



**VERTICAL INTEGRATION OF COFFEE EXPORT PRACTICES,
CHALLENGES AND PERFORMANCE OF COFFEE EXPORTERS IN
ETHIOPIA**

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And performance of coffee exporters in Ethiopia**

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DECLARATIONS

I, Sisay Arega, declare that this Thesis entitled “Vertical integration of coffee export practices, challenges and performance of coffee exporters in Ethiopia” is my own original work. I have carried out it independently with the guidance and suggestions of the research advisor. And it has not been presented in Addis Ababa University or any other University.

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ACKNOWLEDGEMENT

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LIST OF ACRONYMS/ABBREVIATION/

ECTA	Ethiopian Coffee and Tea Authority
ECX	Ethiopian Commodity Exchange
GOE	Government of Ethiopia
GDP	Gross Domestic Product
ICAFFE	Instituto Del Café De Costa Rica
ICO	International Coffee Organization
SC	Supply Chain
SCI	Supply Chain Integration
USDA	United States Department Of Agriculture

ABSTRACT

In 2017, the Ethiopian Coffee and Tea Authority amended the coffee marketing system that enables exporters to buy coffee directly from suppliers outside the Ethiopian Commodity Exchange floor. And this study was conducted to assess the vertical integration of coffee export practices and the challenges of coffee exports in Ethiopia. Primary data was collected from 151 coffee exporters that used vertical integration marketing systems to source coffee. For data analysis, the researcher used descriptive and inferential statistics methods. Accordingly, the overall findings showed that coffee export vertical integration practices played a role in improving coffee export performance, but the forward and backward vertical integration practices were expected to improve the performance. Improving information sharing practices and capacity building activities in supply chain actors were considered as enablers in this study. And the researcher also found contract default, price volatility, a low level of production and credit constraints as challenges in coffee export vertical integration practices. And overall, the researchers of this study recommended all partners in the vertical integration practices to work closely to improve the coffee export performance as intended in the new marketing system for vertical integration.

Key words: Vertical Integration, Forward vertical integration, Backward vertical integration, Export performance.

CHATER ONE

INTRODUCTION

This chapter includes a background of the study, research problems, research questions, research objectives, scope of the study, delimitation of the study, significance of the study, definition of terms and organization of the study.

1.1. Background of the study

Coffee is the second largest traded commodity in the world after oil and the most valuable primary agricultural product in international trade. More than 70 countries globally are producing coffee and most of the economies of these countries depend greatly on coffee revenue (Taringana,2018). But for coffee production to effectively contribute to economic development

Ethiopia is the largest producer of coffee in Africa and is the fifth largest coffee producer in the world next to Brazil, Vietnam, Colombia, and Indonesia. In Ethiopia the coffee sub-sector plays the major role in the economic growth/development of the country. And this sub-sector creates an employment opportunity for the vast majority of the rural population and it account for around 90 percent of foreign exchange and 40 percent of GDP. Therefore coffee exports have a strong bearing on the performance of the Ethiopian economy and the sector is the back bone of Ethiopian Economy. And any institutional innovation or intervention that improves coffee marketing will have direct bearing on the poverty alleviation and well-being of small holder farmers. About 95 percent of Ethiopian coffee is produced by smallholder farmers (USDA, 2019).

Even if Ethiopia is the largest producer of coffee in the word almost all coffee production is rain fed; thus, precipitation is the most important production factor. Other factors which hinders the country from the benefits getting from coffee are low-value addition, low productivity, low mechanization, no automation (backward technology), low irrigation practice (from household to commercial scale or state farm), lack of innovation, small land size holdings by the household farmers with scattered location that hampers large scale production; little to no support by the government in terms of incentives to the household farmers, no subsidies, and no hedging from mostly natural risks to their agricultural products(Matiwsos,2020).

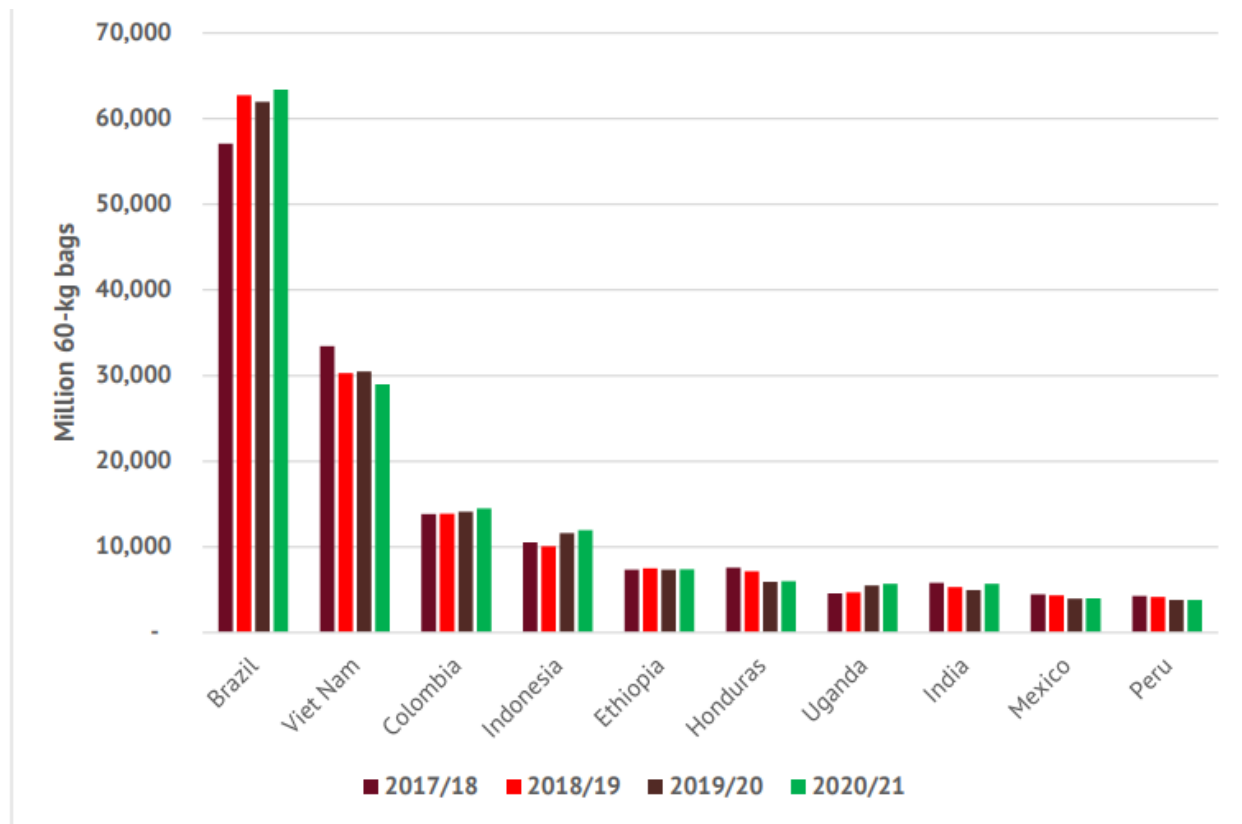


Fig 1: 10 largest coffee producing countries (Source ICO,2021)

Not only factors mentioned above but the complex coffee supply chain is one of the bottlenecks in coffee business. Coffee beans sometimes changing hands of times on the journey from producers to consumer by provide economic benefits at each step of the global value chain that links growers to consumers. Changes in the sales procedures of the item in some parts of the market chain usually affect the performance of the sector and those involved in the business.

In 2017, the Ethiopian Tea and Coffee Authority amended the coffee marketing system through proclamation No. 1050/2017 and No. 1051/2017. And the two major reform areas transpired; first, cutting the number of middlemen in the value chain; and second restoring traceability through so-called ‘vertical integration’ (Alban Mas Aparisi,2021).

This alternative coffee transaction system has been found necessary to establish modern, legal and fair alternative coffee transaction system, in order to boost the benefit of coffee producers, transaction actors and the country by insuring traceability and sustainability of coffee marketing and to improve coffee production volume and quality.

1.2 Problem Statement

Coffee is a source of income for more than 12 million farms worldwide, a quarter of which are operated by women and it provides direct employment to more than 25 million families in producing countries (ICO, 2019). And about 95 percent of these farms are smaller than 5 hectares and considered ‘smallholder’. These are predominantly located in 20 countries where the climate and soil are suitable for growing coffee. Almost half of these farms can be found in Ethiopia (2.2 million), Uganda (1.8 million) and Indonesia (1.3 million). Viet Nam, Burundi, Kenya and Colombia each have more than 500,000 farmers. Small producers are the backbone of this giant global industry and at least 5.5 million live below the international poverty line of \$3.20 a day.

Productivity is low in most coffee-producing countries in Africa with an average yield of 400 kg/ha in the period. The use of mineral fertilizers and pesticides is limited and ageing trees are only slowly replaced as access to finance is severely constrained. The lack of effective extension services in most countries also hampers the transfer of skills and the adoption of modern farming techniques (ICO, 2017).

A review of literature on the Ethiopian coffee production and marketing system indicate that Ethiopia has not yet fully exploited its position as the producer of the best coffees in the world (Jima, 2020). Even if different alternative marketing transaction system implemented in the sector for the last two decades. Establishment of ECX and implementation of vertical integration transaction systems are among from the alternative marketing systems.

According to USDA (2020) report the Government of Ethiopia (GOE) seeks to address the main challenges facing the coffee sector through improved coordination between the government and the private sector through improved value-chain integration. Factors addressed include traceability, improved service by ECX, and strengthened research and development efforts to breed high-producing coffee varieties. Past efforts by the GOE to streamline the coffee value chain have borne fruit, and farmers are now able to export coffee directly to international buyers instead of using middlemen.

According to ECTA after the 2017 coffee marketing and quality control proclamation there is an improvement in marketing resulting from reforms in coffee growing areas. For example, more primary market centers have been established closer to farmers. And this helps to establishment of a more transparent and competitive selling process. Farmers have a greater choice of traders to whom they can sell and have more trust in the weighing practices of those traders.

However, some challenges remain. For example, farmers now have more access to price information from wholesale markets, but they are still often unable to obtain the highest prices for their coffee at the marketing centers. As a result of ongoing foreign currency shortages in Ethiopia, exporters sometimes sell their coffee at below market price in order to earn foreign currency to import machinery and consumer goods to sell at a profit in the local market. In order to discourage this practice, in 2019 the GOE made it illegal to sell coffee below the international market price. Ethiopia has recently initiated a Homegrown Economic Reform Plan, a three-year program to liberalize the economy, improve the business climate, and boost export capacity. As Ethiopia's largest export and a key foreign currency earning sector in Ethiopia, the coffee sector plays an important part in this plan.

Regarding vertical integration transaction system, Mr. Hayru Nuru, director for market information and supervision of the Coffee and Tea Authority, was said, on his interview with Fortune newsletter (2021) "In the last six months alone, close to 6,000 linkages have been created between farmers, collectors, and buyers through vertical integration, shipping 133,000tn of coffee overseas". And this indicated some exporters have been using vertical integration to source their export coffee from collectors and small holder farmers.

In the five months of the current budget year (2021/22), the coffee export has registered huge achievement to which Adugna Debela, Director General of ECTA, told Capital (2021) that the role of vertical integration was significant in attaining the success.

But still there are different contradicting views about vertical integration. For instance Anwar Ahmed, a commodities consultant, said in his interview with Fortune newsletter (2021) "Vertical integration has the existing supply-chain unsettled, raising market prices

and creating a monopoly in the system." And on the same newsletter Zerihun Kemiso, president of the Southern Region Coffee Suppliers Association said "Vertical integration has enabled farmers to reap the fruit of their hard work."

Vertical trading is an important option. It brings quality, integration, traceability and sustainability to the Ethiopian coffee market. But in practical aspects of vertical integration exporters raise problems like unable to get coffee per sample provided, unable to get the required quantity of coffee at the right time per contract.

Different studies have been carried out on the contribution and challenges of ECX, for example: Samuel (2019), Seyfe (2020). But as far as the researcher knowledge, empirical studies are not done to assess the practice and challenges of vertical integration on coffee export performance. This study, therefore, will be intended to assess vertical integration of coffee export practices, challenges and performance of coffee exporters in Ethiopia.

1.3 Basic Research Questions of the study

What are the practices and challenges of vertical integration on coffee export performance?

Sub-research Questions

- I. How vertical integration is being practiced for coffee export in Ethiopia?
- II. What is the role of vertical integration on the performance of coffee export in Ethiopia?
- III. What are the major factors affecting the vertical integration performance of coffee export in Ethiopia?
- IV. What are the enablers of vertical integration of coffee export practices in Ethiopia?

1.4 Research objectives of the Study

1.4.1 General objectives

To assess the vertical integration of coffee export practices, challenges, and performance of Ethiopian coffee exporters.

1.4.2 Specific objectives

- I. To assess the vertical integration practices for coffee export in Ethiopia.
- II. To examine the role of vertical integration on the performance of coffee export in Ethiopia
- III. To find the major factors affecting coffee export vertical integration performance in Ethiopia
- IV. To assess the enablers of vertical integration practices of coffee export in Ethiopia.

1.5 Scope of the study

Even though vertical integration supply chain also practiced for roasted coffee beans. This study is designed only to assess the practices and challenges of vertical integration on coffee not roasted. And only consider export performance of coffee exporters whose bases are in Addis Ababa. And the study will be carry out through collecting data using questionnaires and interview in related to vertical integration coffee marketing system from coffee exporters which using vertical integration in the period from April 1st to April 30th 2022.

1.6 Delimitation of the study

In vertical integration transaction system there are different variables which can affect coffee export performance in Ethiopia. The most important variables identified after through literature review (Alban, 2021 and Fortune, 2021) are quality of coffee, delivery time, quantity of coffee, and role of financial institution and will be used for analysis in this study.

1.7 Limitation of the study

Coffee export vertical integration marketing practice is the practice recently exercised in the country, and the researcher wasn't able to go through previously done research in this area. And the other major limitation due to budget and time constraints that the researcher didn't consider in his survey was the challenge suppliers faced and the problem coffee importers in foreign countries faced when coffee was supplied to them using vertical integration.

1.8 Significance of the study

Since coffee has been one of the most important export items in Ethiopia, more studies should be done to increase the value coffee producers get and the country's benefit from this cash crop.

This study will play a significant role to identify the gap on vertical integration marketing system and helps the policy makers in this regard. And for new researchers, it will inspire them to further study and will serve as a source of secondary data for conducting a detailed and comprehensive study on a similar area to generate more advanced and important findings.

1.9 Definition of Terms

1.9.1 Conceptual definition of Terms

Supply Chain: A supply chain is a network of facilities and distribution options that performs the function of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to consumers (Matiwos, 2018).

Traceability: is the ability to track a product batch and its history through the whole, or part, of a production chain from harvest through transport, storage, processing, distribution and sales (Petter and Melania, 2013)

Coffee Collectors: means a person who, is certified and licensed to trade coffee by the appropriate regional states, upon meeting the required criteria, collects prepares and processes coffee with pulp or red cherry coffee from auction centers or producers integrated with legal and developmental auctions or from his own farm or from members of cooperatives for delivery to the Ethiopia Commodity Exchange or directly to exporters with lawful transaction line or export market(Proclamation No.1051/2017).

Coffee producer and exporter :means a person who has obtained certificate of competence and coffee export business license from appropriate government organ either by collecting from his own farm or out growers in accordance with law, and coffee cooperatives collected from its members and exports coffee in compliance with the export quality and standards(Proclamation No.1051/2017).

1.9.2 Operation definition of Terms

Vertical Integration: the coffee transaction in which coffee directly transfer from small holder farmer or coffee collector to exporter bypass ECX trading floor.

1.10 Organization of the study

The study will be organized under five chapters.

Chapter one deal with the problem and its approach which includes background of the study, statement of the problem, research questions, research objectives, scope of the study, delimitation of the study, significance of the study, limitation of the study and organization of the research. Chapter two provides a detail review of relevant literature to connect to the research questions. Chapter three presents the methodological concerns that used in conducting this research and provides a justification for each step taken. Chapter four presents the summarized results/findings of this study and interpret and/or discuss the findings to address the research questions and objectives. Chapter five presents summary, conclusion drawn from the findings, the recommendations made to address the problems stated in chapter one.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The first section of this chapter reviews some relevant theoretical literature regarding supply chain management, supply chain integration vertical integration practices and vertical integration performance. The second section reviews the empirical literature regarding vertical integration practice coffee export challenges of vertical integration and vertical integration performance. The third and the forth section narrate about conceptual frame work and identification of gaps respectively.

2.1 Theoretical Literature Review

2.1.1 Supply Chain Management

Various authors defined and described supply chain (SC) in different ways. Some of the definitions of SC are given below;

a supply chain is “a network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer.”

For La Londe and Masters (1994), SC is a set of enterprises (organizations) that move materials forward. It can be assumed that, in reference to materials, they are also speaking of products, products in process, parts, components and raw materials. Note that in the production of goods and delivery of these to customers (end users), several independent companies are involved in the process and they are all members of the SC, such as manufacturers of components and raw materials, assemblers, wholesalers , retailers and transportation companies to name a few. Lambert, Stock, and Ellram (1998) define a SC as the association of companies that deliver products and services to market.

Christopher (1992) defines SC as a network of organizations that are involved in upstream and downstream relations in the various processes and activities that produce value in the form of products and services that are delivered to the final consumer.

To Mentzer *et al.* (2001), SC is a set of three or more organizations directly involved in the flow of goods, services, finance and / or information both upstream and downstream from a source (supplier) to the consumer.

To Chopra and Meindl (2001) a SC consists of all stages involved, directly or indirectly, in fulfilling a customer request. The SC is not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers, and customers themselves.

Even if the term SC defined by different authors differently there are some common features or attributes in the definitions. For instance a supply chain involves a series of steps involved to get a product or service to the customer. The steps include moving and transforming raw materials into finished products, transporting those products, and distributing them to the end-user. The entities involved in the supply chain include producers, vendors, warehouses, transportation companies, distribution centers, and retailers.

A company's supply chain is an integral part of its approach to the markets it serves. The supply chain needs to respond to market requirements and do so in a way that supports the company's business strategy. The business strategy a company employs starts with the needs of the customers that the company serves or will serve. Depending on the needs of its customers, a company's supply chain must deliver the appropriate mix of responsiveness and efficiency. A company whose supply chain allows it to more efficiently meet the needs of its customers will gain market share at the expense of other companies in that market and also will be more profitable. According to Sebastian (2013) there are three steps to use in aligning supply chain with business strategy. The first step is to understand the markets that the company serves. The second step is to define the strengths or core competencies of the company and the role the company can or could play in serving its markets. The last step is to develop the needed supply chain capabilities to support the roles the company has chosen.

As we discussed in previous section, the supply chain consists of all the activities and process associated with the flow of goods and information from the raw material stage to the end consumer of the product/service. Whereas supply chain management is an integrated approach beginning with planning and control of materials, logistics, services, and information stream from suppliers to manufacturers or service providers to the end client(Siddig and Abdelsalem,2014). It represents a most important change in business management practices and one of the most effective ways for firms to improve their performance.

Supply Chain Management is a network of facilities that produce raw materials, transform them into intermediate goods and then final products, and deliver the products to customers through a

distribution system. It spans procurement, manufacturing and distribution (Lord, 2019) the basic objective of supply chain management is to “optimize performance of the chain to add as much value as possible for the least cost possible”. In other words, it aims to link all the supply chain agents to jointly cooperate within the firm as a way to maximize productivity in the supply chain and deliver the most benefits to all related parties.

2.1.2 Supply Chain Integration

Stevens and Johnson(2016) defined supply chain integration (SCI) as “alignment, linkages and coordination of processes, people, information, knowledge, strategies , and communication across the supply chain among all points of contact and making the efficient and effective movement of materials, information, money and knowledge as needed by the customer.”

Also SCI has been defined as a set of two or more organizations directly involved for coordination of upstream and downstream activities form source to the customer (Chen *et al.*,2007;Flynn *et al.*,2010).

Supply chain integration is the cooperation of buyers and sellers, with the goal that all parties benefit from the relationship. The resulting supply chain partnerships result in improved quality, improved delivery, and an improved bottom line for everyone involved in the supply chain and in addition, the final customers get better quality, reliable on-time delivery, and more responsive service.(<https://www.graphicproducts.com/articles/supply-chain-integration>) [Accessed 4 March,2022].

At the simplest level, supply chain integration involves communication between a buyer and a seller. The objective is to establish an ongoing working relationship such that the buyer's needs are better known and understood by the supplier.

Different types of supply chain integration have been discussed in the literature, such us vertical integration vs. horizontal integration and forward vs. backward Supply Chain Integration. (Bezaye,2018).

Vertical integration is “the degree to which an organization owns the network of processes” (Marzice and Sajedeh, 2016). This type of integration involves the coordination between businesses located at different stages of the supply chain and also involves acquisition of a key component of the supply chain that the company has previously contracted for. It may reduce the

company's costs and give it greater control of its products. Ultimately, it can increase the company's profits. Customer integration and supplier integration are major instances of vertical integration. A contract between a product buyer and a producer is an example of vertical integration(Bezaye,2018).

On the other side, horizontal integration is the coordination between businesses located at the same stage of the supply chain. The aim of horizontal integration is to identify some organizational and managerial synergies enhancing inter-functional and inter organizational coordination.

At the tactical level supply chain entities usually face with forward or backward integration. Forward integration involves “coordinating and integrating the forward physical flow of deliveries between suppliers, manufacturers, and customers” (Saunders, 1997; Trent & Monczka, 1998). This type of supply chain integration is closely related to just-in-time. The Delivery integration plays an important role in terms of implementing product postponement and mass customization in the supply chain or for utilizing third-party logistics.

Backward integration involves “the backward coordination of information technologies and the flow of data from customers to suppliers” (Marzice and Sajedeh, 2016). Information technologies assist independent organizations to coordinate their activities in a supply chain to enhance overall achievements. Information technologies such as data interchange as well as sharing the traditional data are employed through supply chain integration.

2.1.3 Vertical integration practices

Vertical integration is where two businesses at different stages of the supply chain join together. Business will look to integrate in order to obtain greater control of the supply chain. Suppliers need buyers and buyers need suppliers. By vertically integrating the suppliers no longer worries about having customer, and the buyer no longer worries about unreliable deliveries.

As Davide and Armando (2020) mentioned in their book vertical integration can be categorized as backward (upstream) and forward (downstream) integration. Backward integration is concerned with manufacturing decision to integrate with its suppliers of parts or equipments, or

simply the decision to make or sale. Whereas forward integration considers a manufacturer's or producer's decision to sell out put directly to consumer.

The Ethiopian coffee marketing system which was amended through proclamation No.1050/2017 and No. 1051/2017 introduce new vertical integration coffee marketing system. The practice of this new marketing reform is strictly controlled and supervised by the Ethiopian Coffee and Tea Authority (ECTA). First the vertical integration coffee supply chain contract can be concluded between coffee supplier and coffee exporters or between small holder coffee farmers and exporters or between small holder farmers and roasters. And the next step is contract must be approved by Federal Document Authentication and registration office. Then approved contracts are to be submitted to the authority, which will continue to follow up on permit holders. Suppliers and exporters can enter into a future contract, too, with a two year limit based on the regulation approved previously.

The new directive does not authorize a contract signed between two parties to be terminated unless both parties wish to. And the party which found breaching contracts will not be allowed to use other options, including the ECX trading floor.

The current coffee supply chain in Ethiopia consists of smallholder farmers (cooperative), coffee collectors, coffee suppliers and private estate farmers and coffee is moved through wet and/or dry mill processing system. After the processing, the coffee is bagged and stored in the field warehouse. The coffee is loaded onto trucks and passes through the woreda administration bureau where documents are issued and trucks sealed and then delivered to the relevant ECX warehouse in the area or to cooperative warehouses or directly to the exporter warehouse based on the vertical integration agreement. In the case of cooperative and plantations coffee, the coffee can be directly exported without passing through ECX trading system; however, ECX grades the cooperative and plantations coffee based on its quality and location.

2.1.4 Vertical integration performance

When vertical integration put into practice under the right situation can work towards the organizations advantage. And one of the major advantage is more control over quality of products or services in case of backward integration (H. Luke, 2021). The other advantage in case

of forward integration is it allows manufacturer to better control its retail prices, enabling it to respond to change in demand more effectively (Yen-Ting *et al*,2014).

2.1.5 Enablers of vertical integration

The success of supply chain integration depends on organizations which can develop competitiveness and capabilities, looking for total supply chain coordination, information sharing to reduce uncertainty, ensuring on-time delivery and visibility of finished goods and services at a reasonable cost, and the involvement of appropriate supply chain partners (Anurodhsingh K and Rajesh K.,2018).

Copra and Meindi (2007) also strength the above idea, lack of coordination also results if information distortion occurs within the supply chain and as a result manufacturing cost increases, inventory cost increases, transportation cost increases, shipping and receiving cost increases, and profitability decreases.

2.2 Empirical Literature Review

2.2.1 Vertical Integration Practice Coffee Export

In coffee export vertical integration practices vary from country to country. In Costa Rica the coffee sector is regulated by the Instituto Del Cafe de Costa Rica (ICAFE) and the key aspects of regulation is the system of liquidation. According to Rocco *et al*.(2016),the system to be implemented all transactions of coffee along the chain as registered as contracts with the board. Coffee mills and buyers often sign forward contract for future delivery and the contract must specify types of bean, quality of parchment and preparation type. And the board only allows mills to cancel contract under specific circumstances.

In Rwanda the vertical integration is exercised between farmers and associations or cooperatives. Government of Rwanda has devoted its efforts to strengthening cooperatives or associations to give farmers access to extension services, farm inputs, credit, market and other services (Nkurunziza and Ngabitsinte,2015),

In Ethiopia a couple of years ago the Ethiopian Coffee and Tea Authority (ECTA) introduced vertical integration as an alternative to trade export for coffee besides the electronic trading platform. But as far as the researchers knowledge it is difficult to get empirical literature which evidenced the merit and demerits of this new platform.

Indeed coffee is Ethiopia's main export crop, contributing to the livelihoods of more than 5 million smallholder farmers. However, these smallholders find themselves at the bottom of a long value chain that includes collectors, traders, processors and exporters. And to change the livelihood of these small holders and to evaluate the coffee supply chain studies have been undertaken in the area of Ethiopian coffee marketing system. But as far as the researchers knowledge it is difficult to get empirical literature which evidenced the merit and demerits of this new platform in Ethiopia.

The 2017 marketing reform, Vertical Integration, bring about two major changes. First, they allow coffee trading outside the ECX not just for cooperatives and large plantations, as was already the case, but for any producer or supplier processing coffee into green beans. Second, the reform enhances traceability within the ECX: blending of lots at the ECX warehouse level is no longer possible, and all lots sold on exchange are labeled all the way down to their washing station. Coffee smallholders now have seven selling options, instead of only to collectors and cooperatives. They can sell: 1) directly to the ECX; 2) to domestic roasters; 3) to international buyers; 4) to out-growing farms; 5) to suppliers; and, as before, 6) to suppliers' brokers at the primary market centers; and 7) to cooperatives.

2.2.2 Challenges of Vertical Integration

Due to different reasons coffee price fluctuate globally and it's the main challenge in the industry. According to the study conducted by Rocco *et al.*,2016 about vertical integration practices in Costa Rica, there are two main challenges of vertical integration. The first one unanticipated increase in market prices lead to vertical integration contract default signed between mills and buyers. Contract defaults increases significantly in response to unanticipated increase in reference prices over the duration of the contract. The second challenge in vertical integration practice is credit constraints for high working capital requirements of mills.

When we come to vertical integration practice of the Rwandan coffee value chain (Nkurunziza and Ngabitsinze, 2015) the main challenges of cooperatives were not capable to get sufficient production of fully washed coffee due to low level of participation of coffee farmers in cooperation and underutilization of coffee washing stations which were encouraged by Rwandan Government for the production of specialty coffee for high-end market.

2.2.3 Vertical Integration Performance

Vertically integrated firms play a large and important role in the economy. For instance there is better quality control since all links are working to the same goal and products, lower costs for end consumers with elimination of middlemen, increase control of market share and raised barriers to entry for competitors and eliminated reliance on competitors and suppliers with conflicts of interest.

According to Nkurunziza I and Ngabitsinze J (2015), farmers participated in the vertical integration, as member of a cooperative, of the Rwanda coffee value chain had average yield of coffee equivalent to 759 kgs/ha compared to 635 kgs/ha for non-members, had annual average farm net income corresponding to 223,000 Rwfs and 193,000 Rwfs for members and non-members respectively.

Ethiopia developed new coffee marketing and quality control proclamation 1050/2017 & 1051/2017 to improve coffee export performance by cutting the number of middlemen in the value chain and by restoring traceability through vertical integration as alternative coffee transaction systems allowing direct export by small scale farmers and coffee suppliers.

2.2.4 Enablers of vertical integration of coffee export practices in Ethiopia

The final product which had been produced by coffee supply chain in Lampung Province, Indonesia, was coffee powder (Nurmalina, 2016). The coffee powder was sold and exported to customers in foreign country. The end customer on this supply chain was coffee bartender and retailer. To meet end customer's want and end customer's satisfaction, the member of this supply chain should cooperate, coordinate, and collaborate or integrate all supply chain's business activities each other.

2.3 Conceptual frame work

The aim of the coffee value chain framework is to maximize value creation while minimizing the costs of all participants in the chain. In coffee export vertical integration practice identifying the major challenges affecting its performance is very important. And also relate how these challenges alter the practices and affect the export performance.

The conceptual framework for Coffee vertical integration supply chain practices, challenges and effects on its export performance is assumed as follows.

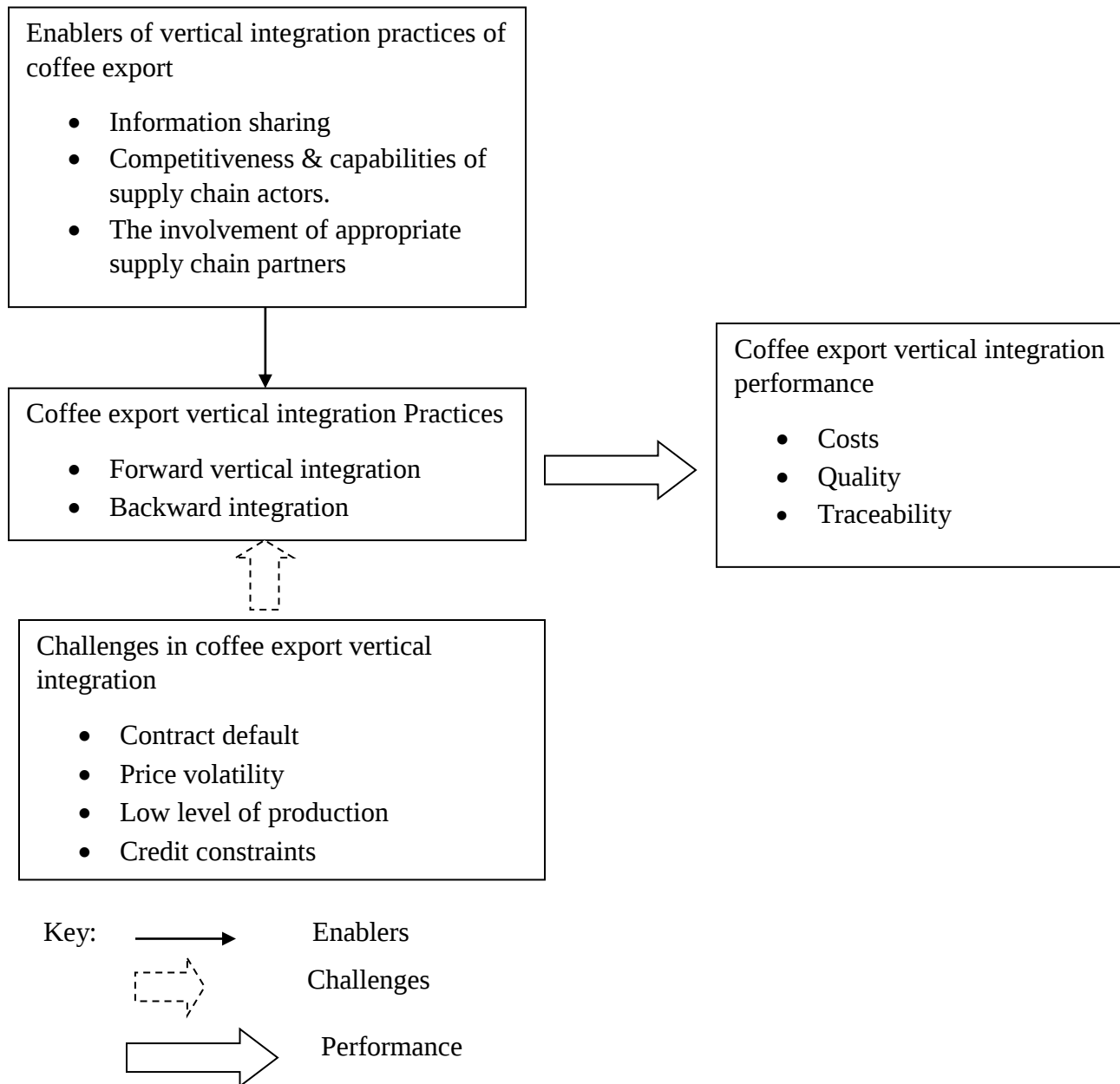


Figure 2: How Coffee Export Performance Is Affected by coffee export vertical integration practices: Source: Researcher's own development.

NB: Vertical integration supply chain stages

Coffee collectors/Sebsabies' are the most important participants in coffee value chain and they directly bought the coffee with its pulp (Jenfel coffee) and/or without pulp from small holder farmers and sold it to suppliers or private traders for further processing activities and preparation

for marketing. Coffee collectors play an essential role of bringing coffee from very remote areas to the market by adding value augmenting the volume of coffee.

Suppliers (Akrabi) in coffee value chain of Ethiopia are those who buy red coffee cherries from collectors or producers and process their coffee. They have hulling, washing and other sophisticated machine for processing purposes. There are wet and dry processing types performed by the processors. In the case of wet processing, after the harvested coffee cherries immediately pulped, fermented in tanks and then finally washed in clean water to remove the mucilage. It then dried in the sun on raised tables and sorted at proper moisture content.

Vertical integration as alternative market other than ECX gives suppliers the chances to sale to exporters by an agreement concluded between suppliers and exporters or export it themselves by acquiring export license. We can observe forward vertical integration practices in this case. And as backward integration practices exporters might offer working capital to suppliers to ensure quality

2.4 Identification of gaps

Based on the literature revised, as a researcher several researches have been done regarding coffee marketing system via ECX. But as far as the researcher knowledge it is difficult to get literatures about vertical integration of coffee export practices, challenges and performance of selected coffee exporters in Ethiopia. There is a need for better understanding and identification of constraints in the coffee export performance to analyze the improvements and enhance its future performance.

CHAPTER THREE

METHODS OF THE STUDY

This chapter discusses the methods of the study which will be used in the study including research design and approach, population and sample design, data source and type, data collection procedure Method of data analysis and presentation, validity and reliability test and ethical consideration.

3.1 Description of the study area

This study is on the title of ‘Vertical integration of coffee export practices, challenge and performance of coffee exporters in Ethiopia. In 2017 Ethiopia developed new coffee marketing and quality control proclamation which allowed coffee suppliers to sell their coffees directly to coffee exporters bypass ECX trading floor. And this study assessed the practices and challenges of this new transaction system, vertical integration, in the country’s coffee export performance.

3.2 Research design

Research design is the overall plan for connecting the conceptual research problems with the pertinent (and achievable) empirical research (Tesfaye, 2018). Since the objective of this study is to describe and analyze one of the alternative coffee transaction system, vertical integration, which allowing direct export by small scale farmer and coffee suppliers in Ethiopia. The researcher used descriptive and explanatory research design. And the study is cross sectional to determine the existing characteristics in a population at a certain point in time.

3.3 Research approach

As explained by Carrie (2017), the three common approaches to conducting research are quantitative, qualitative, and mixed methods. For this research the researcher applied quantitative and qualitative research approach because it helps to explain, predict or investigate relationships, describe current condition, or examine possible impacts on specified outcomes. Also in this method numbers are used to explain findings.

3.4 Population and Sample Design

3.4.1 Population of the study

According to the information collected from Ethiopian Coffee and Tea Authority in the last Ethiopian's budget year, 2013 E.C, 501 coffee exporters were registered by the authority and export their coffee overseas. And from these 280 exporters were sourced their coffee directly from suppliers and small holder farmers outside the Ethiopian Commodity Exchange trading floor using vertical integration. And therefore based on the objective of this study the 280 exporters which used vertical integration for their coffee source are the population of the study.

3.4.2 Sampling Design (sampling techniques, sampling procedure and sample size)

The sampling technique applied in this study is simple random probability sampling because it has the greatest freedom from bias. The simple random sample means that every case of the population has an equal probability of inclusion in sample.

First the researcher found list of coffee exporters in the sample frame work from Ethiopia Coffee and Tea Authority. Then the researcher collected additional information from the authority about their previous year's performance and activity. And finally the researcher applied simple random sampling using random number table to get the required data.

To determine the sample size the researcher applied Slovin's formula. This formula used With regard to the level of accuracy, a confidence level of 95% as suggested by Anokye (2020) , this means that there are 95 chances in 100 (or .95 in 1) that the sample results represent the true condition of the population within a specified precision range against 5 chances in 100 (or .05 in 1) that it does not.

$$n = \frac{N}{1 + Ne^2}$$
, where n = Number of samples, N = Total population and e = Error tolerance.

And when the researcher apply this formula for $N = 280$ as the population size and $e = 0.05$ as error of tolerance at 95% confidence level, then he will get sample size equal to 165.

$$n = \frac{280}{1 + 280(0.05)^2} = \frac{280}{1.45} = 164.71 \approx 165$$

3.5 Data source and type

Data that has been collected from first-hand-experience is known as primary data and Data collected from a source that has already been published in any form is called as secondary data (Syed, 2016). For this study the researcher used both primary and secondary data for the analysis of the study. Primary data through information collected from Green Coffee exporters that use vertical integration transaction marketing system as to source of coffee. Secondary data from different local and international source like Ethiopia Coffee and Tea Authority, Ministry of trade and ICO.

3.6. Data collection Procedure

The researcher used questionnaire and interview as a primary data collection instrument. Questionnaire helps to gather information from the group of respondents because it has the advantage of participating large respondents over other data gathering techniques; it limits inconsistency and also saves time. But as Kothari (1990) mentioned in his book, the questions should be presented with exactly the same wording and in the same order to all respondents. And this helped the researcher to capture the subjective evidence about practices, challenges and performance of some selected coffee exporters in Ethiopia.

The following procedure applied to manage questionnaires to respondents. First, the researcher approached respondents in the targeted sample to ask their cooperation in filling the questionnaire and explained the purpose of collecting data, how the questionnaire would be filled and the confidentiality of to be obtained information. Then, the questionnaires distributed and respondents asked to provide information honestly and return the filled up questionnaire.

And the researcher used interview to assure validity of the research through the use of additional methods to collect data. Unstructured interview conducted with two senior experts from two directorates in the Ethiopian Coffee and Tea Authority. And additional interview will be conducted with the chairman of Ethiopian Coffee Exporters Association. Before starting interviewing, the researcher introduced himself explained the purpose of the study to the interviewee. During interview session, the researchers will jot down all important points on notepad and organized them for analysis purpose.

3.7 Method of data analysis and presentation

The researcher used descriptive and inferential statistics methods for data analysis that was collected through a questionnaire. To address the descriptive nature of the study, the qualitative data was collected using questionnaires and mean scores were computed to show how respondents' responses to each item in the questionnaire. For inferential statistics, since they deal with the process of inferring information about a population based on a sample from that population, Spearman rank correlation and ordinal regression were calculated. A Spearman rank correlation analysis was run to measure the strength of the relationship between factors that affect vertical integration and coffee export vertical integration performance. An ordinal regression analysis was used to determine the behavior of coffee export vertical integration performance with respect to the role of factors in vertical integration practices .

The collected raw data analyzed using the Statistical Package for social Science (SPSS) version 26 to show the aggregate effect of major factors that affecting coffee export vertical integration performance in Ethiopia

Qualitative data that obtained from the interview presented using narrative analysis.

3.8. Validity and Reliability test

Reliability and validity are the two most important and fundamental features in the evaluation of any measurement instrument or tool for a good research.

According to Roberta and Alison (2015) Validity is defined as the extent to which a concept is accurately measured in a quantitative study. Several ways of establishing validity are: content validity; convergent validity concurrent; predictive validity; construct validity; and convergent validity (Ellen, 1995). This study addressed content validity through review of literature and asking the opinion of expert judges in the field.

In quantitative research, reliability refers to the consistency, stability and repeatability of results (Mohajam, 2017). The scores should remain the same when the instrument is administered repeatedly at different times, and it should remain consistent. The researcher used Crombach's Alpha coefficient for reliability test because it is the most commonly used reliability measure. The Cronbach's α result is a number between 0 and 1. An acceptable reliability score is one that is 0.7 and higher (Roberta and Alison, 2015).

In this study the coefficient was calculated taking into consideration all the questions of the variables which are 45 questions under 12 sub groups. Table 3.1 shows analysis of the reliability. The overall Cronbach's alpha coefficients was 0.920 which is above the minimum coefficient acceptable to in the literature, that is 0.7. Since the Cronbach's alpha value for all the variables involved in the study was greater than 0.70, the reliability of the data was found acceptable.

Table 3.1: Reliability test of results

S.No.	Variables	Alpha value	No. of items
1	Forward vertical integration	0.984	4
2	Backward vertical integration	0.957	4
3	Contract default	0.869	5
4	Price volatility	0.828	4
5	Low level of production	0.980	4
6	Credit constraints	0.943	3
7	Information sharing	0.989	4
8	Competitiveness and capability of an organization	0.987	4
9	The involvement of appropriate SC partner	0.999	4
10	The role of VI practices on cost	0.727	3
11	The role of VI practices on quality	0.701	3
12	The role of VI practices on traceability	0.957	3
	Overall reliability	0.920	45

Source: Survey report, 2022

3.9 Ethical Considerations

This research work strictly adhered to the ethical principles with respect to the data used in the work. First the researcher introduced himself to the respondents by presenting an official letter from the School of Commerce which will indicate the purpose of the study. Then the researcher explained briefly about respondent's right like the respondent has the right to respond or not, the respondent has the right to participate or not and also informed respondents about the purpose of the questioner and the study considered the confidentiality of the response by not asking to state name. While conducting the study, emerging ethical issues was considered and attention was given

CHAPTER FOUR

RESULTS, DISCUSSION AND INTERPRETATION

4.1 Introduction

In this chapter we will get the major findings of the study. It has two main sections. The first section deals with descriptive and inferential statistics of the samples. The second section presents the role of vertical integration performance in coffee export performance.

The purpose of this research was to describe the enablers and challenges of coffee export vertical integration practice in Ethiopia and to analyze their role in coffee export performance. There were four research questions in this study: --- (1) How is vertical integration being practiced for coffee exports in Ethiopia? (2) What is the role of vertical integration on the performance of coffee exports in Ethiopia? (3) What are the major factors affecting the vertical integration performance of coffee exports in Ethiopia? (4) What are the enablers of vertical integration of coffee export practices in Ethiopia? The data collected for each item was analyzed and the findings were categorized. Quantitative analysis, which involved reliability testing of measurements used in the study, inferential statistics, Spearman rank correlation, and ordinal regression analysis, were carried out.

4.2 Survey response rate

A questionnaire for this study was developed and distributed to all 165 targeted respondents. And those who filled out and returned the questionnaire were 151 respondents, making a response rate of 91.50% as shown in the table below. Table 4.1 given below shows the survey response rate.

Table 4.1: Survey response rate

Unit	Study sample size	Questionnaire distributed	Completed and returned questionnaire	Distributed but not returned questionnaire
N	165	165	151	14
%		100%	91.5%	8.5%

Source: Survey report, 2022

4.3 Profile of respondents

To describe the demographic part of the respondents participated on this study frequency was calculated and presented in the below tables.

Table 4.2: Demographic and general information of respondents

Item No.	Dimensions	Variables	Frequency	percentage	Cumulative percentage
1	Gender	Male	101	66.9	66.9
		Female	50	33.1	100.0
		Total	151	100.0	
2	Age	18-30	67	44.4	44.4
		31-59	79	52.3	96.7
		60 and above	5	3.3	100.0
		Total	151	100.0	
3	Educational qualification	Certification holder	2	1.3	1.3
		Diploma holder	19	12.6	12.6
		First degree holder	125	82.8	82.8
		Masters degree & above	5	3.3	3.3
		Total	151	100.0	100.0
4	Years of experience	Less than 5 years	20	13.2	13.2
		5 years and above	131	86.8	100.0
		Total	151	100.0	
5	Respondents position in the company	Export officer	12	7.9	7.9
		Expert in export department	30	19.9	27.8
		Export manager	77	51.0	78.8
		Marketing manager	27	17.9	96.7
		General manager	5	3.3	100.0
		Total	151	100.0	

Source: Survey report, 2022

Table 4.2 clearly showed that among 151 total respondents, 101 respondents (66.90%) were male and 50 respondents (33.10%) were female. This indicated that most of the respondents were males. In addition to that, most of the respondents (52.30%) were between the ages of 31-59, followed by age 18-30, which accounts for 44.40 % of the respondents, and the remaining were 60 or above 60, which covers 3.30 % of the total respondents.

Regarding the educational qualifications of the respondents, (82.80%) of them had first degrees and (12.60 %) of the respondents had college diplomas, and it's evidently showed that most of the respondents could understand the questions that were included in the questionnaire.

If we consider their work experience in the coffee export sector, 151 respondents, 51.00 % of them were working as export managers, 19.90 % of them were experts in the export department, and the remaining 17.90 % of them were working as marketing managers. Therefore, most of the respondents can understand the subject in the study area very well to give convenient answers to the questionnaires.

4.4 Descriptive analysis of items under coffee export vertical integration practices

One of the objective of this study was, as mentioned in chapter one, to access the vertical integration practices for coffee export in Ethiopia. And the practices included were forward vertical integration and backward integration. Likert scale with a five point indication applied to rate vertical integration practices with 1- Strongly Disagree: 2- Disagree: 3- Neutral: 4- Agree: 5- Strongly agree.

Analysis of the data was done using mean and standard deviation. The mean obtained were interpreted as follows; 1.00 -1.49 = strongly disagree; 1.50-2.49= disagree; 2.50-3.49= neutral; 3.50-4.49= agree; 4.5-5.0= strongly agree

4.4.1 Mean score of items under forward vertical integration practices

The mean score and standard deviation were calculated to access forward vertical integration practices. And the resulted presented in table 4.3 as follows.

Table 4.3 Mean score of items under forward vertical integration practices (N=151)

Forward vertical integration	Mean	Std. Deviation
Suppliers deliver the required coffee per the quality grade mentioned on contract in forward vertical integration practices to avoid contract default cost.	2.30	.929
Suppliers deliver coffee per time stipulated on the contract in forward vertical integration practices,	2.34	.944
Suppliers deliver the required quantity of coffee as mentioned on the contract during forward vertical integration practices to avoid contract default cost.	2.38	.972
Suppliers provide coffee to exporters with sufficient information about the origin of coffee to keep record about traceability of coffee.	2.33	.929
Grand Mean	2.34	

Source: Survey report, 2022

As revealed in the above table the overall mean of (2.34) and standard deviation (.94) were obtained from the descriptive analysis and most of the respondents disagree with the items listed under forward vertical integration practices. And it depicted that in forward vertical integration practices most suppliers do not delivered coffee per the quality mentioned on the contract to avoid contract default which might happened due to quality problem. In addition to this, from the responses of most respondents we can observe that supplier do not delivered the required coffee at the right time, right quantity and quality standard during forward vertical integration practices.

4.4.2 Mean score of items under Backward coffee vertical integration practices

During coffee export backward vertical integration practices there are a flow monetary value and information. And the mean and standard deviation of coffee export backward vertical integration practices presented in table 4.4.

Table 4.4 Mean score of items under backward vertical integration practices (N=151)

Backward vertical integration	Mean	Std. Deviation
Exporters transfer payment per the contract in backward vertical integration practices.	2.30	.872
Exporters provide sufficient information to suppliers in backward vertical integration to get good quality of coffee	2.44	1.017
Exporters give proper delivery time and shipment schedule for suppliers in advance.	2.31	.939
Exporters provide price information transparently to suppliers in vertical integration practices	2.32	.921
Grand Mean	2.34	

Source: Survey report, 2022

Like forward vertical integration practices, for backward vertical practices also most respondents disagree with the items listed under backward vertical integration practices. The overall mean of (2.34) and standard deviation (.94) were obtained from the analysis. And it portrayed that during backward vertical integration most exporters do not settled payments per the agreement mentioned on their contract. And also the result indicated that most exporters do not provide sufficient information about the quality of coffee they required and about deliver time schedule in advance.

4.5 Descriptive analysis of items under enablers of coffee export vertical integration practices.

Information sharing, competitiveness & capabilities of supply chain actors and the involvement of appropriate supply chain actors in coffee vertical integration were variables considered as enablers of coffee export vertical integration practices in this study.

4.5.1 Mean score of items under Information sharing

Information flows from supplier to exporter and also from exporter to supplier. And four items were listed under information sharing in the questionnaire to obtained respondents reply.

Table 4.5 Mean score of items under information sharing(N=151)

Information sharing	Mean	Std. Deviation
Information sharing improves coffee quality to enhance vertical integration of coffee export	4.06	1.041
Information sharing improves traceability level by keeping record about the coffee in vertical integration.	4.03	1.016
Information sharing reduce unnecessary warehouse and transportation cost by keeping schedule in vertical integration practice.	4.05	1.044
Strong information sharing practice in vertical integration helps exporters to avoid unnecessary penalty costs that arise from default in shipping line schedule.	4.07	1.024
Grand Mean	4.053	

Source: Survey report 2022

From Table 4.5 we can observe that the overall mean of items under information sharing is 4.053 and its standard deviation is 4.125. And this indicated most respondents agreed with the items listed under information sharing.

4.5.2 Mean score of items under competitiveness and capabilities of supply chain actors

From the mean score of items related to competitiveness and capabilities of supply chain actors, Table 4.6, most respondents agree that competitive and capable supply chain actors in coffee export vertical integration practice can prepare the required amount of coffee, have better equipment to prepare good quality coffee and can improve traceability level of the coffee.

Table 4.6 Mean score of items under competitiveness and capabilities of supply chain actors (N=151)

Competitiveness and capabilities of supply chain actors	Mean	Std. Deviation
Competitive and capable suppliers can prepare the required amount of coffee to avoid contract default cost in vertical integration practices.	4.07	1.027
Competitive and capable suppliers have better equipments to prepare good quality coffee per vertical integration contract.	4.16	.939
Competitive and capable suppliers can keep records of each type of coffee in their store to improve traceability level in vertical integration practices.	4.07	1.027
Competitive and capable supply chain actors have experts in the coffee industry to work on quality of coffee in vertical integration practices.	4.06	1.041
Grand Mean	4.09	

Source: Survey report 2022

4.5.3 Mean score of items under the involvement of appropriate supply chain partners

In this part mean score of items related to the involvement of appropriate supply chain partners were included and the main point in this part was to assess the roles of experienced supply chain partners on coffee export vertical integration performance.

Table 4.7 showed that the average mean score was 4,07 and standard deviation is 1.0085. And it indicated that most respondents agree with items listed.

Table 4.7 Mean score of items under the involvement of appropriate supply chain partners

The involvement of appropriate supply chain partners	Mean	Std. Deviation
Involvement of appropriate supply chain partners in vertical integration practices helps to improve quality of coffee by having common understanding.	4.07	1.024
Involvement of appropriate supply chain partners in vertical integration practices helps to solve problems incurred in the transaction to avoid contract default cost.	4.07	1.024
Involvement of appropriate supply chain partners in vertical integration of coffee export helps to keep traceability of coffee.	4.07	1.024
Partners in vertical integration of coffee export have sufficient experience to improve coffee quality.	4.07	1.024
Grand Mean	4.07	

Source: Survey report 2022

4.6 Descriptive analysis of variables related to challenges in coffee export vertical integration

4.6.1 Mean score of items under contract default

When we observe the average mean score of variables related to challenges in coffee vertical integration with respect to contract default most respondents were neutral to the items listed. But from individual items responses we can observe that most respondents agree with items which indicated negative effect of contract default on coffee export vertical integration.

Table 4.8 Mean score of items under contract default (N=151)

Contract default	Mean	Std. Deviation
Contract defaults in vertical integration practice add arbitration cost.	2.32	.921
When supplier fails to provide the required amount of coffee in vertical integration practice exporters will be forced to find replacement coffee from other suppliers and traceability level will be reduce.	4.39	.864
When exporters breaching contract suppliers will be forced to keep the coffee for additional time which increases warehousing cost.	4.39	.864
When exporters breaching contract suppliers forced to keep coffee for additional time which affects quality of coffee.	4.39	.864
When suppliers breaching contract exporters will be forced to pay more to get the replacement coffee.	4.40	.842
Grand Mean	3.315	

Source: Survey report 2022

4.6.2 Mean score of items under price volatility

As indicated in the below Table4.9 the overall mean score is between 3.50-4.49. Which indicated most respondents agree with items which indicated negative effect of price volatility on coffee export vertical integration. And the standard deviation is also small, that is the variability of respondents reply is small.

Table 4.9 Mean score of items under price volatility

Price volatility	Mean	Std. Deviation
When international coffee price increases suppliers' want looking another exporter which do not vertical integrated with them.	4.44	.629
When international coffee price drop suppliers lose interest to prepare good quality coffee in vertical integration.	4.43	.658
Due to price volatility firms may delay investment and other decision.	4.41	.580
Exporters demand increases when coffee price in international market increases	4.44	.573
Grand Mean	4.43	

Source: Survey report 2022

4.6.3 Mean score of items under low level of production

Low level of production is one of the challenges in coffee industry and questionnaire were arranged to get respondents feedback regarding its effect on export performance and it is presented on the below Table4.10. And from the average mean (4.41), we can observe that most respondents agree with item listed. Low level of production might be occurred due to different agronomical and environmental factors and most of the respondents agree that due to low level of production coffee export vertical integration performance influenced negatively.

Table 4.10 Mean score of items under low level of production

Low level of production	Mean	Std. Deviation
When level of production decreases degree of vertical integration practices also decreases.	4.44	.771
Unexpected decrease in production leads to vertical integration contract default.	4.40	.842
During in low level of production suppliers unable to preserve the quality of coffee that mentioned in vertical integration	4.40	.842

contract.		
During low level of production exporters forced to find additional coffee from other suppliers and it decreases level of traceability.	4.39	.864
Grand mean	4.41	

Source: Survey report 2022

4.6.4 Mean score of items under credit constraints

Table 4.11 Mean score of items under credit constraints

Credit constraints	Mean	Std. Deviation
There is sufficient financial support from banks and other finance institution to suppliers to invest on quality of coffee in vertical integration practices.	1.73	.553
There is sufficient financial support from banks and other finance institution to suppliers to improve traceability of coffee in vertical integration practices.	1.62	.563
Credit facility from legal institution for exporters decreases vertical integration contract default cost which may arise from unable to pay to suppliers on time.	1.64	.594
Grand mean	1.66	

Source: Survey report 2022

From the above Table4.11 we can observe that the mean score for each item is between 1.50 and 2.49. And it indicated most respondents disagree with the items which indicated the existing financial support for coffee export vertical integration. And most of the respondents believed that there is no sufficient financial support in the sector,

4.7 Descriptive analysis of variables related to coffee export vertical integration performance

4.7.1 Mean score of items under costs

Table 4.12 Mean score of items under coffee export vertical integration performance from cost perspective (N=151)

Costs	N	Mean	Std. Deviation
Vertical integration decreases transaction costs	151	4.35	.645
Vertical integration eliminate middle men cost	151	4.35	.645
Vertical integration reduce processing cost by improving quality	151	4.00	.894
Grand Mean	151	4.23	

Source: Survey report 2022

As indicated on the above Table4.12, the average mean of variables about coffee export vertical integration performance with cost perspective is 4.23. That is most respondents thought that vertical integration decreases transaction costs, vertical integration eliminate middle man cost and vertical integration reducing processing cost by improving quality.

4.7.2 Mean score of items under quality

In this study, quality considered as one of the parameter in coffee export vertical integration performance. And the below Table1.13 mean score and standard deviation of the related items presented. The average mean is 4.03. That is most respondents argue that in coffee export vertical integrations partners works to improve quality of coffee.

Table 4.13 Mean score of items under coffee export vertical integration performance from quality perspective (N=151)

Quality	Mean	Std. Deviation
Vertical integration improves quality of export coffee	3.88	.774
Supply chain partners collaborate to improve quality of coffee	3.98	.820
Coffee price in vertical integration encourage the preparation of good quality coffee preparation	4.24	.728

Grand mean	4.03	
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Source: Survey report 2022

4.7.3 Mean score of items under traceability

According to ECTA, one of the objectives of vertical integration marketing system is to maintain the traceability of coffee. And Table4.14 showed respondent's reply for this parameter. From the average mean (4.19), most respondents agree that vertical integration increases traceability and also most respondents thought partners works in harmony to increase traceability of the coffee

(n=151)

Traceability	Mean	Std. Deviation
Vertical integration helps to get more traceable coffee	4.19	.830
International buyers pay more for traceable coffee due to strong vertical integration	4.17	.823
Supply chain partners communicate how they record profile of each coffee in the supply chain.	4.20	.817
Grand Mean	4.19	

Source: Survey report 2022

4.7.4 Summary for mean score of items under coffee export vertical integration performance

Table 4.15 Mean score of items related to of coffee export vertical integration performance from cost ,quality and traceability perspective N=151)

Vertical integration performance	Mean	Std. Deviation
Coffee export vertical integration performance from cost perspective	4.234	.5898
Coffee export vertical integration performance from quality perspective	4.033	.6131
Coffee export vertical integration performance from traceability perspective	4.188	.7903
Grand mean	4.152	.6644

Source: Survey report 2022

Table 4.15 portrayed that coffee export vertical integration practices had positive influence by improving coffee export performance from cost, quality and traceability perspectives. The average mean, that is 4.152 indicated coffee export vertical integration practices improve export performance mostly by decreasing cost and next by improving traceability level and improving quality.

4.8 Inferential Analysis

4.8.1 Normality test using Skewness and Kurtosis indicators.

The researcher used numerical test method using Skewness and Kurtosis indicators to check the normality of the data distribution.

In Table 4.16 given below Skewness and Kurtosis for variables which affect the coffee export vertical integration performance are given and Z score calculated and its value values are greater than 1.96 and less than -1.96. And this implied the Likert scale data were not normally distributed.

Therefore the researched selected spearman ranks correlation and ordinal regression for inferential statistics analysis.

Table:4.16 Normality test using Skewness and Kurtosis indicators

	N	Skewness		Kurtosis	
Characters	Statistic	Statistic	Std. Error	Statistic	Std. Error
FVI	151	.981	.197	.724	.392
BVI	151	.937	.197	.703	.392
CD	151	-1.265	.197	2.377	.392
PV	151	-.512	.197	.274	.392
LLP	151	-1.468	.197	2.635	.392
CC	151	.165	.197	-.547	.392
IS	151	-.860	.197	-.397	.392
CCSC	151	-.804	.197	-.486	.392
IASCA	151	-.860	.197	-.417	.392
Valid N(LISTWISE)					

Source: survey report, 2022

Where:

FVI= Forward vertical integration

CC= credit constraints

BVI= Backward vertical integration

IS=Information sharing

CD= contract default

CCSC= Competitiveness and capability of an

PV=Price volatility

organization in the SC

LLP=Low level of production

IASCA= The involvement of appropriate SC partners

4.8.2 Spearman rank correlation

The data in Table 4.17 on the next page depicted the Spearman's rank correlation result, which helped to understand the strength and direction of association between two ranked variables. When we observe the association between enablers of coffee export vertical integration and coffee export performance with respect to cost parameters, the correlation is significant at the level of 0.01. Whereas the association between enablers and performance with respect to quality and traceability is positive but not significant.

In the same table i.e. Table 4.17, if we observe the association between challenges that affect export coffee vertical integration practices and performance with respect to cost, quality and traceability there were positive and negative association. Performance with respect to cost was negatively associated with contract default, price volatility and low level of production.

Table 4.17 Spearman rank correlation

Correlations(N= 151)											
		CD	PV	LLP	CC	IS	CCSCA	IASCA	PC	PQ	PT
CD	Correlation Coefficient	1.000									
	Sig. (2-tailed)										
PV	Correlation Coefficient	.522**	1.000								
	Sig. (2-tailed)	0.000									
LLP	Correlation Coefficient	.900**	.587**	1.000							
	Sig. (2-tailed)	0.000	0.000								
CC	Correlation Coefficient	-0.099	-0.125	-.175*	1.000						
	Sig. (2-tailed)	0.228	0.126	0.032							

IS	Correlation Coefficient	0.031	-0.016	0.048	-0.019	1.000					
	Sig. (2-tailed)	0.708	0.848	0.562	0.818						
CCSCA	Correlation Coefficient	0.057	0.005	0.068	-0.011	.982**	1.000				
	Sig. (2-tailed)	0.485	0.953	0.409	0.892	0.000					
IASCA	Correlation Coefficient	0.044	-0.019	0.051	-0.015	.981**	.994**	1.000			
	Sig. (2-tailed)	0.590	0.820	0.533	0.859	0.000	0.000				
PC	Correlation Coefficient	-0.032	-0.046	-0.032	0.012	.751**	.750**	.758**	1.000		
	Sig. (2-tailed)	0.698	0.572	0.696	0.879	0.000	0.000	0.000			
PQ	Correlation Coefficient	0.068	0.114	0.111	-0.136	0.133	.162*	0.150	0.154	1.000	
	Sig. (2-tailed)	0.410	0.163	0.173	0.095	0.104	0.047	0.066	0.059		
PT	Correlation Coefficient	-0.049	0.138	0.010	-.218**	0.060	0.056	0.053	0.121	.452**	1.000
	Sig. (2-tailed)	0.553	0.091	0.900	0.007	0.468	0.495	0.516	0.138	0.000	
**. Correlation is significant at the 0.01 level (2-tailed).											
*. Correlation is significant at the 0.05 level (2-tailed).											

Sorce: Survey report 2022

Where:

CD= contract default PV=Price volatility LLP=Low level of production

CC= credit constraints IS=Information sharing

CCSC= Competitiveness and capability of an organization in the SC

IASCA= The involvement of appropriate SC partners

PC= Performance with the parameter of cost

PQ= Performance with the parameter of quality

PT= Performance with the parameter of traceability.

4.8.3. Multicollinearity test

According to Aniruddha (2020), multicollinearity occurs when two or more independent variables are highly correlated with one another in regression model. And for this study the researcher was carried out multicollinearity test by examining tolerance and variance inflation factor (VIF) for each factor which affected export coffee vertical integration practices and presented the following table after combine the correlated variables and dropping the others.

Table 4.18 collinearity test

Coefficients ^a				
Model		Collinearity Statistics		
		Tolerance	VIF	
1	PV	.663	1.508	
	LLP	.655	1.527	
	CC	.974	1.026	
	IS	.994	1.006	
a. Dependent Variable: AP				

Source: Survey report,2022

Where:- PV = Price volatility

LLP = Low level of production

CC = Credit constraints

IS = Information sharing

AP= Export performance

The small value of VIF ($1 < VIF < 5$) corresponding to the variables show that there is no problem of collinearity(Noora,2020).

4.8.4 Ordinal regression analysis

The researcher carried out ordinal regression to predict behavior of ordinal level of variables in coffee export vertical integration performance with respect to change in factors which affects coffee export vertical integration practices. And model of fitting was used for this analysis.

Table:4.19 Model fitting Information

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	742.111			
Final	676.945	65.166	28	.000
Link function: Logit.				

Source: Survey report,2022

Table 4.20 Goodness-of -Fit

Goodness-of-Fit			
	Chi-Square	df	Sig.

Pearson	1927.173	2072	.989
Deviance	570.334	2072	1.000
Link function: Logit.			

Source: Survey report,2022

Table 4.21 Test of Parallel Lines

Test of Parallel Lines^a				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	676.945			
General	.000 ^b	676.945	756	.982
The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.				
a. Link function: Logit.				
b. The log-likelihood value is practically zero. There may be a complete separation in the data. The maximum likelihood estimates do not exist.				

Source: Survey report,2022

From collinearity test on Table 4.18 and Model information result on Table 4.19, the researcher observe that it is possible to predict the behavior of dependent variable, that is export performance from the behavior of change in price volatility, low level of production, credit constraints, and information sharing.

4.9 Analysis for Interview Data

Interviews were used by the researcher to ensure the validity of the research and to gather additional information. It was conducted with two senior officers from the Ethiopian Coffee and Tea Authority, who had good experience in coffee export vertical integration practices, and with the chairman of Ethiopian Coffee Exporters Association. The research questions in this study were directly used and their replies summarized as below.

Regarding the first question, which concerned the vertical integration practices of coffee export in Ethiopia, they replied that, despite the recent implementation of this new marketing system in Ethiopia, forward vertical integration, which included coffee and information flows, and backward vertical integration, which included cash and information flows, were carried out in accordance with the rules and regulations formulated by the Ethiopian Coffee and Tea Authority.

And also the forward vertical integration practices and backward vertical integration practices bind by contract signed between suppliers and exporters. Furthermore, forward and backward vertical integration practices are governed by contracts signed between suppliers and exporters.

The second question presented to the interviewees was regarding the role of vertical integration in the performance of coffee exports in Ethiopia. And the two interviewees from the Ethiopian Coffee and Tea Authority started their replies almost in the same way by stating the objectives stated in the proclamation. To improve export performance by reducing the role of middlemen and by restoring traceability. But the interviewee from the Ethiopia Coffee Exporters Association said even if it was planned to reduce the middle man role, it still exists.

When they answered the third question, they started in a similar way by acknowledging the existence of many challenges. The first challenge they raised was quality. Some suppliers didn't supply coffee as per the sample agreed. The second challenge was that some suppliers were unable to supply the full quantities of coffee stated in the contract. The other challenge mentioned by them was breaching contract. When coffee prices rose, coffee suppliers wanted to go to other exporters to get better prices than in vertical integration contracts.

Regarding enablers of vertical integration of coffee export practices in Ethiopia, they said upgrading coffee productivity is the major enabler, in addition to improving the ability and capabilities of supply chain partners. And, as they say, the financial sectors' roles in this case are unenviable.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

The main objective of this study is to assess the vertical integration of coffee export practices and the challenges of coffee exporters in Ethiopia in this practice. This chapter presents a summary of the findings, a conclusion drawn from the study, and a recommendation on the major findings.

5.1 Summary of findings,

From the mean score of items under forward and backward vertical integration practices, the researcher found that most suppliers during forward vertical integration practices didn't maintain quality, delivery time, and traceability information per stipulated in the contract signed between suppliers and exporters. And similarly, during backward vertical integration practices, exporters do not perform payment per the period mentioned in the vertical integration contract. Also, most exporters didn't provide information about delivery time and shipment schedule in advance for suppliers.

Regarding enablers of coffee export vertical integration practices, the researcher found the following. First, good information sharing practices improve the quality and traceability level of coffee in the vertical integration supply chain. And most respondents agree that seamless information sharing reduces costs that might arise from contract defaults and quality problems. Second, when competitive and capable partners are involved in the vertical integration practices, they can reduce cost by improving the quality of coffee and traceability level.

Regarding challenges in coffee export vertical integration practices, the researcher found that contract default, price volatility, low level of production and credit constraints are the main challenges. And most respondents agree that these challenges played their roles by increasing costs, reducing coffee quality, and reducing traceability levels.

From Spearman rank correlation, the researcher found that there is a significant correlation between enablers and coffee export performance with respect to cost. But the association between enablers and performance with respect to quality and traceability is positive but not significantly.

From ordinal regression analysis result the researcher found out that it is possible to predict the behavior of coffee export vertical integration performance from the behavior of price volatility, low level of production, credit constraints and information sharing practices.

5.2 Conclusion

From the findings of this study we can concluded that the current backward and forward vertical coffee export practices not appropriately handled to improve the coffee export performance. In forward vertical integration most coffee suppliers didn't able to deliver coffee in quality standard specified in the contract and in backward vertical integration also there were a problem in payment method and information sharing practices.

Contract default, price volatility, low level of production and credit constraints were challenges discussed in this study and we observe that they have negative effect in the coffee export vertical integration practices. Whereas enablers mentioned in this study, that were information sharing, competitiveness and capability of supply chain actors and involvement of appropriate supply chain actors, had positive effect in improving export performance.

5.3 Recommendations

The following recommendations suggested from the researcher from the findings of this study:-

- ❖ The Ethiopian Coffee and Tea Authority should give sufficient trainings to coffee suppliers to create awareness how they improve forward vertical integration practices.
- ❖ The coffee exporters which prefer to use vertical integration practices should keep the payment period in the contract and expected to improve information sharing practices.
- ❖ To avoid contract default each parties should closely works to improve the coffee quality, the improve the traceability level and to improve low level of production.
- ❖ Banks and other financial organizations should facilitates credit facilities.

Since coffee export vertical integration practices is the recent alternative coffee marketing system, I recommend new researcher to study further about this practice. Because coffee export is one of the major foreign currency source for our country.

APPENDIX I: REFERENCES

- Alban,M.(2021)'Ethiopian Coffee Marketing Reform and Smallholder Coffee Producers',pp 23
- Anurodhsings K. and Rajesh K.(2018)'Supply chain integration: a review of enablers, dimensions and performance', Institute of Management ,volume 27,Issue No. 1,Nov., pp291.
- Bezaye Taye(2018)'Producer-Processor Relationships: The case of Dairy Supply Chain in Addis Ababa and its surrounding' pp 10-12.
- Carlos,E.(2019)' The Coffee Market in Brazil: Challenges and Policy Guidelines', ResearchGate, Volume 39,Issue No.69, July,pp6.
- Carrie, W. (2007) ' Research Methods' , Journal of Business and Economic Research, Vol 5, No. 3, March. Pp 65
- Chauhan, Hooda and Agenaet (2015) 'Coffee: The backbone of the Ethiopian Economy', Institutional Journal of Economy', Volume 2,February, pp. 20
- Dadide and Armando(2020)'Backward and forward integration along global value chain', Euro[ian University working paper, RSCAS 2019/91,pp 4

- Eleni, G.(2012)'A Market For Abdu, Creating a Commodity Exchange in Ethiopia', International Food Policy Research Institute,
- Ellen,A.(1995)' Validity and Reliability in Social Science Research' , Educational Research and Perspective, Volume 38, No. 1 ,PP. 114-120
- Federal Democratic Republic of Ethiopia (2017), 'A Proclamation To Provide For Coffee Marketing and Quality Control', Addis Ababa [Proclamation No. 1051/2017]
- H. Luke (2021)'Impact of vertical integration', Munich personal RePEC Archive, pp 1
<https://www.graphicproducts.com/articles/supply-chain-integration>) [Accessed 4 March,2022].
- International Coffee Organization(2017) '*Value Addition in The African Coffee Sector*', International Coffee Council, pp 3-6
- International Coffee Organization(2019)' *ICO coffee development report 2019*', ED 2318119, PP 6
- Jima,D(2020).'Review on Coffee Production and Marketing in Ethiopia', Journal of Marketing and Consumer Research, Volume 67,June, pp 7
- Kirubel,A.(2019)' An Assessment on Market Integrity of Ethiopian Commodity Exchange',pp47
- Kothari, C. (1990) 'Research Methodology',pp101
- La Londe,B.J. and Masters,J.M(1994) Emerging Logistics Strategies ; Blueprint for the next century ,International Journal of Physical Distribution and Logistics Management ,Volume 24,No.7,pp 35-47
- Lord,E.(2019),' The Impact of Strategic Sourcing and Supplier Selection on The Operations of Goldfields Ghana Limited, Tarkwa Mine', African Journal of Procurement, Logistics and Supply Chain Management, Volume 1,issue 7,July,pp31
- Marzice, M. and Sajedeh, T.(2016) 'Supply Chain Sustainability and Raw Material Management' Concepts and Processes' , pp 39
- Matiwos, E. (2018)' Principles of Supply Chain Management' pp5 ' How to Define Traceability', Trends in Food Science and Technology, Volume 29, December, PP 3

- Matiwos,E.(2020)'Analysis of Factors That Affect Coffee Value Chain Development in The Upstream Supply Chain Members in Gudeyo Bila District, Oromia, Ethiopia', International Journal of Business Analysis and Intelligence,2020,pp. 43
- Muluken,Y.(2022)'Oromia Region Drifts Away From ECX',*Capital*,January17,
- Muthoni,M.(2019) ' Coffee Value Chain Analysis in Kenya (Acase of Kenya planters coo[eration union)', European Journal of Business and Management, Vol. 6, No. 5, PP 210
- Nkurunziza and Ngabitsinze(2015)'Determinants of Farmers Participation in the Vertical Integration of the Rwandan Coffee Value Chain : Results from Huye destrict', Journal of Agricultural Science; Vol. 7, No. 9; pp 197-198,208
- Noora Shrestha(2020)' Detecting Multicollinearity in Regression Analysis', American Journal of Applied Mathematics and Statistics' volume 18,No. 2, PP 41
- Petter, O and Melania, B. (2013) ' How to define traceability', Trends in Food Science and Technology, Volume 29, December, PP 3
- Rita N, Prisca N, Anggita T.(2016)'The degree of integration of supply chain in Lampung province' pp 269
- Roberta,H. and Alison,T.(2015)' Validity and Reliability in Quantitative Studies',May, pp 66-67
- Rocco M. and Josepa M.(2016)'Vertical integration and Relational contracts in Costa Rica Coffee Chain', pp 4-9,29
- Samuel,B.(2019) 'Challenges of Ethiopian Commodity Exchange Market Performance in Trading Partners in The Case of Wolaita Sodo Branch', International Journal of Research in Business and Management, Volume 6, issue 11,pp 14-16,34
- Sebastian, K.(2013) 'Main Issue of Supply Chain Management',
- Selam, G.(2021)' Coffee Authority Doules Down on Vertical Integration', *Fortune*, July 18.
- Seyfe, F. (2020)' The Role and Challenges of Ethiopian Commodity Exchange(ECX) on Coffee Supplies and Marketing in Ethiopia', Business and Management Studies, Volume 6,Number 3, September, pp. 5-9

- Siddlg, B and Abdelsalem,A. (2014) ‘Supply Chain Management Practices and Supply Chain Performance Effectiveness’, International Journal of Science and Research, Volume 3, issue 8,August, PP 187
- Stevens and Johnson(2016)’Integrating the supply chain---25 years on’, International journal of physical distribution and logistics management, volume 46, February, pp 5.
- Sunil Chopra and Peter Meindi (2007)’Supply Chain management, strategy, planning, and operation’, third edition, pp 500-501.
- Syed, M.(2016) ‘ Methods of Data Collection’, ResearcgGate, pp 204
- Taringana,T.(2018) ‘Coffee Production and The Limit to Development in The Developing Countries’, Journal of Sustainable Development in Africa, Volume 20, pp.13
- Tesfaye, B.(2018) ‘ Research Design and Methodology’, ResearchGate, December, PP 1
- TechnoServe.(2017)’TechnoServe’s East Africa Coffee Initiative: An Example of system Leadership in practice’,pp7
- USDA Foreign Agricultural Service,(2019)’ Global Agricultural Information Network: Report Number ,ET1904
- Yen-Ting, Ali K., and Jayashankar M., (2014)’Vertical Integration Under Competition: Forward, Backward, or No Integration?’, Production and Operations Management,VOL.23 Nov.1 pp 19

APPENDIXII: QUESTIONNAIRE

Dear respondent, As part of my MA thesis at Addis Ababa University School of Commerce, I am conducting a survey that investigates vertical integration of coffee export practices, challenges and performance in Ethiopia.

The participants in this research are completely volunteers. You may leave blank any questions you don't want to answer. Your response will remain confidential and anonymous. Data from this research will be kept confidential and reported only as a collective combined total. No one other than the researcher will know your individual answers to this questionnaire.

If you agree to participate, please answer the questions on the questionnaire as best you can. It should take approximately 10 minutes (ten minutes) to complete. Please return the questionnaire to the person who handed you.

If you have any questions, feel free to contact at 0911-31-56-64/ sisayrg@gmail.com

I. Demographic Information

Choose the suitable answer and tick (X) in the box given for each question

1. Gender: Male ☐ Female ☐
2. Age: 18- 30 years ☐ 31- 59 years ☐ 60 years and above ☐
3. Educational qualification: Certificate holder ☐ Diploma holder ☐
First degree holder ☐ Master's degree and above ☐
4. Year of experience in the coffee export sector:
Less than five years ☐ five years and above ☐
5. Position in the company: Export officer ☐ Expert in export department ☐
Exporter manager: ☐ Marketing manager ☐ General Director ☐
Other, please specify _____

II. Information of the firm

1. Year of the firm established _____

2. Legal formation of the firm: Partnership Sole proprietorship

Joint venture ☐ Cooperative union ☐ Share company ☐

Public Enterprise ☐ Private Limited Company ☐

3. Operational capital

Business category: Large scale ☐ Medium scale ☐

Small scale ☐ Micro scale ☐

III. Assessment of practices, challenges and performance of vertical integration in coffee export sector.

Direction: Please indicate your opinion by ticking (X) for each closed questions and rate honestly based on what you actually given the statements using the following scales.

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

I	Vertical integration practices of coffee export	Scales				
A	Forward vertical integration	1	2	3	4	5
1	Suppliers deliver the required coffee per the quality grade mentioned on contract in forward vertical integration practices to avoid contract default cost.					
2	Suppliers deliver coffee per time stipulated on the contract in forward vertical integration practices,					
3	Suppliers deliver the required quantity of coffee as mentioned on the contract during forward vertical integration practices to avoid contract default cost.					
4	Suppliers provide coffee to exporters with sufficient information about the origin of coffee to keep record about traceability of coffee.					

B	Backward vertical integration	1	2	3	4	5
5	Exporters transfer payment per the contract in backward vertical integration practices.					
6	Exporters provide sufficient information to suppliers in backward vertical integration to get good quality of coffee					
7	Exporters give proper delivery time and shipment schedule for suppliers in advance.					
8	Exporters provide price information transparently to suppliers in vertical integration practices					
II	Major factors affecting coffee export vertical integration performance in Ethiopia	1	2	3	4	5
A	Contract default					
9	Contract defaults in vertical integration practice add arbitration cost.					
10	When supplier fails to provide the required amount of coffee in vertical integration practice exporters will be forced to find replacement coffee from other suppliers and traceability level will be reduce.					
11	When exporters breaching contract suppliers will be forced to keep the coffee for additional time which increases warehousing cost.					
12	When exporters breaching contract suppliers forced to keep coffee for additional time which affects quality of coffee.					
13	When suppliers breaching contract exporters will be forced to pay more to get the replacement coffee.					
B	Price volatility	1	2	3	4	5
14	When international coffee price increases suppliers' want looking another exporter which do not vertical					

	integrated with them.					
15	When international coffee price drop suppliers lose interest to prepare good quality coffee in vertical integration.					
16	Due to price volatility firms may delay investment and other decision.					
17	Exporters demand increases when coffee price in international market increases					
C	Low level of production	1	2	3	4	5
18	When level of production decreases degree of vertical integration practices also decreases.					
19	Unexpected decrease in production leads to vertical integration contract default.					
20	During in low level of production suppliers unable to preserve the quality of coffee that mentioned in vertical integration contract.					
21	During low level of production exporters forced to find additional coffee from other suppliers and it decreases level of traceability.					
D	Credit constraints	1	2	3	4	5
22	There is sufficient financial support from banks and other finance institution to suppliers to invest on quality of coffee in vertical integration practices.					
23	There is sufficient financial support from banks and other finance institution to suppliers to improve traceability of coffee in vertical integration practices.					
24	Credit facility from legal institution for exporters decreases vertical integration contract default cost which may arise from unable to pay to suppliers on time.					

III	Enablers of vertical integration of coffee export					
A	Information sharing	1	2	3	4	5
25	Information sharing improves coffee quality to enhance vertical integration of coffee export					
26	Information sharing improves traceability level by keeping record about the coffee in vertical integration.					
27	Information sharing reduce unnecessary warehouse and transportation cost by keeping schedule in vertical integration practice.					
28	Strong information sharing practice in vertical integration helps exporters to avoid unnecessary penalty costs that arise from default in shipping line schedule.					
B	Competitiveness and capability of an organization in the supply chain	1	2	3	4	5
29	Competitive and capable suppliers can prepare the required amount of coffee to avoid contract default cost in vertical integration practices.					
30	Competitive and capable suppliers have better equipments to prepare good quality coffee per vertical integration contract.					
31	Competitive and capable suppliers can keep records of each type of coffee in their store to improve traceability level in vertical integration practices.					
32	Competitive and capable supply chain actors have experts in the coffee industry to work on quality of coffee in vertical integration practices.					
C	The involvement of appropriate supply chain partners	1	2	3	4	5
33	Involvement of appropriate supply chain partners in					

	vertical integration practices helps to improve quality of coffee by having common understanding.					
34	Involvement of appropriate supply chain partners in vertical integration practices helps to solve problems incurred in the transaction to avoid contract default cost.					
35	Involvement of appropriate supply chain partners in vertical integration of coffee export helps to keep traceability of coffee.					
36	Partners in vertical integration of coffee export have sufficient experience to improve coffee quality.					
IV	The role of vertical integration practices in performance					
A	Costs	1	2	3	4	5
37	Vertical integration decreases transaction costs					
38	Vertical integration eliminate middle men cost					
39	Vertical integration reduce processing cost by improving quality					
B	Quality	1	2	3	4	5
40	Vertical integration improves quality of export coffee					
41	Supply chain partners collaborate to improve quality of coffee					
42	Coffee price in vertical integration encourage the preparation of good quality coffee preparation					
C	Traceability	1	2	3	4	5
43	Vertical integration helps to get more traceable coffee					
44	International buyers pay more for traceable coffee due to strong vertical integration					
45	Supply chain partners communicate how they record profile of each coffee in the supply chain.					

APPENDIX III: INTERVIEW QUESTIONS

1. How the practice of the new marketing alternative, vertical integration, which recently implemented by ECTA going on?
2. What are the challenges occurred in vertical integration coffee marketing system ?
3. In what parameters the performance of vertical integration coffee marketing system showed improvement?
4. What are the enablers of vertical integration of coffee export?