degree of vertical integration, and corporate trust. Going by this concept, it is held that several costs arise within the context of their usage; if appropriately managed, activities may lead to losses rather than being sources of gain. Logistic services cost must thus be reduced during the process of delivering services, most commonly by using asset specificity and minimize uncertainty so that the client's organizational performance is improved through operation efficiency. Therefore, the theory is useful for this study as it posits the potential benefits of implementing integrated supply chain management.

2.4. Empirical Literature

Earlier literature has related increased organizational effectiveness to professionalism in logistics functioning and competencies. For instance, Suhong et al (2004 carried out a study on the impact of supply chain management techniques on the issue of competitiveness and the performance of organizations in the United States. With the advent of supply chain competition as opposed to organizational competition, supply chain management or SCM, there is potential of becoming a critical paramount strategy for competitive advantage and improved organizational performance. This study conceptualizes and explores five pillars of SCM practice: substitution, survival, and cost leadership and supplier partnerships.

Customer relationship, quantity of information sharing, quality of information sharing, and delay) and investigates the links between SCM practices, competitive advantage, and organizational success. The findings suggest that increased levels of SCM practice can lead to a competitive advantage and greater organisational performance. Additionally, competitive advantage can have a direct and beneficial influence on organisational success.

Lenny et al. (2007) examined how supplier-manufacturer cooperation via SCM practices influences the performance of the manufacturing company based on the operational performance and SCM-related organizational performance in Turkey. The surveys for this study were conducted on 203 Small and Medium sized Enterprises operating in the manufacturing sector in Istanbul, Turkey that deal with

fabricated metal products and machinery for general use. Their investigation revealed a set of twelve SCM practices: Full integration of second-tier suppliers with manufacturers. Just-in-time delivery. Certain key areas of supply chain management are stated below Supply chain benchmarking and strategic planning, it is a very short list where you find just a few vendors. Suppliers outsourcing, suppliers' electronic procurement, outsourcing, supplier's third party logistics, and suppliers' safety stock. There are several suppliers. The study proved that CM techniques have a direct and a positive effect on operation performance or operational outcome, while, on the other hand, the study also revealed that SCM practices do not, in fact, have a direct or significant positive relationship with the organisational act pertaining to SCM.

Arawati (2015) performed research on the impact of SCM on manufacturing performance and product quality. The major goal of this empirical work is to evaluate the significance of introducing supply chain management (SCM) into the Malaysian manufacturing industry and its influence on production performance and product quality. Furthermore, the study seeks to analyse the mediating role of production performance in the link between SCM and product quality. SCM has a favourable and considerable impact on production efficiency and product quality. The findings also indicate that the production performance construct partially mediates the relationship between SCM and product quality. Among SCM methods, 'new technology and innovation' appears as the most essential component that improves production performance and product quality, this is followed by "strategic supplier partnerships," "quality information exchange," and "lean production."

Bwari et al. (2016) conducted supply chain studies at East African Breweries Limited in Kenya. A descriptive research technique was used in this study. The research included all of EABL's 1653 staff. The survey included a 10% sample from each stratum, yielding a total of There are 165 replies. According to the study, inventory control, distribution management, and transportation management all had a considerable influence on supply chain performance, whereas warehousing management services had just a little impact. The study, however, the study did not look at the links between the research variables. Ruth and Marther (2018) performed research in Kenya to identify the elements that influence coffee marketing by small-scale farmers and to analyse the impact of smallholder coffee marketing systems on the coffee value chain. Coffee marketing faced significant obstacles, including low and delayed payment to SSPs, poor management of P&MCs, and low education levels among senior management of P&MCs and SSPs. Smallholder coffee marketing systems, in turn, have an impact on the coffee value chain by causing financial constraints, lower returns, and reduced

production. Policy implications of these findings include the need to raise awareness of appropriate and affordable measures for an improved sustainable system in the coffee industry through complementary education programmes for SSPs and P&MCs, as well as intervention of cooperative management through relevant government institutions.

In the Ethiopian context, Dilebo (2019) performed research to determine factors influencing coffee market supply in the Yirgachefe area, Gedeo Zone, southern Ethiopia. To achieve this goal, information was gathered from 150 farm households, 30 specialists, and other public and unpublished sources. The acquired data was analysed by descriptive statistics and an econometric model (multiple linear regression). The study's findings revealed that five variables had a substantial impact on market supply of coffee at the household level. These included household heads' education levels, coffee-growing acreage, expertise in coffee production and marketing, coffee production costs, and credit utilisation. The report recommended expanding formal education in the district, implementing a regular experience exchange programme, subsidising coffee production, and establishing a credit facility for coffee production.

Mohammed (2021) performed research to evaluate the factors influencing coffee supply chain management performance in Jimma Zone. In this study, both quantitative and qualitative datasets were gathered and analysed concurrently, with a greater emphasis on quantitative data, and the results were discussed side by side in a conversation based on the themes. The study's 670 target populations included 250 participants (135 farmers and 115 cooperative members).

Cooperative representatives had been chosen as sample respondents for the study. The study's findings revealed that main cooperative and cooperative union efforts to create capacity, infrastructure, and share knowledge were inadequate. On the other hand, the data show that the principal cooperative and Cooperative Union's approach to supplier and customer relationships was modest. The study found that infrastructural variables and supplier-customer relationships had a substantial and high association with supply chain management performance. On the other hand, Capacity Building and Information Sharing have a substantial and moderate link with Supply Chain Management Performance. Furthermore, the study found that infrastructural elements and supplier-customer relationship variables are the biggest drivers of supply chain management performance. The researcher also proposed that the primary cooperative and the Cooperative Union increase the degree of integration and communication of the information sharing system with their partners.

Xuan et al. (2023) did a study to investigate the elements impacting the efficiency and logistics performance index (LPI) of Vietnam's exports to overseas partners from 2018 to 2022 as a result of the COVID-19 pandemic. Based on the major elements influencing the efficiency and performance of global supply chain operations for Vietnam's exports, including the practical effect and logistical outcomes of Vietnamese firms. The authors adopted a panel technique, which allows them to investigate data heterogeneity across nations. The model was estimated using two models: fixed effects (FE) and random effects (RE). The data were obtained from 240 observations in Vietnam and 80 of Vietnam's top export partner nations. The research findings indicate that the cost, timing, and capacity of logistics services have the greatest influence on Vietnam's exports.

Thi and Hanh (2024) performed research in Vietnam to discover characteristics that influence coffee supply chain performance. This study used online questionnaire surveys and personal interviews with the major coffee supply chain stakeholders to evaluate the drivers influencing supply chain performance in Vietnam. This research was conducted in Kontum, one of Vietnam's most important coffee-growing regions. The important components identified in the case study are manufacturing cost, logistical cost, information technology, and government policy. Furthermore, the study included recommendations for enhancing the performance of Vietnam's coffee supply chain.

2.4.1. Identified Literature Gaps

With respect to the gaps in the literature that were found, the researcher was able to ascertain that, despite much emphasis being devoted to investigating supply chain performance determinates, there has been scant information in the context of Ethiopia's coffee supply chain. Previous studies on the Ethiopian coffee industry (Birhanu et al., 2013; Dereje, 2007 & Minten et al., 2015; Dilebo, 2019; Mohammed, 2021) have mostly given general information about the industry or concentrated on specific aspects of the coffee supply chain, like the environment or land use (Dereje, 2007); the difficulties faced by coffee exporters (Birhanu et al., 2013; Tolera, 2015); production and processing (Dilebo, 2019); and export performance (Minten, et al., 2015), without going into detail on how these elements are related to one another and how that affects how well coffee exporters' supply chains function. There is a dearth of research that comprehensively examines how the entire supply chain ecosystem, encompassing logistical, infrastructure, capacity building, supplier-customer relationship management, and information flow across supply chain, collectively influences coffee exporters' operations and success. Mohammed (2021) made an attempt to investigate the determinants of coffee supply chain management performance, but his study only focused on or explored specific aspects of

the supply chain: By thoroughly examining the various aspects that influence the performance of Ethiopia's coffee supply chain and their direct and indirect effects on coffee exporters, this thesis seeks to close this important research gap.

2.5. Conceptual Framework

According to Kombo and Tromp (2009), a conceptual framework is a collection of overarching concepts and ideas from different academic disciplines that are utilised to structure a presentation in the future. It is a research tool that helps a researcher become more aware of and understand the topic they are studying, as well as share what they learn. In contrast to a theory, a concept is an overall impression or abstraction that is determined or deduced from a particular situation.

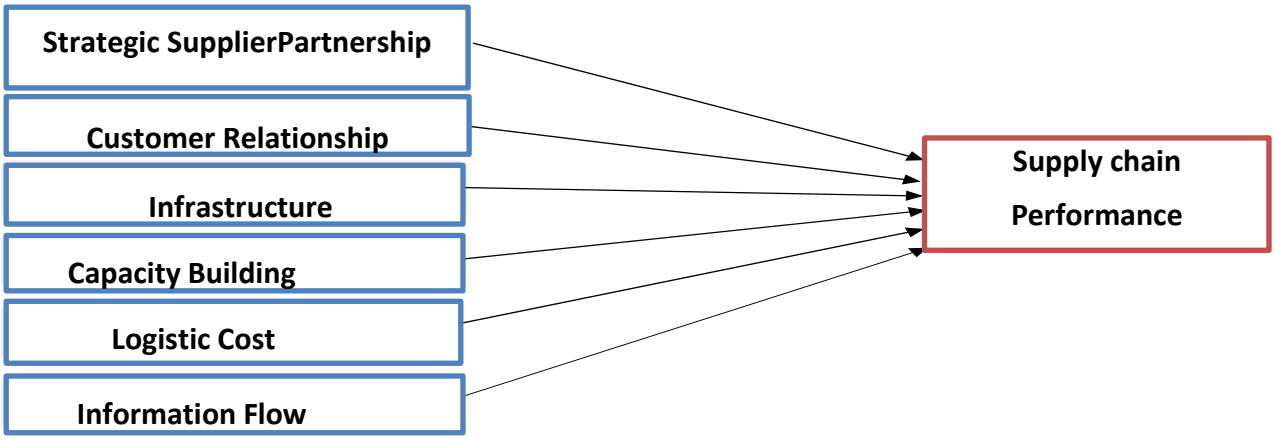


Figure 1 Conceptual Frame Work
Source: (Ruth. et al. 2018; Mohammed, 2021; Thi & Hanh 2024)
Customised by the researcher.

Based on reviews of the theoretical and empirical literature, the researcher creates the conceptual framework for the study as the Supply chain Performance is dependent variable, while strategic supplier partnership, customer relationship, capacity building, infrastructure, logistic cost, and information across a supply Chain are independent variables.

CHAPTER THREE

RESEARCH METHODOLOGY

In this part, the researcher outlines the techniques for conducting a thorough and well-informed inquiry, with an emphasis on the sampling procedure, data gathering, and analytic methodologies. The target population and sampling procedures, as well as data collecting methods and methodologies, are discussed. The word "research methodology" refers to a strategy for emphasising scientific processes in an acceptable manner for the scenario. It is a wide guideline that specifies the processes used to conduct the research study, and it also defines the manner in which analysis should be performed on the information collected (Akinyele, 2016). These are reflected in the study's research methodology, data gathering, and fieldwork procedures.

3.1. Research Design

According to Kombo and Tromp (2009), research design is the strategy or blueprint that leads the research process though the development of research questions and hypotheses to the reporting of findings in order to meet the study's objectives. The research sought to explore the factors influencing coffee supply chain performance in Ethiopia. To accomplish this goal, the study employed an explanatory research methodology that includes a survey questionnaire. An explanatory research design aims to explain patterns of variable interactions by examining a context or a specific problem. It assists in understanding the nature of the independent and dependent variables' relationships. Descriptive research was be utilised to assess the cause and impact of identified factors on the coffee supply chain performance.

3.2. Research Methodology

In terms of research methodology, the study takes a quantitative approach since it examine the many elements influencing coffee supply chain performance and their influence on Ethiopia's coffee exporters. The correlations among variables were statistically examined, necessitating a quantitative method to determining the link between the research variables.

3.3. Data Source and Type

The necessary data for the study was utilized though primary data-gathering approaches. Kothari (2004) defines primary data as information received for the first time and hence having a naturality for the truth. A questionnaire serves as the study's principal data-gathering instrument. Primary data was gathered from high volume coffee exporters located in Addis Ababa via a self-administered questionnaire.

3.4. Population and Sample Design

3.4.1. Target Population

The survey's target population refers to the total number of units from whom data is collected in order to reach conclusions. The target demographic for this study comprises of coffee exporting firms in Addis Ababa. According to the Ethiopian Ministry of Trade, there are around 65 coffee exporting enterprises in Addis Ababa that are now actively involved in coffee export. Lavrakas (2008) recommends a sample size of 10% to 20% of the whole population as representative. As a result, the study focuses on ten coffee exporting enterprises in Addis Ababa, chosen specifically based on their export volume in Ethiopian fiscal year, out of a total population of 65 organisations. The target population consists of the top ten coffee exporter companies: Testi Trading PLC, Mullege Coffee Exporter, Adulina Coffee Exporter PLC,Fahem General Trading PLC, Snap Trading And Industry Plc,Daye Bensa, Kerchanshe Trading PLC, Hadeed Trading Private Limited Company, Tracon Trading Plc, Abdulhakim Mohamed Gelato (AMG) Coffee Export. This represents a sample size of around 15%, which is deemed typical. The example company listings are included in Appendix IV.

3.4.2. Sampling Size

Lavrakas (2008) defines a sample in survey research as a subset of components selected from a wider population. Obviously, such a sample should be generally like the population, ensuring acceptable representation. If a sample is not accurate and inadequate in both characteristics and size, it may result in the rejection of a false null hypothesis, an incorrect conclusion, and a waste of resources (Gerstman, 2003). Similarly, research that collects an excessive amount of data is inefficient. As a result, it is critical to determine a sufficient sample size before embarking on data collecting for a project. In recognising this reality, the sample size for the study is 100 respondents (ten from each

organisation) who are normally involved in various stages of the coffee supply chain. Responders from each organisation, who are normally involved in the coffee supply chain.

3.4.3. Sampling Methods

This study utilizes both probability and non-probability sampling strategies and used non-probability selection techniques, particularly the purposive sampling approach has been utilised on the selected firms based on their export volume size, since the volume of coffee shipped by the top 10 exporters has a substantial influence on export marketing performance. The primary goal of a purposive sample is to provide a sample that can be reasonably considered to be representative of the population. The probability sampling approach, namely simple random sampling, was used to choose sample responders from each organization, who are normally involved in the coffee supply chain.

3.5. Data Collection Instrument

The major data-gathering tool used in the study was a questionnaire. According to Schwab (2005), questionnaires are measuring instruments in which people are asked to answer a series of questions or assertions. A questionnaire is selected since it is simple and easy to administer. Considering the benefits and the need for further information, a questionnaire was distributed to sample respondents to collect their opinions on variables influencing coffee supply chain performance in Ethiopia.

A survey poll was thoughtfully designed and tested on a limited focus group community to identify areas for improvement. Every component was carefully created to gather the necessary data, fit the study goals, and be meaningful to the wider research topic. The questionnaire was developed utilizing the literature, conceptual framework, and research question to investigate the association between specified parameters and coffee supply chain performance. Most of the study's questions are closed-ended. Closed-ended questions are commonly utilized in polls because they provide a greater percentage of responses. Furthermore, the simplicity with which replies to closed-ended questions may be processed and examined makes them particularly beneficial when seeking to establish the statistical significance of survey findings.

3.6. Data Collection Procedure

The very first data was acquired by posing questions to employees from sample companies. Before the full-scale survey, a trial poll conducted with a small number of participants. The initial survey's goal is to assess whether the questionnaire produces the anticipated outcomes as well as to detect and rule out any potential concerns with the questions' substance and language. During the full-scale survey, the researcher personally contacted the target group and hand out the questionnaire. Respondents was politely asked to complete the survey. Permission from firms and employees was sought, and consent was granted.

3.7. Methods of Data Analysis

The core data of the paper was gathered via a distributed questionnaire. To analyses the data, descriptive statistics and inferential statistical analysis practiced. To describe the features of the variables of interest in the study, descriptive statistics such as mean scores, percentages, frequency distribution, and standard deviations was created. To investigate the relationships between variables, statistical methods such as correlation and multiple linear regression analysis are utilized.

3.8. Ethical Considerations

Ethics is all about a moral principle that governs any individual how can differentiate between right and wrong before making any kind of decision. When conducting any research, it is important to behave accordingly and set a moral code of conduct when reviewing others' previous works and communicating with individuals during the study. During the study the following ethical consideration was conducted concerning research ethics:

1. Any information that was used during the study was only for research study purposes and any academic works that belong to other researchers are used for reference purposes only and not as one's work.

2. Participants were informed that the purpose of the research study was for academic purposes only and any information they provided was kept highly confidential and synonymous.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND FINDINGS

The discussions of the study's findings are presented in this chapter. As previously stated, the goal of the study was to look at the variables influencing Ethiopia's coffee supply chain performance. An examination of the demographic data, including gender, age, education, employee category, and work experience, is presented in the first section. The findings from descriptive indicators pertaining to information intended to address the queries of the study were examined in the second section. Following that, findings and debates from numerous linear regressions and correlation analyses are given.

4.1. Instrument Reliability and Validity

Reliability and validity are the primary criteria used to assess measurement. Reliability ensures data consistency, whereas validity assesses measurement precision.

4.1.1. Instrument Validity

Validity is concerned with whether the findings are genuinely about what they appear to be about (Sounders et. al., 2003). Numbers of various actions are done to assure the validity of the study:

- The information was collected from trustworthy sources. Including experienced coffee supply chain professionals.
- To guarantee validity, survey questions was prepared based on a study of empirical literature and frames of reference.
- Experts verify the prototype questionnaire's substance validity to ensure it is relevant to the variables being measured and addresses the study's aims and hypotheses.

The responses from the pilot administration of the questionnaire were utilized to improve the content value of the questions used in the main administration.

4.1.2. Instrument Reliability

In addition, a reliability test was performed to confirm the uniformity of the equipment used in primary administration. To examine the questionnaire's reliability, the study used Cronbach's alpha. A reliability coefficient (alpha) of 0.70 is deemed adequate, dependable, and appropriate for a new questionnaire. The reliability of the questionnaire was verified using Cronbach's alpha correlation coefficient was calculated using the Statistical Package for Social Sciences (SPSS) software.

Table 1 Cronbach alpha value for the dependent and independent Variables

No.	Item description for dependent and independent variables	Cronbach's Alpha	N of Items
1	The overall reliability between all the variables	.937	6
2	The effect of Strategic partnerships on Ethiopian coffee export supply chain performance	.965	10
3	The effect of Customer relationship on Ethiopian coffee export supply chain performance	.919	6
4	The effect of Information flow on Ethiopian coffee export supply chain performance	.953	8
5	The effect of Infrastructure on Ethiopian coffee export supply chain performance	.876	5
6	The effect of Logistic Cost on Ethiopian coffee export supply chain performance	.959	5

4.2. Response Rate

The response rate is shown in Table 4.1. The goal of distributing the questionnaire was to collect information from 100 responders.

Questionnaire sdistributed	Questionnaire sreturned	Questionnair esrejected	Usable Questionnaires	Response rate
100	97	3	94	94%

Table 2 Response Rate

(Source: Own Survey, 2024)

97 of the 100 copies of the questionnaire that were circulated were returned. Data verification has been completed examining the information for accuracy and oddities in order to prepare the raw data obtained from the questionnaire for statistical analysis. As a result, three of the 97 completed

questionnaire copies were returned due to their incompleteness. However, the useable copies contributed to a 94% response rate which Mugenda (2003) regards as a very good response rate.

Based on Kothari (2004), who stated that a response rate of 50% is adequate, a response rate of 60% is good, and a response rate of 70% or higher is considered very good, this is an impressive response rate. Furthermore, Richardson (2005) asserts that it is both desired and feasible to have a total rate of response for the survey of at least 60%. Because of this, the 94% response rate is thought to be good and sufficient, allowing the researcher to proceed with the process of analysis and interpretation.

4.2.1. Demography Information of Respondents

The respondents' general information is shown in this section. Inquiries were made concerning the respondents' gender, age, educational background, job title, and length of employment with the current organization. While the information provided here may not be crucial for achieving research objectives, it is helpful in assessing the respondent's potential to make a significant contribution to the study. Table 2 displays the outcome.

Main factor	Factor level	Frequency	Percentage
Gender	Male	63	67
	Female	31	33
	Total	94	100
Age	18 – 29	7	7.4
	30 - 40	56	59.6
	41 - 55	28	29.8
	Over 55	3	3.2
	Total	94	100
Educational qualification	Secondary School	11	11.7
	Diploma	34	36.2
	Degree	35	37.2
	Master and above	14	14.9

	Total	94	100.0
For how long have you been employed in this company?	Under 2 years	3	3.2
	2 - 5 years	49	52.1
	6 - 10 years	26	27.7
	above 10 years	16	17
	Total	94	100.0

Table 3 General Information of the respondent
Source: Survey Data 2024

The gender distribution of the study participants is displayed in Table 2 above. Table 2 indicates that 33% of the participants were female and 67% were male. This demonstrates that the two sexes' representation in the sample population differs noticeably. The obvious discrepancy in gender representation was caused by the organization's unequal gender representation, which is 67% men and 33% women, rather than by sampling or non-sampling problems. It is typically a reflection of the overall demographic makeup.

Respondents represented a cross-section of customers' ages, as Table 2 illustrates. Seven respondents (7.4%) were between the ages of 18 and 29, 56 respondents (59.6%) were between the ages of 30 and 39, 28 respondents (29.8%) were between the ages of 40 and 50, and the final 3 respondents (3.2%) were over the age of 50. As a result, the study's various age groups were fairly represented. The first of the four age groups is referred to as the youth group, while the remaining groups are all comprised of adult individuals. Within the adult population, the age range of 30 to 39 years old is regarded as early adulthood, 40 to 50 years old as middle adulthood, and 50 years and older as late adulthood.

Using the demographic perspective, whereas 29 is considered the upper-end age for the youth category, 30 =early adult. This implies that most of the sample companies were equally dominated by youths and young adults mirroring the population. Again, this refers to the entire population or the entire group of people in a given society.

Regarding the level of education, the sample population was distributed in four categories or level of education from secondary level to highest level of education. Table 4. 2 depicts the different levels of the sample population education level attainment and their percentages. Regarding

educational qualification, 37. 2% of respondents said they had the first degree while 36% of the respondents said they had a post first degree. 2% hold a diploma, 14.H of those, 9% have a master's degree, and the other 11 are personal communications. 7% have secondary education. This indicates that about 90% of the respondents are certified being at Diploma or higher education level which makes them capable of completing the questionnaire and share the implication of the identified driver for logistic success.

In terms of job experience, 3.2% of respondents had worked for less than two years, 52.1% for two to five years, 27.7% for six to ten, and the rest 17% above decades. This suggests that virtually all (95%) of respondents have been with their company for more than two years and hence have valuable insights into the factors influencing logistical performance.

4.3. Descriptive Analysis of the Study Variables

The fundamental characteristics of the data that was gathered from the field were explained using descriptive statistics. They include basic graphic images along with concise explanations of the metrics and the sample. The descriptive statistics of the metrics used to determine logistic success (such as capacity building, customer relationships, strategic supplier partnerships, and customer relationships) are covered in this section.

Here, an attempt is made to examine the respondents' perspectives on the five-scale Likert-type questions that are presented, in accordance with the technique described under Chapter 3. The feedback from the respondents was recorded along the different Likert scale items that used to assess the study area under each of the six major logistic performance determinants (information flow, infrastructure, capacity building, logistic cost, strategic supplier partnership, and customer relationship). In this sense, a descriptive statistic of mean and standard deviation was used to assess the descriptive portions of the study. As a result, the composite mean value displays the average of each question.

Interval of Means	Interpretation
1.00 – 1.80	Very Low
1.81 – 2.60	Low
2.61 – 3.40	Medium
3.41 – 4.20	High
4.21 – 5.00	Very High

Table 4 Descriptive statistics result interpretation guide, Source: (Shrestha, 2015)

The study area under Using an itemized Likert rating scale, a range of means was created. The result shown in Table 4.3 was interpreted by the researcher using the guidelines provided by Shrestha (2015). Every single item with a range of 1 to 5 has a mean that falls into the following interval. To represent respondents' perceptions and the variety in their responses, Table 5 presents the mean and standard deviation for each variable's descriptive statistics.

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Strategic Supplier Partnership	94	1.43	4.73	3.6177	.79553
Customer relationship	94	1.51	5.00	3.7732	.82776
Information flow	94	1.40	4.40	3.3138	.74712
Infrastructure	94	1.00	4.50	3.3638	.74186
Logistic Cost	94	1.00	4.60	3.1819	.78794
Supply Chain Performance	94	1.10	4.42	3.2320	.76694
Valid N (listwise)	94				

Table 5 Summary of Descriptive Statistics for Study Variables
Source: (Survey data, 2024)

Strategic supplier partnership: Average worth of .79553falls within the 'High' range, suggesting that this variable indicates a high level of perceived strategic partnerships among suppliers. The relatively high mean indicates that strong partnerships with suppliers are believed to be seen as boosting the effectiveness and productivity of logistics operations. Enhance the efficiency and effectiveness of logistics operations. This collaboration is crucial for ensuring a steady supply of quality coffee beans, fostering innovation, and improving responsiveness to market demands. Effective supplier partnerships can lead to better negotiation outcomes, cost savings, and enhanced trust, which are vital for the supply chain's sustainability. The standard deviation of 0.79553, while moderate, shows some variability in responses, indicating that while many respondents agree on the importance of strategic partnerships, there are differences in how strongly this importance is felt. This variability could be due to different levels of supplier engagement and collaboration practices across the supply chain.

Customer Relationship: Customer relationship has the highest mean of 3.7732, emphasizing the importance placed on maintaining strong customer relationships. Respondents clearly view maintaining strong customer relationships as crucial for logistic performance. This high mean indicates that the coffee exporters prioritize understanding customer needs, enhancing customer satisfaction, and building loyalty. The standard deviation of 0.82776 suggests a moderate spread of opinions, which could be influenced by the diverse nature of customer interactions and varying levels of customer relationship management practices across different companies. Strong customer relationships are critical for repeat business, brand reputation, and competitive advantage. Fostering these relationships can lead to better market insights and tailored offerings, enhancing overall business performance.

Information Flow: Information flow scores moderately, with a mean of 3.3138 and a standard deviation of 0.74712, suggesting that while information sharing is adequate, there is potential for enhancement. The standard deviation indicates a moderate level of agreement among respondents, highlighting that efficient information flow is considered crucial, though perceptions vary somewhat. Effective information flow is essential for coordination and decision-making within the supply chain. The variability indicated by the standard deviation points to differing levels of information accessibility and sharing practices among respondents. Improving information flow through better

communication channels and technologies can lead to more synchronized operations, reduced uncertainties, and faster response times to market changes.

Infrastructure: The infrastructure variable has a mean of 3.3638 and a standard deviation of 0.74186, indicating satisfactory but improvable conditions. Infrastructure encompasses the physical and technological systems that support the supply chain, such as transportation networks, storage facilities, and IT systems. The standard deviation suggests some respondents experience significant infrastructure challenges. Enhancing infrastructure can lead to more efficient logistics, reduced delays, and lower operational costs, thereby improving the overall supply chain performance.

Logistic Cost: The mean for logistic cost is 3.1819 with a standard deviation of 0.78794, reflecting concerns about the expenses related to transportation, warehousing, and distribution. The variability in responses suggests that logistic costs impact some firms more than others. Managing logistic costs effectively is crucial for maintaining profitability. Strategies such as optimizing routes, consolidating shipments, and leveraging economies of scale can help reduce these costs.

Supply Chain Performance: Finally, the overall supply chain performance has a mean of 3.2320 and a standard deviation of 0.76694, placing it in the medium to high range. This reflects a balanced view of the supply chain's effectiveness, with moderate variability in respondents' assessments. The overall supply chain performance scores moderately, indicating that while the supply chain is functioning adequately, there is considerable room for improvement. The mean score above the midpoint suggests a general sense of satisfactory performance, but the standard deviation indicates varied experiences among respondents. Enhancing areas such as capacity building, information flow, and infrastructure can contribute to better overall performance.

In conclusion, the descriptive analysis underscores several strengths within the coffee exporter supply chain, such as strategic supplier partnerships and customer relationships, which are essential for maintaining a competitive advantage. However, it also points out areas needing improvement, particularly in capacity building, information flow, and infrastructure. Addressing these areas can lead to more efficient and effective supply chain operations. By investing in employee training, improving communication channels, and upgrading infrastructure, coffee exporters can enhance their supply chain performance, reduce costs, and increase overall market responsiveness. This holistic

approach to supply chain management wouldn't only improve operational efficiency but also ensure long-term sustainability and growth in a competitive market.

4.4. Correlation Analysis

The study sought to determine a correlation between six distinct factors such as strategic supplier partnership, customer relationship, capacity building, infrastructure, logistic cost, and information flow and logistic performance of sample coffee exporter firms. Correlation analysis is a method for determining the sort of relationship between two variables. It is a standard measure of covariance that indicates how closely one variable's variation is connected to that of another (Zikmund et al., 2009). Correlation coefficients are expressed as numbers between -1 and 1. A positive linear correlation coefficient of +1 indicates complete correlation between two variables. When two variables have a correlation of -1, it means that their relationship is negatively linear, and when it is 0 it means that there is no linear link between any variables. To determine if the dependent and independent variables have a combined fluctuation, a Pearson Correlation Coefficient was calculated using SPSS. The study utilized Marczyk et al. (2005) as a guide to interpreting the results reported in the below table.

Correlation value in range	Interpretation
0.00 - 0.19	Weak/ very low correlation
0.20 - 0.39	Low correlation
0.40 - 0.59	Moderate correlation
0.60 - 0.79	High correlation
0.8 - 1.0	Very high correlation

Table 6 Correlation result interpretation guide
Source: (Marczyk, et al., 2005)

This interpreting reference provided here (Table 4.6) is prepared by Marczyk et al. (2005) is useful. As a consequence, this approach has been utilised to interpret the findings, which are summarised in the following parts.

		Supply Chain Performance
Strategic supplier partnership	Pearson Correlation	.807**
	Sig. (2-tailed)	.000
Customer relationship	Pearson Correlation	.859**
	Sig. (2-tailed)	.000
Information flow	Pearson Correlation	.830**
	Sig. (2-tailed)	.000
Infrastructure	Pearson Correlation	.803**
	Sig. (2-tailed)	.000
Logistic Cost	Pearson Correlation	.755**
	Sig. (2-tailed)	.000

Table 7 Correlation Result between the Variables
Source: (Survey data, 2024)

The correlation results from the study offer valuable insights into the relationship between various independent variables and the logistic performance of sample coffee exporter firms. Every distinct factor including strategic supplier partnership, customer relationship, capacity building, infrastructure, logistic cost, and information flow, was assessed for its correlation with supply chain performance.

The findings indicate strong positive correlations between all the independent variables and supply chain performance. Strategic supplier partnership, customer relationship, capacity building, flow of data, infrastructure, and logistic cost all exhibit correlation coefficients ranging from 0.751 to 0.830, with p-values indicating statistical significance ($p < 0.001$). These correlations suggest that as these independent variables improve or increase, there is a corresponding improvement in supply chain performance.

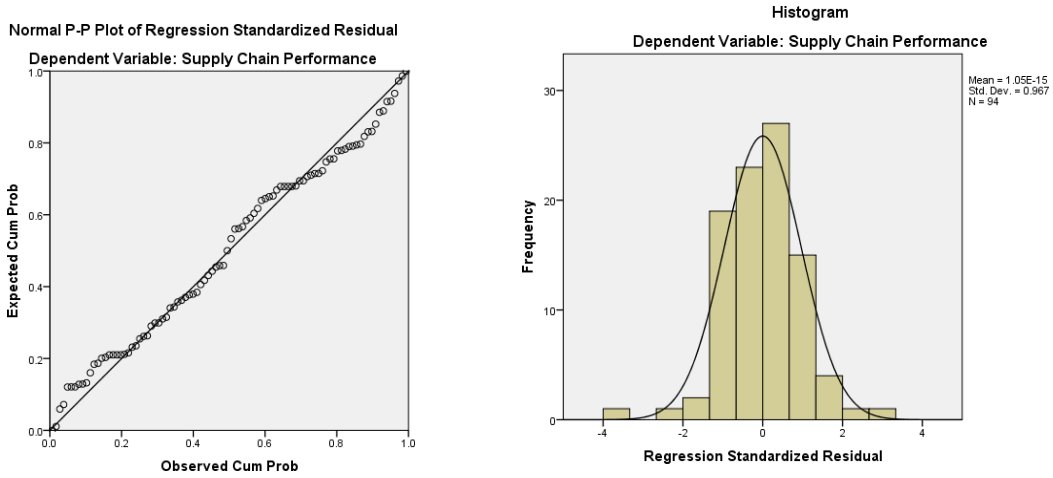
Specifically, **customer relationship, strategic supplier partnership,** and information flow show very high correlations (correlation coefficients ranging from 0.807 to 0.859), indicating that these factors have a substantial influence on supply chain performance. Capacity building, infrastructure, and logistic cost also demonstrate high correlations (correlation coefficients ranging from 0.751 to 0.803), suggesting their significant impact on supply chain efficiency and effectiveness.

4.4.1. Parametric assumption test

Ordinary Least Squares (OLS) assumptions are the foundation of multiple linear regressions. Verifying that the data under study can actually be investigated with multiple regression is one step in the process of opting to employ multiple regression for data analysis. This is because repeated regressions is only allowed if the data "passes" the assumptions. A valid result can only be generated through regressions. Consequently, the factors were subjected to the necessary evaluations for diagnosis.

4.5. Normality

The idea of normalcy in multiple regressions suggests that the mistakes, or residuals, are spread nearly uniformly. The residuals from a regression analysis should have a normal distribution to yield trustworthy conclusions. A straightforward method to verify the provided result is to plot a typical P-P plot or distribution for the variable in question. The expected chance using the standard arc is depicted on the Y axis, while the cumulative odds are displayed on the X-axis. Every mark in the data set would create a straight diagonal line since it was divided absolutely regularly and evenly. The graph below shows Normal P-P plots for the dependent variables (logistic performance). The data is thought to be normally distributed because the dots form a straight line.



SOURCE: (SPSS OUTPUT, 2024)

Figure 2 Normal P-P Plot and Histogram of residual for dependent variables.

4.6. Multicollinearity Test

Multicollinearity occurs when two or more independent variables have a high degree of correlation. This makes it difficult to determine which independent variable contributes to the variance described in the dependent variable (Simon, 2004). The Variance Inflation Factor was investigated for signs of multicollinearity, and all numerical values were significantly lower than the 10-cut-off number recommended by Neter et al. (1996). As indicated in Table 4.7, the VIF for all independent variables was less than the cut-point value of 5, meaning that there was no collinearity between the independent variables using this rule of thumb.

	Collinearity Statistics	
	Tolerance	VIF
Strategic supplier partnership	.391	2.555
Customer relationship	.278	3.595
Information flow	.303	3.304
Infrastructure	.337	2.966
Logistic Cost	.419	2.389

Table 8 Collinearity Statistics for the explanatory variables
Source: (Survey data, 2024)

4.7. Linearity Test

According to Asghar and Saleh (2012), the assumption of linearity in the analysis of multiple regression states that there must be a linear relationship between the variable that is dependent and each of the variables that are independent as well as between the independent and the dependent variables taken as a whole. Making scatter plots and visually examining them for linearity is the most popular method of verifying linearity. Linearity is indicated by a figure that lacks any visible pattern and contains uniformly distributed dots above and below zero on the X-axis and to the left and correct sides of zero on the Y-axis. The studentized residual is shown in a scatter plot below in relation to the linear value of prediction. The linear link is depicted in the drawings as a horizontal row of dots.

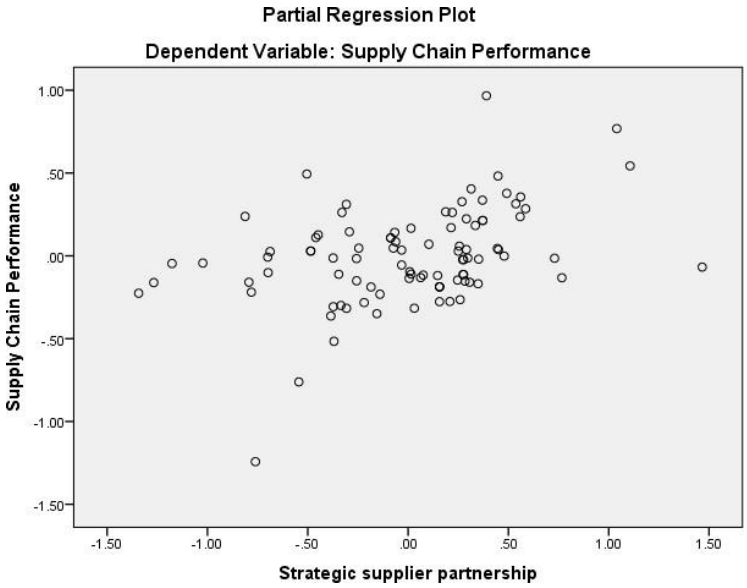


Figure 3 Scatter plot for Linearity Test

Source: (SPSS Output, 2024)

4.7. HOMOSCEDASTICITY

When the remainders' variation (error term) remains constant for all of the study's expected variables, diversity results (Tabachnic & Fidell, 2007). On the other hand, when the measurement variance varies between findings, research becomes uniform (Long & Ervin, 2000). The most popular method is the Breusch-Pagan test, which was designed for contrasting the alternative—that the error variance is an additive function of one or more variables—by the null hypothesis, which declares error variance

is all equivalent. The null hypothesis, according to Breusch-Pagan, is that there is no heteroscedasticity. Reject the null assumption if the sig-value is less than 0.05 (Sazali et al., 2010).

In this investigation, the sig-value for fitted values of dependent variable supply chain performance was 0.218, showing that variation wasn't a concern.

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of supply chain performance
chi2(1) = 1.67
Prob> chi2 = 0.218

Table 9

Breusch-pagan for Heteroscedasticity

Source: SPSS output, 2024

4.9 . ANOVA Interpretation

The regression's total number of squares at 6 degrees of freedom is 48.057, and its mean square is 8.010, according to the results in ANOVA table 4.10. With 87 degrees of freedom, the residual sum of squares is 6.645, and its mean square value is 0. 076. The F statistic indicates that the test for joint significance is 74.160, which is statistically significant. This suggests that the independent variables under consideration had a bearing on the success of Ethiopian businesses in the coffee supply chain.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.057	6	8.010	74.160	.000[b]
	Residual	6.645	87	.076		

	Total	54.703	93			
a. Dependent Variable: Supply Chain Performance						
b. Predictors: (Constant), Logistic Cost, Strategic supplier partnership, Infrastructure, Capacity Building, Information flow, Customer relationship						

Table 10 ANOVA for the determinants of logistic performance

Source: (Survey data, 2024)

4.10. Regression Result

This section discusses the regression statistical analysis that was created using the collected data and models. The goal of this research was to determine the parameters influencing logistics performance in Ethiopian perishable logistics (EPL) enterprises. Regression analysis is utilised to achieve this. It begins with a simple assumption test and then moves on to the results of several linear regression models with the main objective of investigating the factors affecting coffee supply chain performance in Ethiopia. This was done through regression analysis. The independent variable forthe study includes strategic supplier partnership, customer relationship, capacity building, infrastructure, logistic cost, and information flow. Thus, the study intended to assess the impact of each of the six elements (strategic supplier partnerships, customer relationship, capacity building, infrastructure, logistic cost, and information flow) on coffee supply chain performance in Ethiopia.The regression analysis results are reported in the next section.

4.10.1 Model Summary (Coefficient of Determination R^2)

The coefficient of determination describes the proportion of variation between dependent variable (logistic performance) which is explained by all four independent variables (strategic supplier partnership, customer relationship, capacity building, infrastructure, logistic cost, and information flow). Table 4.9 below contains the model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.937[a]	.879	.870	.27637	2.072

Table 11 Model Summary for determinants of logistic performance

Source: (Survey data, 2024)

- Predictors: (Constant), Logistic Cost, Strategic supplier partnership, Infrastructure, Capacity Building, Information flow, Customer relationship
- Dependent Variable: Supply Chain Performance

This analysis found that six separate factors (strategic supplier partnership, customer relationship, capacity building, infrastructure, logistic cost, and information flow) account for 87% of variation in coffee supply chain performance among Ethiopian firms, as measured by the R^2 value. The study's explanatory factors fail to explain the remaining 13% of the variability in supply chain performance.

Dependent Variable: Supply Chain Performance

Strategic supplier partnerships show a positive and significant effect, with a coefficient of 0.230 and a p-value of 0.000. This suggests that enhancing partnerships with suppliers can substantially improve supply chain performance. Similarly, customer relationships have a positive coefficient of 0.252 and are also statistically significant (p = 0.000), indicating that strong customer relationships contribute greatly to better supply chain outcomes. However, capacity building, with a coefficient of 0.032 and a p-value of 0.684, does not significantly impact supply chain performance. This indicates that current capacity-building efforts may not be effectively influencing the supply chain outcomes of Ethiopian firms.

Information flow, on the other hand, has a positive and significant coefficient of 0.225 with a p- value of 0.002. Efficient information flow within the supply chain is thus crucial for improving performance. Infrastructure also plays a significant role, with a coefficient of 0.173 and a p-value of 0.011, underscoring the importance of robust infrastructure in supporting supply chain activities. Additionally, logistic costs, with a coefficient of 0.136 and a p-value of 0.017, significantly influence supply chain performance, highlighting the need for effective cost management strategies.

Overall, the findings suggest that Ethiopian firms should prioritize strategic supplier partnerships, customer relationships, and efficient information flow to enhance their supply chain performance. Investments in infrastructure and logistics cost management are also crucial. However, the current capacity-building strategies may need reassessment to ensure they contribute more effectively to supply chain productivity.

After such beta coefficients are put into regression equation, the framework that represents the coffee supply chain performance is:

Supply Chain Performance = −0.386 + 0.230 (Strategic Supplier Partnership) + 0.252 (Customer Relationship) + 0.032 (Capacity Building) + 0.225 (Information Flow) + 0.173 (Infrastructure) + 0.136 (Logistic Cost)

Here's a breakdown of the equation:

- **Constant (Intercept)**: -0.386
- **Strategic Supplier Partnership (Coefficient: 0.230)**: This suggests that for each unit increase in strategic supplier partnership, supply chain performance increases by 0.230 units, holding other variables constant.
- **Customer Relationship (Coefficient: 0.252)**: Indicates that a unit increase in customer relationship improves supply chain performance by 0.252 units.
- **Information Flow (Coefficient: 0.225)**: Suggests that improving information flow by oneunit increases supply chain performance by 0.225 units.
- **Infrastructure (Coefficient: 0.173)**: Each unit improvement in infrastructure leads towards 0.173-unit improvement of the logistical efficiency.
- **Logistic Cost (Coefficient: 0.136)**: Indicates that a unit reduction in logistic costs improves supply chain performance by 0.136 units.

This regression equation helps quantify the impact of each independent variable on the overall supply chain performance, providing a clear understanding of which factors contribute the most.

4.11. Summary of Hypothesis Result

No	Hypothesis	Tested Hypothesis	Supported
	H0	Strategic partnerships have a Negative and significant effect on Ethiopian coffee export supply chain performance	**NO**
	H1	Strategic partnerships have a positive and significant effect on Ethiopian coffee export supply chain performance	**YES**
	H0	Customer relationships have a Negative and significant effect on Ethiopian coffee export supply chain performance	**NO**
	H2	Customer relationships have a positive and significant effect on Ethiopian coffee export supply chain performance	**YES**
	H0	Infrastructure has a Negative and significant effect on Ethiopian coffee export supply chain performance	**NO**
	H3	Infrastructure has a Positive and significant effect on Ethiopian coffee export supply chain performance	**YES**
	H0	logistics cost has a Negative and significant effect on Ethiopian coffee export supply chain performance	**NO**
	H4	logistics cost has a Positive and significant effect on Ethiopian coffee export supply chain performance	**YES**
	H0	Information access has a Negative and significant effect on Ethiopian coffee export supply chain performance	**NO**
	H5	Information access has a Positive and significant effect on Ethiopian coffee export supply chain performance	**YES**

4.11.1. Discussion of Hypothesis Result

H1: Strategic partnerships and supply chain performance

The findings show that building strategic alliances (e.g., with foreign customers, governments, or supply chain partners) improves the performance of Ethiopia's coffee supply chain. Collaborations may increase efficiency, market access, and overall competitiveness.

H2: Customer relationships and supply chain performance

This finding implies that good customer connections are critical to the performance of the coffee supply chain. Maintaining personal relationships with clients may result in greater feedback, repeat business, and more accurate demand forecasts, all of which increase supply chain efficiency.

H3: Capacity building and supply chain performance

Positive support for this hypothesis emphasizes the necessity of training, skill development, and system upgrades across the coffee supply chain. Improving the competencies of personnel participating in the supply chain is likely to result in increased productivity and responsiveness.

H4: Infrastructure and supply chain performance

This suggests that excellent infrastructure (roads, ports, and storage facilities) is crucial to the performance of Ethiopia's coffee supply chain. Reliable infrastructure ensures on-time delivery, minimizes losses, and improves total export efficiency.

H5: Logistics cost and supply chain performance

While logistics expenses are often associated with negative outcomes, this hypothesis argues that better-managed logistics costs (e.g., lowering inefficiencies and optimising routes) have a considerable beneficial influence on supply chain performance. This might imply that focussing on controlling and lowering logistics costs can improve the efficiency of the coffee export supply chain.

H6: Information access and supply chain performance

The findings indicate that access to timely and reliable information is critical to the operation of the coffee supply chain. This might contain market data, supply levels, or demand projections, allowing

supply chain participants to make more informed decisions and improve performance. Overall implication: Each hypothesis indicates that positive interactions (strategic alliances, customer relationships, capacity building, infrastructure, logistics management, and information access) are critical to enhancing Ethiopia's coffee export supply chain performance. Developing these factors might result in more efficiency, better market access, and higher competitiveness for Ethiopian coffee in the global market.

4.12. Discussion of Findings

The study's primary goal is to determine the factors influencing the supply chain performance of coffee-exporting enterprises in Ethiopia. The regression model demonstrated significant validity and fit. The study's findings align with and expand upon previous research in the area of supply chain performance, particularly concerning coffee exporters. Each significant factor identified—strategic supplier partnership, customer relationship, information flow, infrastructure, and logistic cost—has been supported by earlier studies, reinforcing their importance in supply chain management.

The positive impact of strategic supplier partnerships on supply chain performance is consistent with the findings of Li et al. (2006), who noted that strong relationships with suppliers lead to better coordination, reduced costs, and improved quality, all of which enhance overall performance. Li et al. (2006) found that strategic supplier partnership, and information flow have a major effect on business competitiveness and logistic productivity. In this study, thesignificant coefficient (0.230, p = 0.000) underscores the importance of maintaining and developing strategic partnerships to drive performance improvements in Ethiopian coffee supply chains.

Similarly, the positive influence of customer relationships echoes the results of Fynes, Voss, and Burca (2005), who emphasized that close relationships with customers can lead to increased loyalty, better demand forecasting, and more effective supply chain operations. Furthermore, Wathe (2016) looked at the impact of customer relationship and information flow. The independent variable was the customer relationship and information flow, while the dependent variable was the supply chain performance of manufacturing enterprises. The study found a connection between customer relationship and information flow and the logistics performance of manufacturing companies in Kenya. These findings were consistent with Mollel's (2015) study, which found that customer relationships significantly impact the supply chain performance of Tanzanian food processing firms.

Furthermore, this finding aligns with Kumsa (2018), who discovered that customer service is a key factor influencing the logistics performance of Modjo Dry Port. The coefficient for customer relationship in this study (0.252, p =0.000) highlights its crucial role in achieving higher supply chain performance.

Interestingly, capacity building did not show a significant impact on supply chain performance (0.032, p = 0.684). This contrasts with some prior research, such as Barney (1991), who suggested that building organizational capabilities is critical for competitive advantage. The insignificant result in this context suggests that Ethiopian coffee exporters may need to reassess their capacity-building strategies to ensure they are more impactful and aligned with their specific supply chainneeds.

The relevance of information flow (0.225, p = 0.002) is consistent with Li and Lin's (2006) findings, which show that efficient information sharing across supply chain participants leads to increased coordination and performance. Mollel (2015) conducted a research in Tanzania and discovered that the amount of information exchange has an impact on the logistical performance of food processing enterprises. Similarly, Waqas (2020) did a research on communication transfer impact and lean methods of logistical efficiency on the textile sector in Karachi. Pakistan and he found that level of information sharing, and quality information sharing were all significantly affecting the logistic performance. The current study reinforces that timely and accurate information flow is vital for the efficient operation of coffee supply chains.

The role of infrastructure in enhancing supply chain performance is well-documented. Forinstance, Gunasekaran et al. (2004) pointed out that robust infrastructure supports smooth logistics and operations. The coefficient for infrastructure in this study (0.173, p = 0.011) confirms its critical role in the Ethiopian context, suggesting that investments in infrastructure can yield significant performance benefits. Finally, the impact of logistic cost (0.136, p = 0.017) on supply chain performance is in line with previous studies by Beamon (1998), who highlighted that managing and optimizing logistic costs are essential for maintaining a competitive supply chain. This study further substantiates that controlling logistic costs is crucial for Ethiopian coffee exporters to enhance their supply chain performance.

These findings emphasize the critical role of various aspects of supply chain management in enhancing overall performance within the coffee exporting industry. Strengthening strategic

partnerships with suppliers, fostering robust relationships with customers, investing in capacity building initiatives, ensuring efficient information flow, maintaining reliable infrastructure, and managing logistic costs effectively are all essential strategies for improving supply chain performance and, consequently, the competitiveness of coffee exporter firms.

To summaries, this study emphasized the significance of addressing many dimensions of supply chain management to attain optimal performance results in the coffee export market. By understanding and utilizing the links between independent variables and supply chain performance, organizations may execute focused strategies to better their competitive position and satisfy by shifting demands of the market. The market which aligns with from previous research in the field of supply chain management. In a study by Li et al. (2017), similar correlations were found between the partnership of strategic suppliers and supply chain efficiency at the context of manufacturing enterprises in China. Li et al. highlighted the importance of establishing collaborative relationships with suppliers to enhance overall supply chain efficiency, which resonates with the findings of the current study.

Moreover, the relationships between customer and supply chain performance is consistent with research by Kumar and Ramani (2019), who emphasized the critical role of customer-centric strategies in improving supply chain effectiveness. They argued that a strong focus on customer satisfaction and relationship management contributes to better supply chain performance outcomes, echoing the results of the present study.

Furthermore, the relation between capacity building, information flow, infrastructure, logistic cost, and supply chain performance aligns with the findings of studies conducted by Jones and Farris (2018) and Tan et al. (2020). Both studies emphasized the importance of investing in organizational capabilities, enhancing information sharing across the supply chain, improving infrastructure reliability, and managing logistic costs efficiently to achieve superior supply chain performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

The focus of the research was to look at the factors that affect Ethiopian coffee exporting companies' supply chain performance. The study's results, recommendations, and summary of findings were all discussed in this chapter.

5.1 Summary

The study's overall goal was to determine the elements influencing the supply chain performance of coffee-exporting enterprises in Ethiopia. To accomplish the research aim, the literature on determinants of supply chain performance was examined; six criteria that may influence the supply chain performance of coffee exporters were selected, and a survey was then performed. The study's primary conclusions, depending on the research objectives, are summarised below. Examining the major elements that influence the performance of Ethiopia's coffee export supply chain, with an emphasis on high-volume exporters. The research investigates how strategic supplier alliances, customer interactions, capacity building, information flow, infrastructure, and logistics costs influence supply chain effectiveness.

This thesis investigates the major determinants impacting the success of the Ethiopian coffee export supply chain, with a particular emphasis on high-volume exporters. The research investigates how strategic supplier alliances, customer interactions, capacity building, information flow, infrastructure, and logistics costs influence supply chain effectiveness.

Ethiopia is one of the world's leading coffee producers, and the coffee sector is critical to the country's economy. The study attempts to investigate how Ethiopian coffee exporters may improve their performance and worldwide competitiveness by addressing supply chain inefficiencies.

The study uses quantitative approaches like correlation and regression analysis to analyse data gathered from a structured questionnaire issued to key players in the coffee export supply chain. Primary findings include:

Strong supplier and customer connections greatly improve performance.

In addition, information flow and infrastructure are critical to supply chain performance.

However, capacity-building initiatives have had little impact, indicating that a rethink is necessary.

Managing logistics expenses is critical for increasing profitability and retaining a competitive advantage in the global marketplace.

5.2. Conclusion

The findings of this study shed light on the factors influencing the supply chain performance of coffee exporters in Ethiopia. Through regression analysis, it was determined that strategic supplier partnerships, customer relationships, information flow, infrastructure, and logistic cost significantly impact supply chain performance. These findings underscore the importance of strategic management and investment in various aspects of the supply chain to enhance overall efficiency and competitiveness. Strategic supplier partnerships and customer relationships emerged as critical drivers of supply chain performance, emphasizing the need for Ethiopian coffee exporters to prioritize building and maintaining strong ties with both suppliers and customers. Efficient information flow within the supply chain was also found to be crucial, highlighting the importance of investing in informationsystems and communication technologies.

Furthermore, investments in infrastructure were shown to have a significant positive impact on supply chain performance, indicating the importance of adequate transportation, storage, and processing facilities. Effective management of logistic costs was also identified as essential for maintaining competitiveness in the market.

Interestingly, the study found that current capacity-building efforts may not be effectively contributing to supply chain performance, suggesting a need for re-evaluation and redesign of these strategies aligning with demand industry process requires. Firms might need to redesign their capacity-building programs to ensure they are more effective and aligned with the specific needs of the supply chain.

In conclusion, the findings of this study provide valuable insights for Ethiopian coffee exporters, highlighting areas for strategic focus and investment to enhance supply chain performance. By prioritizing strategic partnerships, improving customer relationships, investing in information flow and infrastructure, and effectively managing logistic costs, coffee exporters can achieve greater efficiency, responsiveness, and competitiveness in the global market.

5.3. Recommendation

Based on the findings of this study, several recommendations can be made to Ethiopian coffee exporters aiming to improve their supply chain performance.

- **Firstly,** it is imperative to prioritize the development and nurturing of strategic supplier partnerships and customer relationships. This can be achieved through regular communication, collaboration on product development, and the establishment of mutually beneficial agreements. Strengthening these relationships enhances coordination and fosters trust and loyalty, ultimately leading to improved supply chain performance.

- **Secondly**, investments should be made in enhancing information flow within the supply chain. This entails implementing robust information systems and technologies that enable real-time data sharing and communication among supply chain partners. By ensuring timely and accurate information exchange, coffee exporters can streamline operations, minimize disruptions, and respond more effectively to market dynamics.

- **Thirdly**, infrastructure development is crucial for supporting efficient supply chain operations. Ethiopian coffee exporters should advocate for investments in transportation networks, storage facilities, and processing plants to improve the speed and reliability of product movement. Moreover, efforts should be made to leverage existing infrastructure efficiently and explore innovative solutions to address logistical challenges.

Strengthen Strategic Supplier Partnerships

Developing and maintaining strong partnerships with suppliers is crucial for supply chain performance. Ethiopian coffee exporters should invest in collaborative strategies with their suppliers, such as joint planning, resource-sharing, and transparent communication. Regular reviews of supplier performance, mutual goal alignment, and adopting a proactive approach to problem-solving will improve the efficiency and reliability of the supply chain.

Enhance Customer Relationships

Establishing and sustaining strong customer relationships is essential for gaining feedback, ensuring repeat business, and enhancing overall satisfaction. Ethiopian exporters should engage in customer-focused practices, including personalized communication, after-sales support, and responsive service.

Implementing customer relationship management (CRM) systems can further streamline communication, helping businesses better understand customer needs and adjust the supply chain accordingly.

Information Flow

Efficient information flow is fundamental to a responsive supply chain. To address this, exporters should adopt advanced information technology systems that support real-time data sharing and integration across the supply chain. Automated tracking systems, digital dashboards, and communication platforms allow exporters to monitor inventory levels, track shipments, and quickly respond to changes. Investment in these tools will enhance supply chain transparency, reduce errors, and facilitate prompt decision-making.

Invest in Infrastructure Development

Infrastructure improvements, including transportation networks, storage facilities, and processing plants, are critical for the speed and reliability of coffee exports. Although infrastructure investment requires significant resources, exporters can collaborate with government agencies and industry bodies to advocate for infrastructure improvements that benefit the coffee industry as a whole. Additionally, exporters should maximize the use of existing infrastructure and seek innovative solutions to overcome logistical bottlenecks.

Effective Logistics Management

Effective management of logistic costs is crucial to maintaining profitability. Exporters should evaluate current logistics strategies and consider options such as route optimization, bulk shipping, and collaboration with third-party logistics providers to reduce costs. Implementing a logistics management system can help exporters track expenses and identify areas for cost savings, such as reducing fuel consumption or optimizing warehouse usage. Regularly reviewing logistic expenses will help maintain a lean supply chain that supports competitive pricing.

Through implementation of these recommendations, Ethiopian coffee exporters can enhance their supply chain performance, increase operational efficiency, and maintain a competitive edge in the global market.

- Lastly, the findings suggest a need to reassess and redesign capacity-building strategies to ensure they effectively contribute to supply chain performance. Ethiopian coffee exporters should tailor capacity-building programs to address specific skill gaps and operational challenges within their supply chains. Emphasis should be on offering practical training and cultivating a culture of continual learning and growth.

5.4. Area Further Research

Even though this study offers some and basic insights into the factors that influence the supply chain performance of coffee exporters in Ethiopia, there is still a need to expand the findings to acquire a more thorough knowledge.

Firstly, investigating the role of government policies and regulations in shaping supply chain dynamics could provide valuable insights. Understanding how regulatory frameworks impact logistics, infrastructure development, and trade facilitation could help identify opportunities for policy interventions to support supply chain optimization.

Secondly, a comparative analysis across different sectors within the Ethiopian economy could offer insights into sector-specific challenges and opportunities. Examining supply chain performance in other agricultural commodities or manufacturing industries could reveal unique factors affecting performance and highlight transferable lessons for the coffee sector.

Additionally, qualitative research methods such as interviews and case studies could provide a deeper understanding of the underlying mechanisms and processes driving supply chain performance. Exploring the perspectives and experiences of key stakeholders, including exporters, suppliers, and customers, can uncover nuanced insights and highlight context-specific factors influencing performance.

Overall, further research in these areas can advance our understanding of supply chain performance in the context of Ethiopian coffee exporters and inform strategies and interventions to enhance competitiveness and sustainability in the industry.

Reference

Abdul, F., Isaac, I., Ganiyu, T., & Oluwayomi, O. (2019). Impact of logistics management on organizational performance: A case study of Dangote Flour Mills Plc, Nigeria. *Journal of Sustainable Development in Africa, 21*(1), 123–136.

Abiy, T. (2016). *Assessments of coffee marketing chain and its export performance in Ethiopian GDP* (Master's thesis, Addis Ababa University, Ethiopia).

Aboneh, H. (2017). *Effect of supply chain management practices on organizational performance in pharmaceutical companies in Addis Ababa* (Doctoral dissertation, St. Mary's University).

Arawati, A. (2015). The influence of SCM on production performance and product quality. *Journal of Economics, Business and Management, 3*(11), 1139–1143.

Babble, E. (2002). *Survey research methods* (2nd ed.). Belmont, CA: Wadsworth.

Beamon, B. M. (1998). Supply chain design and analysis: Models and methods. *International Journal of Production Economics, 55*(3), 281–294.

Belay, M. (2011). *Challenges of supply chain management and their relationship with the competitive position of cement industries in Ethiopia.* Graduate School of Business Leadership, University of South Africa.

Blanchard, D. (2010). *Supply chain management best practice* (2nd ed.). New Jersey: John Wiley & Sons.

Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2002). *Supply chain logistics management* (Vol. 2). New York, NY: McGraw-Hill.

Chopra, S., Kalra, D. V., & Meindl, P. (2010). *Supply chain management: Strategy, planning, and operation* (4th ed.). Pearson.

Cooper, D., & Schindler, P. (2011). *Business research methods* (11th ed.). New Delhi, India.

Cothari, C. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Delhi, India: New Age International Publishers.

Council of Supply Chain Management Professionals (CSCMP). (2012). *Supply chain management definition*. Retrieved from http://cscmp.org/about-us/supply-chain-management/def

CSCMP India. (2013). *Creating competitive advantage through the supply chain: Insights on India*.

Dawson, C. (2009). *Introduction to research methods: A practical guide for anyone undertaking a research project.* Newtec Place, UK: How to Books Ltd.

Dilebo, T. T. (2019). Determinants of coffee market supply: The case of Yirgachefe district, Gedeo zone, southern Ethiopia. *Journal of Agricultural Crop Research, 7*(5), 64–71.

Estampe, D. (2014). *Supply chain performance and evaluation models.* London: ISTE.

Fasika, K., & Marcus, L. (2014). Identifying the characteristics of the supply chain processes in developing country: A manufacturing industry perspective.

Fynes, B., Voss, C., & Burca, S. (2005). The impact of supply chain relationship quality on quality performance. *International Journal of Production Economics, 96*(3), 339–354.

Giunipero, L. C., Handfield, R. B., Monczka, R. M., & Petterson, J. L. (2009). *Sourcing and supply chain management* (4th ed.). Cengage Learning.

Gopal, P. R. C., & Thakkar, J. (2012). A review on supply chain performance measures and metrics: 2000–2011. *International Journal of Productivity and Management, 61*(5), 518–547. https://doi.org/10.1108/17410401211232957

Hanh, N., Bekrar, A., Le, T. M., & Abed, M. (2021). Supply chain performance measurement using SCOR model: A case study of the coffee supply chain in Vietnam. *2021 1st International Conference on Cyber Management and Engineering (CyMaEn)*, Hammamet, Tunisia, pp. 1–7. https://doi.org/10.1109/CyMaEn50288.2021.9497309

Israel, E. F., Albrecht, A., Frazzon, E. M., & Hellingrath, B. (2017). Operational supply chain planning method for integrating spare parts supply chains and intelligent maintenance systems. *IFAC Papers Online, 50*, 12428–12433.

Jones, A., & Farris, J. (2018). *Supply chain management: A strategic perspective.* Pearson.

Joshi, B. (2017). *Willingness to pay for sustainable coffee: The case study of Canggu, Bali* (Master's thesis, University of Gent, Valorous).

Koh, Y. (2007). The impact of supply chain integration on operational capability in Malaysian manufacturers.

Kumar, V., & Ramani, G. (2019). *Customer relationship management in supply chain management and logistics.* Springer.

Lavrakas, P. (2008). *Encyclopedia of survey research methods.* Los Angeles, CA: Sage Publications.

Leończuk, D. (2021). Factors affecting the level of supply chain performance and its dimensions in the context of supply chain adaptability. *Log Forum, 17*(2), 253–269. https://doi.org/10.17270/J.LOG.2021.584

Leong, G. K., Tan, K. C., & Wisner, J. D. (2009). *Principles of supply chain management: A balanced approach.* Cengage Learning.

Li, S., & Lin, B. (2006). Accessing information sharing and information quality in supply chain management. *Decision Support Systems, 42*(3), 1641–1656.

Moslem, G., Elham, R., & Mohammad Ali, E. S. (2013). Manufacturing companies of Khuzestan Province. *Interdisciplinary Journal of Contemporary Research in Business.*

Mugenda, O. (2003). *Research methods: Quantitative and qualitative approaches.* Nairobi, Kenya: Acts Press.

Murphy, M., & Dowding, T. J. (2015). *The coffee bean: A value chain and sustainability initiatives analysis.* The case of Ethiopia.

Nkatha, R. (2014). Information and communication technology adoption and supply chain performance among cooperative societies in Embu County in Kenya. Retrieved from http://hdl.handle.net/11295/75034

Pamulety, T. C., & Pillai, V. (2011). Impact of information sharing in supply chain performance. *Technology Systems Management, 145*, 327–332.

Panhuysen, S., & Pierrot, J. (2014). *Coffee barometer.* Hivos, IUCN Nederland, Oxfam Novib, Solidaridad, and WWF.

Ruth, N., & Marther, W. (2018). Factors affecting performance of agricultural value chains: The case of small-scale coffee marketing in Kangundo, Machakos County. *Proceedings of the 1st Annual International Conference* held on 17th–19th April, Machakos University, Kenya.

Sabry, A. (2015). The impact of supply-chain management capabilities on business performance in the Egyptian industrial sector. *International Journal of Business and Management, 10*(6).

Salem, M. A. (2011). Supply chain management and business process integration – the implication of Confucian dynamism. *European Journal of Marketing, 45*(3).

Stuart, F. (2007). *Supply-chain strategy: Organizational influence through supplier alliances.* London: British Academy of Management.

Syahira, S. N. (2017). The factors that influence supply chain performance. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2971679

Tan, K. C., Kannan, V. R., Handfield, R. B., & Ghosh, S. (2020). *Supply chain management: A global perspective.* John Wiley & Sons.

Thi, T., & Hanh, N. (2024). Factors influencing the performance of the coffee supply chain—The case study of Vietnam. *Proceedings of the World Conference on Information Systems for Business Management.*

Tummala, R. V. M., Cheryl, L. M., Johnson, P., & Johnson, P. (2006). Assessing supply chain management success factors: A case study. *Supply Chain Management: An International Journal, 11*(2), 179–192.

Xuan, T. T. T., Quach, P. H., Thinh, N. V., Hoa, T. T., & Tu, N. T.

RESEARCH QUESTIONNAIRE

Dear respondents:

First of all, I would like to express my appreciation for your kind cooperation in providing me with relevant information. This is a questionnaire designed to collect data for the study entitled: “Factors Affect Supply Chain Performance of Ethiopian High- volume Coffee Exporters” which will be used as an input for a thesis in a partial fulfilment of Master of International Business Program. Your genuine response is solely used for academic purpose and the data will be treated utmost confidentiality.

The questionnaire has been designed to utilize a maximum of 15 minutes to complete. No need of writing names required to be appeared and anonymity is guaranteed. Please read the instructions and each item in the questionnaire carefully before you give response.

Thank you so much for your willingness, cooperation, and support.

General Instruction: - Circle your response or indicate "√" in the box beneath for closed-ended questions among the provided alternatives. You don’t need to write your name.

Section A: Demographic Profile of Respondent

Instruction: Circle your response against any response that applies to you.

1.	Sex:	Male ☐ Female ☐
2.	Age:	☐ ☐
3.	Education level	Secondary school First Degree Diploma Master & above
4.	For how long have you been? employed in this company?	
5.	Department/work unit in the Organization?	

Section Two: Factors Affect Supply Chain Performance

This part of the questionnaire consists of items concerning factors affect supply chain performance.To what extent do you agree about the following statements? Use the following rating scale, and put "√" mark for each rating. 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree and 5: Strongly Agree.

No.	Strategic Supplier Partnership	1	2	3	4	5
1.	Quality is our first criterion in selecting suppliers					
2.	Solving problems jointly with suppliers and partners affects Supply Chain Performance					
3.	Companies supporting financial, capacity building, and others tosuppliers to improve their product quality and quantity as per the company, the need affects Supply Chain Performance					
4.	Involving suppliers in new product development processes, planning, and goal-setting activities. affects Supply Chain Performance					
5.	Regularly measuring supplier's contribution to profitability affects Supply Chain Performance					
6.	integration of suppliers and exporters in all supply chain activity regularly affects Supply Chain Performance					
	Customer Relationship					
1.	Frequent interaction with customers affects Supply Chain Performance					
2.	Frequently measuring and evaluating customer Satisfaction affects Supply Chain Performance					
3.	Having long-term business interaction with customers affects Supply Chain Performance					
4.	Periodical evaluates of customer relationship affects Supply Chain Performance					
5.	Time delivery affects Customer Relationships and those relation affects Supply Chain Performance					

	Capacity Building:	1	2	3	4	5
1	Providing training and development affects Customer Relationship opportunities for employees					
2	investing in technology and infrastructure to support capacity-building affects Supply Chain Performance					
3	providing training to upstream SC members affects Supply Chain Performance					
5	Providing diversified skill training affects Supply Chain Performance					
6	Staff training and development are prioritized for supply chain improvement					
No.	**Infrastructure**	**1**	**2**	**3**	**4**	**5**
1	Maintaining warehousing facilities are well-efficiently. Can affects Supply Chain Performance					
2	Information technology systems reliability support supply chain operations and affects Supply Chain Performance					
3	The infrastructure (transportation networks, communication systems, etc.) in the coffee supply chain is efficient.					
4	The infrastructure in the coffee supply chain meets the industry. standards.					
5.	Infrastructure improvements have positively impacted logistic. costs in the coffee exporter's supply chain.					
No.	**Information Sharing:**	**1**	**2**	**3**	**4**	**5**
1	Using advanced information technology in order tointegrate supply chain (for internal department, supplier and distributors).					
2	Collected and analysed data improve. Supply chain performance					
3	The exchange of information between trading partners affects Supply Chain Performance					
4	Company providing suitable training programs for employees and trading partners. affects Supply Chain Performance					
5	Trading partner shares business knowledge of core business. processes with each other affects Supply Chain Performance					

6	We communicate with other trading partners about any event or developments that may affect them					
7.	Information exchange between our trading partners and us is timely.					
8.	Information exchange between our trading partners and us is accurate					
No	**Logistic Cost**	**1**	**2**	**3**	**4**	**5**
1.	Logistic costs in the coffee supply chain in our company are well-managed.					
2.	Our company effectively optimized logistics costs to ensure competitiveness.					
3.	The cost of transportation in the coffee supply chain is reasonable.					
4.	The company inventory management practices effectively control logistic costs.					
5.	The company transportation and shipping costs are managed. effectively.					

Section Three: Measures for Supply Chain Performance

Concerning the supply chain performance of your company, please choose the appropriate number and put (□) to indicate degree of your agreement level each statement. Each scales are five-point Likert-type scales with 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

No.	**Supply Chain Performance**	**1**	**2**	**3**	**4**	**5**
1	The company supply chain delivery time meets customer expectations and need					
2	Logistics system is integrated and optimized for cost-effectiveness					
3	Inventory management is efficient and responsive to customer. demand					
4	Information sharing among supply chain members is timely and accurate					
5	The company supply chain can rapidly adjust resources to accelerate.					
6	Supplier selection and procurement processes are effective and efficient.					

7.	The exporter effectively manages transportation and warehousing. costs in the supply chain					
8.	The company has a short order-to-delivery cycle time					
9.	The exporter regularly measures and evaluates its supply chain. performance.					
10.	Overall, the company's logistics operations are efficient and cost-effective.					