

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

MASTER OF SCIENCE IN INTERNATIONAL BUSINESS

THE EFFECT OF GLOBAL SUPPLY CHAIN CHANGES ON ETHIOPIAN COFFEE EXPORT PERFORMANCE: THE MEDIATING ROLE OF GOVERNMENT SUPPORT AMONG SELECED COFFEE EXPORT FIRMS IN ADDIS ABABA

A Thesis Submitted to Addis Ababa University in Partial Fulfillment of the Requirement of the Award of Master's Degree in International Business

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JUNE, 2026

DECLARATION

This is to declare that the thesis entitled **"The Effect of Global Supply Chain Changes on Ethiopian Coffee Export Performance: The Mediator role of Government Support among The Selected Coffee Export Firms in Addis Ababa"**, is submitted in the partial fulfillment of requirements for Masters of science in International Business in Addis Ababa University, is an original record of my work and has never been submitted to any institution to get any other degree or certificates. The assistance and help I receive during the course of this investigation have been duly acknowledged.

Tsehay Girma



Signature & Date

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Master of Science in International Business

This is to clarify that the thesis entitled **"The Effect of Global Supply Chain Changes on Ethiopian Coffee Export Performance: The Mediator role of Government Support among The Selected Coffee Export Firms in Addis Ababa"** out by Tsehay Girma, submitted in partial fulfillment of the requirement the degree of Master's in International Business. It complies with the regulations of the university and meets the accepted standards with to originality quality.

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ABSTRACT

The purpose of this study was to use government support as a mediator to examine the effect of changes in the global supply chain on Ethiopian coffee export performance. An explanatory research design was used in this investigation. A survey questionnaire was used to gather the necessary data, which came from both primary and secondary sources. A sample of 384 respondents was initially determined using Yamane's (1967) formula. However, 156 valid questionnaires were successfully collected and analyzed, representing a response rate of 40.6%. the collected data were considered adequate for multiple regression and mediation analysis. The link between the independent variable (Global Supply Chain Changes) and the dependent variable (Coffee Export Performance) was assessed using correlation and regression analysis. Whereas, Andrew Hayes PROCESS Model 4 was employed to analyze the mediating role of Government Support between the relationship of Global Supply Chain Changes and Coffee Export Performance. The regression result showed that Government Support had a positive and significant effect on Coffee Export Performance ($\beta = 0.7453$, $p < 0.001$), explaining 67.9% of the variance in Coffee Export Performance (R Square = 0.679, Adjusted R Square = 0.675). The researcher discovered that there was a positive and significant impact of global supply chain changes on coffee export performance ($\beta = 0.2138$, $p < 0.001$) when the mediating variable of government support was disregarded. The indirect effect of government support was found to be positive and significant (Effect = 0.0597, BootSE = 0.0284, 95% BootCI: 0.0017 to 0.1141), with the bootstrap confidence interval not containing zero, suggesting that about 21.8% of the total effect is transmitted through the mediator. This suggests that government support plays a partial mediating role in the relationship between global supply chain changes and coffee export performance. The study suggests that policymakers and government agencies prioritize strengthening government support mechanisms, particularly market intelligence and training programs for coffee exporters, as well as investing in climate-resilient infrastructure and stable regulatory frameworks, because government support acts as a critical mediator, enhancing the positive relationship between global supply chain adaptations and Ethiopia's coffee export performance.

Keywords: Global supply chain changes**, **Coffee export performance**, **Government support

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LIST OF ABBREVIATIONS/ACRONYMS

AFCFTA: African Continental Free Trade Area

CMSA: Constant Market Share Analysis

EUDR: EU's Deforestation Regulation Ethiopian Coffee and Tea Authority

ICA: International Cooperative Alliance

MRLs: Maximum Residue Limits

RCA: Revealed Comparative Advantage

SCM: Supply chain management

SCOR: Supply Chain Operations Reference

SNNPR: Southern Nations, Nationalities, and People areas

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Coffee is the one of the most traded agricultural commodity in the world and proved a livelihood of millions of producers in developing countries. Ethiopia is the birthplace of Arabica coffee and remains Africa's biggest coffee producer and exporter. Coffee is an important sector for generating foreign exchange earnings, employment and rural livelihoods (Minten et al., 2019).

Recent disruptions in global supply chains have also posed significant challenges to agricultural exports. Climate variability has changed rainfall patterns and temperature conditions in major coffee-producing regions, affecting coffee yields and quality. Moat et al. (2017) implies that the future climate scenarios may decrease the suitability of large coffee growing areas in Ethiopia.

In addition, changes in regulations in international markets have become another important issue. The exporters are now expected to meet stricter standards on sustainability, traceability and food safety, particularly in European markets. The cost of compliance increase because of this and also influence market access opportunities. (Alemu, Birru et al., 2023).

Ruther more geopolitical tensions and international conflicts have disrupted transport networks, increased logistics costs and created uncertainty in global commodity markets. This disruption affected the efficiency of international trade and the competitiveness of coffee exporting firms. (Demeke, Ferede et al., 2021).

Government support through export promotion policies and rules, infrastructure development, extension services and institutional assistance and training may help firms to cope with these external shocks and maintain export performance. Therefore, exploring the mediating role of Government support provides significant insights to improve the resilience of the coffee export sector in Ethiopia.

According to Christopher Tang (2006), supply chain disruption arises from climate variability, regulatory change and geopolitical tension that affect the flow goods, information and resource across global supply networks. Similarly Yossi sheffi (2005) identifies natural disasters, government regulations, and geopolitical events as major source of supply chain vulnerability.

Additionally Man Mohan S.Sodhi and Christopher S.Tang (2012) categorized supply chain risks, into envinrmental risks, policies and regulatory all of which significantly influence global trade and export performance. Therefore, climate variability, regulatory change and geopolitical tension are appropriate dimension for measuring global supply chain changes because they represent the major external force that reshape international supply chains.

The direct consequences of global supply chain disruptions on export performance have been studied in the past, but the involvement of government support as a mechanism by which businesses adjust to these external shocks has received little attention. Thus, the purpose of this study is to determine if government support mediates the relationship between changes in the global supply chain and the performance of coffee exports.

1.2 Statement of the problem

The global coffee industry is experiencing a major transformation due to climate variability, regulatory changes and geopolitical uncertainties. These changes have transformed the structure and functioning of global supply chains and posed significant challenges to coffee-exporting countries. For Ethiopia, where coffee is still one of the most important export commodities, such disruptions cause serious risks to export performance, foreign exchange earnings and economic development.

Studies have shown that climate variability has negative impact on coffee production, quality, and productivity, thus questions export competitiveness (Davis et al., 2022; Ovalle-Rivera et al., 2015). Similar trends have been observed with the increase in operational and compliance costs for exporters due to regulatory changes such as standards related to sustainability, traceability requirements and environmental compliance (Neilson et al., 2018). Furthermore, geopolitical tensions and supply chain disruptions have led to uncertainties in transportation, logistics and market access, which have impacted the performance of exporter firms (Gereffi, 2020; Ivanov & Dolgui, 2021).

In response to these challenges, the Ethiopian government has undertaken a series of interventions to have a positive influence the coffee sector. These include export promotion efforts, quality improvement programs, market facilitation mechanisms, infrastructure investments and policy reforms to enhance the competitiveness of coffee exporters. Although

such interventions are supposed to improve firms' capacity to cope with supply chain disruptions, there is still limited empirical evidence about their effectiveness.

Existing studies have mainly examined the direct effects of climate change, supply chain disruptions or government support on firm performance. However, the role of government support as a mediating mechanism that may affect the association between changes in the global supply chain and export performance has been not considered well. Furthermore, the existing literature has mostly studied these issues separately, rather than integrating climate variability, regulatory changes and geopolitical tensions within a single analytical framework.

As a result, there is a substantial empirical and theoretical gap about how government support mediates the relationship between changes in the global supply chain and Ethiopian coffee export performance. In order to improve the sustainability and competitiveness of Ethiopia's coffee export industry, government and industry partners must address this gap. As a result, this study explores how Ethiopian coffee export performance is affected by changes in the global supply chain and looks at the mediating influence of government support among certain Addis Ababa coffee export companies.

1.3 Objectives of the study

1.3.1 General objective of the study

The general objective of the study is to examine the effect of Global supply chain Changes on the Ethiopian coffee export performance and the mediation role of Government support.

1.3.2 Specific objectives of the study

Based on the above general objective of the study, this research will address the following specific objectives.

- To examine the effect of climate variability on Ethiopian coffee export performance
- To evaluate the effect of regulatory changes on Ethiopian Coffee export performance
- To investigate the effect of geopolitical tensions on the Ethiopian coffee export performance, and

To analyze the mediating role of Government support on the relationship between global supply chain change (which are climate variability, regulatory change, geopolitical tension) and Ethiopian coffee export performance.

1.4 Research Question

1. What is the effect of climate variability on Ethiopia's coffee export performance?
2. What is the effect of regulatory on Ethiopia's coffee export performance?
3. What is the effect of geopolitical tension on Ethiopia's coffee export performance?
4. To what extent does government support mediate the relationship between global supply chain change and coffee export performance?

1.4 Significance of the study

The study's findings have practical implications for coffee exporters found in Addis Ababa provides:

- To analyze how government assistance measures might mitigate the disruptive effects of global supply chain changes on export performance.
- It will give exporters an insight how and when government intervene and how regulatory frameworks designed will affect the market of coffee at national and international level
- This study provides critical empirical evidence to policymakers at the Ethiopian Coffee and Tea Authority, Ministry of Trade, and other key government organizations,
- The findings will also show gaps in policy purpose and implementation effectiveness, allowing corrective measures such as the controversial grade-five export ban to be tackled with a greater awareness of stakeholder implications.
- For future scholars, this study adds to the academic literature by filling in the gaps in understanding the mediating impact of government support in the relationship between global supply chain changes and export performance in developing countries.

1.5 Scope of the study

The scope of the study had three major scopes. The first is the subject scope of this study which aimed to investigate the effect of global supply chain changes on Ethiopia's coffee export performance, taking government support as a mediating variable. The subject scope also includes three independent variable dimensions of global supply chain changes: climate variability, regulatory changes, and geopolitical tensions. The dependent variable is coffee export performance and the mediating variable, government support

The second scope of this study was a methodological scope. Methodologically, this study was employed a explanatory research design that consisted of quantitative methodologies.

Geographically, the study was limited to coffee export enterprises operating in Addis Ababa, Ethiopia's capital city. Addis Ababa is Ethiopia's primary coffee export hub, housing the headquarters of the Ethiopian Coffee and Tea Authority, the Ethiopia Commodity Exchange (ECX), the headquarters of major coffee export companies, as well as the administrative and transportation system that supports the coffee trade.

1.6 Conceptual Definitions

Global supply chain changes refer to external environmental, institutional, and political disruptions that affect the movement of products, information, and resources across international supply chains. According to Ethiopian coffee exports, Global Supply Chain Changes are operationalized through three dimensions: climate variability (environmental disruption), regulatory changes (institutional disruption), and geopolitical tensions (political disruption).

Coffee export performance refers to the measurable results of Ethiopian coffee exporters' foreign trade activities, which include both financial and non-financial markers of success. Export revenue is operationally defined as the total foreign currency revenues from coffee exports, calculated using self-reported annual export earnings in US dollars and exporter assessments of revenue trends over the previous three years (Regasa, 2025).

Government support refers to Ethiopian authorities' policies, initiatives, and institutional interventions aimed to has a positive impact increasing the competitiveness and resilience of the coffee sector.

1.7 Organization of the study

This thesis is divided into five chapters, each addressing a specific aspect of the research process and contributing to a comprehensive understanding of the impact of global supply chain changes on Ethiopia's coffee export performance, with a focus on the mediating role of government support. The first chapter, Introduction, serves as the study's basis by providing background information on Ethiopia's coffee business and the global supply chain shifts that are affecting it. This chapter articulates the issue statement, defines the study's scope mainly the subject, methodological, and geographic scopes and the significance and the operational definitions of terms in the study. Chapter two is a thorough analysis of the theoretical and empirical literature

pertinent to the research. Chapter three describes the conceptual foundations, research design, and processes used to carry out the study. It explains the explanatory research design, which consists quantitative survey. Chapter Four summarizes the study's findings and interpretations. Both quantitative and Qualitative findings will be properly presented in this chapter. The fifth chapter provides a succinct explanation of the study's objective, methodology, and key findings and recommendations.

CHAPTER TWO

REVIEW OF THE RELATED LETRATURE

2.1. Conceptual Reviews

2.1.1. Conceptualization of Global Supply Chain Changes

Global supply chains have become increasingly exposed to external disruptions arising from environmental, regulatory, and geopolitical forces. Recent supply chain resilience literature emphasizes that the firms operating in international markets face growing uncertainty due to climate related events, involving regulatory requirements, and geopolitical instability, all of which affect the movement of products, information, and financial resources across supply chain networks (Han & Um, 2024; Faggioni et al.,2024).

The contemporary supply chain environment is characterized by interconnected risks that originate outside organizational boundaries and create ripple effects throughout global value chains. Herold and Marzantowicz (2023) argue that modern supply chains are increasingly exposed to complex disruptions arising from institutional pressures, government interventions, and global crises, requiring firms to develop greater resilience and adaptive capabilities. Similarly, recent supply chain risk management studies categorize external supply chain disruptions into environmental risks, institutional or regulatory risks, and political or geopolitical risks that significantly influence supply chain performance and international trade activities (Han & Um, 2024).

Based on this perspective, the present study conceptualizes Global Supply Chain Changes as a multidimensional construct represented by climate variability, regulatory changes, and geopolitical tensions. These dimensions imply the major groups of external disruptions currently affecting global supply chains.

Climate variability represents the environmental dimension of global supply chain changes. Changes in temperature, rainfall patterns, droughts, floods, and other extreme weather events affect agricultural production, product quality, transportation systems, and supply reliability. In agricultural export sectors such as coffee, climate variability influences production volumes, quality consistency, and the ability of exporters to meet international market demand.

Regulatory changes represent the institutional dimension of global supply chain changes. Global supply chains increasingly operate under evolving sustainability requirements, trade regulations, traceability systems, environmental standards, and food safety regulations. Compliance with these changing requirements affects production practices, operational costs, market access opportunities, and export competitiveness.

Geopolitical tensions represent the political dimension of global supply chain changes. Recent studies highlight that geopolitical conflicts, trade disputes, economic sanctions, diplomatic tensions, and regional instability significantly influence global supply chain configuration, transportation routes, trade relationships, and market certainty. Geopolitical disruptions have emerged as one of the most important sources of supply chain uncertainty affecting international business operations (Bednarski et al., 2025).

Therefore, this study treats climate variability, regulatory changes, and geopolitical tensions as three interrelated dimensions of Global Supply Chain Changes that influence Ethiopian coffee export performance directly and indirectly through government support mechanisms.

2.1.2. Supply chain Administration of the coffee Industry

Coffee is a vital product for agriculture, and many countries that grow it rely significantly on its exports (Kittichotsatsawat et al., 2021). Its unique flavor, aroma, and invigorating qualities make it extremely common (Giraldi-Díaz et al., 2018; Hameed et al., 2018). Coffee companies employ coffee supply chain management, or SCM, as a global strategy to increase their level of competition. In a bid to reinforce their position in the market, companies have modified their operational strategies, such as implementing the SCM model (Nguyen et al., 2017). The initial stage of a coffee bean's journey is cultivation, which involves a large number of parties with diverse objectives and interests (Bothiraj et al., 2020; Ikhwana, 2018).

Different types of coffee plants can be found in Asia, America, and Africa. Companies like the one in issue use a direct trade approach, whereby coffee experts visit respected growers in person all over the world. They visit farms, see the growth, harvesting, and processing phases, and sign contracts for the types and quantities required. Consequently, the primary product, coffee beans, meets consumer demand for coffee (Hanh et al., 2021).

2.1.3. Supply Chain Performance Metrics

Several methods have been used by academics to evaluate supply chain performance in order to determine its effectiveness. The Supply Chain Council (SCC) developed the Supply Chain Operations Reference (SCOR) model. This paradigm, according to Gunasekaran (2004), offers a standardized, process-oriented way for different supply chain players to communicate in areas including manufacturing, delivery, planning, and procurement. Beyond corporate boundaries, SC performance includes material flows and distribution to the end user through a range of channels. Many businesses lack a clear strategy for developing effective performance metrics for supply chain performance, claim Shepherd and Köter (2006). Additionally, Wong (2009) identified several issues with the metrics used to evaluate the efficacy of supply chains, arguing that the evaluation is often scattered both within and between businesses. Sukati (2012) asserts that supply chain performance should be verified using three distinct performance measurement methods: Flexibility (the system's capacity to adapt to external uncertainty), Output (the caliber of value delivered to the customer), and Resources (the caliber of sourcing resources).

2.2 The Concept of Export

Philip R. Cateora (1998) asserts that "whether the company is large or small, or whether its market is one country or a global market," exporting is an essential component of international commerce. In a similar vein, the term describes the strategy of selling goods produced in the company's home nation, often with minimal modification, in order to break into a foreign market. In general, the term refers to the process of moving goods from production facilities that are raw, semi-processed, or fully processed to places where they can be eaten or processed further (Armstrong and Cateora, 2004).

2.2.1. Coffee in Ethiopia

Ethiopia has a favorable climate for coffee production, with the right amount of rainfall, temperature, altitude, soil type, and ph. The origin of coffee Arabica is in Ethiopia. For this Arabica coffee, the nation has a genetic background that is quite heterogeneous. Ethiopia has significant potential to market a wide variety of specialty coffees and produces a variety of unique Arabica coffees (Nure, 2008).

Ethiopia produces very little of the lesser-value Robusta coffee, which is better suited for production in equatorial regions with lower altitudes. The two areas of Oromia and the Southern

Nations, Nationalities, and People areas (SNNPR) in the south and west of Ethiopia are home to nearly all of Ethiopia's coffee production.

Ninety-five percent of Ethiopia's coffee is grown by smallholder farmers (Tefera and Tefera, 2013). Forest, semi-forest, garden, and plantation coffee are among the several production strategies used to produce it (Tulu, 2008). Farmers harvest forest coffee from trees that require little care and are grown in the wild beneath natural forest cover. Although semi-forest coffee is also grown in forested environments, growers only do minimal upkeep, namely yearly weeding. Despite the fact that the trees are typically situated far from agricultural plots, this variety of coffee has clearly defined ownership borders. Coffee from trees that farmers cultivate close to their homes is known as "garden coffee." It frequently grows alongside trees or other crops.

Plantation coffee is grown on state, private, and large commercial farms. In this situation, current production techniques like mulching, stumping, pruning, watering, and the use of modern inputs are frequently used. These various production systems are thought to account for roughly 10, 35, 50, and 5 percent, respectively, of the nation's total coffee production, despite the absence of recent, trustworthy figures (Kufa, 2012).

Over the past ten years, there have been substantial domestic policy changes that have impacted the composition and operations of the coffee export industry. First, private dealers were required to sell their coffee through the Ethiopian Commodity Exchange (ECX), a brand-new, cutting-edge commodity exchange, starting in December 2008.

Based on a warehouse receipt system, ECX trades standard coffee contracts with standard terms for delivery, payment, transaction size, and coffee grades. Nine liquoring and inspection units in significant manufacturing locations carry out decentralized first-level quality control. The coffee value chain's structure has changed significantly since the ECX was established (Gabre-Madhin, 2012). Second, in an attempt to curb exporters' hoarding, the government repeatedly stepped in to regulate the coffee market. Six major traders were prohibited from exporting coffee in April 2009 due to their known excessive stockpiling.

According to Alemu (2009), the government confiscated their coffee supplies, shut down their warehouses, canceled their licenses, and sold them on their behalf. In addition, a policy that restricted the quantity of coffee that exporters could keep was put into effect in May 2011. If an exporter is discovered to be holding more than 500 metric tons of coffee without a shipment contract with an importer, for instance, their ability to sell and purchase coffee on the ECX will

be terminated (Tefera and Tefera, 2013).Five As demonstrated in 2011 and 2013, coffee exporters have been banned for violating these rules (Araya, 2011; Ye-wondwossen, 2014). Third, coffee export tariffs have undergone several modifications over the years.

The elimination of entry barriers (Proclamation No. 70/1993), the unification of all taxes and duties imposed on coffee export into a single tax family (Proclamation No. 99/1998), which reduced all coffee export taxes to 6.5 percent, and the exemption of all export taxes on coffee exports in the wake of the global coffee crisis in 2002 are among the fundamental changes. To protect legal ownership of specialty coffee names (particularly Sidamo, Harar, and Yirgacheffe) in international markets, an Ethiopian Fine Coffee Trademark Licensing Institute was established in February 2005 (Agrer, 2004). This initiative was initially met with opposition, but it was eventually resolved.

This initiative was initially met with opposition, but it was eventually resolved. The goal of this effort was to add brand value to Ethiopian coffee. In order to improve coffee farm-gate and export prices, signatories and the government agreed on a brand management approach (Arslan and Reicher, 2010).

2.2.2. Coffee Production Systems in Ethiopia

According to the Ministry of Trade (2012), Ethiopian coffee production is divided into four (4) systems: forest coffee, semi-forest coffee, garden coffee, and plantation coffee. Approximately 95% of Ethiopian coffee production is classified as organic. Forest Coffee is the initial method of producing coffee. The South and South Western regions of Ethiopia, namely Bale, West Wolega, Metu, Keficho-Shekicho, Bench Maji, and Jimma, are home to the majority of this industrial system. Arabica coffee, or coffee arabica, is thought to have originated in these regions. Instead of being purposefully developed by growers, forest coffee is self-sown and grows beneath the shadow of naturally occurring forest trees.

This variety of coffee provides a great deal of variation for breeding and selection, allowing plant material to be chosen for high yields, disease resistance, and good flavor and fragrance quality. Under this arrangement, 10% of the country's output is produced. Semi-Forest Coffee comes in second. The southern and south-western regions of Ethiopia also use this production method, which makes for 35% of the country's total coffee production. Compared to trees grown under the forest coffee system, trees under this system receive comparatively more sunlight. Farmers

must thin and choose their forest trees to allow for sufficient sunshine while also guaranteeing sufficient shade.

The country's southern and eastern regions, particularly the South and North Omo, Hararghe, Gedeo, Sidamo, Wolega, and Gurage zones, are home to the third type of coffee production, known as "garden coffee." It is situated close to producers' homes and makes up around half of the country's crop. It is primarily fertilized with organic resources and planted at low densities. Plantation coffee, which makes about 5% of the country's total production, is the fourth method of coffee production. It is produced on well-run smallholder coffee farms and state-owned plantations, some of which have recently been privatized. Under this method, essential agronomic procedures are carried out, including weeding, spacing, applying fertilizer and herbicides (for state-owned plantations), maturing, and controlling shade, among others.

2.2.3. Dimension of Export Performance

According to reviews on export performance (Katsikeas et al., 2000; Oliveira et al., 2012; and Walker and Ruekert, 1987), the three main aspects of performance are effectiveness, efficiency, and flexibility. Walker and Ruekert (1987) defined these three concepts as follows: effectiveness is a measure of the company's success relative to its competitors. Last but not least, efficiency results from a firm's policies in relation to the resources needed to implement them, whereas adaptiveness refers to how successfully a company responds to changes in its environment (Styles, 1998).

(Clark, 2000) likewise makes use of the three previously mentioned dimensions. Diamantopoulos and Kakkos (2007) argue that export sales are associated with efficacy, profitability with efficiency, and innovative items with adaptation, following in the footsteps of Walker and Ruekert (1987) and Al-Khalifa and Morgan (1995). According to Morgan and colleagues (2012), the export marketing plan's execution is critical to the exporting firm's initiative's success. To sum up, a lot of writers assess their work using at least one of these criteria effectiveness, efficiency, and adaptability even if they do it covertly.

2.2.4. Coffee Production and Export in East Africa

Robusta and Arabica are the two biological species of coffee that are native to Africa, and Ethiopia is where the practice of drinking coffee first spread. Arabica coffee is grown at higher elevations and frequently on volcanic soils, whereas robusta coffee is planted at lower elevations.

Compared to Arabica, Robusta coffee is easier and less expensive to grow. In both wealthy and developing nations, coffee is a cash crop. More than 10 million households in 25 coffee-growing countries in Africa rely on it as their primary source of income. Coffee is the main source of foreign exchange income for many of these nations.

Moleketi (2016) asserts that in addition to accounting for a significant portion of the nation's tax revenue and GDP, coffee is a vital source of export revenue. There are 25 coffee-producing nations in Africa, compared to 11 in Asia and Oceania, 12 in Mexico and Central America, and 8 in South America (International Coffee Organization, 2015).

Over the past 49 years, coffee production in Africa has increased negatively. Between 1965–1966 and 1988–1989, while the coffee market was governed by an export quota system, the average production was 19.4 million bags per crop year. The average production per crop year under the free-market economy system was 16 million bags between 1989/90 and 2014/15. Africa's proportion in global coffee production has thus decreased over those two eras, from 24.9% to an average of 14%. About 16.9 million bags were produced in the 2014–15 crop year, which accounts for 12% of the projected 141.7 million bags produced worldwide.

Eight African nations were among the top 20 producers of coffee, accounting for 91% of global production between 1965–1966 and 1988–1989. Furthermore, those eight nations' average production volume represented 21.5% of global production. Côte d'Ivoire accounts for 5.1% of global output, followed by Ethiopia (3.7%), Uganda (3.6%), Angola (2.2%), Cameroon (2%), the Democratic Republic of the Congo (1.8%), Kenya (1.8%), and Madagascar (1.4%). However, only four African nations which together make up 93.7% of global production were listed among the top 20 producing nations during 1989–1990 and 2014–2015.

According to the International Coffee Organization (2015), the four African nations in question Ethiopia (3.9%), Uganda (2.6%), Côte d'Ivoire (2.5%), and Kenya (0.9%) account for just 9.9% of global production. With the exception of Ethiopia and Uganda, it is evident that all African nations saw a decrease in coffee production following the years 1965–1966–1988–1989 (International Coffee Organization, 2015). The arrival of the free market, primarily as a result of less government intervention, would be the cause. With an estimated production of just 35,000 bags in the crop year 2014/15 compared to 3.5 million bags in 1970/71, Angola, which until the mid-1970s accounted for an average of 5% of annual world production, has lost its position as the region's top producer. Ethiopia has seen the fastest growth in African output, with an average

annual growth rate of 2.2% for the previous 50 years, rising to 2.7% since crop year 1989/90 (ICO, 2013). Despite occasional downturns, the nation's output trend is often increasing, reaching over 6.6 million bags in 2014–15. Ethiopian Coffee Production Ethiopia grows coffee in a variety of ways. The first is forest coffee, which can be found growing freely in the forest. Coffee from semi-forests is gathered from wild coffee plants that are grown on private property with little to no cultivation. Smallholders grow garden coffee on small plots. Lastly, plantation coffee is produced on enormous plantations, nearly all of which were once held by the state. Traditionally, coffee has been cultivated under tree shade; this type of coffee is known as "shade grown" coffee.

Sun agriculture, which involves growing coffee in rows completely exposed to the sun with little to no cover from the forest canopy, is becoming more and more popular among farmers. Because of this, berries ripen more quickly, increasing production. But because this approach requires the removal of trees and the application of pesticides and fertilizer, the product loses its eligibility for organic or environmentally friendly specialty designation (Abu, 2021). Unwanted side effects of sun-cultivated coffee include habitat damage, pesticide pollution, deforestation, and degraded soil and water. Coffee grown in the sun is generally thought to be of worse quality than coffee grown in the shade. In Ethiopia, coffee is mostly grown by smallholders who either operate garden farms or harvest wild and semi-wild coffee.

Just under one-third of the area used for coffee production is used for wild or semi-wild coffee, while about two-thirds of the land is used for smallholder cultivation. Only a very small percentage of land used for coffee production is made up of large plantations (Mechal, 2013). Since coffee cultivation is a labor-intensive sector that does not require large amounts of capital, the majority of Ethiopia's coffee is either grown by smallholders or grows wild. The majority of producers are not financially hampered by this because the government provides farmers with land. However, the opportunity cost of growing coffee is an important expense that needs to be emphasized. Coffee plants require four years to reach maturity and begin yielding a harvestable crop after planting. The loss in revenue that could earn by using the land to grow alternative crops during the maturing period is therefore the most significant fixed costs for most coffee farmers. That said, garden coffee could be successfully intercropped to diversify income streams. Smallholders require very little working capital, as the input supplies are limited to small quantities of fertilizer and perhaps the occasional replacement of tools. Farmers typically do not

have to pay for environmental restoration since they are not required to address environmental degradation caused by their production. Due to the labor-intensive nature of coffee production, owners of larger farms and plantations do need working capital, mostly to hire workers. The private sector is poor when it comes to the provision of inputs. Promoting nurseries that create and disseminate more recent disease-resistant strains at a reasonable cost presents opportunities (Anteneh et al., 2011).

2.2.5. Coffee Production and Marketing Value Chain in Ethiopia

Small-scale farmers, privately owned farmers, and state-owned enterprises are among the producers in this stage of Ethiopia's coffee value chain. In the nation's coffee value chain, producers, particularly large-scale private coffee plantations and state-run coffee plantations, control the majority of the volume of goods mobilized, value-adding services, market share, and capital possessed. Following cultivation and maturation, those producers' value-adding operations in the value chain include gathering coffee beans and transferring them to processing facilities (USAID, 2010).

Coffee and the majority of other farm goods are raw and must be processed before being consumed. This raises the price of marketing services, which raise the value and cost of agricultural products. Coffee processing includes the following subtasks: pulping, washing, drying, sorting, sacking/packaging, loading, and trucking, followed by offloading to the warehouse. Without harvesting, drying, or hulling, the small-scale coffee growers always sell their farm's red cherry coffee to coffee collectors. Some small-scale producers in rural areas, however, cultivate, harvest, dry, hull, and sell their dry cherry coffee to collectors, both legal and illicit.

Household farmers, on the other hand, primarily sold red cherry coffee. Large-scale private and state farms utilize pulping machines (dry or wet pulping machines) to increase the value of their coffee goods after harvesting coffee chary. Consequently, women make up the majority of agro-processing workers (USAID, 2010). Coffee's importance to Ethiopia As mentioned repeatedly before in this paper as well as various other literatures, Ethiopia’s export has always been mainly comprised of agricultural products, of which, until very recently, was dominated by coffee.

Samuel and Eva (2008) estimate that up to 8 million households rely on the coffee industry for a significant portion of their income, and many of them work in coffee-related jobs including marketing, transportation, and processing. It is projected that 700,000 households in the country produce coffee (ICO/CFC, 2000). Coffee has enormous developmental implications for Ethiopia, but it also contributes significantly to the nation's social and cultural legacy. The certification system's subsequent design, website development, and other marketing strategies like coffee "cupping" and tourism could all benefit from technical support (Ezera, 2007).The certification system's subsequent design, website development, and other marketing strategies like coffee "cupping" and tourism could all benefit from technical support (Ezera, 2007).

2.2.6. Coffee production and export performance in Ethiopia

In the modern world, development economists are increasingly interested in the relationship between export performance and economic growth. Because commerce may boost foreign exchange revenues, provide access to technological knowledge, and encourage greater use of idle human capital resources all of which can be significant stimulants of rapid economic expansion.

According to UNCTAD (2005), export performance is important because: export development enables the nation to focus on investment in those sectors where it has a comparative advantage; the resulting specialization is likely to increase overall productivity; the larger international market allows economies of scale to be realized in the export sector; worldwide competitive pressures are likely to reduce inefficiencies in the export area and result in the adoption of more efficient techniques in the overall traded good sector; and a larger export sector would make available the physical and human capital, such as advanced production and management technology and higher-quality labor.

UNCTAD (2005) also discusses the theoretical argument that redistributing resources to export production has a favorable impact on growth. Coffee is thought to span over 600,000 hectares of Ethiopian land (McMillan et al., 2003), with more than half of that area being semi-forest or semi-wild/wild terrain.Smallholder farmers grow coffee on their own farms or harvest semi-wild or wild coffee, accounting for about 95% of Ethiopia's total production. Smallholder coffee, often known as "garden" or "cottage" coffee, is grown on about 235,600 hectares and is typically interplanted with food staples (McMillan et al, 2003). Additionally, there are roughly 20,000

hectares of plantation coffee, mostly from state farms but also increasingly from privately owned plantations (McMillan et al, 2003).

2.2.7. Importance of Cooperatives Sector in Ethiopia

According to the International Cooperatives Alliance (2017), a cooperative is an independent group of people who have come together voluntarily to address their shared economic, social, and cultural needs and goals through a jointly owned and democratically run business. The sector made a huge contribution to the historical economic growth of several nations worldwide. Over one billion individuals worldwide are united by the cooperative movement, according to data gathered by the International Cooperative Alliance (ICA).

The United Nations estimated in 1994 that cooperative enterprises provided security for the lives of approximately three billion people, or half of the world's population. These businesses continue to support the communities' social and economic endeavors. In 2020, 9.2 million Ethiopians, or 10% of the country's total population, were cooperative members. Nearly one billion people are members of the International Cooperative Alliance (ICA). As of October 2013, these figures were derived from 94 ICA member nations. Cooperatives significantly improve the socioeconomic circumstances of its members and the communities in which they operate as self-help groups and economic enterprises. The Ethiopian people have a long history of collaborating to meet their socioeconomic demands. In rural Ethiopia, a lot of social activities continue to be organized through teamwork. By establishing the legal foundation and expanding human resource development at higher institutions, the Ethiopian government has paved the way for improved cooperative development in the nation and recognized the cooperative form of business organizations as essential to socio-economic development (Tamiru, 2015).

Building robust cooperatives is essential to the nation's economy in nations where cooperative activity is practiced. It took more than fifty years for modern cooperatives to be established in our nation. According to the Federal Cooperative Agency's completed report as of December 30, 2009 E.C., there are 79,038 main cooperatives with a total capital of 13,874,369,638.00 and 15,482,168 members (11,041,619 men and 4,440,549 women). Additionally, 370 cooperative unions are currently operating and making 3,808,433,565.00 in capital.

The cooperative sector generates 17.68 billion capitals annually on average. Additionally, the cooperatives' saving culture has been steadily increasing, reaching 7.9 billion birr and

distributing 6 billion birr in credit. Although cooperatives have significantly improved smallholders' access to markets, information, and services, the Ethiopian cooperative movement has previously encountered some challenges. Although the nation's current free market economy supports the growth of cooperatives, their limited capacity has prevented them from fully utilizing the opportunities that are currently available (Federal Cooperative Agency Report, 2020). Coffee unions have the right to avoid coffee auctions, when individual merchants are required to take part.

2. 3. Climate Variability and Ethiopian Coffee Export Performance

2.3.1. Biophysical Impacts of Climate Variability on Coffee Production

According to Moat et al. (2017), climate change poses a significant threat to Ethiopian coffee production through rising temperatures and changing rainfall patterns, potentially affecting both productivity and export competitiveness.

Even under mediate warming scenarios, there would be significant geographical shifts in coffee suitability, potentially forcing production to higher elevations and endangering the genetic diversity preserved in Ethiopia's wild coffee forests, according to this groundbreaking study, which used ensemble climate models and species distribution modeling.

Rising temperatures have an effect that goes beyond geographic suitability. The precise impacts of temperature rises on coffee bean development in Ethiopia's main growing regions were studied by Davis et al. (2019). Ethiopian coffee industry faces equally important issues due to rainfall fluctuation. Gebre and Tiki (2020) found a statistically significant correlation between variations in annual yield and patterns of rainfall distribution after examining 30 years of meteorological data and coffee production statistics from Ethiopia's main coffee districts. Their study showed that delayed belg (spring) rains, which trigger coffee flowering, led to shorter harvesting seasons and higher labor expenses, which decreased export profitability.

2.3.2. Indirect Effects through Supply Chain Disruption

Climate variability affects coffee export performance through its influence on production, quality consistency, and supply chain stability. Changes in temperature and rainfall patterns can reduce coffee yields, alter bean quality, and increase uncertainty in export supply, thereby affecting firms' ability to satisfy international market requirements (Moat et al., 2017; Davis et al., 2019)..

Tessema and Wiersum (2021) looked into how Ethiopia's coffee marketing system is affected by changes in production brought on by the environment. Based on surveys of 450 coffee traders and exporters in Addis Ababa and regional trading hubs, their study found that exporters are forced to maintain larger inventory buffers due to climate-driven production volatility, which raises working capital requirements and decreases supply chain efficiency. According to exporters, it is challenging to complete long-term contracts with foreign clients due to inconsistent supply, which could harm Ethiopia's standing as a dependable supplier.

Ethiopia's position in premium coffee markets depend on quality consistency, which is negatively impacted by climate unpredictability. Coffee samples collected over several growing seasons with different climatic conditions were subjected to sensory analysis by Worku et al. (2022). They discovered that, in contrast to ideal growing years, beans grown during drought years had significantly different flavor profiles, with less acidity and more bitterness. Ethiopia's branding efforts are complicated by these quality variances, which can also lead to price reductions when shipments fall short of the buyer's expectations based on prior purchases.

2.4. Regulatory Changes and Ethiopian Coffee Export Performance

2.4. 1 Domestic Regulatory Evolution

Since the 1990s, Ethiopia's coffee marketing system has undergone numerous revisions, moving from a centrally planned system to one with a more liberalized market structure. In order to increase market transparency, standardize quality grading, and ease price discovery, the Ethiopia Commodity Exchange (ECX) was established in 2008, marking a turning point in the regulation of coffee marketing. Tadesse and Guttormsen (2020) examined transaction data from 2005 to 2018 to assess the effect of ECX establishment on coffee export performance. By blending beans from different origins, the system initially disadvantaged specialty coffee exporters by obscuring the traceability information those premium buyers were increasingly demanding. However, their econometric analysis showed that ECX participation improved price transparency for lower-grade coffees.

The Direct Specialty Trade (DST) system, which was introduced in 2017 and permitted registered exporters to buy directly from certified cooperatives and private estates instead of going through ECX auctions, was one of the legislative changes brought about by the recognition of this restriction. In their study of the effect of this regulatory reform on specialty coffee export

performance, Gebreyesus and Mohn (2021) discovered that, within two years of its implementation, DST implementation was associated with a 23% rise in specialty coffee export volumes and a 15% premium over coffees traded on the ECX. Their study demonstrates how regulatory architecture, depending on how well it aligns with buyer requirements and market structure, can either help or hinder export performance.

More recent regulatory developments have focused on institutional coordination and quality assurance. The Coffee and Tea Authority's establishment in 2021 consolidated regulatory oversight previously distributed across multiple agencies, theoretically enabling more coherent policy development. Alemu and Birru (2023) assessed the early impacts of this institutional reform, finding improved coordination in quality inspection and certification processes but noting persistent challenges in enforcement capacity, particularly regarding traceability documentation required for accessing European markets.

2.4.2. International Regulatory Frameworks

Ethiopian coffee exports are subject to a more complicated international regulatory framework that is marked by changing requirements for sustainability, quality certification, and food safety. According to Neilson & Wang (2019); changes in international coffee value chains and market governance structures have increased the importance of compliance with quality, traceability, and sustainability requirements. One of the biggest legislative changes influencing Ethiopian coffee exports is the EU Deforestation Regulation (EUDR), which was adopted by the European Union in 2023. Coffee is particularly listed as a regulated commodity under this regulation, which requires importers to prove that goods put on the EU market do not come from land that was cleared of trees after December 2020. According to Teklewold et al.'s (2024) analysis of the possible effects of EUDR implementation on Ethiopian coffee exports, smallholder producers without official land documentation may be at a disadvantage as compliance costs for setting up the necessary traceability systems could range from $120-180 per metric ton.

The success of Ethiopian coffee exports has also been impacted by food safety regulations enforced by importing nations. The EU, Japan, and other major importers have tightened the Maximum Residue Limits (MRLs) for pesticides, imposing additional limitations on previously approved compounds. According to Asfaw et al.'s (2021) analysis of Ethiopian coffee exporters' adherence to international pesticide standards, testing and certification expenses accounted for 8–

12% of total export costs for companies serving EU markets, while they only made up 3–5% for those exporting to traditional Middle Eastern markets with laxer regulations. Exporters specialize in either less regulated mass markets or high-compliance premium markets as a result of this disparity, which puts pressure on market segmentation.

2.4.3. Certification Systems and Market Access

For Ethiopian coffee exporters, the rise of voluntary sustainability certifications such as Fairtrade, Rainforest Alliance, Organic, and UTZ has brought about both opportunities and difficulties. Even though they are not required, these certification programs are now de facto prerequisites for entering several market niches, especially in specialty markets in Europe and North America. Minten et al. (2018) used survey data from 1,600 households in major coffee regions to provide a thorough examination of the effects of certification on Ethiopian coffee producers and exporters. According to their research, certified producers were paid an average of 15–30% more than non-certified growers; nevertheless, participation was restricted to bigger private estates and better-organized cooperatives due to certification fees and compliance requirements.

Exporters face regulatory complexity as a result of the emergence of numerous certification schemes with overlapping requirements. In their analysis of exporters' reactions to certification multiplicity, Damtew and Verbeke (2022) discovered that while smaller exporters specialized in one or two certification systems based on their primary buyer relationships, larger exporters generally maintained multiple certifications to access diverse markets.

2.5. Geopolitical Tensions and Ethiopian Coffee Export Performance

2.5.1 Regional Conflict and Supply Chain Disruption

Ethiopian coffee exports are impacted both directly and indirectly by the ongoing armed conflicts and geopolitical tensions in the Horn of Africa. Although it mostly affected northern Ethiopia, the Tigray conflict (2020–2022) affected coffee supply chains in a number of ways. The conflict's effects on coffee marketing were studied by Tafesse and Worku (2023), who noted that farming communities were displaced, processing infrastructure was destroyed, and transportation lines from production areas to export markets were disrupted. According to their research, which was based on surveys of 215 coffee exporters and merchants, during the active war period, coffee exports from impacted regions were cut by 65–80% due to conflict-related

interruptions, with recovery being hampered by damaged infrastructure and disturbed social networks.

In addition to the direct effects of conflict, regional instability has an influence on logistical dependability and investor confidence. Even when production is unaffected, Ethiopia's market share has decreased as a result of some foreign purchasers diversifying their sourcing away from the region due to the continued insecurity in portions of Ethiopia and its neighbors. In their analysis of European coffee importers' purchasing patterns prior to and during regional conflict episodes, Gebreegziabher and Tadesse (2024) discovered that perceived supply risk rose by 40% during conflict periods, resulting in lower contract volumes and shorter-term purchasing agreements that disadvantage Ethiopian exporters looking for steady, long-term buyer relationships.

2.5.2 International Trade Tensions and Market Dynamics

Ethiopian coffee exports are indirectly impacted by global trade disputes between major economic powers, which have an impact on trade flows, commodity prices, and exchange rates. While not specifically aimed at coffee, the US-China trade tensions that escalated between 2018 and 2020 had an impact on commodity prices and international financial markets, which had an impact on Ethiopian exports. In their study of the relationship between international trade tensions and Ethiopian coffee prices, Demeke and Ferede (2021) discovered that trade dispute uncertainty raised price volatility in international coffee markets by 25–35%, making it more difficult for Ethiopian traders to plan their exports and manage risk.

Ethiopian coffee export competitiveness is also impacted by currency volatility brought on by geopolitical events. The Ethiopian birr's managed exchange rate regime insulates exporters from some currency volatility but creates periodic adjustment pressures when official rates diverge significantly from market-clearing levels. In their analysis of the relationship between geopolitical events, exchange rate pressures, and coffee export performance, Feyissa and Gemechu (2022) discovered that birr devaluations, which temporarily increased export competitiveness in foreign currency terms but raised input costs for imported agricultural inputs, usually preceded periods of increased geopolitical uncertainty in global markets.

2.5.3 Shifting Trade Blocs and Bilateral Relations

Ethiopia's coffee export prospects are shaped by its involvement in regional and global trade agreements within a changing geopolitical environment. Ethiopian coffee exports face both potential and difficulties as a result of the African Continental Free Trade Area (AFCFTA), which opened for business in 2021. In their evaluation of Ethiopia's prospects for growing its coffee exports inside Africa in accordance with AFCFTA preferences, Tekle and Mohammed (2023) identified Kenya, South Africa, and Egypt as viable markets that are now largely supplied by non-African producers. However, their analysis also pointed out that without concurrent advancements in trade facilitation and transportation infrastructure, tariff liberalization could not be enough to boost intra-African coffee trade.

Ethiopian coffee export performance is strongly influenced by bilateral ties with major importing nations. Ethiopian coffee exports to the US have increased since 2000 thanks to duty-free access to US markets granted by Ethiopia's designation under the African Growth and Opportunity Act (AGOA). According to Abera et al. (2022), AGOA preferences improved competitiveness in comparison to non-beneficiary producers by lowering effective tariffs on Ethiopian coffee exports to the US by 8–12%. However, both exporters and purchasers experience uncertainty due to the recurring renewal requirements and eligibility assessments, with the possibility of termination or suspension posing a substantial downside risk.

Coffee export conditions are similarly impacted by relations between the European Union and Ethiopia, especially with regard to trade preferences and development cooperation. Ethiopian coffee has duty-free, quota-free access under the EU's everything but Arms (EBA) agreement, which is a significant preference margin over MFN rates. While preference utilization surpassed 90%, Hailu and Van den Berg (2020) looked at how Ethiopian coffee exporters used their EBA preferences. They discovered that the administrative costs associated with claiming preferences partially offset the benefits of tariffs, especially for smaller exporters.

2.5.4 Geopolitics of Sustainability Standards

One new issue facing Ethiopian coffee exporters is the growing incorporation of geopolitical goals into sustainability criteria. Despite its apparent emphasis on environmental and human rights protection, the EU's planned legislation on due diligence in supply chains has geopolitical implications as importing nations look to externalize their policy preferences through trade policies. In their analysis of the possible effects of changing EU due diligence regulations on

Ethiopian coffee supply chains, Woldesenbet and Kebede (2024) estimated that adherence to human rights due diligence requirements might necessitate large expenditures in supply chain mapping and monitoring systems and raise documentation costs by 15% to 20%.

2. 6. The Mediating Role of Government Support

2.6.1 Forms of Government Support in the Coffee Sector

Historically, the Ethiopian government has provided several sorts of support for the coffee industry, such as market development aid, infrastructure investment, extension services, and input provision. Although coverage is still limited by low extension agent-to-farmer ratios, Melese and Tulu's (2021) evaluation of the efficacy of government extension services in raising coffee productivity and quality found that households receiving regular extension visits achieved 18–25% higher yields and significantly better quality grades compared to non-participating households.

Another crucial area of government assistance that has an impact on coffee export success is infrastructure investment. While investments in laboratory facilities increase the capability for quality testing, road construction between distant coffee-producing regions and marketing cities lowers transportation costs and post-harvest losses. An hourly reduction in travel time to district markets was linked to a 7–12% increase in farm-gate prices received by producers, according to Belete and Alemu's (2023) analysis of the effect of rural road investment on coffee marketing efficiency. This was because better access increased marketing options and decreased intermediary power.

2.6.2 Government Support as a buffer against External Shocks

The government of Ethiopia tried to support coffee sector especially in the time of COVID-19 pandemic, because the pandemic had disturbed the global logistics and reduce and decreased demand for coffee in foodservice channels. These support that included temporary tax relief, accelerated export procedures, and foreign exchange retention allowances. The Ethiopian coffee exports performance decreased by about 8% in 2020 compared to 2019. This is far less than the 15–20% decreases that comparable African producers without equivalent assistance measures faced. The government mitigates the effects of climatic variability. As stated by Getachew and Fikre's (2023) in the assessment of the climate resilience outcomes of the interventions, participating coffee cooperatives had 30% less yield variability during drought years than non-

participating cooperatives and the result suggested that government-sponsored adaptation measures are an effective defence against production shocks related to climate change.

2.6.3 Limitations and Challenges in Government Support

The Ethiopian government support for the coffee industry was very much limited. The efficiency and the effectiveness of government support for Ethiopia's coffee industry is severely limited, despite its possible mediating effects. The scope and intensity of interventions are limited due to budgetary limits, especially in light of conflicting development agendas and sporadic macroeconomic pressures. The Ethiopian Coffee received about 4% of agricultural development expenditures despite it is contributing 25–30% of agricultural export earnings. As stated by Mulugeta and Tesfaye's (2022) that analyzed the budget allocations for the coffee sector in relation to sectoral GDP contribution and the result suggested that underinvestment in relation to economic importance.

The support of government support and its effectiveness is limited by implementation gaps caused by coordination issues between federal and regional government agencies. In Ethiopia Coffee is mostly produced in regional governments with significant administrative autonomy, but export marketing is subject to federal regulation, which could lead to inconsistencies between marketing facilitation and production assistance. As indicated by Dessalegn and Tsegaye (2024) studied about coordination mechanisms at different levels of government there are many irregularities and information asymmetries that hinder the efficiency of support interventions and delay responsiveness to new difficulties.

2.6.4 Justification of the Mediating Role of Government Support

Both theoretical and empirical data support the choice of government support as a mediating variable. Coffee export performance is impacted by global supply chain changes, such as climate variability, regulatory changes, and geopolitical tensions, which disrupt production systems, raise compliance costs, lower supply chain reliability, and restrict access to foreign markets. However, the success of government initiatives that improve businesses' ability to react and adapt will determine how much these external disturbances ultimately impact export performance.

Institutional Theory (Douglass C. North, 1990) states that businesses function in an institutional setting where organizational behavior and performance are influenced by laws, rules, and auxiliary organizations. Government assistance helps businesses reduce external uncertainties and boost their competitiveness in global markets through export promotion policies, financial incentives, quality certification, market data, infrastructure development, extension services, and trade facilitation. Government assistance thus serves as an institutional mechanism that converts external environmental variables into performance outcomes at the enterprise level.

From the standpoint of supply chain resilience, government assistance strengthens operational continuity during difficult times and lessens a company's susceptibility to supply chain disruptions. Geopolitical tensions may disrupt international trade and logistics, climate variability may lower coffee production and quality, and regulatory changes may increase compliance obligations. Businesses are able to withstand these shocks because to government initiatives including climate adaptation programs, export financing, infrastructure investment, diplomatic trade discussions, and technical assistance. Therefore, it is anticipated that changes in the global supply chain will have an impact on coffee export performance both directly and indirectly through government assistance.

This mediating mechanism is also supported by empirical research. James Hanley et al. (2025) discovered that by enhancing infrastructure, decreasing coordination errors, and increasing market access, institutional support and government policies enable upgrading within the global coffee value chain. Ethiopian coffee exports are now more competitive thanks to government initiatives like digital traceability systems, quality assurance programs, export market diversification, and institutional reforms, according to the Ethiopian Coffee and Tea Authority (2025). Additionally, Getachew and Fikre (2023) demonstrated that government-funded climate adaptation initiatives improved export stability by lowering production variability among coffee cooperatives.

Despite this evidence, prior research has mostly focused on how export performance is directly impacted by climate variability, regulatory changes, or geopolitical tensions; the explanation of how government support affects these linkages has received less attention. Therefore, by lessening the detrimental effects of external disruptions and improving exporters' capacity to

compete in global markets, this analysis suggests that government support mediates the relationship between changes in the global supply chain and coffee export performance.

2.7. Theoretical Reviews

2.7.1. Institutional Theory

Institutional theory suggested that organizations operate within an institutional environment where government policies, regulations, and supported mechanisms influence firma outcomes (North, 1990). In the context of global supply chain changes, government often intervenes through trade facilitation, infrastructure development, financial assistance and regulatory reforms. Such interventions allow firms to defend the external disruption and increase efficiency of export performance.

Institutional Theory provides the bases for understanding regulatory changes and government support, while supply chain risk and resilience perspectives explain the effect of environmental and geopolitical tension on the performance of export. Therefore climate variability, regulatory changes, and geopolitical tensions are treated as major external source of global supply chain change that affect coffee export performance either directly or through government support mechanisms.

2.7.2. Resource-based review (RBV)

The resource based review deals with the nature of trade that has unmistakable resources that, when accurately utilized, boost the firm's competitiveness. 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. The Coordination and transportation integration produce more important assets than autonomous endeavors. In connection with Concurring to the guideline, associations that take part in asset integration get more preferences. The impact of supply chain and coordination operations on operational execution will be compelled by the firm's available assets and those coordination are interesting and the 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).

2.8. Empirical Literature Review

2.8.1. Global Supply Chain Dynamics and Value Addition in the Coffee Sector

As stated by Hanley, Liu, Semrau, and Görlich's in their empirical studies, the fundamental data nations should engage in helping the improvement of the coffee global supply chain. They also investigated that coffee-growing countries mainly in Africa are struggling for maximizing from the higher –value portions of the chain for example roasted and soluble coffee exports, after analyzing 28 years of trade data (1991–2018) among coffee-producing nations. In their study, the above scholars investigate that African nations continue to be major exporters of raw green coffee beans, whereas, North America and the European Union dominate the export markets for value-added roasted coffee. Their research result also identified many factors that determine the global value chain. Their study depicted that coffee exports were negatively correlated with processing hub distance. The study also discovered that the higher level of agricultural taxation and lack of access to fertilizers were the main challenges of coffee export performance.

Ecel, Muwanga, Ssekiziyivu, and Nakanwagi's (2025) conducted comparative study of Ethiopian and Ugandan coffee competitiveness using UN Comtrade data from 2012 to 2023 and their study result showed that Ethiopia commands higher prices (averaging $5,186 per unit) than Uganda ($2,578 per unit). Their study quantitative analysis using Constant Market Share Analysis (CMSA) and Revealed Comparative Advantage (RCA) metrics showed that there are some indicative of the success of Ethiopia's specialty Arabica varieties. The founded that Ethiopia's supply chain was affected by serious issues, such as slow volume growth, high local consumption that accounts for half of production, and infrastructure limitations that prevent export growth. Finally, their study result suggested that supply chain inefficiencies and market concentration pose risks to sustained export performance.

2.8.2. Government Support and Institutional Interventions

The mediating effect of government support has an effect on coffee export performance through supply chain changes was supported by different empirical studies. For example the study of Hanley et al. (2025), founded that institutional and trade policy considerations have a big impact on global supply chain upgrading. Their findings showed that governments should design a supportive strategy in order to improve structural changes in the coffee sector. Their recommended that resolving coordination issues, supplying high-quality infrastructure, and

easing access to global markets, are very much important to enhance export cofeee performance(Hanley et al., 2025). The Ethiopian government has recently provided proof of the observable results of government action. As stated by the Ethiopian Coffee and Tea Authority (ECTA) identifying structural issues in the industry and putting specific remedies in place have been given top priority in the government's 15-year comprehensive national coffee development strategy. According to the Ethiopian Coffee and Tea Authority (quoted in ICE News, 2025), these include expanding export market locations, strengthening quality control procedures, and boosting traceability systems. As indicated by Director General of ECTA AdugnaDebela credits and other government-led measures, like digital auction platforms, bilateral trade agreements, and stringent quality control systems increased the coffee export performance (Debela, as cited in ICE News, 2025; Xinhua News, 2026).

2.8.3. Empirical Evidence on Ethiopian Coffee Export Performance

The study conducted by Survé and Mdlokovana (2025), showed that Ethiopia's coffee exports reached $762.75 million in the first quarter of the 2025–2026 fiscal year, a 47% increase in value over the previous year. But the quality of export coffee is still very poor. The researchers recommended that the government of Ethiopia should facilitate direct commerce between producers and foreign purchasers, building better data systems that helps both to have a real-time monitoring and increase delivery of compliance. In addition, the price level should be reasonable and should encourage cooperatives and coffee producing farmers (Survé&Mdlokovana, 2025).

Another empirical study stated in the ICE News report (2025), revealed that there was an 87% rise in export earnings during a ten-month period compared to the prior year, with shipment volumes increasing by 70% to 354,302 metric tons. As mentioned in the document, the Ethiopian Coffee and Tea Authority made a clear relation between the achievement made and specific reforms and the initiatives used to strengthen quality control, increase traceability, and broaden access to foreign buyers via digital channels. Ethiopia as a country, has been able to take advantage of favorable global market conditions due to the high demand for Arabica coffee and its price level (Ethiopian Coffee and Tea Authority, as stated in ICE News, 2025). As stated in Xinhua News (2026), Ethiopia took strategic move in order to enhance the coffee export

performance. Hanley et al. (2025) also added that the government's role has is reflected in the move away from conventional raw bean exports and toward processed coffee.

2.9. Empirical Gaps

Although previous empirical studied have substantially contributed to understanding coffee export performance and global supply chain dynamics, several important gaps were not covered.

First, existing studies have mainly examined individual determinants of coffee export performance, such as climate variability (Moat et al., 2017; David et al., 2019), regulatory changes (Gebreyesus & Mohn, 2021; Alemu & Birru, 2023), or geopolitical tension Demeke & Ferede, 2021; Tafesse & Worku, 2023), independently.

Consequently, limited empirical evidence explains how these dimensions collectively represent global supply chain change and also influence coffee export performance. Since exporter often experiences these disruptions concurrently rather than in isolation, examining them as an integrated construct provides a more comprehensive understanding of the current global business environment.

Second, while a number of studies have looked into the direct relationship between export performance and external environmental factors, very few have looked at the mechanism through which these relationships occur. In particular, despite growing government interventions through trade facilitation, export promotion, quality certification, financial incentives, and institutional reforms, the mediating role of government support has received little empirical attention. As a result, it is still unclear how much government support mitigates the negative effects of changes in the global supply chain on coffee export performance.

Third, rather than focusing on coffee export companies, the majority of earlier empirical research has focused on coffee producers, farmers, cooperatives, or agricultural productivity. These studies offer important insights into production-related issues, but they fall short in explaining how exporting companies react to global supply chain disruptions in foreign markets. As a result, there is still little firm-level data on the export performance of coffee exporters.

Fourth, comparatively few studies have concentrated on Ethiopia's coffee export industry; the majority has been carried out in industrialized nations or across several nations. Findings from other nations cannot be automatically applied to Ethiopian coffee export companies because to the country's distinct institutional framework, reliance on coffee exports, shifting regulatory environment, and vulnerability to geopolitical risks and climate variability.

Fifth, there is still a methodological gap regarding the use of mediation models to explain the indirect influence of government support on coffee export performance. This study fills these empirical gaps by analyzing the integrated effects of climate variability, regulatory changes, and geopolitical tensions as dimensions of global supply chain changes on coffee export performance, while concurrently investigating the mediating role of government support among selected coffee export firms in Addis Ababa. Previous studies have mostly used descriptive analyses or direct-effect regression models to explain the underlying relationships between global supply chain changes, government support, and export performance. By doing so, the study contributes empirical evidence to the literature on export performance, global supply chain management, and institutional support within the context of Ethiopia's coffee export sector.

2.10 Research Hypothesis

H1: There is a positive and significant relationship between Global Supply Changes and Ethiopian coffee export performance

H2. There is a positive and significant relationship between government support and Ethiopian Coffee export performance

H3. Government support has a mediating role in the relationship between Supply changes and Ethiopian coffee export performance

2.11. Conceptual Framework of the study

The conceptual framework focused on the effect of Global Supply Chain Change on Coffee Export performance in the case of selected coffee exporter in Addis Ababa. The study had three major variable; the independent, dependent and mediation variable. The independent variable in this study was global supply chain dimensioned as climate variability, regulatory change, and geopolitical tension and the dependent variable was export coffee performance whereas, government was treated as a mediating variable in the study. The conceptual framework of this study used the resource-based view perspectives and this theory propose that firm capabilities interact with external support mechanisms to generate competitive advantage, and highlights the role of institutional context in determining how developing country firms participate in and benefit from international markets (Hanley et al., 2025).

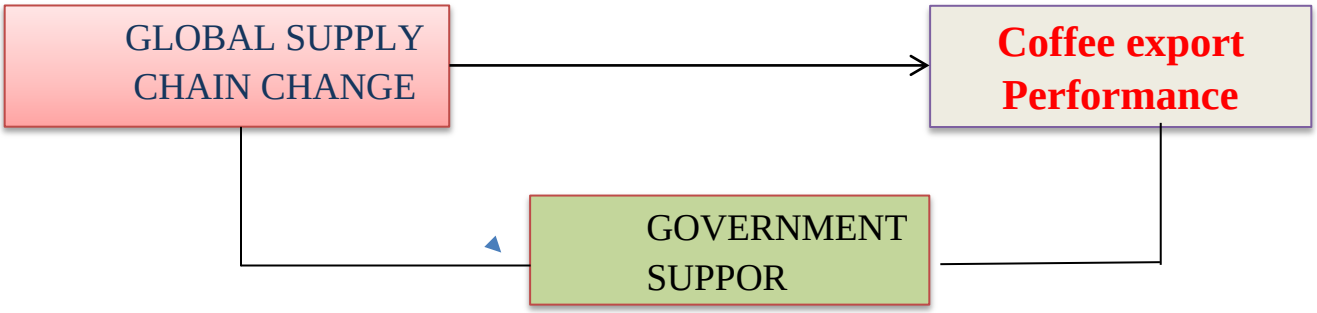


Figure 2.1 ***Conceptual framework of the study***

Source: Hanley et al., (2025) and modified by the researcher

Because it is the institutional mechanism via which external supply chain disruptions affect businesses' export performance, government support is modeled as a mediating variable. Therefore, this study uses mediation analysis with Hayes' PROCESS Model 4 to look at how changes in the global supply chain affect coffee export performance both directly and indirectly.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

According to Saunders (2007), research design is the overarching plan for answering the research questions. It enables a deeper understanding of the studied problem. Explanatory research design is appropriate for this study because it allows for examining the causal effect between the independent, mediating and dependent variable.

3.2. Research Approach

To achieve the aforementioned objectives, the study adopts an explanatory research approach, which includes the use of a questionnaire that collects mostly descriptive and quantitative data.

3.3 Data Type and Sources

Regarding types of data and sources, this study utilized primary data collected directly from coffee exporting firms. The target population consists of coffee exporters registered with the Ethiopian Coffee and Tea Authority (ECTA) and operating in Addis Ababa. As of recent reports, Ethiopia's coffee sector has demonstrated remarkable growth, with export revenue reaching 2.65 billion USD in the 2024/2025 fiscal year (Xinhua, 2026), and the government has intensified efforts to support the sector through various initiatives including policy reforms, digital auction platforms, traceability systems, and bilateral trade agreements (Ethiopian News Agency, 2025a). Leading exporters have reported that government policy adjustments introduced by the National Bank and ECTA's consistent monitoring have notably boosted sector performance (Ethiopian News Agency, 2025b). The sampling frame was obtained from ECTA's registry, and a stratified random sampling technique will be employed to ensure representation of exporters of different sizes and export volumes. Based on similar studies in comparable emerging economy contexts, a sample size of approximately 200-400 exporting firms were targeted to ensure adequate statistical power for the proposed analysis (Hair et al., 2019; Tripathi et al., 2024).

3.4. Target Population and sample size

3.4.1 Target Population

A population, according to Lavaca's (2008), is any finite or infinite grouping of distinct constituents.Todefineapopulationasthetotalityoftheitemsthatweareinterestedin. According to Zikmund (2010)and Khotar i(2004), a population is the "universe" or all of the objects in any subject of study. Exporters in Addis Ababa are the target group for this study. Therefore, the researcher used random selection of samples. The total population in this study is coffee exporters that operate in Addis Ababa. According to the Ethiopian Business Review (2026), as of early 2026, from the list of top Coffee Exporters the researcher selected 10 firms in order to collect accurate information from targeted employees.

3.4.2Sample Size

Since the researcher based conclusions on the sample, determining the sample size is a crucial albeit challenging aspect of every research project. Statistical techniques like significance tests can be used to perform precise checks to determine whether the sample size is sufficient for the necessary analysis.

3.4.3. Sampling Technique

The research applied sampling method to determine the sample size, employees within the selected firms using stratified random sampling. Then the sample size was determined using Yamane's formula (1967), the required sample size was calculated to be 384 respondents, however despite repeated follow up efforts, only 156 completed and applicable questionnaire were returned, resulting in a response rate of 40.6%. Although the achieved sample size was smaller than the initially determined sample, it was considered adequate for the statistical analyses employed in this study. According to Hair et al. (2022), a sample size of 150 or more is generally sufficient for multiple regression and mediation analysis involving a moderate number of predictor variables. Therefore, the 156 valid responses met the minimum analytical requirements for the study.

3.5. Data collection Instruments

In this study, there are three variables i.e. the independent variable, the dependent and mediating variable. Global supply chain is the independent variable and it was measured by climate variability, geopolitical tensions and regulatory changes. The dependent variable is the Ethiopian Coffee export performance whereas the mediating variable is the government support. The main tool used to collect data was survey questionnaires. The first is a structured questionnaire for Addis Ababa-based coffee export businesses that includes closed-ended questions divided into four sections that cover export performance indicators, government support mechanisms, global supply chain management practices, and demographic data. Each section is scored on a five-point Likert scale.

3.5.1. Procedures of Data collection

The techniques for gathering data adhered to a methodical seven-step methodology. Initially, the instruments were created using a literature research as a basis, evaluated by professionals, and pilot tested with five businesses to guarantee their validity and reliability. Second, the Ethiopian Coffee and Tea Authority as well as the academic institution's appropriate authorities were consulted in order to secure official approvals and ethical clearance. Third, the Ethiopian Coffee Exporters Association registration used to pick a stratified random sample of coffee export enterprises, and key informants will purposefully chose based on their vast experience. Fourth, in order to increase response rates, questionnaires were disseminated via in-person visits and online platforms along with follow-up reminders.

3.5.2. Model Specification

Taking the theoretical and empirical reviews synthesized in chapter to the researcher develops the following model specification. In order to run further analyses towards the variables as hypothesized, the relationships between the independent and dependent variables can be specified as follows:

Stage 1: On accounts of the theoretical relevance, the study formulates the following regression equation (relationships) to identify the determinants of Ethiopia Coffee Export Performance using three predetermined explanatory variables:

Y= α+ βx1+ βx2+ βx3

CEP = α+ βClimate Variability + βRegulatory Changes + βGeopolitical Tensions

Stage 2: To examine the Effect of Government Support on Ethiopian Coffee Export Performance, the following simple linear regression was formulated:

CEP =α+ βGS

3.6. Validity and reliability

3.6.1. Validity

The degree to which the idea being assessed by a specific scale or index truly measures what is being measured is known as validity. Kothari (2004) states that the goal of validity is to establish the findings that are associated with the condition. The degree to which the scale appropriately captures the relevant notion is its main focus. In order to ensure the validity of the study's measurement tool, it is based on the conceptual framework that is literally accepted and clearly identifies the theoretical construct. It also has measurements that are valid for measuring the relationship between Global Supply Chain, Government support and Ethiopian coffee Export Performance. Where possible this should be supported and consideration given to practical things. So that pre-questionnaire will be distributed to check the validity of questions to further data collection process.

3.6.2. Reliability

When two or more items are assigned to measure the same variable, a reliability test will be conducted to evaluate each item's consistency in measuring that variable or the same underlying construct. Cronbach's alpha is a dependability coefficient, according to George and Mallery (2003, as referenced in Joseph & Rosemary, 2003). It is frequently employed to gauge the reliability or internal consistency of a psychometric test result for a sample of examinees. The typical range of the Cronbach's alpha reliability coefficient is 0 to 1. The instrument is deemed satisfactory if the Alpha value is 0.7 or higher (Cronbach, 1951; and Sekaran & Bougie, 2010).

3.7. Methods of Data Analysis

Both descriptive and inferential statistical techniques were used in the analysis of the study. To provide a concise picture of respondents' attitudes toward the research variables, descriptive analysis were employed and the results presented in tables, frequency distributions, percentages, means, and standard deviations. Three steps comprised the inferential analysis: multiple regression analysis to test the direct effect of global supply chain management on export

performance while controlling for company characteristics; Pearson correlation analysis to investigate bivariate relationships between variables; and mediation analysis using Andrew Hayes process model 4 approach to determine whether government support significantly mediate the relationship between Ethiopian coffee export performance and global supply chain management practices.

3.7.1. Descriptive Analysis

The descriptive results presented by tables, frequency distributions and percentages to present a condensed picture of the data. This was achieved through summarizing statistics, which included the mean value and standard deviation values which would be computed for each variable in the study.

3.7.2. Inferential Analysis

In this study Pearson correlation analysis employed to determine the relationships between the studying variables i.e. effect of Global supply chain management on the Ethiopian coffee export performance via Government support in the case of selected Coffee Exporters in Addis Ababa. Regression analysis will be employed to examine the relationship between the independent, the mediating and dependent variables.

3.7.3. Diagnostic Tests

Before analyzing the data, the researcher conducted diagnostic analysis in order to meet the underlying assumption of the statistical model. The most important assumption tests diagnoized were, multicollinearity test using the Variance Inflation Factor (VIF) and tolerance values, where VIF values exceeding 10 or tolerance values below 0.10 would indicate problematic multicollinearity that could distort the regression coefficients and standard errors. Normality and autocorrelation were also diagnosed.

3.8. Ethical considerations

There are certain considerations which are made in this study. Primarily, study subjects were asked for to be part of this study or not. Once this is done, the information they provided through the data collection instruments kept confidential. Furthermore, their personal information was kept in confidence only the aggregated results obtained from the data used. In addition to this, the researcher avoided leading questions. Confidentiality of the information was also guaranteed by informing respondents not to write their names or anything that makes them be identified by others. Finally, the researcher provided the research output to decision makers ethically with relevant recommendations.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATIONS

4.1. Introduction

This chapter presents the data analysis and discussion of the research findings obtained from data collected from the survey questionnaire. Responses which gained from the respondents are summarized and presented using statements, tables and charts to facilitate easy understanding. The demographic profiles of the study sample have been described using descriptive statistics. Pearson correlation was employed in order to measure the relationships between the studying variables. Finally, Andrew Hayes mediation analysis was used to examine the effect of mediating variable on the relationship between independent and dependent variable.

4.2. Survey Response Rate

From the total of 384 questionnaires distributed to the participant of the study, 187 questionnaires were returned. Among the returned questionnaire 31 Reponses were incomplete. As a result, a total of 156 questionnaires were subjected for analysis. Rather than Yamane's formula proposed the sample size 196 because of the incomplete questionnaires only 156 valid responses were obtained and used for analysis. This represents a response rate of approximately 79.6%, which is generally considered acceptable in survey research. The questionnaire were developed in five scales ranging from five to one; where 1 represents strongly disagree, 2 disagree, 3 neutral (no opinion), 4 agree, and 5 strongly agree. To make easy interpretation, the following ranges of values were reassigned to each scale: mean scored value less than 3 considered as "Disagree", mean scored value greater than 3 considered as "Agree" and the mean scored value equal to 3 considered as "Neutral" (cited in Yonas, 2013). Descriptive statistics were used and also correlation and regression analysis were conducted for scale typed questionnaires.

According to Malhotra & Birks (2007), reliability is the extent to which a measurement reproduces consistent results if the process of measurement were to be repeated. Cronbach-alpha, a widely used measure of internal consistency, was run using SPSS version 25 and all of the scales used for this study are found to be reliable as their respective alpha values are higher than 0.7, and for most closer to 1. The cronbach- alpha of each scale is presented in the following table.

Table 4.1 ***Reliability Test Results***

Studying Variable	**Reliability Test Results**
Climate Variability	**.735**
Regulatory Changes	**.741**
Geopolitical Tensions	**.732**
Government Support	**.778**
Coffee export Performance	**.701**
Total	**.774**

Source: Own Survey Result, 2026

4.3. Demographic Profile of Respondents

This section summarizes the demographic characteristics of the sample, which includes age of the respondent, gender, education level, and work experience. The purpose of the demographic analysis in this research is to describe the characteristics of the sample such as the proportion of males and females in the sample, range of age, and education level, so that the analysis could be more meaningful for readers

4.3.1. Gender

Regarding gender, respondents were more of male and female are very few in number as compared to male (female 34.6%, male 65.4. %). This shows that female's respondents are less in number in than male respondents in this study. Therefore, the work force group in the school is not proportional in terms of gender.

4.3.2. Age

Regarding the age of respondents, the sample population is largely dominated by the age group of 31-40 (37.2. %) followed by the group comprise age of 20-30 (30.1%), age of 41-50(25%). Finally, the remaining 7.7% of respondents consisted of those respondents whose age is more than 50 years and above. This indicates that most of the sample populations not youngsters but they are at the middle ages.

4.3.3. Education level

In terms of education, the distribution is not very equally distributed. 52.6 % of respondents have attained Master's degree, respondents that hold First Degree (28.2%) and the remaining 19.2% holds Diploma.

4.4. Descriptive Analysis

In this study Descriptive statistics was used as a measure of measures of central tendency. Descriptive statistics are the most efficient means of summarizing the characteristics of large sets of data. In a statically analysis, the analyst calculates one number or a few numbers that reveal something about characteristics of large sets of data Cooper and Emory (1995).The descriptive statics used in this study were frequency, Mean and standard deviations. The arithmetic mean (the mean) is defined as the sum of the values in the data group divided by the number of values. The square root of the variance is called the standard deviation, the variance being similar to the average deviation in that it is based on the difference between each value in the data set and the mean of the group (Kaizmier, 1988).The standard deviation records the extent to which scores deviate from the mean.

To facilitate the interpretation of descriptive statistics, a decision criterion was established based on the five point Likert scale used in the study the class interval was calculated by dividing the scale range (5-1=4)by the number of research category (5), resulting in an interval width of 0.08. Accordingly mean score between 1 and 1.80 indicates a very low level of agreement, 1.81 – 2.60 indicate low agreement, 2.61 – 3.40 indicate mediate agreement, and 3.41 – 4.20 indicate high agreement, and 4.21 – 5.00 indicate very high agreement. This criterion was used to interpret the respondents' perceptions regarding global supply chain changes, government support, and coffee export performance.

Table 4.2 ***Summary of Descriptive statistics on Climate Variability***

	N	Mean	Std. Deviation
Unpredictable rainfall patterns in coffee-growing regions have negatively affected our coffee export volumes.	156	4.56	.498
Rising temperatures in Ethiopia have reduced the quality of coffee beans available for export.	156	4.46	.500
Droughts or floods in recent years have caused delays in our coffee shipment schedules.	156	4.55	.499
Climate-related crop failures have forced us to reduce contracted export quantities.	156	4.36	.481
Seasonal shifts due to climate change have made it harder to maintain consistent coffee supply for international buyers	156	4.48	.501
Valid N (listwise)	156		

Source: Own Survey Result, 2026

As indicted in the above table, the mean scores for all five items varied from 4.36 to 4.56, depicted that respondents generally agreed or strongly agreed that climate change has a negative impact on many aspects of coffee production and export. The statement, that states "Unpredictable rainfall patterns in coffee-growing regions have negatively affected our coffee export volumes," received the highest mean score of 4.56 with a standard deviation of 0.498. This indicate that unpredictable rainfall was the most serious climate-related barrier to export volumes. The item "Droughts or floods in recent years have caused delays in our coffee shipment schedules" came in second with a mean of 4.55 and a standard deviation of 0.499, suggested that extreme weather events were another cause that greatly affects coffee export performance. .

Respondents were asked that "Rising temperatures in Ethiopia have reduced the quality of coffee beans available for export" and they rated a mean of 4.46 and a standard deviation of 0.500, which suggest that the rise of temperature have a negative effect on coffee quality.

In the same vien, respondents were also asked to rate the statement that states "Seasonal shifts due to climate change have made it harder to maintain consistent coffee supply for international buyers" and their response recorded a mean of 4.48 with a standard deviation of 0.501. This

implies that that the changing seasonal patterns affect the market of coffee at the international level.

Table 4.3**. Summary of Descriptive Statistics on Regulatory Changes**

	N	Mean	Std. Deviation
Frequent changes in Ethiopian coffee export regulations have increased our operational costs.	156	4.53	.501
New licensing or certification requirements have delayed our coffee clearance for export.	156	4.32	.495
Changes in taxation or tariff policies have reduced our profit margins on coffee exports.	156	4.47	.550
Regulatory instability has made it difficult to sign long-term contracts with foreign buyers.	156	4.54	.525
Uncertainty about export documentation rules has led to shipment rejections or penalties.	156	4.54	.500
Valid N (listwise)	156		

Source: Own Survey Result, 2026

As depicted in the above table, all five items measuring regulatory changes affecting Ethiopian coffee export performance recorded high mean scores ranging from 4.32 to 4.54, suggesting strong and general agreement that regulatory instability has a negative effect on various aspects of coffee export operations. As showed in the above table, the highest mean values were reported for two items tied at 4.54. Respondents were asked to rate for the statement "Regulatory instability has made it difficult to sign long-term contracts with foreign buyers" (SD = 0.525), and "Uncertainty about export documentation rules has led to shipment rejections or penalties" (SD = 0.500). This result indicate that contractual relationships with international buyers and documented. The other statement asked "Frequent changes in Ethiopian coffee export regulations have increased our operational costs" recorded a mean of 4.53 (SD = 0.501), suggested that exporters suffer significantly greater administrative and compliance costs as a result of regular regulatory revisions. The final statement asked for respondents was "Changes in taxation or tariff policies have reduced our profit margins on coffee exports" and recoded a mean of 4.47 (SD =

0.550). This result suggested that tax and tariff fluctuations are also perceived as profit-reducing factors, albeit with slightly more variation in respondent experiences, as evidenced by the highest standard deviation among all items.

Table 4.4 **Summary of Descriptive Statistics Geopolitical Tension on**

	N	Mean	Std. Deviation
Geopolitical instability in the Horn of Africa has disrupted our main coffee export routes.	156	4.49	.502
Trade restrictions or sanctions involving Ethiopia's trading partners have reduced our coffee export orders.	156	4.60	.505
International political tensions have caused fluctuations in coffee prices, affecting our export revenues.	156	4.54	.500
Security concerns along transit corridors have increased insurance and logistics costs for coffee exports.	156	4.33	.497
Geopolitical conflicts have led to delays in payment settlements from international coffee buyers	156	4.47	.550
Valid N (listwise)	156		

Source: Own Survey Result, 2026

The descriptive results above in the table regarding Geopolitical tensions affecting Ethiopian coffee export performance recorded a mean that ranged from 4.33 to 4.60. The result suggested that there was a clear consensus that geopolitical variables have a greater effect on coffee exports. From the mean score values, the highest mean was recorded for "Trade restrictions or sanctions involving Ethiopia's trading partners have reduced our coffee export orders" (M = 4.60, SD = 0.505), followed by "International political tensions have caused fluctuations in coffee prices, affecting our export revenues" (M = 4.54, SD = 0.500), and "Geopolitical instability in the Horn of Africa has disrupted our main coffee export routes" (M = 4.49, SD = 0.502).The mean for "Geopolitical conflicts have led to delays in payment settlements from international coffee buyers" was 4.47 (SD = 0.550), while the lowest mean was found for "Security concerns along transit corridors have increased insurance and logistics costs for coffee exports" (M = 4.33, SD = 0.497). The continuously low standard deviations (range from 0.497 to 0.550) imply

widespread agreement among all 156 respondents, with trade restrictions and price swings appearing as the most serious geopolitical problems influencing Ethiopian coffee exports.

Table 4.5 **Summary of Descriptive Statistics on Government Support**

	N	Mean	Std. Deviation
The Ethiopian government provides timely financial support (e.g., subsidies, low-interest loans) to coffee exporters.	156	4.38	.537
Government-led trade missions have helped us find new international coffee buyers.	156	4.38	.537
Export infrastructure (e.g., roads, ports, logistics hubs) has improved due to government investment.	156	4.48	.501
The government offers effective training or market intelligence on international coffee trade regulations.	156	4.62	.488
Government support reduces the negative impact of climate, regulatory, or geopolitical challenges on our coffee export performance.	156	4.38	.537
Valid N (listwise)	156		

Source: Own Survey Result, 2026

As mentioned in the above table, the mean scores given by employees to the variable government support of coffee export performance ranged from 4.38 to 4.62. this result suggested demonstrating a clear consensus that government support positively impacts coffee export operations. The highest mean was found for "The government offers effective training or market intelligence on international coffee trade regulations" (M = 4.62, SD = 0.488), indicating that capacity-building and information providing are considered as the most valuable type of government support. This was followed by "Export infrastructure (e.g., roads, ports, logistics hubs) has improved due to government investment" (M = 4.48, SD = 0.501), indicating that infrastructure development is widely seen as a crucial supportive strategy.

Three items each had a mean of 4.38 (SD = 0.537): "The Ethiopian government provides timely financial support (e.g., subsidies, low-interest loans) to coffee exporters," "Government-led trade missions have helped us find new international coffee buyers," as well as "Government support reduces the negative impact of climate, regulatory, or geopolitical challenges on our coffee export performance." The consistently low standard deviations (ranging from 0.488 to 0.537)

indicate strong consensus among all 156 respondents, with training and market intelligence emerging as the most highly rated form of government support, followed by infrastructure investment, while financial support, trade missions, and barrier against external challenges are all recognized but perceived to be slightly less effective.

Table 4.6 **Summary of Descriptive Statistics on Coffee Export Performance**

	N	Mean	Std. Deviation
Our coffee export volume (in tons) has increased over the last two years.	156	4.37	.535
We have expanded the number of international markets receiving our coffee exports.	156	4.37	.547
Our coffee export earnings (in USD) have shown consistent growth.	156	4.49	.502
We have met or exceeded our annual coffee export targets for the past three years.	156	4.60	.491
Our coffee products meet international quality standards, leading to repeat export orders.	156	4.41	.574
Valid N (listwise)	156		

Source: Own Survey Result, 2026

The first four categories measuring coffee export performance yielded mean ratings ranging from 4.37 to 4.60, demonstrating widespread agreement that export performance has improved across various dimensions. The greatest mean was obtained for "We have met or exceeded our annual coffee export targets for the past three years" (M = 4.60, SD = 0.491), indicating that exporters are consistently meeting their objectives. This was followed by "Our coffee export earnings (in USD) have shown consistent growth" (M = 4.49, SD = 0.502), showing a good financial performance.

The lowest means were reported for "Our coffee export volume (in tons) has increased over the last two years" (M = 4.37, SD = 0.535) and "We have expanded the number of international markets receiving our coffee exports" (M = 4.37, SD = 0.547), both indicating slightly lower but still strong agreement. The continuously low standard deviations (0.491 to 0.547) imply significant agreement among the 156 respondents. However, the fifth statement, "Our coffee

products meet international quality standards, leading to repeat export orders," had a mean of 4.41 (SD = 0.574) significant agreement among the 156 respondents.

4.5. Correlation analysis

A statistical measure, Correlations relations is the measure of the linear relationship between the independent and dependent variables. The coefficient of correlation has a value ranging from -1 to 1. Values that are closer to the absolute value of 1 indicate that there is a strong relationship between the variables being correlated whereas values closer to 0 indicates that there is little or no linear relationship. As described by Andy (2006), the correlation is a commonly used measure of the size of an effect: values of ± 0.1represent a small effect, ± 0.3 is a medium effect and ± 0.5 is a large effect.

Table 4.7 **Correlations**

		GSST	GST	CEPT
GSST	Pearson Correlation	1	.187*	.541**
	Sig. (2-tailed)		.020	.000
	N	156	156	156
GST	Pearson Correlation	.187*	1	.711**
	Sig. (2-tailed)	.020		.000
	N	156	156	156
CEPT	Pearson Correlation	.541**	.711**	1
	Sig. (2-tailed)	.000	.000	
	N	156	156	156

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Own survey result, 2026

The correlation result revealing that all three variables were positively and statistically significantly correlated with one another. The association between Global supply chain management and Government support was small but significant (r = 0.187, p = 0.020), showing that there will be a change in global changes due to government support. The correlation result also showed that there was a mediate and positive correlation was discovered between global supply chain management and coffee export performance (r = 0.541, p < 0.001). This result

suggested that global supply chain modifications are connected with increased coffee export performance, accounting for about 29.3% of the variance between these two variables.

The correlation between Global supply chain management and GST was small but significant ($r = 0.187$, $p = 0.020$), showing that as global supply chain changes occur, government assistance increases as well. GST and CEPT had the greatest association ($r = 0.711$, $p < 0.001$), indicating a significant positive relationship between higher levels of government support and better export performance, accounting for approximately 50.6% of the CEPT variance. These correlation results provide preliminary support for the research mediation model, as the significant GSST-GST relationship meets a key mediation precondition, and the strong GST-CEPT correlation emphasizes the critical role of government support in facilitating export success, which is consistent with the significant indirect effect found in your PROCESS Model 4 analysis.

4.6. Tests of Assumptions of Regression Analysis

In order to run regression analysis, the researcher checked critical assumptions which is essential and to draw conclusion about the population under study. In this regard, normality of the residuals variables, Homoscedasticity and Multi co linearity between variables were checked, and the results presented as follows.

4.6.1. Multicollinearity Test

Multicollinearity is tested in this study using the variance inflation factor (VIF) which quantifies the severity of multicollinearity in regression analysis. The VIF factor should not exceed 10, and should ideally be close to one. The table below depicted that there is no multicollinearity problem. The researcher used Tolerance as an indicator of how much of the variability of the specified independent variable is not explained by the other independent variables in the model. If this value is very small (less than 0.10), it indicates that the multiple correlation with other variables is high, suggesting the possibility of multicollinearity. The below table confirms the absence of multicollinearity according to Collinearity Statistics. VIF factor did not exceed 10 and the tolerance is above 0.1 which shows us there is no multi- Collinearity problem.

As indicated in the above table the tolerance value for each independent variable is .687 and, .606 respectively. These values are below one and greater than zero. Therefore there is no multicollinearity problem in this study. In addition to tolerance values, the variance inflation

factor are 1.623and 1.603 and all the results are greater than one and less than10. Therefore, there is no multicollinearity problem

4.6.2. Auto-correlation Test

In order to examine whether there is autocorrelation problem or not, the researcher, crosschecked the Durbin-Watson test. Based on this the Durbin test value is 2.457. The Durbin-Watson statistic ranges in value from 0 to 4. A value near 2 indicates non- autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation. With Durbin Watson value of 2.457, which is close to 2, therefore, there is no auto-correlation problem.

Table 4.8 **. Model Summary[b]**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.824[a]	.679	.675	.846	.679	161.656	2	153	.000	2.457

a. Predictors: (Constant), GST, GSST

b. Dependent Variable: CEPT

Source: Own Survey result, 2026

4.6.3. Normality Test

Another most important test which is a prerequisite in order to run regression test is Normality test. As indicated by Field (2009), the assumption of normality is a key test in research while using regression and helpful to generalize the results of the analysis beyond the sample collected. Accordingly, among several ways to check for the normality assumptions for linear regression analysis, it is advisable to inspect to see if a distribution is normal through a P–P plot (probability–probability plot). Therefore, to establish the validity of these assumptions, the researcher also checks for the normality for the residuals with bivariate through P-P plot as follows. The straight line in this plot represents a normal distribution, and the points represent the observed residuals. Therefore, the assumptions of simple linear regression have been met and we can possibly assume that the model is accurate and can probably generalize to the population.

The study used both methods of assessing normality; graphically using Normal Probability Plot (P-P) graph and numerically using Skewnes and Kurtosis.

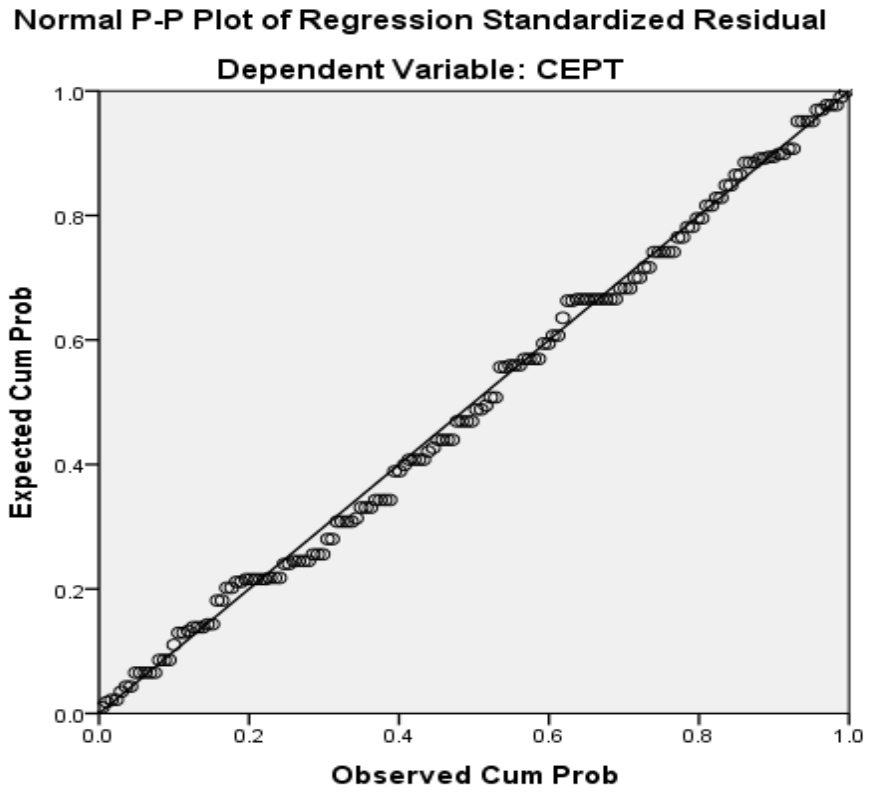


Figure 4.1 ***P-P plot test***

As the above figure shows, the frequency of distribution is normal curve, demonstrating that the data witness to the normality assumption. Moreover, the histogram is bell shaped which lead to infer that the residual (disturbance or errors) are normally distributed. Thus, no violations of the assumption normally distributed error term. The normal probability plots were also used to test the normality assumption as shown on the normal p-plot figure. It shows the residuals were normally distributed around its mean of zero which indicates that the data were normally distributed and it was consistent with a normal distribution assumption. The p-plot figures confirmed the normality assumption.

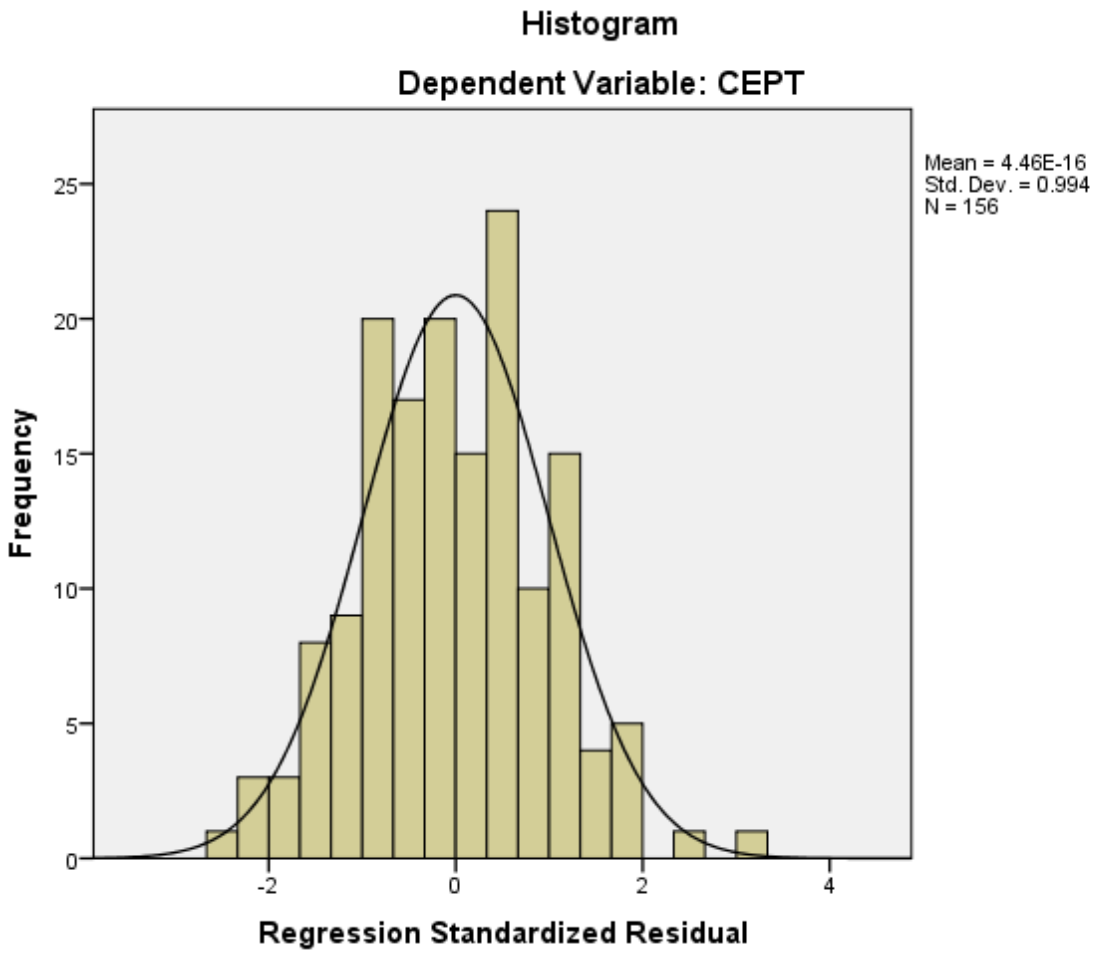


Figure 4.2. ***Histogram***

4.6.4. Homoscedasticity

Homoscedasticity is the extent to which the data values for the dependent and independent variables have equal variances (Field 2009). At each level of the predictor variables, the variance of the residual terms should be constant. This just means that the residuals at each level of the predictors should have the same variance, therefore checking for this assumption is helpful for the fitness of the regression model. In this regard, to plot the Homoscedasticity analysis, as suggests by Field (2009), the researcher plot the standardized residuals, or errors (ZRESID) on the Y axis and the standardized predicted values of the dependent variable based on the model (ZPRED) on the X axis and the result is presented as follows. In this regard, as Field (2009) describes, the graph of *ZRESID and *ZPRED should look like a random array of dots evenly dispersed around zero, if the assumption of Homoscedasticity has to be met. Likewise, as we

shown in the below figure, the points are randomly and evenly dispersed throughout the plot and there are no obvious outliers on this cloud of dots which are spaced around zero. According to Garson (2012), Homoscedasticity helps as to check for the relationship under investigation is the same for the entire range of the dependent variable and lack of Homoscedasticity is shown by higher errors (residuals) for some portions of the range, which can be seen on the scatter plot. The variability in scores for independent variables should be similar at all values of the dependent variable. The scatter plot should show a fairly even rectangular shape along its length. The plot must show scores below and above zero points that means both positive and negative values. There should be Homoscedasticity before running multiple regression analysis, (the difference between the values of the observed and predicted dependent variable) is normally distributed, and that the residuals have constant variance (Burns & Burns, 2008). If the assumption of Homoscedasticity is violated (i.e. there is heteroscedasticity). Since the errors (the dots) are close to the line the graph has demonstrated Homoscedasticity of the study.

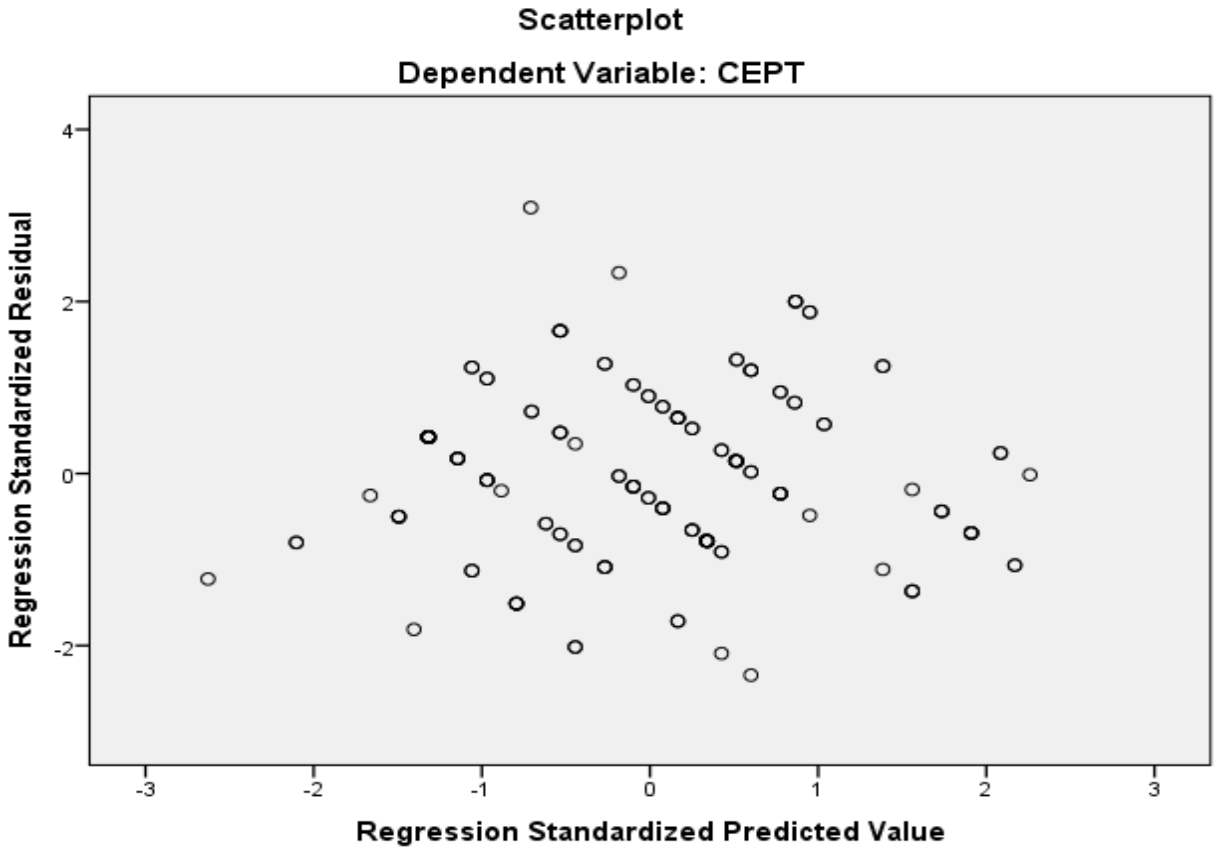


Figure 4.3 ***Scatterplot***

4.7. Multiple Regressions

After the study met all the regression assumption tests, the researcher conducted regression analysis in order to examine the effect of independent variable on the dependent variable. In addition, the researcher tested the three hypothesis developed in the study based on the regression test results. The regression test results are presented in the table below.

Table 4.9 **Model Summary**[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.824[a]	.679	.675	.846	.679	161.656	2	153	.000	2.457

a. Predictors: (Constant), GST, GSST

b. Dependent Variable: CEPT

Source: Own Survey Result, 2026

Table 4.10 **. ANOVA[a] , the effect of Global Supply Chain and Government Support on Coffee Export Performance**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	231.635	2	115.817	161.656	.000[b]
	Residual	109.615	153	.716		
	Total	341.250	155			

a. Dependent Variable: CEPT

b. Predictors: (Constant), GST, GSST

Source: Own Survey Result, 2026

The researcher conducted multiple linear regression in order to examine the effect of Global Supply Chain Changes and Government Support on Ethiopian Coffee Export Performance. The result of regression showed that both supply chain and government support were a good indicator of the Ethiopian coffee export performance(R^2 = 0.679,), this demonstrate global Supply Chain and Government support explained the level of coffee export by 67.9%. The model summary and ANOVA results also showed there was a strong statistical evidence that Global Supply Chain Changes and Government Support are major predictors of Ethiopian Coffee Export Performance, accounting for roughly 68% of the variance. The regression result was consistent with your earlier PROCESS Model 4 results i.e. global supply chain and government support were significant predictors of Coffee Export Performance. Based on the linear regression and the Andrew Hayes Process model, the researcher derive the following regression equation:

Regression Equation

Y= **α+ βx1+βx2**

Coffee Export Performance=4.302 + .214 GSS+ .745GST

Coffee Export Performance=9.302+.214GSST

4.7.1 The Mediating Role of Government Support on the relationship between Global Supply Chain Management and Coffee Export Performance

The mediation effect indicate the situation where government support affect both Global Supply chain and Coffee export Performance. In order to examine the mediating role of the government support between the independent and dependent variable, the researcher employed Andrew Hayes process model 4. Based on this, thee coefficient for government support predicting Global supply chain was positive and significant (b = 0.0801, SE = 0.0340, t = 2.3598, p = 0.0195, 95% CI: 0.0131 to 0.1472). This result showed that when global supply chain changes increase, government support also increases. Second, the researcher examined the effect of global supply chain and government support on coffee export performance. The result showed both variables predictors were significant: Government support had a positive and direct effect

on Coffee Export Performance (b = 0.2138, SE = 0.0236, t = 9.0682, p < 0.001, 95% CI: 0.1672 to 0.2604). The effect of Global Supply Chain on Cofee Export was also positive and significant (b = 0.7453, SE = 0.0550, t = 13.5594, p < 0.001, 95% CI: 0.6367 to 0.8539).

The effect of Government support on coffee export performance was also positive and significant (influence = 0.2138, SE = 0.0236, t = 9.0682, p < 0.001, 95% CI: 0.1672 to 0.2604). The mediation analysis result also showed that the indirect effect of Global supply chain on Coffee export performance through government support was positive and significant (Effect = 0.0597, BootSE = 0.0284, 95% BootCI: 0.0017–0.1141). The bootstrap confidence interval excludes zero, indicating a statistically significant indirect impact (p < 0.05).

The total effect showed the sum of the direct and indirect effects (0.2138 + 0.0597 = 0.2735), demonstrating the entire relationship between global supply chain changes and coffee export performance without taking into account the mediator. The zero-order correlation between government support and coffee export performance (r = 0.541, p < 0.001) supports the statistical significance of the overall effect. The proportion of the entire effect mediation by government support is around 21.8% (0.0597 / 0.2735 = 0.218), indicated that that about one-fifth of the total effect of global supply chain changes on coffee export performance is mediated indirectly by government support.

Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2 *****************

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

****

Model : 4
Y : CEPT
X : GSST
M : GST

Sample
Size: 156

****

OUTCOME VARIABLE:
GST

Model Summary

R	R-sq	MSE	F	df1	df2	p
.1868	.0349	1.5397	5.5688	1.0000	154.0000	.0195

Model

coeff	se	t	p	LLCI	ULCI
constant	16.8417	2.2858	7.3679	.0000	12.3261	21.3573
GSST	.0801	.0340	2.3598	.0195	.0131	.1472

****

OUTCOME VARIABLE:
CEPT

Model Summary

R	R-sq	MSE	F	df1	df2	p
.8239	.6788	.7164	161.6565	2.0000	153.0000	.0000

Model

coeff	se	t	p	LLCI	ULCI
constant	9.3015	1.8133	5.1295	.0000	5.7191	12.8840
GSST	.2138	.0236	9.0682	.0000	.1672	.2604
GST	.7453	.0550	13.5594	.0000	.6367	.8539

********** DIRECT AND INDIRECT EFFECTS OF X ON Y **********

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.2138	.0236	9.0682	.0000	.1672	.2604

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
GST	.0597	.0284	.0017	.1141

********** ANALYSIS NOTES AND ERRORS **********

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

------ END MATRIX -----

Source: Own survey result, 2026

4.9. Hypothesis Result Tests

In order to test the Hypothesis proposed, the researcher used the correlation coefficients. Based on this, the result of the hypothesis was described as follows.

The relationship between Global supply chain and Ethiopian coffee export performance was found positive and mediate ($r = 0.541$, $p < 0.001$). Therefore, the researcher accepted the alternative hypothesis formulated.

The relationship between Government Support, ignoring the natural independent variable, Global supply chain and between coffee export performance was positive and strong ($b = 0.7453$, $p < 0.001$). Therefore, the researcher accepted the alternative Hypothesis

The hypothesis test was aimed to examine the mediating role of Government support and the Andrew Hayes process model regression result indicated that government support mediate and has indirect effect supply chain and Coffee Export Performance (effect = 0.0597, 95% BootCI: 0.0017 to 0.1141). The mediating result was positive (effect=.2138, 95% Boot UCI.1672 and LCI.2604). Therefore, the researcher accepts the hypothesis.

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

5.1. Introduction

In this chapter the summary of major finding, conclusions and recommendations presented. The purpose of the study was to examine the effect of Global Supply Chain on coffee export Performance, using Government support as a mediator variable. In order to address the objectives of the study, the researcher synthesized related literatures and collects quantitative data through survey questionnaires and analyzed the data using (SPSS 24) version. The mediation analysis was examined using Andrew hays process model. The mediation analysis was done using Andrew Hayes process model 4. Based on the results of the study, conclusions and recommendations were drawn.

5.2. Finding and Discussion

The findings of this study showing that global supply chain changes significantly affect Ethiopian coffee export performance. Specifically, climate variability, regulatory changes, and geopolitical tensions were found to have significant relationships with coffee export performance. Furthermore, government support was found to partially mediate the relationship between global supply chain changes and coffee export performance.

The study found that climate variability significantly influences coffee export performance. This finding is related with and supported the studies of Moat et al. (2017) and Davis et al. (2019), who informed that changing rainfall patterns and rising temperatures negatively affect coffee productivity, quality, and export competitiveness. The finding also supports Gebre and Tiki (2020), who found that climate variability, creates production instability and increases export-related challenges for coffee exporters.

The findings further showed that regulatory changes significantly affect coffee export performance. This result is consistent with the earlier study of Neilson and Wang (2019), who argued that increasing international requirements related to traceability, sustainability, and food safety have become important determinants of export success. Similarly, Teklewold et al. (2024)

reported that compliance with international regulations such as the European Union Deforestation Regulation (EUDR) creates both opportunities and challenges for coffee exporters.

The study also revealed that geopolitical tensions significantly affect coffee export performance. This finding agrees with Demeke and Ferede (2021), who found that global trade uncertainties and geopolitical conflicts increase logistics costs and market volatility. Likewise, Tafesse and Worku (2023) indicated that regional conflicts disrupt transportation networks and reduce the reliability of export supply chains.

Regarding the mediating role of government support, the results showed that government support has a positive and significant indirect effect on coffee export performance. The bootstrap confidence interval excluded zero, confirming the existence of a significant mediation effect. This finding supports the studies of Hanley et al. (2025), Melese and Tulu (2021), and Belete and Alemu (2023), which emphasized that government interventions through infrastructure development, extension services, market facilitation, and export promotion improve exporters' resilience and competitiveness. The finding suggests that government support serves as an important institutional mechanism through which firms can better respond to global supply chain disruptions and maintain export performance.

Overall, the findings support the Institutional Theory. Which argues that external environmental conditions significantly affect firm performance? The results also support Research Based Theory which argue government support can provide critical recourse that enable exporters to respond effectively to supply chain disruptions.

5.3 Conclusion

This study examined the effect of global supply chain changes on Ethiopian coffee export performance and assessed the mediating role of government support among selected coffee export firms in Addis Ababa. The study employed an explanatory research design and analyzed data collected from coffee export firms using correlation analysis, multiple regression analysis, and Hayes PROCESS Model 4 mediation analysis.

The findings revealed that climate variability, regulatory changes, and geopolitical tensions significantly influence coffee export performance. The results indicate that changes in the global business environment create both opportunities and challenges for Ethiopian coffee exporters by affecting production, logistics, market access, and competitiveness.

The study further established that government support has a positive and significant effect on coffee export performance. More importantly, government support was found to partially mediate the relationship between global supply chain changes and coffee export performance. This implies that effective government interventions help coffee exporters adapt to supply chain disruptions and improve their export outcomes.

Therefore, the study concludes that strengthening government support mechanisms is essential for enhancing the resilience, competitiveness, and sustainability of Ethiopia's coffee export sector under rapidly changing global supply chain conditions.

5.4 Recommendations

Based on the findings of the study, the following recommendations are proposed:

1. Strengthen Climate Adaptation Programs in the Coffee Sector

The Ethiopian government should strengthen climate adaptation initiatives to minimaize the adverse effects of climate variability on coffee production and export performance. This can be implemented through the Ethiopian Coffee and Tea Authority (ECTA), the Ministry of Agriculture, and regional agricultural bureaus by expanding climate-smart farming practices, establishing early-warning weather information systems, distributing drought-resistant coffee varieties, and investing in irrigation and water conservation projects in major coffee-producing areas.

2. Enhance Exporters' Capacity to Comply with International Regulations

Regulatory changes continue to create challenges for Ethiopian coffee exporters. Therefore, ECTA, the Ministry of Trade and Regional Integration, and export promotion agencies should organize regular training programs, workshops, and awareness campaigns on international standards such as the European Union Deforestation Regulation (EUDR), traceability requirements, food safety regulations, and sustainability certifications. A dedicated technical support center should also be established to assist exporters in meeting compliance requirements.

3. Improve Logistics and Transport Infrastructure

To minimize disruptions caused by geopolitical tensions and supply chain uncertainties, the government should improve transportation and logistics infrastructure. This can be implemented through investments in road networks connecting coffee-producing regions to export terminals, modernization of customs clearance systems, expansion of dry-port facilities, and adoption of digital logistics tracking systems to improve supply chain visibility and efficiency.

4. Expand Financial and Institutional Support for Coffee Exporters

Government support should be strengthened through accessible financial services and institutional assistance. The National Bank of Ethiopia, Development Bank of Ethiopia, and commercial banks should establish specialized export financing schemes with favorable credit terms for coffee exporters. In addition, government institutions should develop digital market information platforms that provide real-time information on international coffee prices, market opportunities, and regulatory updates.

5. Promote Supply Chain Risk Management Practices among Exporters

Coffee export firms should adopt proactive risk management strategies to reduce vulnerability to global supply chain disruptions. This can be implemented through diversification of export markets, establishment of long-term contractual relationships with suppliers and buyers, investment in digital traceability systems, and development of contingency plans to manage disruptions arising from climate, regulatory, or geopolitical factors.

6. Strengthen Public–Private Collaboration in the Coffee Sector

The government, coffee exporters, cooperatives, and industry associations should establish regular consultation forums to discuss emerging supply chain challenges and jointly develop solutions. This can be implemented through quarterly stakeholder meetings coordinated by ECTA and the Ethiopian Coffee Exporters Association to improve information sharing, policy coordination, and sector-wide competitiveness.

7. Improve Quality Assurance and Traceability Systems

The Ethiopian Coffee and Tea Authority should strengthen quality control and traceability systems to improve Ethiopia's competitiveness in premium international markets. This can be implemented by expanding laboratory testing facilities, introducing digital traceability platforms, enhancing inspection services, and supporting certification programs that improve market access and product credibility.

5.4 Limitation and Future Researcher Direction

This research has limitation on geographical consideration; collected data were considered only exporter firms in Addis Ababa. Although the required sample size was calculated as 384, only 156 valid responses were obtained. The lower response rate may limit the generalizability of the findings. Nevertheless, the sample size was adequate for the statistical techniques employed and provided sufficient evidence to address the study objectives.

Future researchers should examine additional factors affecting coffee export performance, including technological innovation, digital supply chain integration, export market diversification, and organizational capabilities. Future studies may also employ longitudinal research designs, larger sample sizes, and comparative analyses across different export sectors to generate broader empirical evidence.

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APPENDIX

QUESTIONNAIRE

Dear respondents

I am kindly request you to participate on this survey questionnaire **the effect of Global supply chain Changes on the Ethiopian coffee export performance: The Mediation role of Government support in selected coffee export firm in Addis Ababa.** The information you will provide will be used as primary data for partial fulfilment of the requirements for the MSC degree in International business your participation in this study is completely voluntary. Your genuine response and cooperation is vital for this study and will take approximately 10 minutes. All your responses are strictly confidential and data from this research will be reported only in the aggregate. Please don't write your name anywhere on this questionnaire .Please Tick (√) where appropriate in the box. I would like to express my heartfelt gratitude in advance for your kind participation.

PART ONE: Demographic Data

1. Gender

Male ☐ Female ☐

2. Age

20-30 ☐ 31-40 ☐ 41-50 ☐ Above 50 ☐

3. Educational level

Diploma ☐ BA/BSC ☐ MA/MSC ☐ PhD ☐

4. Work Experience

1-5 years ☐ **5-10 years** ☐ **11-15 years** ☐ **above 15 years** ☐

Part Two: <u>Questionnaires on the studying variables</u>

The following sets of statements aimed at helping to understand your feelings or perceptions of **the effect of Global supply chain Changes on the Ethiopian coffee export performance and the mediation role of Government support**. Please place a tick (√) or a mark (**X**) in the box (cell) only one choice that represents your appropriate level of agreement. Please choose only one scale

Key for scales- 1= strongly Disagree, 2=Disagree, 3= Neutral, 4= Agree, 5= strongly Agree

No	**Climate Variability**	**1**	**2**	**3**	**4**	**5**
1	Unpredictable rainfall patterns in coffee-growing regions have negatively affected our coffee export volumes.					
2	Rising temperatures in Ethiopia have reduced the quality of coffee beans available for export.					
3	Droughts or floods in recent years have caused delays in our coffee shipment schedules.					
4	Climate-related crop failures have forced us to reduce contracted export quantities.					
5	Seasonal shifts due to climate change have made it harder to maintain consistent coffee supply for international buyers					
	Regulatory Changes	**1**	**2**	**3**	**4**	**5**
1	Frequent changes in Ethiopian coffee export regulations have increased our operational costs.					
2	New licensing or certification requirements have delayed our coffee clearance for export.					
3	Changes in taxation or tariff policies have reduced our profit margins on coffee exports.					
4	Regulatory instability has made it difficult to sign long-term contracts with foreign buyers.					
5	Uncertainty about export documentation rules has led to shipment rejections or penalties.					
	Geopolitical Tensions	**1**	**2**	**3**	**4**	**5**
1	Geopolitical instability in the Horn of Africa has disrupted our main					

	coffee export routes.					
2	Trade restrictions or sanctions involving Ethiopia's trading partners have reduced our coffee export orders.					
3	International political tensions have caused fluctuations in coffee prices, affecting our export revenues.					
4	Security concerns along transit corridors have increased insurance and logistics costs for coffee exports.					
5	Geopolitical conflicts have led to delays in payment settlements from international coffee buyers					
	Government Support	**1**	**2**	**3**	**4**	**5**
1	The Ethiopian government provides timely financial support (e.g., subsidies, low-interest loans) to coffee exporters.					
2	Government-led trade missions have helped us find new international coffee buyers.					
3	Export infrastructure (e.g., roads, ports, logistics hubs) has improved due to government investment.					
4	The government offers effective training or market intelligence on international coffee trade regulations.					
5	Government support reduces the negative impact of climate, regulatory, or geopolitical challenges on our coffee export performance.					
	Coffee export Performance	**1**	**2**	**3**	**4**	**5**
1	Our coffee export volume (in tons) has increased over the last two years.					
2	We have expanded the number of international markets receiving our coffee exports.					
3	Our coffee export earnings (in USD) have shown consistent growth.					
4	We have met or exceeded our annual coffee export targets for the past three years.					
5	Our coffee products meet international quality standards, leading to					

	repeat export orders.					

I clarify that for the title **the effect of Global supply chain Changes on the Ethiopian coffee export performance: The Mediation role of Government support among selected coffee export firm in Addis Ababa** I used exact the same above questionnaire statements to collect data.