THE EFFECT OF SUPPLY CHAIN MANAGEMENT PRACTICE ON COMPANY COMPETITIVENESS: THE CASE OF ETHIOPIAN AIRLINES GROUP, ADDIS ABABA, ETHIOPIA

BY

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A THESIS SUBMITTED TO ADDISABABA UNIVERSITY, SCHOOL OF COMMERCE, DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT PRESENTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR MASTERS OF ARTS DEGREE IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

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STATEMENT OF DECLARATION

I, Dereje Kuma, have carried out independently a research entitled ***"The effect of supply chain management practice on company competitiveness: The case of Ethiopian Airlines Group (EAG)"*** in partial fulfillment of the requirement for Master of Arts degree in Logistics and supply chain management with close advice and support of my advisor. This study is entirely my own work and it has not been submitted to any other institution for a similar purpose or other academic award. In addition, all reference materials contained therein have been duly acknowledged.

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Statement of Certification

This is to certify that the study prepared by Dereje Kuma, entitled **"*The effect of supply chain management practice on company competitiveness: The case of Ethiopian Airlines Group (EAG)*"** and submitted in partial fulfillment of the requirements for the Masters of Arts degree in Logistics and supply chain management complies with the regulations of the program and meets the accepted standards with respect to originality and quality.

Signed by the Examining Committee,

Examiner I: _____ Signature:_____ Date:_____

Examiner II: _____ Signature:_____ Date:_____

Advisor: Busha Temesgen (PhD) Signature:_____ Date:_____

ABSTRACT

This study has been conducted on the effect of supply chain management practice on company competitiveness with the special emphasis on Ethiopian Airlines Group (EAG). The major objective of the study was to assess the effect of supply chain management practice and company competitiveness in EAG. Specifically, the study focused on assessing how internal integration affect competitive advantage for EAG, the impact of customer relationship on EAG's ability to compete, the effect of information sharing, quality of information on EAG ability to compete, and investigating how Strategic Supplier Partnership affect the EAG's ability to compete. To realize these objectives, the researcher adopted mixed research approach with descriptive research design. Both primary and secondary source and types of data utilized for the study. As primary data collection tools, self-administered survey questionnaires that were measured by Likert scale were used. Semi-structured interviews were also held with six interviewees of each unit representative. The questionnaires were sent for 382 respondents via outlook out of which 370 questionnaires were successfully received/collected. Document analysis was also done to collect secondary data. The collected primary data were presented in tables and analyzed using SPSS version 25. The findings of the study indicate that all variables of the study which include customer relationship, internal integration, information sharing, quality of information and Strategic Supplier Partnership have positive and significant effects on competitiveness of EAG. But data obtained from the interview indicates that upon restructuring of the logistic and cargo group where the finance unit has been structured under it which negatively affecting payment processes that in turn affects customer relationship and strategic suppliers. The study concluded and recommended that since the airline existence, profitability and competitiveness are highly affected by Strategic Supplier Partnership, customer relationship, internal integration, information sharing and quality of information, all stakeholders of EAG need to provide special attentions in the long run by implementing special customer relationship management practice tools, reevaluating the internal integration, creating more strategic alliances with suppliers, partners and advancing the information flow and quality of management.

Keywords: Logistics and Supply chain management, Ethiopian Airlines Group, Company competitiveness

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AT: Agency theory

EAG: Ethiopian Airline Group

EAL; Ethiopian Airlines

ECGO: Ethiopian cargo and logistics service

ERP: Enterprise Resource Planning system

ET: Ethiopian, Ethiopian airlines

GCEO: Group chief executive officer

IATA: International air transport association

IT: Institutional theory

KBV: Knowledge base theory

MLM: Material logistic management

MRO: Maintenance repair and oversell operations

NP: Network perspective theory

RBV: Resources based theory

SCM: Supply Chain Management

SCT: Strategic Choice Theory

ST: System theory

TCA: Transaction Cost Theory

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Supply chain management is rapidly becoming one of the essential business activities that provide a source of competitive advantage. It is currently a hot topic in business literature and is undoubtedly regarded as a crucial strategic component in many firms (Azar et al, 2010). Due to rapid technological advancements and shifting consumer needs, business organizations today face a challenging climate with intense competition. In such a dynamic environment, traditional supply chain strategies become ineffective. As a result, utilizing a competitive advantage is one strategy for overcoming such obstacles (Azar et al, 2010).

The supply chain consists of the entire activities associated with goods and services movement from unfinished products to consumable products to the customers. This dynamic movement includes financial and information flows as well as material flows. That means, Supply Chain is a network consisting of up and downstream companies which are involved in various processes and activities that create value for the user in the form of goods or services (Rossignoli & Ricciardi, 2015).

Supply Chain Management entails the coordination and configuration of different processes needed to make products available in a timely, reliable, and suitable condition. By identifying and employing supply chain management (SCM) practices in an organized manner, it is possible to achieve the distinctiveness of supply chain management that will help to achieve competitiveness (Hassan Zadeh, 2010).

According to Zailani & Rajagopal (2005), supply chain management is used to describe the stimulation, integration of customer requirements, internal processes, and upstream suppliers' performance. The awareness and practice of supply chain management (SCM) have become an important requirement for staying competitive in the global race and increasing competitiveness and profitability. The goals of the supply chain and competitive strategies must be congruent and accordingly, the competitive approach will

soon seek to meet the consistency of customer objectives (Sunil Chopra and Peter Meindl, 2007). One of the competitive approaches during the strategic planning phase of the supply chain management practice is expanding the capabilities and ensuring strategic fit which is considered a critical component (Sunil Chopra and Peter Meindl, 2007).

According to Salazar (2012), the practice of supply chain management should involve integration to ensure competitive advantage that has a substantial impact on business processes across the supply chain management, especially for cost savings advantage, quality improvement, operational speedup, and streamlining cross-company processes from A- Z.

Businesses that adopt a novel competitive approach work closely with partners to create and manage processes that exceed conventional organizational boundaries and will succeed because supplier networks engage in competition with one another rather than with distinct enterprises. Thus, supply networks become the center of rivalry in organizations (Salazar, 2012). Different business organizations have recently shown a significant interest in supply chain management as they have realized that they can no longer effectively compete in isolation from their suppliers or other entities since it lowers costs while simultaneously enhancing customer delivery. However, still many companies in developing countries including Ethiopia use traditional purchasing and selling practices and are not competitive. Even though there is a supply chain by default, it is not adequately managed or deployed to benefit from effective supply chain management practice (Belay, 2011).

Ethiopian Airlines has been growing fast since its establishment in 1945 GC with consistency over a decade by keeping its competitive position in the airline industry including difficult times like the COVID-19 pandemic, it expands its services both in passenger services and its cargo and logistic services across the world, particularly in Africa. The higher management's strategic and creative decisions particularly during the COVID-19 pandemic prevalence like converting passenger aircraft to cargo aircraft for cargo and logistic services able EAL group one of the top three airlines to make a profit and remain competitive in the industry.

One of the main reasons to remain competitive and profitable besides its creativity and flexibility during difficult times like the COVID-19 pandemic is its dynamic strategic goal to achieve Vision 2035, the Airline periodically undergoes a system-wide review of organizational structures to streamline and enhance process effectiveness and efficiency as well as bring operational excellence.

To this end, Ethiopian Cargo services become one of the nine strategic business groups of the airline and have reorganized and renamed itself to Ethiopian Cargo and Logistics Services to improve the supply chain management practice and to ensure EAL group competitiveness. The following are some of the major reasons for the reorganization of this business unit that affects the supply chain management practices and competitiveness: To provide integrated logistics and transportation services to all its global partners, suppliers, and air freighter service users, to provide efficient, safe and reliable distribution services, to provide consolidation/deconsolidation services and storage facilities for major customers who are planning to use Addis Ababa as a logistics and distribution hub which is a multimodal transportation and logistics solutions (Land, Air and Sea-freight services) that ensures speed to market in a shortest transit/waiting time at the lowest possible cost with the highest reliability (www. Ethiopian airlines.com).

Therefore, the study will assess practice of supply chain management and its effect on the competitive position of Ethiopian airlines group.

1.2. Statement of the Problem

The success of one firm depends on its effective integration and successful supply chain management practices which are very essential components to remain competitive in the industry (Hassan Zadeh, 2010).

Well-structured supply chain management practices and integration have been viewed as strategic tools for businesses to increase their competitiveness with the development of information and communication technology. Firms have to effectively integrate with their suppliers, customers, warehouses, and other intermediary value-adding partners to completely profit from and utilize supply chain management concepts (Fasika, 2014). If firms have a good foundation, integration, and smart supply chain management practices they can contribute to the development of core competencies across the value chain (Hassan Zadeh, 2010).

The airline industry is the most highly dynamic and volatile and its competitiveness and success are highly dependent on the effectiveness of supply chain management practices and integration. Even though supply chain management practices are still in their initial stages in Ethiopia, in current days several firms started to incorporate it into their organizational structures. Nevertheless, firms involved in supply chain management in developing countries including Ethiopia are isolated throughout different organizational units, often performed individually, which results in a lack of effective supply chain-wide integration (Zachary, 2017).

The use of SCM practices particularly in developing countries show inefficient, especially in the areas of strategic supplier partnerships, customer relationships, information exchange, and lean systems, it frequently experiences stock-out issues and inconsistent raw material quality because lack of information sharing and lack of closer communication with suppliers and so on. This practice has an impact on the relationships with its consumers. Lack of fulfillment of customer orders with consistent product quality and pricing, and all these issues lead the company to lose its competitive position concerning its competitors in areas where competitive positions are typically measured,

such as lower prices, higher quality, higher dependability, and regular new product development initiatives.

The previous study on supply chain management practice in the EAL MRO unit by Endakimew Gate (2020) indicates that there were operational disruptions as a result of the existing supply chain management practice among the MRO units and due to that total number of 138 C-checks delayed from total of 1298 checks during Jul 2018 and Jun 2019, according to this findings, 103 flights were delayed due to lack of integration, lack of strategic supplier partnership, lack of relevant information sharing, but this study still not completed because it only focuses on MRO technical units and doesn't consider the current restructured business unit of the airline. Moreover, there is no study made so far considering Technical (MRO) with non-Technical units together concerning supply chain management practice and competitiveness in the case of the EAL group instead the earlier study focused on supply chain management practice's effect on operational performance.

Therefore, this study has provided an opportunity in finding out the effect and improvement of the supply chain management practice in EAG after COVID -19 and the possible challenges in relation to reorganizing cargo and logistic services in addition to the gaps in literature. Hence the researcher specifically finds out the following main gaps in the literature:

The major gaps in the related literature are;

- The prior study does not take into account the context and circumstances of the current reform or restructuring of the cargo and logistic services after COVID phenomena, factors that might have an impact on non-technical units were not taken into account and looked together with technical units as far as the knowledge of this researcher.
- There hasn't been enough research done on the impact of supply chain management effectiveness and practices on airline industry competitiveness particularly in Africa including the EAL group.

- Incomplete and inconclusive research has been done on study topics in the airline industry EAL group.
- It is necessary to conduct the further empirical study because there is no conclusive evidence and differing opinions offered by various researchers.

Therefore, this study has been carried out to address the gaps stated above from earlier research and address or assess the practice of supply chain management on the competitiveness of Ethiopian Airlines Group. Moreover, by exploring the possible gap between newly structured cargo and logistic services on the supply chain management practices, the study was point out possible solutions for improvements as it will help to remain or keep the competitive position of the Airline. Thus, the study analyzed specifically SCM practice on the competitiveness of Ethiopian Airlines Group with dimensions of client relation, level of information sharing and quality, Strategic Supplier Partnership practices, and their effect on the competitiveness of Ethiopian airlines.

1.3. Objectives of the Study

1.3.2. General Objective

The general objectives of this study are to assess the effect of supply chain management practice on company competitiveness, the case of Ethiopian Airlines Group (EAG).

1.3.3. The Specific objective of the study

The specific objectives of this study are;

- To examine the relationship between SCM practices (Customer relationship, level and quality of information sharing and Strategic Supplier Partnership) with competitive position of Ethiopian Airlines Group.
- To analyze how internal integration, affect competitive advantage for EAG.
- To assess the impact of customer relationship on EAL Group's ability to compete.
- To assess the effect of information sharing and quality of information on EAG's ability to compete

- To investigate how Strategic Supplier Partnership, affect the EAL group's ability to compete.

1.4. Research Questions

The study addresses the following research questions.

- How supply chain management practices affect the competitive advantage of EAL Group?
- How and to what extent internal integration impact and is related to building a competitive advantage of EAG?
- What is the influence of information sharing and quality on EAL Group's ability to compete?
- How customer relationships affect EAG ability to compete?
- How Strategic Supplier Partnership practices affect the EAL group's ability to compete?

1.5. Significance of the Study

In a competitive business world especially in the airline industry, airlines with effective supply chain management practices have an advantage over their rivals in terms of lower prices, higher quality, higher dependability, and quicker delivery times.

Accordingly, top-level management has to adapt and implement an effective SCM practice strategy and use it to gain a competitive advantage. As a result of this study the management team and researchers will be able to gain in-depth knowledge about the relationship between supply chain management practices and the competitive position of the organization and will apply it in their organization.

In addition, the findings from this study are also to be used as references for further research work by anyone who might be interested in this area of study. Moreover, it will contribute academically to future research.

Furthermore, the findings of this study could assist policy makers related to the air transportation supply chain management and logistics services to fill or solve the gap limited the effectiveness of SCM in cargo and logistic services. They are likely to use it while reviewing and drafting policies, and standard operating procedures that often act as guidelines on the approach that they always consider ensuring competitive position using supply chain management practice.

1.6. Scope of the Study

The study focused on the SCM practice and its effect on the Ethiopian airlines group's competitiveness. It is challenging and unmanageable to study SCM in all of its varying managerial practice domains and as a result, the focus of this research was restricted to the SCM practices, procedures, and market position of Ethiopian airlines Group. This study's subject area was further narrowed to the company's point of reference for strategic supplier partnerships, customer relationships, information sharing levels, and Strategic supplier partnership. By analyzing how the airline interacts with its upper stream (suppliers) and the down streams of the supply chain, the study's focus was further restricted to the case company, Ethiopian Airlines Group.

Furthermore, the study used Primary data from major users of SCM services in the EAL group only and secondary data from various reports including transfer pricing, statement of profit and loss of the ET cargo, and logistic section both technical and non-technical. The study did not include primary data through interviews with the Airline's GCEO and financial managers.

1.7. Limitations of the Study

It is challenging to examine the complete supply chain in a single investigation. The research did not include all or every supply chain actor, namely suppliers, and customers which could negatively affect the generalizability of the study. However, the internal actors of the chain have been thoroughly studied to minimize the effect.

1.8. Term Definitions/Operational Terms

Supply chain management (SCM) practices have been defined as a set of activities undertaken in an organization to promote effective management of its supply chain (Li et al, 2006).

Supply chain management is the management of upstream and downstream relationships between suppliers and customers to deliver superior customer value at a lower cost to the supply chain as a whole. It is a network of relationships to deliver superior value (Christopher, 2005).

Competitive advantage: the extent to which an organization can create a defensible position over its competitors (Li et al, 2006).

Strategic supplier partnership: enduring connections between a company and its suppliers. Each participating company is expected to receive substantial, continuous benefits by utilizing its strategic and operational capabilities (Li et al, 2006).

Customer relationship: the wide range of methods employed to address customer concerns, build long-lasting relationships with customers, and improve customer satisfaction (Li et al, 2006).

Internal integration: Ability to work across functions and processes within a firm and across multiple firms in order to bring value to customers and the end consumer (Andrew C, 2006)

Level of information sharing: The quantity of sensitive and confidential information shared with a supply chain partner (Li et al, 2006).

1.9. Organization of the Study

The study is organized into five chapters. Chapter one addressed the introduction part of the study as presented above. Chapter two contains a literature review. This has a theoretical framework on which the study is based. It also reviews different literature in the areas of supply chain management. Chapter three is about methodology of the study. It explains the research approach and design adopted, sampling methods, tools used for data collection, and methods of data analysis. Chapter four encompasses data presentation and analysis of the study. The last chapter of the study deals with the conclusion and recommendations of the study

CHAPTER TWO

RELATED LITERATURE REVIEW

2.1 Introduction

In the first section of this chapter, reviews of the significant theoretical and empirical literature on supply chain management and companies' competitiveness were discussed. These reviews were organized around topics, and then the chapter discusses how supply chain management practices contribute to a company's success and competitiveness. In section 2.1 the theoretical review was made. A greater emphasis has placed on five key factors: client relations ships, information quality and sharing levels, Strategic supplier partnership and integration. These five factors were covered in detail and separately in section 2.2 empirical review literature part. The effects of supply chain management on a company's competitiveness are reviewed in part 2.3, the practice of supply chain management and the conceptual framework of this study was presented in section 2.4 and finally in section 2.5 literature gap have discussed.

2.2 Theoretical Review

The competitive business environment across the world especially in the airline industry, in addition to the imperfect market, limited technology, and other resource constraints especially in developing countries makes the management of the supply chain difficult. Accordingly, it requires sustainable implementation and practicing of the proper supply chain management, good integration, and application of well-studied strategy in the supply chain. Hence, scholars in the field of finance and economics and management science developed numerous theories of the supply chain to analyze the alternative of the supply chain that can maximize the firm performance and competitive advantage. Some of the major theories of the supply chain are, Resource-based view theory (RBV), Transaction cost analysis theory (TCA) , Knowledge-based view theory (KBV), Strategic choice theory (SCT), Agency Theory (AT), Institutional theory (IT), System theory (ST), Network perspective theory (NP) and Material Logistic management theory that exists in

a large body of literature that examines the effectiveness of supply chain. Accordingly, each of the theory presented here below.

2.2.1 Resource-Based View (RBV) Theory

This theory specifies that the designing of the supply management process should be based on the resources which are available to the company.

It advocates that a firm's resources and its capability to convert these resources to provide sustainable competitive advantage are the keys to superior performance (Liu, 2010).

Firms' resource bases are continually heterogeneous because many resources are firm-specific, imperfectly transportable, or imitable. This means that sustained firm resource heterogeneity could be a source of competitive advantage (Das and Teng, 2000).

In explaining a firm's superior performance, firm-specific factors are more significant than environmental or industry-structure aspects. According to logistics research, emphasizing the development of logistical capabilities is linked to better business performance, which seems to corroborate this concept (Olavarrieta and Ellinger, 1997).

Through strategic management, infrastructure management, and resource management, the unique capability of logistics can be used to create time, place, quantity, form, and possession utilities within and among businesses and individuals, to produce goods and services that satisfy the customer by achieving value.

Firms' increased preoccupation with quick response systems, efficient consumer response initiatives, and just-in-time supply programs is further evidence that logistical distinctive to improve performance, capabilities are becoming increasingly important in the creation of a customer-focused business strategy. To achieve customer satisfaction, logistics is used as the primary strategic resource. This is done by ensuring that there is enough inventory, that deliveries are made on time, that fewer products fail, and that there are therefore fewer lost sales or returns. Service capabilities are quickly overtaking product differences as the primary method of differentiation accessible to businesses. Effective logistics management can provide firms with a competitive edge, provided that the logistics system is designed around the needs of the customer.

2.2.2 The Transaction cost Analysis Theory (TCA)

The theory is founded on the transaction costs paid throughout supplies. When a corporation chooses between producing internally and acquiring from the market, the TCA demonstrates that transaction costs are the primary issue (Hyuk, 2014). The company is described as an administrative tool that increases efficiency and promotes communication among economic actors (Leiblein, 2003).

The effective boundary between organizations and markets is observed by TCA. According to the TCA, reducing transaction costs is the key focus of organizational research, and reducing costs is achieved by discriminately allocating transactions to governance structures. Mechanisms are dependent on the relative monitoring costs brought on by constrained rationality and uncertainty brought on by the self-interest and opportunism of partners. Process integration and mutual trust, it aids businesses in lowering the opportunism and monitoring costs that are inherent in market transactions, hence lowering the likelihood that partners will act opportunistically.

TCA has been used to examine the question of why businesses exist. However, as businesses increasingly operate as networks and logistic chains lengthen and become more complicated, a more extensive application of transaction cost theory may be necessary (Platje, 2013).

2.2.3 Knowledge-based View Theory (KBV)

This theory is formulated by going on the available information knowledge.

The knowledge-based view of the firm, which is a more recent extension of the Resource-Based View (RBV) of the firm, provides a solid theoretical foundation for the organization's learning and intellectual capital researchers, according to Carit Curado and Nick Bontic (International Journal of Learning and Intellectual Capital, Jan 2006). Knowledge is seen as a unique strategic resource that doesn't deteriorate over time the way other conventional economic productive variables do. The majority of knowledge-based resources are intangible and dynamic by nature, permitting idiosyncratic development through causal ambiguity and route dependency, which form the basis of

the process for generating economic rent in the Knowledge-Based View (KBV) of the organization.

2.2.4 Strategic Choice Theory (SCT)

The theory is based and dependent on various strategic theories which are taken by the management to ensure that they make rightful decisions on the supply chain (Ketchen & Hult, 2006).

Strategic Choice theory, a branch of organizational theory, explains how leaders or leadership groups can have an impact on an organization by making decisions in a fluid political process. Before the development of this theory, it was widely believed that organizations were created per the operational needs of the external environment. An alternative was offered by the strategic choice theory, which focused on the agency of people and groups inside organizations to make decisions, sometimes for their purposes that had a dynamic impact on how such organizations developed. These tactical decisions were a result of an organizational learning process that adjusted to the internal political climate as well as the external environment.

Organizations are typically questioning the strategic choices of the past and the future should they deliver more services to the customer, develop more of their R&D to grow in specific niche markets, or play on the cost side by making cuts in non-essential extras?

These strategic choices have a direct impact on the supply chain strategy and will lead to different supply chains. Different strategies will also result in different targets for supply chain metrics.

According to Treacy and Wiersema's competitive strategies (2014), there are three possible corporate strategies of choices:

1. **Operational Excellence** - offering the lowest price
2. **Customer Intimacy** - striving for the best customer experience
3. **Product Leadership** - delivering the highest quality products

In short, the supply chain triangle concept comes down to the fact that organizations deliver different types of services to their customers, which come at a certain cost and require a certain amount of inventory, or more generically, cash. The balancing of these three sides of the triangle is the essence of supply chain management.

2.2.5 Agency Theory (AT)

The interaction between the principals and the agents is explained by this theory. It makes sure that pertinent regulations are followed, lowering expenses while raising productivity or revenue. Risk management, outsourcing, sourcing, and supply chain collaboration are just a few of the activities related to supply chain management to which principal-agent theory has been applied (Plambeck & Gibson, 2010).

Various supply chain management activities, including as risk management, outsourcing, sourcing, and supply chain collaboration, have been subject to principal-agent analysis (Plambeck & Gibson, 2010). Additionally, the management of the company (agents) must act by the authority granted to them by their employment on behalf of the company proprietors (principals) while making operational decisions about supply chain costs.

Accordingly, this theory contends that, the goals of the principal and agents are not in conflict and that the principal and agent can reconcile different tolerances for risk (Lavassani & Movahedi, 2010).

Both principals and agents seek to maximize their utility from the same organizations. The trouble faced by the principal is how to secure some service benefit from the agent while not knowing the true value of those benefits, or being forced to accept those benefits the agent wishes to supply (Zsidisin & Wagner, 2010). This theory also involves considerable information asymmetry. This information asymmetry also makes it difficult for the principals to know beforehand how much service is needed. The intention of the owners who are the principals is for the managers (agents) to make decisions that will ensure the SMEs thrive which include supply chain collaboration success (Eisenhardt, 1989).

2.2.6 Institutional Theory (IT)

This theory is based on the principles under which the institution is governed.

Institutional theory has become a prominent paradigm among the numerous organizational theories in recent years. The open systems theory, which acknowledges the significance of the external environment on "the structure and functioning of the organization," has been considered as an extension of IT (Scott, 2003) . While institutional theory extends beyond open systems theory and concentrates on the social and cultural influences present in the environment, open systems theory emphasizes the influence of the total environment on the organization. Organizations were viewed from an IT perspective as social and cultural systems rather than just production systems (Scott, 2001). It is generally acknowledged that the works of Meyer and Rowan (1977) and DiMaggio and Powell (1983) serve as the IT foundation.

Organizations employ business practices because they strengthen their legitimacy, claims institutional theory (DiMaggio and Powell, 1983). This theory can provide crucial insights into how supply chain management technologies and techniques are adopted.

Interorganizational procedures that adhere to organizational fields, a key idea of the new institutional theory, define supply chains. As a result, the supply chain is a suitable analytical unit for examining IT principles.

2.2.7 Systems Theory (ST)

Systems theory is based on the systems in which the institution's supplies are handled. The theory is based on the systems of the organization (Halldorsson et al., 2007) .This theory for simplifying complex organizational structures and identifies the organizational stakeholders.

2.2.8 Network Perspective (NP) Theory

This is a theory that gives relationships and explanations on all the networks which are available to facilitate connections between all levels in supply management.

It is a grand theory of procurement and supply chain management. The network theory is mostly used to describe the interactions between businesses, suppliers, customers, and buyers. The theory was first presented in the 1970s and 1980s and evolved from its initial emphasis on strategic alliances—interactions between just two entities—to an approach that calls for multiple relationships among several counterparts along the supply chain. According to Harland (1996), a network is a particular kind of relation connecting a specified group of individuals, things, or events (Harland, 1996, p. 67). According to Chang, Chiang, and Pai (2012), the supply chain network is a complex network model whose specific context depends on the connections among its members (Chiang, 2012, p. 1114).

Thorelli (1986) adds that two or more organizations engaged in long-term interactions are referred to as networks in addition to this (Thorelli, 1986, p. 37). The investments and actions of the other counterparts involved in the process are also considered helpful for any company embedded in a network (Hkansson & Ford, 2002, p. 134). It was also discovered that there are several underlying assumptions, such as the idea that a company's location in the center of a network might give it a competitive advantage or the idea that businesses share information and knowledge with their partners.

Furthermore, the theory can be considered to apply to the most crucial choice points in terms of the contribution to purchasing. The theory aids in demand planning by streamlining resource allocation decisions made through the establishment of long-term, strategic relationships. Additionally, businesses that are part of a network have access to a wider range of suppliers, which enables them to even guarantee the supply of essential commodities. The partnerships between businesses are also taken for granted as being trustworthy, which adds value for both parties and further simplifies the choice of supply strategy. Lastly, because businesses in networks seek to engage in negotiations, the network theory has an impact on the fourth decision point.

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2.2.9 Materials Logistics Management Theories (MLM)

The theory designs mechanisms to ensure that the level of inventory is controlled. The evaluation of a considerable number of current and representative frameworks and models of supply chain management indicates that a mature stage of development of a comprehensive supply chain model has not as yet been attained. Furthermore, any real convergence to a generally accepted normative model of supply chains and their management does not appear to exist (Caddy and Helou, 1999). As such, the current study examines the application of the theories and principles of general systems theory to ascertain whether a more general and fundamental supply chain framework can be developed. Furthermore, the current study aims to address the question of whether the application of general systems theory to this field would provide additional insight in terms of the effective management of supply chains.

2.3 Review of Empirical Literature

Empirical literatures from international and national experiences have been presented as concisely.

2.3.1 Empirical Literature Review outside Ethiopia

Studies by researchers like Clark and Lee (2000) and Alvarado and Kotzab focus on the links between manufacturers and merchants that are made downstream (2001). A few recent studies have simultaneously taken into account the upstream and downstream ends of the supply chain.

By using supply chain design, supply chain information exchange, and flexibility and delivery components as independent factors impacting supply chain performance, Alireza

j. (2011) performed research on the Malaysian electronic industry. The findings of this study showed that information sharing, and delivery had an impact on supply chain performance.

Li et al. (2006) conducted study Long-term relationships, information sharing, vision and goals, risk and reward sharing, cooperation, process integration, and supply chain leadership were recognized as the core principles of SCM. Strategic supplier partnerships, customer relationships, information exchange, and postponement were listed by as important SCM approaches. The same practices (i.e., information sharing, customer relationships, and strategic supplier partnerships) are used in this study as sub-constructs for the SCM practices construct.

The distribution and sharing of information also directly affect supply chain performance. The results also confirmed that supply chain performance is influenced by flexibility through delivery. The performance of the supply chain is impacted by information exchange both directly and indirectly through flexibility. This research elaborates on the important role that the supply chain's style plays in how well it performs while taking information sharing into account.

Chen and Paulraj (2004) studied outsourcing, strategic supplier alliances, client connections, information sharing, and

Modularity of the product. Long-term relationships, cross-functional teams, supplier involvement, and supplier base reduction were used

Tan (1998) looks into the connections between customer relations, supplier management, and organizational success. The effect of supplier-customer integration on organizational performance is examined by Frohlich and Westbrook (2001). Tan et al. (2002) investigate SCM and supplier assessment procedures and establish a connection between the constructs and business success. A method was developed by Min and Mentzer in 2004 to evaluate supply chain orientation and SCM conceptually.

Cigolini et al. (2004) provide a set of supply chain methodologies and tools for the analysis of SCM strategies. When taken as a whole, these studies demonstrate the variety

of distinctive yet fascinating SCM methodologies that have been explored. However, without an integrated framework that incorporates all supply chain activities on both the upstream and downstream sides and links those activities to both competitive advantage and organizational performance, the application of earlier results on SCM is less advantageous. Prior academics have placed a significant deal of emphasis on the connection between supply chain management techniques and specific elements of organizational performance from various perspectives/dimensions of the whole supply chain. Some of the conclusions from these investigations are included in the discussion that follows By using information sharing, customer relationships, the quality of information sharing, and internal lean practices as independent variables affecting the competitive advantage, Moslem (2013) conducted research on the impact of supply chain management practices on competitive advantage in manufacturing companies of Khuzestan Province (Iran).The findings of this study suggest that there are correlations between SCM and competitive advantage and procedures.

Ashish (2007) has developed a reliable and trustworthy instrument to evaluate supply chain management techniques. A comparable tool was also utilized in this investigation. Increasing a company's competitive advantage may help it perform better. Three elements of supply chain management techniques have an impact on supply chain responsiveness. Information sharing, customer interactions, and strategic supplier alliances are a few of these.

Academics and business experts agree that supply chain management strategies could greatly increase a company's success. A series of measures taken by firms to ensure the effective management of their supply chains are known as supply chain management procedures.

Ayman (2014) describe supply chain management strategies such supplier integration, internal integration, customer integration, information sharing, and delay. Six characteristics of supply chain management strategies were discovered through factor analysis. These included integrations, information sharing, customer focus, and usage of Just in Time (JIT) capabilities.

R. Prabusankar (2017) breaks down the elements of supply chain practices into the following five categories: customer relationships, information exchange, information quality, internal lean practice, and strategic supplier partner.

Fawcett et al. (2007), entails designing seamless value-adding activities across organizational boundaries to enable a firm to satisfy genuine consumer needs. The execution of supply chain management faces numerous complex issues and difficulties as a result of the design and implementation. To proactively develop problem solving procedures, these significant issues must first be accurately identified. As a result, the study listed the following as supply chain design and management issues: ineffective coordination of effort, incompatible information systems, lengthy cycle times, communication issues, customer service issues, excessive waste and environmental degradation, relatively high inventories compared to the level of customer service achieved, and lower than ideal profits.

Sambasivan and Jacob (2008) investigated the effects of supply chain strategies on MNEs' competitive positions in Malaysia using the SCM methods suggested by Tan (1999). The findings demonstrate that efforts to increase customer happiness, choose quality suppliers, increase operational efficiency, and implement quality policies have a big impact on the company's ability to compete.

Li et al. (2005) assessed SCM practices. In this investigation, the same instrument has been used. Thus, SCM methods are presented in the literature from a variety of angles, all with the aim of enhancing organizational performance by generating competitive advantage. Four key aspects of SCM practice that are thought to promote supply chain responsiveness have been discovered after researching and synthesizing the literature. These include Lean system, level of information exchange, customer relationship, and strategic supplier partnerships. Competitive advantage can have a direct and positive impact on organizational performance, and from the five dimensions developed, postponement has not been a strong indicator of SCM practice compared to the other four dimensions. The results show that higher levels of SCM practices can result in enhanced competitive advantage and improved organizational performance.

2.3.2 Empirical Literature Review in Ethiopia

Mustefa's (2014) study on the supply chain management techniques and corporate performance in the case of the awash tannery P.L.C. in Ethiopia, information was acquired from the company's employees. The study establishes and tests the correlations among five dimensions of SCM practice (strategic supplier partnership, customer relationship, level of information sharing quality, quality of information sharing, and internal lean practice).

Study conducted by Mwale (2014) performed research on the organizational performance and supply chain management techniques of big manufacturing companies in Nairobi, Kenya. According to the study, there is a strong correlation between supply chain management practices and organizational performance, which can be attributed to seven independent variables: strategic supplier partnerships, customer relationships, information sharing levels and quality, outsourcing levels, lean practices, and postponement. The study also shows that all seven independent factors had a favorable effect on an organization's performance, with strategic supplier management and customer relationships having the biggest effects.

The internal and external integrations of the integrated supply chain have a significant impact on competitive capabilities, according to a study by Arash Bahrami and Pooya Sabetfar (2014) titled "Impact of Supply Chain Integration on Competitive Capabilities in Automobile Parts Manufacturing Industry in Qazvin Province." It might be argued that higher supply chain integration boosts competitive capabilities.

At Horizon Addis Tyre S.C. in Ethiopia, SCM approaches and organizational performance were investigated by (Banchiyrgu, 2017). The performance of the case company is strongly, significantly, and favorably correlated with the extent and quality of information sharing, internal lean practices, and the five characteristics of SCM practices. Strategic supply alliances and the organizational success of the case company are positively correlated.

Wendwoesen (2015) demonstrated the effects of four SCM practices—supplier collaboration, customer relationships, environmental concerns, and information

sharing—on the competitiveness of cement manufacturers in Ethiopia in the future. The findings indicate that Ethiopian cement firms made very little effort to put these SCM methods into practice, which hurt their ability to compete.

Hailemickael (2017) explained the creation of core competences that may be used to tackle these issues and, as a result, create better supply chain management methods when considering how to handle such SCM challenges. The Internal-External Success Factors, buyers' Partnership, Information Communication, and Customer Relationships are employed as factors of enterprises' competitiveness on Sesame Seed Exporter Members of Ethiopia Commodity Exchange. He highlighted these four characteristics of SCM techniques. According to, these procedures help a company's competitive position.

Elsabet (2017) also studied on SCM techniques included outsourcing, supplier alliances, information sharing, cycle time reduction, and continuous process flow. Quality, purchasing, and customer relations were used in their empirical study to illustrate SCM techniques. Core competencies, the use of interorganizational systems, and the delay of the elimination of surplus inventory were the SCM practices that concentrated on. Supply chain integration, information exchange, customer service management, geographic proximity, and JIT capacity were recognized as the fundamental components of SCM practice. In this study based research level activities are essential to fostering supply chain responsiveness.

There is generally more than one measurement that may be used to assess how supply chain management affects an organization's performance, as the several literatures described above show (dimension). A lack of consensus on the definition and characteristics of the SCM concept, the use of different analytical units, and different performance assessment strategies make comparisons challenging despite an increase in empirical research over the past few years.

2.4. Variables of the Study and Empirical Literatures

2.4.1. Strategic Supplier Partnership

A long-term partnership between a business and its suppliers is referred to as a strategic supplier partnership, according to (Somuyiwa et al, 2012). These collaborations entail concerted efforts to create and keep up a network of trustworthy suppliers. This effort includes all steps necessary to improve suppliers' current performance. Long-term, direct relationships are prioritized in strategic partnerships, which also promote joint planning and problem-solving. Supplier groups can work together more closely and save unnecessary time and effort (Li et al, 2006). Direct, long-term association is prioritized, and collaborative planning and problem-solving activities are encouraged. These strategic alliances are created to promote mutual benefit among the parties and ongoing participation in one or more important strategic domains, like technology, goods, and markets (Mwale, 2012).

The management of client relationships is becoming more and more crucial to a company's ability to survive as mass customization and customized services gain popularity. Customer relationships encompass the whole range of practices used to address customer complaints, forge enduring connections with clients, and increase client happiness (Tan et al. 1998; Claycomb et al. 1999, n.d.). By proactively identifying their needs and expectations, a company that has a close relationship with its customers can be more responsive in meeting customer demand, differentiate its product from competitors, maintain customer loyalty, and significantly increase the value it offers to customers. Businesses will maintain a competitive edge by developing strong customer relationships (Bowersox et. al, 1999).

Businesses must integrate with their customers and suppliers, according to SCM, in order to achieve both financial and non-financial growth goals (Tan, 2001). Industry leaders are learning how to collaborate with clients and suppliers and how doing so enables them to achieve supply chain excellence. According to Stank et al. (2001). In addition to lowering lead times and improving product quality, smoothing production and reducing inventory can all be achieved by co-planning operational operations with suppliers (Lee, 2003).

Makweba and Xu (2009) questioned the notion that customers' wants should be given the weight they merit in their study. In today's market, companies that excel at providing services those customers find valuable have a significant competitive advantage. Food, beverage, and bottled water producers need to make a commitment to knowing what customers need and creating strategies that create customer-friendly process connections in place of the present one-buy-sell traditional relationship. This is because consumers frequently base their purchases on both price and the caliber of the service they receive. As a result, the company places a high value on the quality and accessibility of products that provide customers with the best service possible.

Strategic supplier partnerships often form with a small number of big suppliers who are willing to share responsibility for the success of the product. Strategically aligned businesses can work closely together and waste less time and effort (Balsmeieret al.1996). Successful supplier alliances may be crucial to an innovative supply chain (Noble, 1997).

2.4.2. Client Relationship Management

The term "customer relationship management" describes how we interact with customers and handle them proactively. Realizing that customer relationship management (CRM) actually dictates how we connect with customers, solve their concerns, persuade them to make purchases, and handle financial transactions is essential. In essence, it covers every client interaction we have (Li et al, 2004).

Customer relationship includes all methods used to address customer complaints, build strong relationships with customers, and increase customer satisfaction. By fostering close relationships with customers, a business can set itself apart from competitors, keep customers loyal, and significantly increase the value it provides to them (Li et al, 2004).

To achieve both financial and non-financial growth goals, companies, according to SCM, must integrate with their customers and suppliers (Assefa Balda, 2001).

Comprises the full spectrum of techniques used to handle customer complaints, create lasting customer relationships, and enhance customer service Satisfaction. Due to their

inherent hurdles to competition, committed relationships are the most enduring advantage, according to someone who views customer relationship management as a crucial part of SCM processes.

In this era of mass customization and global competition, stronger relationship management with individual clients and personalized service are essential for a firm to succeed (Wines, 1996). The success of a company's SCM initiatives depends on its ability to maintain favorable relationships with its trading partners, especially with its consumers (Moberg et al., 2002). Customer connections have long been recognized as a crucial internal component of a business's marketing strategy to increase sales and profitability (Barney j et al., 1991). Customer-centric business practices support client retention, enable product differentiation from competitors, and raise the value provided to customers. For SCM strategies to be successful, quick customer relationship management actions have been crucial (Wisner, 2003).

The customer relation management macro process is made up of the interactions that take place between a company and its clients further down the supply chain. The two main goals of the customer relationship management macro process are to increase client demand and make it easier to transmit and track orders. This weak process results from poor order processing and execution, which lowers demand and degrades the customer experience (Sunil Chopra & Peter Meindl, 2004).

Businesses will be better equipped to meet customer needs if they focus on and maintain their relationship with customers. This will boost customer loyalty, promote repeat business, and persuade customers to spend more for high-quality products (Carr and Pearson, 1999). Customer relationships' significance and their impact on a business's success and competitiveness are widely acknowledged (Lummus, Duclos, &Vokurka, 2003; Power, 2005; Spekman, Kamauff, &Myhr, 2002, n.d.). Businesses have reorganized and reengineered in order to increase organizational effectiveness in pleasing customers (Hailemichael, 2011).

Customer relationship is conceptualized for this study's purposes from the literature analysis and its applicability in Ethiopia as the means of establishing long-term

relationships with customers improving client services, lowering prices/costs, lowering product defect rates, and handling customer complaints are all ways to increase customer loyalty.

2.4.3 Level of Information Sharing

According to Li et al. (2005), organizations must evaluate their information as a strategic asset and make sure that it moves with the least amount of latency and opacity. Furthermore, Li et al. (2005) point out that reliable information must be provided in order to choose the optimum SCM system. All functional aspects of the supply chain are thought to benefit from efficient use of timely, relevant information as a competitive advantage (Ahmadi, 2005).

Sharing information is crucial for attaining complete supply chain integration. Information must be visible across the supply chain in order for cross-functional integration and interorganizational integration to take place. A supply chain with poorly coordinated partners will experience numerous major issues, including high inventory levels, erroneous projections, inefficient use of resources, and high production costs. In fact, sharing information is highly regarded as a means of reducing demand uncertainty (Lee and Whang & Lee, 2002).

According to numerous studies, information exchange can benefit suppliers and buyers alike by reducing inventory and lowering manufacturing costs (Yu et al & and Raghunatahan, 2003). The success of a partnership is determined by how organizations communicate information, whether it is confidential or not. Depending on the level of integration, institutional trust, and accessibility of the infrastructure that supports the activity, the type of information to be present along the supply chain varies. Since information flow is an essential component of SCM and material flow is highly dependent on information flow, an informatics perspective is crucial in the supply chain.

Information sharing is the ability of businesses to share knowledge and information with supply chain partners in an effective and efficient manner. Information sharing is the extent to which critical and private information is transmitted to one's supply chain partner (W.A.D.S. 2016). Information is essential for making informed decisions in the

supply chain at all three decision-making levels (strategic planning, operational decision-making, and other supply chain drivers) (facilities, inventory, transportation, sourcing, and pricing).

Information technology enables the collection of these data to increase supply chain visibility as well as their analysis to ensure that the decisions made about the supply chain will maximize profitability (Sunil Chopra, and Peter Meindl 2007). Leading companies have understood for a long time that an effective information system is essential for supply chain management success. Shared information allows supply chain participants to connect with one another. The details of new product launches, production schedules, demand statistics and projections, and modifications to the bill of materials are among the elements that supply chain partners must provide (Christopher, 2011).

Both quantity and quality of information sharing are crucial for SCM practices and have been handled as separate entities in previous SCM research (Moberg, 2002; Monckza, 1998). The level (quantity aspect) of information sharing describes how much crucial and confidential information is shared with supply chain partners (Mockza et al, 1998).

In addition, Alireza et al. (2011) claimed that information sharing can effectively provide integration and coordination across the supply chain. Sharing of knowledge is one of the five components identified by Lalonde (1998) as constituting a strong supply chain relationship. Stein and Sweat (1998) assert that supply chain participants that communicate often can function as a single unit. Together, they can more fully comprehend end-user requirements and, as a result, can react to market changes more quickly. Together, they can more fully comprehend end-user requirements and, as a result, can react to market changes more quickly (Karim and Rafiee, 2014).

In this study, the level of formal or informal corporate knowledge exchange with supply chain partners is characterized as information sharing in the supply chain. Additionally, it is connected to how much information is shared between supply chain participants on both the downstream and upstream sides of the supply chain, as well as how intense that information sharing is.

The correctness, timeliness, sufficiency, and reliability of the information provided are only a few examples of the qualities of information sharing. Sharing of information is crucial, but how much it affects SCM depends on what information is exchanged, when, how, and with whom. The dysfunctional effects of erroneous or delayed information as it flows along the supply chain are well documented in literature.

Informational asymmetries along the supply chain, partners' conflicting interests and opportunistic behavior, and high level of information. It has been hypothesized that businesses will purposefully falsify information in order to harm not only their rivals but also their own suppliers and clients. Since information disclosure is seen as a loss of authority, it appears that there is a built-in aversion within businesses to give out more than the bare minimum of knowledge. Given these tendencies, a crucial component of successful SCM is assuring the quality of the shared information. Organizations must see information as a strategic asset and make sure it moves with the least amount of delay and omission (Li et.al, 2006) quoted by (Banchiyrgu D., 2017).

All functional aspects of the supply chain are thought to benefit from efficient use of timely, relevant information as a competitive advantage (Ahmadi, 2005). Failures may occur as a result of information delays, shortages, or supply chain distortions (Power, 2005). In this study, the amount of information shared between supply chain partners on the downstream and upstream sides of the supply chain as well as the information intensity are related to supply chain information sharing. In this study, the level of formal or informal corporate knowledge exchange with supply chain partners is characterized as information sharing in the supply chain. Additionally, it is linked to the information intensity and the volume of information shared between supply chain participants on both the downstream and upstream sides of the supply chain.

2.4.4 Shared Information

In the typical supplier-buyer arrangement, businesses only exchange orders in order to convey demand data. In fact, orders from downstream serve as a crucial source of information about forthcoming businesses. Order-based information is occasionally skewed, which could mislead upstream partners when making decisions about production

and inventories. Finally, it lowers the supply chain's efficiency by increasing manufacturing costs due to surplus capacity, inefficient utilization and overtimes, extra warehousing expenses, higher transportation costs, and poorer customer service standards (Lee, 1997).

Retailers like Wal Mart started the Collaborative Planning, Forecasting and Replenishment (CPFAR) initiative to benefit from the vendors' superior forecasting abilities. Manufacturers and retailers are encouraged to collaborate on forecasting and replenishment strategies and to share knowledge. A Sale Forecast: is the standard format for discussing forecasts.

The Collaborative Planning, Forecasting and Replenishment (CPFAR) project was started by retailers like Wal Mart to benefit from the vendors' superior forecasting abilities. With the help of this project, retailers and manufacturers can collaborate to create forecasts and replenishment plans. The standard approach is talking about forecasts entails the downstream site exchanges information with the supplier since it is nearer the market and can therefore more accurately forecast future market demand.

Inventory Level: One of the data points that supply chain participants send out most frequently is inventory level. Access to supply chain inventory information can be used to reduce the overall inventory level in the supply chain. If the manufacturer and the retailer manage their own inventories independently without sharing inventory status information, they run the risk of having redundant safety inventories or stock-outs at both locations (Milgrom and Roberts, 1998).

Another type of information that is frequently given in a supply chain may be performance metrics and capacity. Performance measurements include data on product quality, lead times, workstation queue backlogs, and service quality. By sharing this information, the supply chain can identify any bottlenecks and operate more efficiently (Tsay, 1997).

It is currently recognized as the most significant new paradigm for the manufacturing sector, enhancing firms' competitiveness (Forrester et al., 2010). Internal lean practices

knowledge for the study includes waste reduction with regard to setup time, continuous improvement, and just-in-time (Mustefa, 2014).

According to ,Ferry Jie (2007), the objective of lean operations is to "advance toward the elimination of all waste in order to develop an operations that is faster, more dependable, offers higher quality goods & services, and runs at low cost .Lean systems put eliminating all waste first (Finch, 2006). The numerous waste categories are listed here. Waste is any activity that does not add value for the organization. The following types of waste are the foundation of lean systems, as identifying the problem is the first step in correcting it (Finch, 2006).

2.4.5 Internal Integration

Internal integration, in accordance with Darja et al. (2009), entails the coordination, collaboration, and integration of logistics activities with other functional areas within an organization. When operations and processes that permit and necessitate cooperation occur and when specialized departments or functions within a firm are interdependent. Therefore, internal integration research is done within a corporation; it focuses on greater coordination between functional divisions and tries to do away with traditional silo activities. Internal integration refers to how a company's complementary functions work together as a unit even though they are not all part of the same entity. Additionally, it describes internal integration as a partnership that encourages teamwork, resource sharing, and goal-setting amongst complementary activities; they all lead to a more. According to Claudine (et al., 2008) internal integration is defined as unifying functions and processes within the firm especially in the areas of warehousing, transportation, inventory management, purchasing, demand planning and production. In order to integrate internal operations, firms need to have cross-functional structures because cross-functional inputs necessitate the consideration of how coordination and integration can be sustained across this intra-firm relationship. This can be achieved with 11 an appropriate organizational structure with fewer formalities, more empowerment and work teams. The nature of logistics is such that it involves intricacy, extensive documentation and detailed management. There is a need to streamline operations and redesign work routines and processes to eliminate redundancy of work. This allows savings of cost and

time, and increases the quality of services, and ultimately value to customers (Bowersox, et al., 2002) Internal integration is the extent to which business functions work cooperatively and interact through cross-functional process integration to resolve conflicts and achieve mutual goals (Danese et al., 2013; Pagell, 2004). Internal integration is a state of high-level of values, common objectives and collaborative behavior (Souder, et al., 1993). On the other hand (Lorsch & Jay, 1965) defined it as a process of equal input between different subsystems when achieving company tasks.

2.4.6 Competitive Advantage

According to Kotler, a competitive advantage is an edge over rivals achieved by giving customers with more value, either through lower pricing or by the addition of features that justify higher costs (Gary Armstrong, 2006).

A competitive advantage is the business's capacity to outperform its rivals in the market by providing higher consumer value. Competitive priorities should take into account the demands and expectations of the client and might include low cost, excellent quality, great service, or quick market reaction (Raturi et al. 2005).

According to Li et al. (2006), competitive advantage is one of the ways that a business may fortify itself against rivals and contains a quality that enables it to stand out from others.

The capacity of a company to achieve a defensible position over its competitors is the definition of competitive advantage (Li et al.). According to Tracey, Vonderembse, and Lim (1999), a company's competitive advantage consists of specific competences that set them apart from rivals and provide them an advantage in the market. They go on to say that it is the result of crucial managerial choices. However, today's rivalry is seen as a "war of movement" that depends on foreseeing and promptly reacting to shifting consumer demands (Stalk, Evans & Shulman, 1992).

Companies used to develop advantages for customer differentiation, resulting in performance in terms of market share and profitability (Barney, 1991; Coyne, 1986; Day & Wensley, 1988; Prahalad & Hamel, 1990). The establishment of obstacles that make

imitation challenging by way of ongoing investment to increase the advantage is necessary for businesses to sustain competitive advantage, making this a long-term cyclical process (Day & Wensley, 1988). The majority of managers concur that cost and quality will always be a firm's competitive advantages (D' Souza & Williams, 2000).

Five elements of competitive advantages are mentioned by Somuyiwa et al. (2012): price/cost, quality, reliability of delivery, product innovation, and time to market (Somuyiwa et al. 2012). The supply chain is increasingly important to businesses as they work to improve their competitiveness via product customization, high quality, cost savings, and speed to market. Making the suppliers "partners" in the company's plan to fulfill a constantly changing market is the key to good supply chain management.

According to Jay Heizer and Barry Render (2006) ,lower cost and differentiation are two common competitive strategies that force businesses to consider a variety of product varieties to produce, the company's distribution channels, various types of customers, the areas where the company sells its products, and the industries in which it will compete (Wheelen & Hunger, 2012). A source of competitive advantage to generate more profit is an organization's capacity to set itself apart from its rivals and run at a reduced cost. A cost advantage, a value advantage, or both can be the source of a competitive advantage that is both sustainable and defendable (Christopher, 2005). There are often four categories used to classify these two general competing tactics. Low cost, adaptability, delivery, and quality are these. One of these areas, a group of these areas, or all of these areas may provide a company a competitive edge. It goes without saying that a company that excels in each of these areas would face much greater competition in the market than one that excels in just one (Fredendall& Hill, 2001).

To use these markets' resources in their marketing strategy, businesses integrate and understand their resources. Business organizations gain a competitive edge because they are able to offer more value than their competitors (Rossignoli & Ricciardi, 2015). Only the strategy that firms establish helps them to get a competitive edge at a certain point in the value chain (Quayle, 2006). Value chain describes the ability of resources to give a competitive advantage (Porter, 1985). The relationship between the resources required to satisfy an organization's demands and the needs themselves demonstrates this talent

(Venkataraman and Pinto, 2008). Differences in competitors' value chains are a significant source of competitive advantage (Wheelen & Hunger, 2012).

Value chains aim to gain a competitive edge by enhancing the value of products for consumer satisfaction. Additionally, it helps firms understand how to create and provide the most significant value for both their operations and consumers.

Businesses who are able to use their resources imaginatively and acquire dynamic competencies to preserve their adaptability and agility will survive. The capabilities of the resources form the basis of the competitive advantage. The importance of interorganizational networks in fostering agility should be the focus of the capabilities. It's crucial to identify the assets and competencies that give a business a competitive edge. These abilities have the ability to inspire competencies. The value of the resource aids the business in achieving its strategic goal. The types of abilities that could give an advantage in a market include those that are regulated, positional, functional, or cultural in nature. While the last two groupings are based on skill, the first two are based on assets (Enders, 2004).

A business frequently has a range of resources at its disposal that it can use as a base to gain a competitive edge. Not all of the organization's resources, nevertheless, can give it a competitive advantage. Organizations must separate their resources if they want to offer competitive advantages. Additional categories for resources include financial, physical, human, organizational, technological, and human resources. A company's internal resources include things like information, expertise, land, labor, and cash (Lowson, 2002). Other examples of corporate resources include names, locations, and machinery (Sandner, 2009). As specific examples of resources, the location of a plant, human resources (the number of employees, their skills, and motivation), technological resources (patents and copyrights), and goodwill are all mentioned business assets (Wheelen & Hunger, 2012). According to their kind, resources are actually split into tangible and intangible assets. Intellectual property, trade secrets, agreements and licenses, databases, information, networks, stakeholder knowledge, reputation, and culture are examples of intangible resources, which are the most difficult to categorize. Furthermore, if a company's performance is reliant on intangible assets like intellectual

property, brands, and client franchises, it can be difficult to assess its true value (Axson, 2010).The choices a company takes regarding its infrastructure and organizational structure affect its capacity to gain a competitive advantage (Hayes and Wheelwright, 1984). These choices may be divided into eight categories. When a company takes these choices in line with its strategic business strategy, it develops the manufacturing capabilities necessary to compete as intended. Companies may reverse their course, but to do so they must alter each and every production choice they have made in the past. This is incredibly challenging and requires a lot of time and work (APICS Dictionary, 1998).

Increased market share and profitability result from the development of superior capabilities that are then applied to deliver value to customers, acquire cost advantages, and/or distinguish oneself from the competition (Barney, 1991; Coyne, 1986; Day and Wensley, 1988; Prahaladand Hamel, 1990). According to Wheelwright, some of the most important competitive factors for manufacturing include price, quality, dependability, and speed of delivery (1978). One well-known source of competitive advantage is time to market (Holweg, 2005). As essential competitive qualities, cost/price, quality, dependability of delivery, and speed to market have all been mentioned (Vokurka et al., 2002; Fawcett and Smith, 1995; White, 1996; Skinner, 1985; Roth and Miller, 1990; Tracey et al., 1999). It has been asserted in earlier research contributions that "Time" is a dimension of competitive advantage (viz: Stalk, 1988; Vesey, 1991; Handfield and Pannesi; 1995, Kessler and Chakrabarti, 1996; Zhang, 2001).

Prior studies (Koufteros et al., 1997; Zhang, 2001) have operationalized competitiveness; this work has accepted the measures with minor modifications. The four competitive competence dimensions listed below are used, and they are based on studies by Koufteros (1995), Zhang (1997), and Li et al (2006). Price/Cost "A company's capacity to compete with significant rivals on the basis of low price" (Li et al., 2006), Quality. Delivery Dependability is described as "an organization's ability to deliver product quality and performance that improves value for consumers" (Koufteros, 1995). According to Li et al. (2006) and time to Market, "the capacity of a company to offer on time the type and

volume of goods demanded by customer(s)." An organization's capacity to launch new items more quickly than its primary rivals (Li et al., 2006).

2.4.7. Company Competitiveness

Business plans are created in order to determine how organizations might change from their current competitive position to a new, stronger one. This can only be done through increasing an organization's degree of competitiveness (Rainer Feurer and Kazem Chaharbaghi, 1994).

Competitive requirements for a successful supply chain are low price, reliable quality, and on-time delivery. The firm's operations must support its competitive edge in order to attain distinctiveness and low cost leadership. The fundamental objective of responsive supply chains, on the other hand, is to assist the business in expanding its capacity for customization, rapid delivery, high-performance design quality, volume flexibility, and learning and integrating capabilities (Kim, 2005).

2.5 Literature Review Gap

Empirical findings conducted by various researchers show that there is a divided opinion on supply chain management strategies among firms. However, the majority of academics and findings appear to concur on the key approaches, such as internal integration, delay, customer relationship management, quality and quantity of information exchange, and strategic supplier relationships. It implies that there is variation according to the type of industry as well as adaptation and understanding of supply chain management techniques in the practical world.

According to the literature in the previous section of this unit, most studies are done in developed countries and can't be applied to developing ones for a variety of reasons, and recent advancements in developing nations are still insufficient. Few studies have been done specifically on the airline industry and the Ethiopian airline group in particular. For instance, separate studies were made that focused on the effects of supply chains and management either on technical or non-technical units distinctly, and they do not provide

a complete picture of the EAL group's processes from A-Z that show the overall effectiveness of supply chain management and its limitation after the reorganization .

Thus, this study necessary complete the gaps found in the analysis of the related literature discussed above and to demonstrate the possible drawbacks and advantages of the reformation notably concerning the competitive advantage of EAL groups.

Specifically, this study focused on the following major gaps in the related literature;

- It is necessary to conduct the further empirical study because there is no conclusive evidence and differing opinions offered by various researchers.
- There hasn't been enough research done on the impact of supply chain management effectiveness and practices on airline industry development, particularly in Africa including the EAL group.
- Incomplete and inconclusive research has been done on study topics in the airline industry EAL group.
- The prior study, it does not take into account the context and circumstances of the current reform or restructuring of the cargo and logistic services, in addition to that factors that might have an impact on non-technical units were not taken into account and looked together with technical units as far as the knowledge of this researcher.

Therefore, this paper generally aims to fill the above-stated gap in the literature by identifying the factor that influences the supply chain practice on the competitiveness of EAL groups.

2.6 Conceptual Framework

Effective supply chain management has emerged as a potentially significant method of preserving competitive advantage and improving organizational performance because the competition now occurs across supply networks rather than between businesses (Li et al.2004).

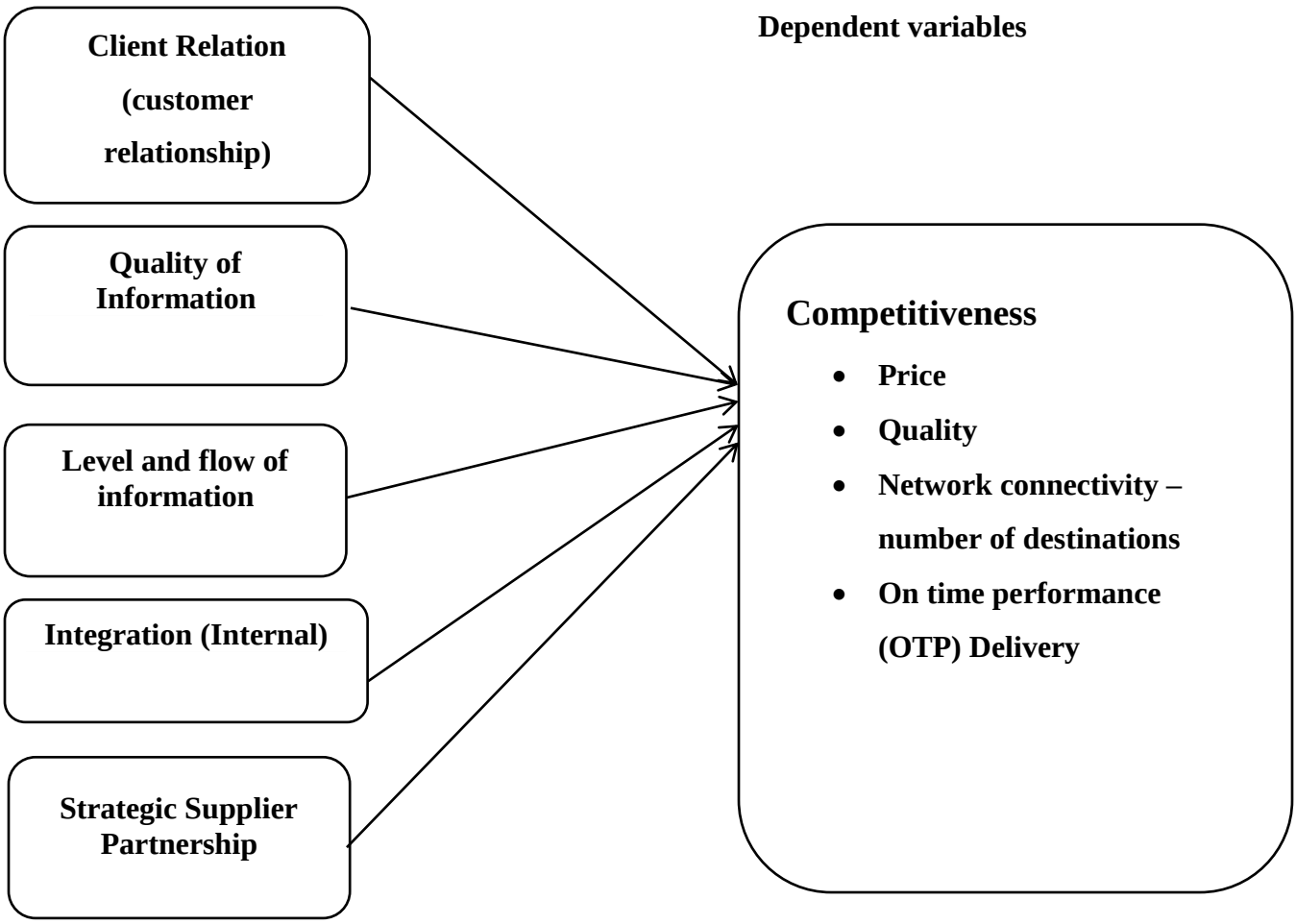
A key element of competitive strategy to increase organizational productivity and profitability has been supplying chain management (Gunasekaran et al. 2004).

SCM practices are expected to improve a company's overall competitive position, return on investment, and market share. For instance, Tan et al (1998) claim that customer relationships and purchasing habits affect an SCM strategy's effectiveness and its ability to succeed financially and commercially. On the other hand, Froehlich and Westbrook (2001) postulated that companies with stronger relationships with their clients and suppliers along the supply chain had the greatest performance gains in terms of achieving commercial success. Along with overall organizational performance, SCM practices impact an organization's competitive edge. Through price/cost, quality, delivery dependability, speed to market, and product innovation, they should strengthen an organization's competitive edge (power, 2001).

According to the paradigm, both direct and indirect effects of supply chain management strategies on competitive advantage are expected. Depending on the nature of the study and data analysis, there are several types of variables. The researcher created an independent variable and a dependent variable for this investigation. The dependent variable, according to Neuman (2007), is the variable that affects, results from, or has an impact on another variable. The reasons of the outcome are the independent variables, whereas the cause is what the dependent variable "depends on." Supply chain practices and competitive advantages are independent and dependent variables, respectively, for this study. The practice of supply chain management is seen as a six-dimensional construct. Strategic supplier partnerships, customer relationships, information sharing quantity and quality, internal integration, and delay are the six dimensions.

The study that follows demonstrates the connection between elements of SCM practices and their influence on competitive position. Based on a review of the literature, the researcher identified four SCM practice dimensions (Internal Integration ,Client relationship, Information sharing level and quality, and Strategic Supplier Partnership) that are thought of as independent variables and dependent variable competitive advantages, which are typically identified in the literature as cost/price, quality, delivery dependability, and time to market as dependent variables.

Figure 2.1: Conceptual frameworks on supply chain management and company competitiveness



Source: Researcher own design based on theoretical and empirical literature (Westbrook, Tan, power, Gunasekaran, Li Neuman).

CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

3.1 Introduction

This chapter provides a brief overview of the overall framework for this specific study's execution, including the methodology and design used. The research approach is used to examine the impact and relationship between key variables, particularly client relationships, information level and quality, integration, strategic supplier partnership and the competitiveness of EAL group. Econometrics has been utilized as a tool for the analysis, helping to apply regression, evaluate the impact of each variable, and demonstrate the co-relationship between variables. This study primarily employed primary data and, when secondary data is required, sources such as company official publications and other aviation-related publications from reputable sources like IATA, SKY TRAX, and others used.

Following that, variables were constructed and developed to check, explore, and respond to the stated research questions to explain the qualitative and quantitative data. These variables were based on the ideas and findings of the literature from the previous two chapters. The chapter is organized and begins with a description of the study area, the research approach, and the research design, followed by sections on population and sample, data collection approach (data sources, methods, and tools), ethical considerations and finally data analysis of the study have been discussed.

3.2 Research Approach

The method chosen by the researcher to gather, examine and interpret data is known as a research methodology. Accordingly, this study adopted both quantitative and qualitative approach (mixed approach).

Using a qualitative approach, data is analyzed, interpreted, and collected by seeing how individuals behave, act, and react (Creswell, 2003). It is regarded as an inductive strategy in which data collection and analysis techniques like case studies and interviews are

employed. According to Garson (2002), "qualitative research designs try for the in-depth understanding of subjects, using techniques such as participant observation or narrative analysis, or they may strive for an in-depth comprehension of texts through such procedures as exegesis or deconstruction." The non-statistical qualitative research approach was utilized to investigate the motivations and causes in a qualitative fashion (Creswell, 2003).

The quantitative strategy incorporated a large number of respondents, raised the mentioned questions, and predefined the response options. (Bryman and Bell, 2007) state that the quantitative research methodology is helpful to analyze the perspectives and issues of the study and to unearth the hidden values, attitudes, and motivations, the quantitative research approach is the most effective since it employs a logical method, and evaluating and gathering data, it aims to evaluate relevant theories.

The mixed approach contains of the merits of the both approach together.

3.3 Research Design

According to Eriksson & Wiedersheim-Paul (2001), research can be exploratory, descriptive, or explanatory depending on the nature of the problem.

The research design type of this study was descriptive design since the nature of the study is to describe the existing facts of the effects of the identified variables on the competitiveness of EAG.

3.4 Population

The target population for this study was Ethiopian airlines group Cargo and logistics services user departments, the population elements are employees of MRO, Catering, Warehouse, Procurement, Cargo, Facility and Base Services. Total employee users under these departments are 8500 (EAG HR, 2023).

The population includes six different departments' workers from technical (MRO) 4250 ,non-technical units catering unit 1700, Procurement 850 ,Wearhouse 425 ,Cargo 1020

,facility and base services 255 were included. The departments were chosen since they directly involve in the cargo and logistics supply chain services.

3.5 Sampling Design

Sampling is the selection of subset of population interests in the research study. Since difficult to include all the population and costly to applying the entire population, sampling in most research is common to infer and conclude about the total population.

To determine the sample size the common scientific statistical formula, Yamane (1967) formula was used from total of 8500 employees working in six divisions directly related to the supply chain operation at Ethiopian Airlines Group some of them selected due to the fact that using the entire population as stated above is difficult and time-consuming and not manageable accordingly the study used the below Yamane (1967) formula accordingly the sample size was 382 employees.

n= N/ (1 + N(e)2)

N= Total population (8500 employees)

e= Error level

n = Number of samples

The research uses a 95% confidence interval. The error allowed 5%, hence the total of 382 employees will be taken to represent the 8500 population based on the above scientific sampling formula.

n= N/ (1 + N(e)2)

n= 8500/1+8500(.05)2 = 382 sample size.

Strata by working unit	Number of employees (target population)	Percentage	Sample size
MRO	4250	50%	191
Catering	1700	20%	77
Procurement	850	10%	38
Warehouse	425	5%	19
Cargo	1020	12%	46
Facilities and base services	255	3%	11
	8500	100%	382

Source: based on data from ET ERP system (2023)

There are several sampling methods applied in a given research where probability and nonprobability sampling methods are the common classifications (Wiley P., 2019). Accordingly, for this research paper stratified probability sampling was used and found apocopate. For the selection of sample from each stratum simple random, specifically lottery method was applied.

3.6 Data Collection Methods

3.6.1 Sources and Type of the Data

To measure and test the five independent variables including client relation, the level of information sharing and quality, strategic supplier, and Integration data mainly mined from primary data sources collected from the workforce in Ethiopian airlines group cargo logistics and its users. Data published on the official airline's website or online internet also was used, in addition to secondary data found in a magazine, newspapers, various publications, and reports by international organizations like ICAO, IATA, AFRA, and SKYTRAX applied.

3.6.2 Data-producing (Collection) Instruments

Operational definition of Variables

This section explains how the research questions' independent variables are formed based on the literature and how they are calculated. Clint relation, information sharing and quality levels, Strategic Supplier Partnership, and integration are the independent factors for this study. To see how these variables relate to one another and how they affect the dependent variable, EAG competitiveness. The variable integration was utilized as a control variable to clarify the relationship between the independent and dependent variables.

Dependent variable -

The Competitiveness of the Airline industry measured by the network connectivity, Price, quality, delivery on time performance and dependability (Rechard, 2003).

Network connectivity (NTC): The other dimension of airline competitiveness can be measured by network connectivity; this can be measured by the change in growth of destination over period.

NTC = NTC yt – NTC y1 / NTC yt

Quality: This indicate the collection and characteristics of the service to satisfaction of customers (freedisctionery.com) as this more of qualitative it is measured using Likert scale.

Price: Most literature use price index among the firms in the industry to compare the competitiveness between firms.

Delivery/time to market /on time performance (OTP): Number of flights meet scheduled time per the standard total scheduled time out of 100%.

OTP = 1-Total delay of flight Yt / Total number of flights Yt

3.7 Data Analysis

To show how independent factors affect the dependent variable, descriptive statistics (mean, percentages, frequencies, and standard deviation), Pearson correlation, and regression analysis techniques used to analyze the survey data using SPSS software version 25. The analysis was conducted using the respondent's responses, and based on the results, interpretations, and the necessary analysis held to clarify the situation. The conclusion of the study has included recommendations along with the main findings.

3.8 Model Specifications

The study employed a multiple regression model to assess the level of significance of the connection between the dependent and independent variables to determine the cause-and-effect relationship between the dependent and independent variables.

The following is a presentation of the model used to demonstrate this impact;

$$\mathbf{Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5\ \varepsilon}$$

Where: Y stands for EAG corporate competitiveness.

If X1, X2, X3, X4 and X5 are all 0, then 0 = Constant (Y value).

β 0 = constant value

β 1 = Internal Integration (IE)

X1 = Internal Integration level (IE)

β 2 = Client Relationship Regression (CR)

X2= Relationship with customers (CR)

β 3 = Regression coefficient for level of information flow and sharing (IL)

X3= Information flow and sharing level (IL)

β 4= Strategic Supplier Partnership regression (SP)

X4= Strategic Supplier Partnership strategies (SP)

β 5 =Information quality (QI)

X5 = Information quality level (QI)

E = Error term

3.9 Reliability and Validity Test

3.9.1 Validity Test

The degree to which differences detected by a measuring device accurately represent those under test is known as validity (Kothari, 2004). In other words, validity is the most important criterion and shows how closely a measurement matches its intended purpose. To guarantee the high standards of the research design, substance, and construct validity. The research adviser will check the content validity after considering the suitability of the measuring scales and the questions.

3.9.2 Reliability

Reliability is the degree to which measurements can be repeated when performed by different people, at various times, under various conditions, and with apparently distinct devices that purport to measure the same item. Overall, consistency of measurement or stability of measurement under various settings, where essentially the same results should be produced, is reliability. The trustworthiness of the data is shown by a Cronbach's alpha coefficient greater than 0.7, according to Field (2006) and Zikmund (2010). The Cronbach's alpha result higher than 0.7, indicating that the results of the question are credible.

Table 3.1: Reliability statistic test of Cronbach's alpha

Variables	Measures	Original N of items	N of Items deleted	Cronbach's Alpha	Final N of Items
Supply chain management practices	Customer relation	8	0	0.701	8
	Quality of Information	4	0	0.738	4
	Level and flow of information	6	0	0.732	6
	Integration (Internal)	10	0	0.671	10
	Strategic Supplier Partnership	5	0	0.770	5
Company competitiveness	Price	3	0	0.622	3
	Quality	3	0	0.759	3
	Network connectivity	5	0	0.76	5
	On time Performance	6	0	0.706	6

Source: Own output SPSS computation result (2023)

Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability. This study used 49 question and 5 items, hence "N" of items in the below Cronbach's Alpha test is 245. According to Rubin & Bobbie (2009) generally considered reliable and acceptable when they have an alpha level > .70 threshold on a scale of 0 to1.The Reliability Statistics result in table 4.1 - below shows that the value of Cronbach's Alpha is greater than 0.70. Hence, scales developed suggest good internal consistency.

3.9.3 Continuity

The two main issues with validity are whether the measurement instruments are accurate and whether they are actually measuring what they aim to measure. Internal and external validity relate to two different facets of the validity concept (Winter, 2000). Internal validity ensures that the researcher investigates the subject under investigation. The degree to which the questionnaire assesses what the researcher wants to measure to

establish internal validity is referred to as internal validity It also refers to the extent to which the questionnaire's measurements provide the data necessary to carry out the study's goals. External validity is the extent to which study results can be generalized to a larger population. All surveys will be given out by the researcher in person to participants. The questions were modified from Li et al. (2006), Lenny et al. (2007), and Priscila and Luiz and are standard research questions widely used to evaluate supply chain management practice and competitiveness (2011). For clarity, they were also worded in simple terms that respondents could easily comprehend.

3.10 Ethical Consideration

When doing research, various ethical factors must be taken into account, according to the Leedy & Ormrod study (cited in Yohannes, 2014). These include protection from danger, the right to informed consent, the right to privacy, and open communication with coworkers at work. Participants were thus shielded from bodily and psychological harm; they only participated voluntarily; their right to privacy was respected; and the outcomes were provided in a precise and genuine manner. All participants agreed in full after being informed of the goals of the study. It is known as informed consent.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

Company with massive network over all the world need to have effective supply chain management practice as it is very crucial to deliver its service effectively and efficiently. Ethiopian Airline Group provides its services across all continents have been implementing strategy on supply chain management on cargo and logistic services as a result it can able to keep its competitive position over 70 years.

The previous chapters discussed the theoretical and empirical findings on supply chain management practice and effectiveness as well as its importance for competitive position for a company. Accordingly, this chapter has presented findings of the study.

The questionnaire was developed in five scales ranging from five to one; where 5 represents strongly agreed, 4 agreed, 3 Neutral, 2 disagree, and 1 strongly disagrees.

The analysis was done with the help of SPSS output(version 25) and detail discussions were presented on the degree of relationship of the five independent variables of supply chain management practice and on the company competitive position ,specifically customers relationship, strategic suppliers partnership ,information sharing and quality and flow of information.

The analysis also involved correlation analysis (Pearson correlation) to measure the degree of association between the five different variables stated above. Followed by Regression Analysis applied to test and to show the effect of independent variable on dependent

4.2 Descriptive Statistics

4.2.1 Demographic Data of the Respondents

From the total sample size of 382 prospected respondents, 12 respondents did not fill and respond the questionnaires that made the response rate to be computed as 97%. Based on this high response rate, it is possible to proceed to data analysis.

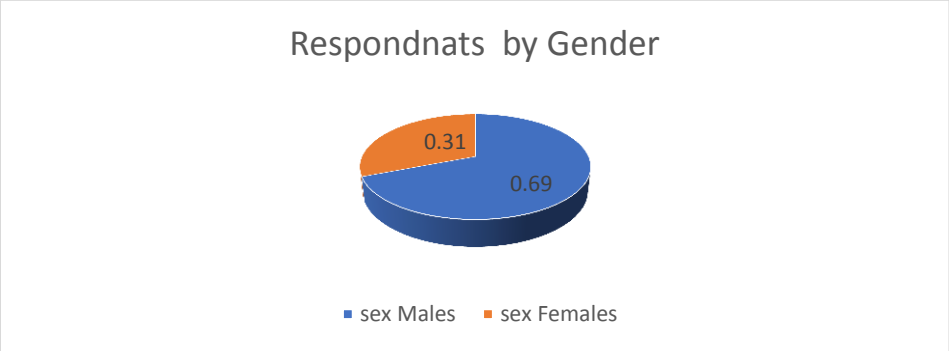
Information regarding the demography of the respondents were presented in the first part of the questioners specifically the respondent's sex, age, educational qualification, the working unit and their service year in the organization and discussed as follows.

Table 4.1: Summary of general information of the respondents

Demographic characters		Frequency	Percent
Gender	Male	256	69%
	Female	114	31%
Age	Less than 25 years	22	6
	25-35 years	115	31
	36-45 years	137	37
	Above 45	96	26
Education level	Second degree	15	4
	First Degree	281	76
	Diploma	74	20
	Certificate	0	0
Working unit	MRO	185	50
	Catering	74	20
	Cargo	41	11
	Facilities & base service	11	3
	Warehouse	22	6
	Procurement	37	10
Experience	Less than 5 years	103	28
	5 to 10 years	159	43
	11 to 15 years	56	15
	16 to 20 years	30	8
	Above 20 years	22	6

Source: Researcher's own survey (2023)

Chart 4.1: Gender of respondents

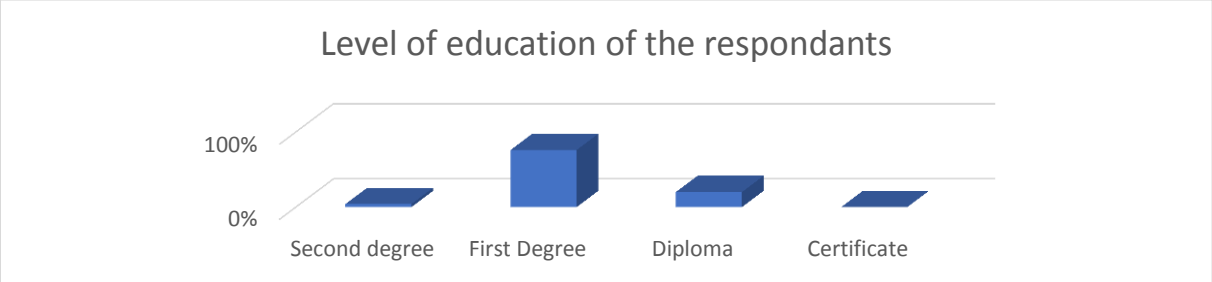


Source: Researcher's own survey (2023)

As indicated in the table 4.1 and chart 4.1 above 69% of the respondents are males and 31% of the respondents are females. This implies that most of the respondents are male.

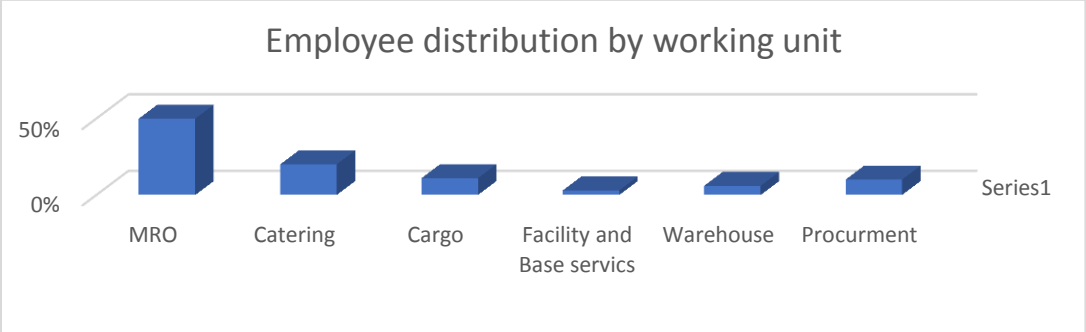
According to the data per table 4.1 most respondents are between 26 and 46 ages that imply most of the working force are younger age category and cover more than 60%.

Chart 4.2: Level of education of respondents



The summary table 4.1 ad chart 4.2 above show that educational level of respondents with second degree hold 4% ,first degree holder 76% and diploma holder 21% ,certificate nil, it specify that most of them are educated and the majority have first degree qualification .

Chart 4.3: Working unit of respondents



The data summary also showed that area of working expertise, as indicated in table 4.1 about 50% of the respondents were working at MRO technical area, others 50 % non - technical area, 20% catering, 12 % cargo service, 10% procurement, 3% facility and base service and 6% at warehouse service .

The majority of the respondents as indicated in the table 4.1 have experience between 5-10 years 43% which is good and 11-15 year about 15% moderate, less than 5 year 28%.

4.2.2 Descriptive Analysis on Independent Variables

Table 4.2: Descriptive statistics of independent variable

Variable	N	Mean	Std. Dev.
Customer relationship	370	3.92365	0.340619
Strategic partnership	370	3.87568	0.433681
Quality of information	370	3.83378	0.316775
Level of information	370	4.00721	0.306424
Internal Integration	370	3.8696	0.285082

Customer relationship : From the above table 4.2 the statistics summary show that the mean value of customer relationship variable (M =3.923) and its standard deviation (SD=0.3406) it measure the average response rate of respondents ,which implies that on average respondents agreed on that the customer relationship have been good, specifically EAG provide right, quick, proper and flexible service and the influence of the variable on the company competitiveness also very good .The standard deviation value 0.3406 indicate that some respondents deviate from the fact that disagreed on the good relation between EAG and customers.

Strategic partnership: Its statistical mean value was (M= 3.87) and its standard deviation (SD=.43), which implies on average the strategic partnership between EAG was good, the response rate 3.87 indicate agreed on that the strategic partnership between EAG and its partners has been strong, due to the fact that the company solve problems jointly with its suppliers and it helps to improve its service quality, also EAG have been get advantages from its key sources of supplier like Boing and get advantage on competitiveness overall from strategic partnership. The standard deviation (SD=.43) indicate that there was variety of response among the respondents on strategic partnership advantage to competitiveness for EAG. Generally the long run relationship with partners is strong and this helps a lot for the company to stay on competitive position.

Quality of information: As observed above in the table the average mean value of this variable was (M=3.83) and its standard deviation score was (SD=.31), this indicate that most respondents agreed on that the information quality in the supply chain management practice at EAG was good, specifically the information was timely, it the information was reliable and accurate, and due to that EAG get competitive advantage. The standard deviation (SD=.31) indicate that there is reservation with few employees that the quality of information was good and the company not get all the benefit from this variable as expected .

Level of information: The mean score of level of information shown highest value comparing to the other independent variable. The satirical mean (M =4.0072) indicate that majority of the respondents agreed on that the level of information flow is good, implies that the information flow is in advance, accurate and proper. The standard deviation (SD =.30) relatively low but it indicates still there is disagreement with some respondents as the level of information was good.

Internal Integration: The mean value of this explanatory variable was (M =3.869) implied that on average the ability to work across functions and processes within a firm and across multiple firms was good .The standard deviation score vale (SD=0.28) which low but still there are mis communication between units.

4.2.3 Customers Relation in the SCM practice and its Relationship with EAG Competitiveness

Companies to exist on business and to be competitive need to have a good relationship with its customers, without customers business loss its position and close its business .The below table summarize the relationship and influence of customer relation practice on EAG competitiveness

Table 4.3: Customer relationship practice in EAG

1.Customer(Client) relationship(CR)		Rating scale					Total respondents (N)	Item Mean	Std. Err.
		"5"	"4"	"3"	"2"	"1"			
EAG Provide right cargo and logistic services to its customers all the time	Frequency	248	122				370	4.351351	.0273763
	Percent	67	33						
EAG provides quick response to customers	Frequency	115	165	90			370	4.067568	.0385892
	Percent	31.1	44.6	24.3					
EAG has proper customer compliant handling	Frequency	122	115	133			370	3.97027	.0431894
	Percent	33	31.1	35.9					
EAG has easy and flexible customer ordering system	Frequency	237	88	45			370	3.445946	.0539523
	Percent	64.1	23.8	12.2					
EAG achieve minimum customer order processing	Frequency	71	188	111			370	3.891892	.0360745
	Percent	19.2	50.8	30					
EAG has regular customer satisfaction evaluation system	Frequency	22	248	100			370	3.832432	.0305724
	Percent	5.9	67	27					
EAG frequently determine future customer expectation	Frequency	44	115	211			370	3.548649	.0362718
	Percent	11.9	31.1	57					
EAG periodically evaluates the importance of relation ship	Frequency	115	244	11			370	4.281081	.0266226
	Percent	31.1	65.9	3					

Source: SPSS result own computation (2023)

As indicated on table 4.3 from the total 370 respondents 248 of them rate as EAG have a very good relationship with its customers in providing the right cargo and logistic services to all the time, in terms of percentage 67% from the total respondents and 33% or 122 respondents rate as good services while providing cargo and logistic services to its customers .The mean value 4.35 also indicate that EAG provide a good cargo and logistics service to its customers all the time. This implies that the customers receive good services and the relationship between the company and its customers is strong which help the company to stay on success and keep its company competitiveness over the last 70 years.

Respondents on the second research question EAG provides quick response to its customers total of 165 respondents which is 44.6%, rated as very good became 31.1% total 115 and the rest 70 respondents said neutral ,this indicate that EAG provides good quick response , the mean value 4.05 also confirmand a quick response on cargo and logistic service provided by EAG .

Response on compliant handling service by EAG show that from the total 370 participants for this research question 115 of them said that there is a very good proper compliant handling services and the others respondents answers good which is 31.1 %. The mean 3.9 value also confirm same, this indicate that EAG has customer compliant and irregularity handling practice to provide customer recovery and make loyal.

The other question raised under customer relation was, is there any flexible customer ordering system in EAG to cargo and logistic service to this end most of the respondents 237 employee out of 370 of them respond a very good customer ordering system in terms percentage 64.1% and 88 respondents said a good ordering system which is 23.8% .This implies that the company has best ordering system that hep customers to have a good relation sheep and enhance its competitive position, same the mean value 3.44 affirm a good ordering system that maintain the customer and providing better customer relationship.

For the fifth research question minimum customer order processing in EAG from total respondents majority of respondents which is 188 rate as good , 71 of them rated very good and 111 of them rated neutral. This implies that even have moderate minimum customer ordering system a number of respondents still have neutral on perfect system.

EAG group has customer service department lead by VP, regularly the customers satisfaction survey conducted through different mechanisms with designated department via online, hard copy at each cell level both internal and external customers . The research question regards to this also confirm that the majority rated as good 50.8%, 19.2% rated as very good and 30% as neutral. This confirms that EAG has a practice over customer service feedback for both its internal and external customers which also contributing for the success and be competitive in the industry.

Questions related to measurement on customer expectation rated by the respondents result show that 31.1% total of 115 as good 11.9% which is 44 respondents very good and the rest 211 or 57 % neutral, this indicate that even if the airline has the practice on real time market feedback analysis and customer feedback analysis it lag on measurement on customer expectation comparing to the others customer relationship parameters. However overall as the mean value 4.02 indicate is good on measuring customers' expectation.

4.2.4 Strategic Supplier Partnership Practice and EAG Competitiveness

Long run relationship between a company and supplier is crucial for the effectiveness of supply chain management ,companies in order to be competent in this regard need to have a good strategic partnership .EAG have good partners with suppliers that internationally recognized to this end Boing company have been the major supplier over 70 years and others on catering and different logistic service also EAG strategic suppliers for long period of time which help the company to remain competitive in the industry .

Table 4.4: Strategic supplier partnership on company competitiveness

2. **Strategic Supplier Partnership (SP)**		Rating scale					Total respondents (N)	Item Mean	Std. Err.
		"5"	"4"	"3"	"2"	"1"			
EAG Consider quality as its number one criterion in selecting suppliers	Frequency		362	8			370	3.978378	.0075715
	Percent	67	97.8	2.2					
EAG regularly solve problems jointly with its supplier	Frequency	22	260	88			**370**	3.821622	.0268226
	Percent	5.9	70.3	23.8					
EAG have helped its supplier to improve product quality	Frequency		260	66	44		**370**	3.583784	.0360975
	Percent		70.3	17.8	11.9				
EAG have continuous improvement program that includes its key supplier	Frequency	82	200	44	44		**370**	3.864865	.0465025
	Percent	22.2	54.1	11.9	11.9				
EAG actively involve its key supplies in new product development	Frequency	93	232	45			370	4.12973	.031067
	Percent	25.1	62.7	12.2					

Source: SPSS result own computation output (2023)

As shown on table 4.4 above the respondents on the first research question regards to quality of supplier rated 97.8% and rated 2% as neutral, it implies that the company on quality of supplier and strategic partners are very well and essential, the mean value 3.97 also affirm same.

The other research questions on strategic partners stated that EAG regularly solve problems jointly with its suppliers respondents, above 70% of them rated as good and the rest neutral which implies that EAG has strong bond with the suppliers in solving problems while occurred.

Among the respondents on research question regards to EAG help supplier to improve their service quality the majority above 70 % rated good in that EAG assit suppliers to improve service quality and the rest 30 % neutral still a positive induction that EAG have improvement on service quality on splay chain and cargo logistics service.

The 4th research question on strategic supply partnership EAG have continuous improvement program including key supplier output indicate that 22.2% very good,54.1% good and 11.9% neutral, which implies that the majority response is positive.

Respondents on the fifth research question on key development program participation rated very good 25.1%, good 67.7% and neutral 12.2%, still a positive indication EAG on key development program.

4.2.5 Quality of Information and EAG Competitiveness

Table 4.5: Quality of Information and EAG competitiveness

3. **Quality of Information management practices (IF)**		Rating scale					Total respondents (N)	Item Mean	Std. Err.
		"5"	"4"	"3"	"2"	"1"			
EAG have information exchange between partners timely	Frequency	71	188	89	22		370	3.832432	.0417176
	Percent	19.2	50.8	24.1	5.9				
Information exchange between EAG partner is accurate	frequency		362	8			**370**	3.978378	.0075715
	Percent		97.8	2.2					
Information exchange between EAG partner is complete	Frequency		348	22			**370**	3.940541	.0123108
	Percent		94.1	5.9					
Information exchange between EAG partner is reliable	Frequency		216	155			**370**	3.583784	.0256609

Source: SPSS result own computation output (2023)

As per the table above table 4.5, 50.8% of respondents indicate good, 19.25% indicate very good and only 5.9% neutral on that EAG have information exchange between partners ,over all the mean value is 3.8 stated that information exchange between partners is timely .

The majority of respondents 97.8 % indicate the information exchange between EAG and partner is accurate with mean value of 3.97. Likewise 94.1% indicate the information exchange between EAG partner is complete and its mean value 3.94 which is higher.

The reliability of information exchange indicates average mean value of 3.5 again most respondents have opinion the information exchange between EAG and partner is reliable and good.

4.2.6 Level of Information Sharing and Flow of Information Practice and EAG Competitiveness

Below table 4.6 summarize the level of sharing information between EAG and its partners, accordingly 97% of the respondent indicate EAG is good while informing partners in advance the changing needs to its partner, the remaining 3% indicate neutral ,the mean value 3.97 which is high also affirm a good level of information sharing between partners and EAG . Likewise the majority of respondents 73% indicate EAG partner is good and properly share information which is stated in the second research question.

The third research question EAG partners keep fully informed about issues affect the business shown that 55.4% rated as very good, 29.7 good and 14.9 neutral , the overall mean value 4.4 which is higher, which implies that EAG partners well and keep fully informed about issues affect the business .

EAG partners share business knowledge on core business process score mean value indicates 3.98 it means that the majority of respondents agree and good.

From the total respondents on ET partners exchange information that helps establishment of business planning indicate 29,7% very good, 43.2% good and 27% neutral overall mean is 4 it implies the information exchange enhance business plan is effective .

Table 4.6: Level of information sharing and flow of information with supply chain management

4A. Level of Information Sharing		Rating scale					Total respondents (N)	Item Mean	Std. Err.
		"5"	"4"	"3"	"2"	"1"			
EAG inform partners in advance of changing needs	Frequency		359	11			370	3.97027	.0088416
	Percent		97	3					
EAG partners share properly information	Frequency		270	100			**370**	3.72973	.0231189
	Percent		73	27					
EAG partners keep ET fully informed about issues that affect the business	frequency	205	110	55			**370**	4.405405	.0381961
	Percent	55.4	29.7	14.9					
EAG partners share business knowledge of core business process	Frequency	138	88	144			**370**	3.983784	.0454397
	Percent	37.3	23.8	38.9					
EAG partners exchange information that helps establishment of business planning	Frequency	110	160	100			370	4.027027	.0391937
	Percent	29.7	43.2	27					
EAG and partners keep each other informed about events or changes that may affect the other partners	Frequency		343	27			**370**	3.927027	.0135399
	Percent		92.7	7.3					

4B. Information flow management practice		Rating scale					Total respondents (N)	Item Mean	Std. Err.
		"5"	"4"	"3"	"2"	"1"			
EAG periodically evaluate the importance of the relationship with its customer	Frequency		315	41	7	7	370	3.794595	.0291973
	Percent		85.1	11.1	1.9	1.9			
EAG have information flow Management practice	Frequency	116	166	44	44		**370**	3.9	.0477502
	Percent	31.4	44.9	11.9	11.9				
EAG have smooth information flow in the logistic practice	Frequency	45	281	44			**370**	4.002703	.0255314
	Percent	12.2	75.9	11.9					
EAG have adequate information flow in logistics process	Frequency	115	166	45	44		**370**	3.951351	.0495438
	Percent	31.1	44.9	12.2	11.9				
EAG have reliable information flow in logistics process	Frequency		304	44	22		370	3.732432	.0407315
	Percent		82.2	11.9	5.9				
EAG has information flow coordinates to logistics activities	Frequency	44	212	111			**370**	3.864865	.0347895
	Percent	11.9	58.1	30					
EAG has information flow communicates the logistics activates	Frequency	44	215	111			**370**	3.910811	.0294057
	Percent	11.9	58.1	30					
EAG has information flow uses to plan the logistics activates	Frequency	44	249	77			370	3.818919	.0323484
	Percent	11.9	67.3	20.8					

Source: SPSS result own computation output (2023)

As indicate in table 4.6 the information flow practice in EAG, from the first question response we can see that EAG have evaluate the information flow with customers and majority of respondents 85% agreed a good information flow in the airline. In addition EAG have reliable information flow most respondents 82% agreed and help them.

4.2.7 Internal Integration and EAG Competitiveness

Table 4.7: Internal integration and supply chain management practice in EAG

Internal integration		Rating scale					Total respondents (N)	Item Mean	Std. Err.
		"5"	"4"	"3"	"2"	"1"			
Integration between Line Maintenance ECGO services positively affected EAG performance.	Frequency	321	48						.0273763
	Percent	87	13				370	4.451351	
Integration between Component Maintenance and ECGO service positively affected EAG performance.	Frequency	118	166	86			370	4.067568	.0385892
	Percent	32	45	23					
Integration between Schedule base Maintenance and ECGO service positively affected EAG performance	Frequency	122	248	1			370	4.97027	.0431894
	Percent	33	67						
Integration between Line Maintenance and Engineering with ECGO service positively affected EAG performance	Frequency	282	88				370	4.445946	.0539523
	Percent	76	24						
Integration between Material Requirement Planning and ECGO service positively affected EAG performance	Frequency	71	188	111			370	3.991892	.0360745
	Percent	19	51	30					
Integration between Ethiopian cargo and logistics service and Catering services positively affected EAG performance	Frequency	22	248	100			370	3.832432	.0305724
	Percent	5.9	67	27					
Integration between Ethiopian cargo and logistics service and Warehouse positively affected EAG performance	Frequency	159	211				370	3.946648	.0122718
	Percent	43	57						

Source: SPSS result own computation output (2023)

The above table 4.7 indicate that the integration between EAG units, accordingly 87% of the respondent indicate strongly agreed on that the integration between MRO line maintenance and cargo and logistics benefit and increase the performance of EAG ,the mean value 4.45 higher score indicate that majority of respondents agreed the benefit and competitiveness increased due to integration.

Likewise the majority of respondents from the second research question (45%) strongly agreed and (32%) agreed in that EAG benefited from integration between the cargo and logistics and component maintenance, the mean value (m=4) implies that the respondents agreed EAG benefited from the integration.

The third research question integration between cargo and logistics with schedule base maintenance response shown that mean value (m=4.9), 67% of respondents agreed and 33% strongly agreed EAG performance positively affected by the integration.

The integration between Engineering and line maintenance with ECGO service also shown a good result, according to the respondents majority strongly agreed (76%) and agreed (24%). Its mean score also indicate (m=4.44) indicate that EAG performance increased due to this integration.

In addition the integration between material planning and ECGO service bring a good result, according to the respondents response majority agreed a positive result on EAG due the integration of this services .The response rate confirm that 51% agreed and 19% strongly agreed.

Moreover the response rate was agreed 67% and strongly agreed 6% regards to positive effect of integration between catering and ECGO services, the mean value (m=3.8) affirm most respondents agreed positive and impact on EAG performance and competitiveness due to the internal integration.

The other research question integration between Ethiopian cargo and logistics service and Warehouse positively affected EAG performance also has a very good response, majority said strongly agreed (43%) and agreed (57%), its corresponding mean value(m=3.9) also confirm same.

4.3 EAG Cargo and Logistic Management Practice

Table 4.8 summarize the impact of supply chain management practice in EAG on its performance and EAG competitive .As indicated the data result on cargo and logistics management practice impact on EAG market share growth is very good, the mean score value 4.06 confirms the supply chain management practice is good and added value for the overall performance and competitiveness of EAG in the industry.

In addition the supply chain management practice has a good contribution on growth of sales, the data shows that the majority of respondents agreed EAG have successful on its sales through cargo and logistics services and the practices score mean value 3.99 confirms that a high contribution in this regard.

The contribution on investment return mean score value 3.6 also indicate that another gain from the supply chain management practice, according to respondents the majority agree that EAG logistic management and cargo services practice is very good and its contribution over investment return is paramount.

Over all the respondents agree EAG profit increased and the competitive position of the company improved due to a good supply chain management practices in EAG, as the data conforms from the below table 4.8 the mean score value 4.01 indicate that the majority 70% of respondents agreed EAG competitiveness improved due to have good cargo and logistics management practice.

Table 4.8: EAG competitiveness and Performance

Company competitiveness and Performance		Rating scale					Total respondents (N)	Item Mean	Std. Err.
		"5"	"4"	"3"	"2"	"1"			
Logistics management practice have led the growth of EAG market share	Frequency	89	215	66			370	4.062162	.0335382
	Percent	24.1	58.1	17.8					
Through implementation of logistics management practice EAL has grown its sales	Frequency	44	281	45			**370**	3.997297	.0255314
	Percent	11.9	75.9	12.2					
Logistic management practice have led to the growth of EAG return on investment	Frequency	78	160	44	88		**370**	3.616216	.0554311
	Percent	21.1	43.2	11.9	23.8				
Through the implementation of logistics management practice EAG has increased profit	Frequency	117	253				**370**	4.316216	. 0242069
	Percent	31.6	68.4						
EAG have got return on investment by applying logistic management	Frequency	1	351	18			370	3.954054	.0115517
	Percent	3	94.9	4.9					
Competitive position of EAG has increased due to implementation of logistic management practice	Frequency	44	212	111			**370**	4.083784	.0462782
	Percent	11.9	58.1	30					

Source: SPSS result own computation output (2023)

4.4 Descriptive Statistics of Dependant Variable (Company Competitiveness)

As indicated table 4.9 below summarize the data collected from participants on this research on the dependent variable EAG competitiveness position in the industry.

The data summary shown the majority of respondents agree on EAG is cable and one of the major competitors in the industry the mean score value 3.14 indicate EAG is cable and on competitive position due to its good supply chain management.

All participants on this research confirms that EAG provide competitive price, the mean score value 4.03 high score values also affirm the company provide competitive price in the industry.

In terms of quality services the majority of respondents indicate agree, EAG provide quality service that enable the company to remain competitive in the industry ,its mean score 4.06 affirms majority believes a good quality service delivered and this create value for the customers and the company to compute in the industry .

Regarding network connectivity in cargo and logistic service EAG advance a lot it covers all the continent except Antarctica and most of destination concentrated in Africa, Asia and Europe, the number of network growth shown paramount, the mean score value 4.25 also implied that it was high score relatively rapid growth and achievement than its competitor. Different publications by IATA, SKY track and European based organization also provide a number of award for the service of EAG cargo services due to the fact that it services reach most African countries with other continents and due to its safest services.

The other competitive parameter was on time performance (OTP) of the cargo flights, the average score value of this parameter indicate that 4.69 which was high implied that most of the time the EAG cargo and logistics service meet the scheduled time and among the top airlines in this regard.

Table 4.9: Supply chain management practice effect on company competitiveness

Competitiveness (y)		Rating scale					Total respondents (N)	Item Mean	Std. Err.
		"5"	"4"	"3"	"2"	"1"			
a. Price/Cost									
EAG is cable of computing against major competitors	Frequency	285	87				370	3.145946	.0819147
	Percent	76.5	23.5						
EAG provide competitive price	Frequency	224	132	8			**370**	4.513514	.0394454
	Percent	60.5	35.7	2.2	1.6				
EAG are offer prices lower or lower than its customers	Frequency	220	95	55			**370**	4.445946	.0384093
	Percent	59.5	25.7	14.9					
Price/cost								**4.0349**	
b. Quality									
EAG capable of offering quality service and performance that create high value to customers	Frequency		292	67	11		**370**	3.759459	.0256165
	Percent		78.9	18.1	3				
EAG able to compute based on quality	Frequency	157	116	18	79		370	3.948649	.0599094
	Percent	42.4	31.4	4.9	21.4				
EAG offers services that are highly reliable	Frequency	219	116	35			**370**	4.497297	.0344992
	Percent	59.2	31.4	9.5					
Quality								**4.0684**	
c. Network connectivity									
EAG is capable of introducing new network destination in the market place on cargo and logistic services	Frequency		294	76			**370**	4.369459	.0245155
	Percent		79	21					
EAG alters its network destination offerings to meet client needs on cargo and logistic services	Frequency	151	122	81	16		370	3.948649	.0599094
	Percent	40.81	32.97	21.91	4.31				
EAG provide and deliver services on time on cargo and logistic services	Frequency	219	116	35			**370**	4.497297	.0344992
	Percent	59.2	31.4	9.5					
EAG demonstrate fast service environment on cargo and logistic services	Frequency	157	116	18	79		370	3.948649	.0599094
	Percent	42.4	31.4	4.9	21.4				
EAG is first in the marketing introducing new network destinations on cargo and logistic services	Frequency	219	116	35			**370**	4.497297	.0344992
	Percent	59.2	31.4	9.5					
Network connectivity								**4.25023**	
d. On time performance									
EAG capable of providing on time services requested by customer on cargo and logistic services	Frequency	282	77	11			**370**	4.69459	.0245155
	Percent	76	20	4					
On time performance								**4.69459**	

Source: SPSS result own computation output (2023)

4.5 Descriptive Statistics of Interviews

The interview was carried out in addition to the questioners for 6 representatives of different unit accordingly the majority argued that a remarkable improvement on the service delivery and the impact on the performance and competitiveness changed after the reorganizing the cargo and logistics service as one business unit ,nevertheless some of the interviewed said that the financial payment activates affect the speed and back some activities intern affect delay of payments to customers as result some complaints received from the customers.

Hence majority of the interviewers suggested that Finance unit should self-controlled all finance related activities as before the integration.

4.6 Correlation Analysis

To test for correlation between the variables parson correlation coefficient was used as per (Brook, 2008), correlation between two variables measures the degree of linear association between them. Values of the correlation coefficient are always ranged between positive one and negative one. A correlation coefficient of negative one indicates that a perfect negative(inverse) association between the two variables, while a correlation coefficient of positive one indicates that a perfect positive(direct) association between the two variables. A correlation coefficient of zero on the other hand indicates that there is no linear relationship between the two variables (Brooks, 2008).

Table 4.10: Pearson Correlation summary on company competitiveness

Correlations							
		CC	SP	QI	LI	IE	CR
CC	Pearson Correlation	1	.753**	.624**	.553**	.781**	.745**
	Sig. (2-tailed)	0.0002	0.0041	0.0204	0.0100	0.031	0.001
	N	370	370	370	370	370	370
SP	Pearson Correlation	.753**	1	.446**	.168**	.572**	.403**
	Sig. (2-tailed)	0.0106	0.0051	0.0204	0.0300	0.051	0.013
	N	370	370	370	370	370	370
QI	Pearson Correlation	.624**	.446**	1	-0.080	.637**	.278**
	Sig. (2-tailed)	0.0112	0.0041	0.0204	0.0101	0.031	0.011
	N	370	370	370	370	370	370
LI	Pearson Correlation	.553**	.168**	-0.080	1	.264**	.498**
	Sig. (2-tailed)	0.0102	0.0041	0.0204	0.0100	0.031	0.001
	N	370	370	370	370	370	370
IE	Pearson Correlation	.781**	.572**	.637**	.264**	1	.270**
	Sig. (2-tailed)	0.0002	0.0031	0.0204	0.0400	0.021	0.001
	N	370	370	370	370	370	370
CR	Pearson Correlation	.745**	.403**	.278**	.498**	.270**	1
	Sig. (2-tailed)	0.0211	0.0041	0.0204	0.0100	0.031	0.021
	N	370	370	370	370	370	370
**. Correlation is significant at the 0.01 level (2-tailed).							

Source: SPSS output of the study, 2023

The independent variables customer relationships and dependent variable EAG competitiveness have strong and positive correlation (r=0.75 and p=0.002), and statistically significant at 0.01 level this indicate the effect of customer relation on EAG competitiveness is high and positive.

On the other hand strategic supplier partnership variable and relationship with company competitiveness also strongly correlated, the statistically value indicate (r=0.75 and p=0.0041) implies that strategic supplier partnership and EAG competitiveness has positively and directly corelated and statistically significant at 0.01 level.

The correlation analysis indicate also the relationship between company competitiveness and internal integration was high and positive the statically result for internal integration was 0.78 indicate a strong effect and the relationship between company competitiveness and integration significant at 0.01 level, regarding to variable information sharing also

positively correlated (r=0.55 and p=0.024), this indicate information sharing for company competitiveness highly contributed.

Moreover the quality of information correlation result also high as indicated in the table (r= 0.6 and p=0.01) this confirms statistically significant at 0.01 level, there is a positive relationship between quality of information and Competitiveness.

4.7 Result of Regression Analysis

4.7.1 Multi-collinearity Test

An important assumption for the multiple regression models is that independent variables are not perfectly multicollinear. One independent variable should not be a linear function of another. This study was checked multicollinearity by Vif (variance inflation factor) the result we be 2.24. So, this shows us the Vif < 10 or a 1/Vif < 0.10. This study has not observed multicollinearity problems here. All Vif score are under 10.

Figure 4.1: Variance inflation factor test result

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
internalex~n |      3.62    0.276246
QualityofI~e |      3.17    0.315481
Levelofinf~n |      1.98    0.504093
cutomerrel~p |      1.84    0.543937
Strategics~p |      1.70    0.588943
-------------+----------------------
    Mean VIF |      2.46
```

In addition to VIF, to test either an exact or approximately exact liner relationship between independent variables multicollinearity test should be done and according to (Kenndy, 2011) if the correlation coefficient greater than 0.7 between two independent variable multicollinearity problem exist implies that the sample parameters become inefficient and cause larger standard error and the coefficient value and singe became unreliable.

When we observed the variables in table 4.11 below no any independent variable have value greater than 0.7 indicate that no multicollinearity test problems.

Table 4.11: Multi-collinearity test

	SP	LI	QI	IE	CR
SP	1	.446**	.168**	.572**	.403**
		0	0.001	0	0
	370	370	370	370	370
LI	.446**	1	-0.08	.637**	.278**
	0		0.127	0	0
	370	370	370	370	370
QI	.168**	-0.08	1	.264**	.498**
	0.001	0.127		0	0
	370	370	370	370	370
IE	.572**	.637**	.264**	1	.270**
	0	0	0		0
	370	370	370	370	370
CR	.403**	.278**	.498**	.270**	1
	0	0	0	0	
	370	370	370	370	370

The regression analysis was conducted to know how much the independent variable explains the dependent variable. It is also used to understand by how much each independent variable (Strategic supplier partnership, Customer relationship, Level of information sharing, and strategic supplier partnership) explains the dependent variable, Company Competitiveness.

Table 4.12: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.953[a]	0.955	0.898	0.05698
a. Predictors: (Constant), customer relationship, internal Integration, Level of information, Strategic supplier partnership, Quality of Information exchange				

Per table 4.12 above the R value 95% indicate the dependent variable EAG competitiveness explained by independent variables by 95% and the remaining 5% not explained implies that there is high relationship between the independent variable customer relation, integration, strategic supplier partnership and information sharing and quality with the dependent variable competitiveness and the variables competitiveness explained well by dependent variable.

4.7.2 Analysis of Variance (ANOVA)

Table 4.13: Analysis of the variance

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.358	5	3.872	13.434.99	.000[b]
	Residual	0.105	364	0		
	Total	19.463	369			
a. Dependent Variable: competitiveness						
b. Predictors: (Constant), customer relationship, internal Integration, Level of information, Strategic supplier partnership, Quality of Information exchange						

As indicated in table 4.13 the ANOVA analysis shown that overall the independent variables are significant together at 0.01% level, the F value 13.44 with p value 0.01 also confirm the model was statistically significant .

4.7.3 Model Diagnostic Assumption Test

The aim of model diagnostic test is to test the explanatory variables either statistically significant and to test also the liner regression model assumption violated or not, moreover it helps to test the data fits the basic assumptions and affirm the reliability of output (Brooks, 2008). Accordingly Autocorrelation test, Multicollinearity test, linearity test, homoscedasticity test done and summarized below.

4.7.4 Autocorrelation

The test of autocorrelation done to confirm no error terms correlated, between the error terms over time the covariance is zero .To test no autocorrelation the DW test rule of autocorrelation was applied .

It is the assumption of independent error tenable or reasonable test. Durbin-Watson used to test for serial correlation between errors. The test statistic can vary between 0 and 4, with a value of 2 meaning the residuals are uncorrelated (Field, 2006). A value greater than 2.5 indicates a negative correlation between adjacent residuals, whereas a value below 2.5 indicates a positive correlation. Similarly, Ott and Longnecker (2001) defines when there is no serial correlation, the expected value of the Durbin–Watson test statistic d is approximately 2.0; positive serial correlation makes d < 2.0 and negative serial correlation makes d > 2.0. Although, values of d less than approximately 1.5 (or greater than approximately 2.5) lead one to suspect positive (or negative) serial correlation. The test produces a test statics that ranges from 0-4. The value close to 2 (the middle of the range) suggests less auto correlation and values close to 0 and 4 indicate greater positive or negative auto correlation respectively.

Table 4.14: Durbin-Watson (Dw) Auto correlation test table

Model Summary[b]	
Model	Durbin-Watson
1	2.286[a]

Source: Own computation SPSS result (2023)

As stated above the DW value 2.28 indicate that there was no autocorrelation issue and the assumption of autocorrelation has been met.

4.7.5 Homoscedasticity Test

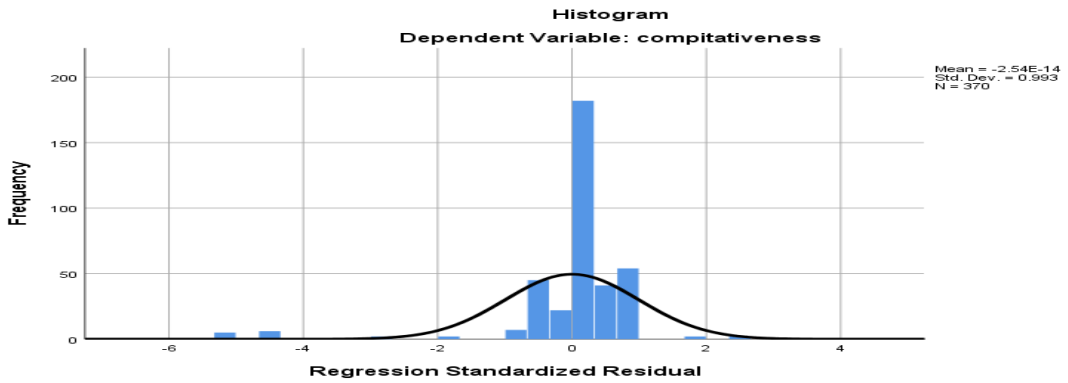
The basic assumption of this test is that the error terms are homoscedastic, in other word assumed that the error terms have constant variance (Yared S, 2019). If the error terms have no constant variance in this case said to have heteroscedastic problem and the

presence of heteroscedasticity makes the standard errors too big or too low and hence any inferences made could be misleading. There are different methods to test heteroscedasticity but the most popular method is the white's test. According to (Brook, 2008) if the probability of F-statistics, Observed R-square, and Scaled explained SS of the heteroscedastic white test result is in excess of 5% then there is no heteroscedastic problem. However, if one of these three fails then there is existence of heteroscedastic problem.

Table 4.15: Heteroscedasticity test table

Model	t	sig
(Constant)	0.092	
SP	0.164	0.589
QI	0.131	0.315
LI	0.192	0.504
IE	0.247	0.276
CR	0.242	0.544

If the precision value is > 0.05, there will be no heteroscedasticity problem among the variables Based on coefficient output table, the independent variables sig is >0.05, so this indicates that there is no heteroscedasticity problem.



4.7.6 Omitted Variable Test

Testing for omitted variable bias is important for our model since then we tested omitted-variable bias using the ov test command. There is no omitted variable. The null hypothesis is that the model does not have omitted-variables bias, the p-value is 0.00 threshold of 0.05 so we reject the null and conclude that we need more variables.

Table 4.16: Omitted variable test table

```
. ovtest

Ramsey RESET test using powers of the fitted values of compitativeness
      Ho:  model has no omitted variables
                F(3, 361) =     95.35
                 Prob > F =      0.0000
```

As indicated above table 4.16 the model has no omitted variables

4.7.7 Multiple Regression Analysis (ANOVA) for Coefficients

Table 4.17: Regression result between dependent variable EAG competitiveness and SCM practice

	Coefficients[a]				
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	0.092	0.016		5.569	0.0000
SP	0.164	0.003	0.31	61.823	0.0041
IE	0.131	0.005	0.18	26.321	0.0106
LI	0.192	0.004	0.256	47.197	0.0100
QI	0.247	0.006	0.306	41.81	0.0112
CR	0.242	0.004	0.36	68.925	0.0211

Source: Own SPSS out from the data survey (2023)

Unstandardized Beta Coefficient

Based on chapter three regression model for this study, SCM practice independent variables and EAG competitiveness and the result SPSS coefficients the model presented below.

$$\mathbf{Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \varepsilon}$$

$$Y = .092 + 0.13X1 + 0.242X2 + 0.19X3 + .0.16X4 + .0.247X5$$

As can be observed from the above table there is a significance positive relationship between independent and dependent variables with beta value ranging from 0.18 to 0.36 at max p value of 0.0211. Specifically, customer relation has significant positive effect on company competitiveness (β=0.24, p=0.0211). Supply partnership also has significant positive (β=0.164, p=0.0041) effect on the company competitiveness followed by level of information flow (β=0.192, p=0.0100). Additionally internal integration also have significant positive effect on the company competitiveness (β=0.131, p=0.0106) and the quality of information has positive value (β=0.247, p=0.0112). This indicate that statistically all the independent variables significantly affect the company competitiveness. And all of them are significant predictors of dependent variables.

4.7.8 Regression Analysis between Customer Relation Coefficient and Company Competitiveness

Based on the SPSS result indicated in the table 4.17 above the coefficient of customer relation (CR) was 0.24 and it is also positively correlated with the dependant variable company competitiveness, which implies that keeping other factors constant when CR increase by 1unit the Company competitiveness increase by 0.24 and statically significant at 0.05% level, hence this indicates that the customer relation has good impact on company competitiveness.

Study on SCM practice on company competitiveness affirm that the customer relation have a positive impact on the company comitatives on that Customer-centric business practices support client retention, it enable product differentiation from competitors (Barney j et al., 1991).

In addition the findings of other researcher also confirm there is a positive relationship and statistically significant that SCM strategies to be successful, quick customer relationship management actions have been crucial (Wisner, 2003).

4.7.9 Regression Analysis between Strategic Partnership and Company Competitiveness

The regression result also shown in the above table as there is a positive and direct relationship between strategic supply management and company comitatives. The coefficient of SP 0.164 implies that other factors remain constant when SP increase by 1 unit company competitiveness increase by 0.164 and statistically was significant at 1%. Over all EAG has been benefited and have become competitive in the industry from the strategic partnership from supply chain practice.

According to the result of the literature by Makweba and Xu (2009) that customers' wants to excel and be competitive should be given the weight for the supplier. The result of the study indicates also a positive and significant between the company competitiveness and strategic supply chain management practice in the company.

Moreover the findings of other study also stated that strategically aligned businesses can work closely together and waste less time and effort (Balsmeieret al.1996). Successful supplier alliances may be crucial to an innovative supply chain (Noble 1997). These two study result indicate that there is a positive and significant influence between the strategic supply partnership and company competitiveness.

4.7.10 Regression Analysis between Internal Integration and EAG Competitiveness

The other independent variable internal integration SPSS output shown a strong and positive relation sheep between company competitiveness, the coefficient value of this variable was 0.131 indicate that other factors remain constant when internal integration increase by 1 unit EAG competitiveness increased by 0.131 unit. The result also confirms statistically the coefficient was significant at 5% level.

According to other the study by Bowersox, et al., 2002), there is a strong positive relationship between internal integration and company competitiveness. The findings of this study affirms statistically significant which implies companies have strong internal integration and relation can compute in the business .The study suggested that need to streamline operations and redesign work routines and processes to eliminate redundancy of work since it allows savings of cost and time, and increases the quality of services, and ultimately value to customers and improve competitiveness.

The other study also indicates that through cross-functional process integration companies can compute since can resolve conflicts and achieve mutual goals (Danese et al., 2013; Pagell, 2004).

4.7.11 Regression analysis between Level of Information and Sharing with EAG Competitiveness

Per SPSS out put the result of the coefficient variable level of information sharing was 0.192, indicate that a positive relationship between the company competitiveness and level of information sharing in EAG. Implies that while the level of information increased by 1-unit competitive position of EAG increase by 0.192 keeping other factors constant. This value also statistically significant at 1% level with direct relationship.

4.7.12 Regression Analysis between Quality of Information and EAG Competitiveness

The last independent variable regression result also confirms that there is a strong and direct correlation between the quality of information and dependant variable EAG competitive position .As it can be seen from the table 4.9 the coefficient of the variable QI was 0.247 indicate that as information flow increase by 1% the EAG competitive position increased by 0.247, keeping other factors consistent and statistically also significant at 0.01 level.

According to other study conclude that quantity and quality of information sharing are crucial for SCM practices and have been handled as separate entities in previous SCM research by (Moberg, 2002; Monckza. 1998), based on the findings of this study there is a

high positive correlation between supply chain management practice and company competitiveness in the industry.

According to Power (2005) the amount of information shared between supply chain partners on the downstream and upstream sides of the supply chain as well as the information intensity are related to supply chain information sharing. In this study, the level of formal or informal corporate knowledge exchange with supply chain partners is characterized as information sharing in the supply chain. Additionally, it is linked to the information intensity and the volume of information shared between supply chain participants on both the downstream and upstream sides of the supply chain. The result confirms that high positive correlation between SCM and information level of the company and statistically also significant.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary of Major Findings

The study was conducted with an objective of identifying the effect of Supply Chain Management practice and company competitiveness of EAG. The study selected five main variable important based on theoretical and empirical literatures. Consequently, five variables namely customer relationship, strategic supplier partnership, level of information sharing, and integration were selected to explain the effectiveness of the supply chain management practice of EAG and any limitation in the practice.

The multiple regression result revealed that all supply chain management practice dimensions such as customer relation, supplier partnership, internal integration, information flow and level of information has significance positive effect on the company competitiveness with beta value ranging from 0.18 to 0.36 and p value of 0.0041 to 0.0211. Specifically, customer relation has significant positive effect on company competitiveness (β=0.42, p=0.0211). Supply partnership also has significant positive (β=0.164, p=0.0041) effect on the company competitiveness followed by level of information and sharing (β=0.192, p=0.0100). Additionally, internal integration also have significant positive effect on the company competitiveness (β=0.0131, p=0.0106) and the quality of information (β=0.247, p=0.0112). These indicate that all the independent variables are significant predictors of dependent variable (competitiveness).

The regression output indicates that the variables customer relation, strategic supplier partnership, level of information flow and sharing and quality of information have positively and significantly affects company competitiveness. Though the result of the variable of internal integration shows positive and significant effect, the data obtained from interviews indicate that the new integration of among units has brought delay in payment and poor customer handling which needs improvement.

Based on the regression analysis the finding of the study the effectiveness of Supply Chain Management practices over all have positive and very good. The variable customer relation coefficient value 0.242 and its P value 0.021 and r=0.74 indicate high impact on competitiveness of the company.

The variables strategic supplier partnership also have positive relation with company competitiveness a correlation coefficients; strategic supplier partnership (r=0.75), customer relation (r=0.74), level of information sharing (0.55), quality of information (r=0.64) and the correlation between SCM Practice and competitiveness were high and strong.

5.2 Conclusion

Airline industry is very dynamic working in a very competitive environment where the maximum efficiency and effectiveness depends on various factors, among the factors the strategic decision of supply chain management services on cargo and logistic services is high due to the fact that a networked business that needs a strong supply chain management practice.

Accordingly following the COVID -19 pandemic EAG has made a restructuring focusing cargo and logistic services as one designated business unit. This reform has been contributing for the airline to be competitive in the industry and remain the in business at difficult time. EAG has been improving the supply chain management that enabled it to earn a remarkable profit and expanding its network and market share in the cargo and logistic service to different parts of the world especially in Africa.

Based on the regression analysis all factors applied in determining the supply chain management effectiveness, specifically the customer relation, strategic supplier partnership, information flow and quality and integration showed positive and statistically significant effects on competitiveness.

The customer relation of the group is found to be very important variable for the competitiveness of EAG where each interaction with the customers' needs to be in the way that creates good customer experience.

In addition, the variable of strategic supplier partnership could also be considered as another important variable of competitiveness for EAG. This implies that the strategic partnership that the group created with its suppliers should be sustainable and capable of assuring its long run competitive advantages.

Information flow and quality of the information are also very essential tools for successful competitive advantages positions of EAG. This signifies that of the importance of advanced information flow and quality of information management.

Furthermore, the study revealed that the internal integration variable of the study is also found to be influential and determinant for the competitiveness of the group though the recent restructure made on some units could negatively affect its internal processes and competitive advantage of the group.

In general, the study concluded that customer relation, strategic supplier partnership, information flow, quality of the information and internal integration are found to be crucial factors of EAG competitiveness that need special attention to be continuing as the leader airline in Africa and globally competent.

5.3 Recommendation

Based on the finding and the conclusion of the study, the following recommendations have been forwarded.

- ✓ To sustain in the business, the airline needs to keep and work more on the supply chain practices, focus should be given more to the customer relationship, strategic partnership, information flow and integration since they highly determine the competitiveness of the organization.
- ✓ As the airline business is very dynamic and volatile business, continuous reevaluation of one's supply chain practices is very important to sustain in a changing market and remain profitable.
- ✓ It has been observed the internal integration have some difficulties after the integration or reorganization of the cargo and logistic services as new unit, aiming

the supply chain management practice effective and efficient and make profit during difficult business time. But some inefficiency due to overlapping role conflict as result of the strategic suppliers and customer relationship factors can be damaged unless corrective action done specifically the delay of payment to suppliers.

- ✓ All Stakeholders specially the CEO, CCO, Directors, Managers and team leaders need to give attention for the relationship between EAG competitiveness and Supply chain management practices in the long term since the success of EAG has been on Cargo and logistic services that have been proved at COVID -19 time.

- ✓ To strengthening relationship with customers measuring and evaluating customer satisfaction is vital, regularly determining the future customer expectations, and evaluating periodically the importance of the relationship have greater impact in affecting company's competitiveness. So, EAG needs to work strongly to perceive the need from customers and provide special services that other competitors do.

- ✓ The company should also work more on value steaming project for the better performance of the cargo and logistic operation as good as the passenger service.

- ✓ Generally, EAG can be more competitive by maximizing supply chain management practices, and by evaluating and proactively implementing changes in response to the dynamic business environment. Side to side with the passenger service operation, EAG can earn more profit and be competitive for long term in the supply chain and cargo service. Therefore, the company should be more proactive and reconfigure its supply chain continually and consider the SCM practices as a core activity to enhance its competitiveness.

5.4. Suggestions for Further Studies

- ✓ The research only focused EAG, it did not incorporate other airlines in the industry in Africa and other researchers can conduct their study at sub-Saharan or at continents level.
- ✓ This study was conducted based on five supply chain management practice implementation factors, but research can be done by considering more independent variables that can affect the supply chain value and EAG competitiveness.
- ✓ Furthermore, the future studies can examine the proposed relationships by bringing some contextual variables and additional dimensions into the model in order to fill the observed limitation of this study.

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APPENDICES

Appendix I: Questionnaire

Addis Ababa University

School of commerce

Department of Logistics and Supply Chain Management

Dear Participant,

The purpose of the questionnaire is to collect primary data to conduct the study for the partial fulfillment of Master of Arts in logistics and supply chain management. This is purely for academic purpose to study effectiveness of supply chain management and its effect on competitiveness on EALG and the information you provide will be kept strictly confidential. Hence, I kindly request you to fill the questionnaire genuinely. Thanks in advance for your cooperation.

General Instruction

➢ Please do not write your name or address on the questionnaire. ➢ Please put a tick (√) mark in the appropriate box of your answer ➢ Contact address: if you have any question please contact me through the following addresses

Telephone: 09 09789134

Email: derejeku@yahoo.com

Section A: General information

A. Sex

1. Male ☐ 2. Female ☐

B. Age

1. less than 25 year ☐ 2. 25-35 year ☐ 3. 36-45 years ☐ 4. Above ☐ 45 year

C. Education Level

1. Certificate ☐ 2. Diploma ☐ 3. First degree ☐

4. Second degree & above ☐

D. Working unit

1. MRO ☐ 2. Warehouse - Inventory ☐ 3. Catering ☐

4. Facilities & based service ☐ 5. Cargo ☐ 6. Procurement ☐

E. How long have you been working for this organization?

1. Below 5 years ☐ 2. 5-10 years ☐ 3. 11-15 years ☐

4. 16-20 years ☐ 5. Above 20 years ☐

Section B: Supply chain Management Practices in EAG

Please put a tick (√) mark on the appropriate number to indicate the state of logistics management practice in EAG.

The item scales are five-point scales with 5 strongly agreed, 4 agreed, 3 Neutral, 2 disagree, and 1 strongly disagrees.

	Supply chain management practices	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
A	**Customer (Client)Relationship**	1	2	3	4	5
1	EAG Provide right cargo and logistic services to customers all the time	1	2	3	4	5
2	EAG provide quick response to customer needs	1	2	3	4	5
3	EAG had proper customer compliant handling on cargo and logistic services	1	2	3	4	5
4	EAG has easy and flexible customer ordering system on cargo and logistic services	1	2	3	4	5
5	EAG achieve minimum customer order processing cost on cargo and logistic services	1	2	3	4	5
6	EAG has regular customer satisfaction evaluation and measurement on cargo and logistic services	1	2	3	4	5
7	EAG frequently determine future customer expectations on cargo and logistic services	1	2	3	4	5
8	EAG periodically evaluate the importance of the relationship with its customers.	1	2	3	4	5
B	**Strategic Supplier Partnership**					
1	EAG consider quality as its number one criterion in selecting suppliers	1	2	3	4	5
2	EAG regularly solve problems jointly with its suppliers.	1	2	3	4	5
3	EAG have helped its suppliers to improve their product quality.	1	2	3	4	5
4	EAG have continuous improvement programs that include its key suppliers.	1	2	3	4	5
5	EAG actively involve its key suppliers in new product development processes.	1	2	3	4	5

C	**Information flow management**					
1	EAG has Smooth information flow to all cargo and logistic services	1	2	3	4	5
2	EAG has adequate information flow in cargo and logistic services	1	2	3	4	5
3	EAG has reliable information flow in cargo and logistic services	1	2	3	4	5
4	EAG has information flow coordinates cargo and logistic services	1	2	3	4	5
5	EAG has information flow communicates cargo and logistic services	1	2	3	4	5
6	EAG has information flow uses to plan cargo and logistic services	1	2	3	4	5
D	**Level of Information Sharing**					
1	EAG inform partners in advance of changing needs.	1	2	3	4	5
2	EAG partners share proper information with EAG	1	2	3	4	5
3	EAG partners keep EAG fully informed about issues that affect cargo and logistic services	1	2	3	4	5
4	EAG partners share business knowledge of core business processes	1	2	3	4	5
5	EAG and partners exchange information that helps establishment of cargo and logistic business planning.	1	2	3	4	5
6	EAG and partners keep each other informed about events or changes that may affect the other partners.	1	2	3	4	5
E	**Integration**					
1	The extent of integration between Line Maintenance and Ethiopian cargo and logistics service positively affected EAG performance.	1	2	3	4	5
2	The extent of integration between Component Maintenance and Ethiopian cargo and logistics service positively affected EAG performance.	1	2	3	4	5
3	The extent of integration between Schedule Base maintenance and Ethiopian cargo and logistics service positively affected EAG performance.	1	2	3	4	5
4	The extent of integration between Line Maintenance and Engineering positively affected EAG performance.	1	2	3	4	5
5	The extent of integration between Material	1	2	3	4	5

	Requirement Planning and Ethiopian cargo and logistics service positively affected EAG performance.					
6	The extent of integration between Ethiopian cargo and logistics service and Finance positively affected EAG performance	1	2	3	4	5
7	The extent of integration between Ethiopian Catering and cargo and logistics service positively affected EAG performance	1	2	3	4	5
8	The extent of integration between Ethiopian base services, facility maintenance and cargo and logistics service positively affected EAG performance.	1	2	3	4	5
9	The extent of integration between Ethiopian cargo and cargo and logistics service positively affected EAG performance.	1	2	3	4	5
10	The extent of integration between Warehouse and cargo and logistics service positively affected EAG performance.	1	2	3	4	5
F	**Quality of Information Sharing**					
1	Information exchange between EAG partners is timely	1	2	3	4	5
2	Information exchange between EAG partners is accurate	1	2	3	4	5
3	Information exchange between EAG partners is complete.	1	2	3	4	5
4	Information exchange between EAG partners is reliable	1	2	3	4	5

Section C: Supply chain management practice impact on organizational competitiveness and performance of EAG

5. Questions related with company competitiveness and performance. Please put a tick (√) mark on the appropriate number to indicate the extent to which cargo and logistic services management practice contribute to the organizational competitiveness and performance of EALG.

The item scales are five-point scales with 1=Strongly disagree, 2=Disagree, 3=neutral, 4=Agree, 5= Strong agree.

	EAG organizational competitiveness and Performance parameter	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
	Competitive advantage aspect					
a	**Price/cost**	1	2	3	4	5
1	EAG is cable of competing against major competitors on cargo and logistic services based on low price	1	2	3	4	5
2	EAG provide competitive price on cargo and logistic services	1	2	3	4	5
3	EAG are offer prices as low or lower than its competitor on cargo and logistic services	1	2	3	4	5
b	**Quality**					
1	EAG capable of offering product quality and performance that create high value to customer on cargo and logistic services	1	2	3	4	5
2	EAG able to compute based on quality services on cargo and logistics	1	2	3	4	5
3	EAG offers service that are highly reliable on cargo and logistic services	1	2	3	4	5

c	**Network innovation; EAG is capable of introducing new network destinations faster than major competitors**	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1	EAG is capable of introducing new network destination in the market place on cargo and logistic services	1	2	3	4	5
2	EAG alters its network destination offerings to meet client needs on cargo and logistic services	1	2	3	4	5
3	EAG provide and deliver services on time on cargo and logistic services	1	2	3	4	5
4	EAG demonstrate fast product environment on cargo and logistic services	1	2	3	4	5
5	EAG is first in the marketing introducing new network destinations on cargo and logistic services	1	2	3	4	5
d	**Performance aspect parameter**	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1	cargo and logistic services practices have led to the growth of EALG market share	1	2	3	4	5
2	Through the implementation of Supply chain and logistics management practices EAG has grown its sales	1	2	3	4	5
3	Supply chain Logistics management practices have led to the growth EAG return on investment	1	2	3	4	5
4	Through the implementation of cargo and logistic services management practices EALG has increased its profit	1	2	3	4	5
5	EALG has got return on investment by applying supply chain management practice	1	2	3	4	5
6	Competitive position of EALG has increased due to implementation of cargo and logistic services practice	1	2	3	4	5
e	**On time performance ,Delivery Dependability; EAG capable of providing on time the services required by customer(s).**	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
	EAG capable of providing on time services requested by customer on cargo and logistic services	1	2	3	4	5

6. Interviews related with company competitiveness and performance

1. What are the practices of strategic supplier partnership in EAG?
2. What are the effects of strategic supplier partnership?
3. What are the practices of customer relationship management in EAG?
4. What are the effect and importance of internal integration in EAG?
5. What is the level of information sharing with EAG partners?
6. What are the roles of the information sharing for in the company?
7. What are the supplier partnership practices of the company?
8. What is the major competitive dimension of the company and why you choose?

THANK YOU!!!

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.957[a]	0.955	0.995	0.01698
a. Predictors: (Constant), customer relationship, internal Integration, Level of information flow and sharing, Strategic supplier partnership, Quality of Information exchange				

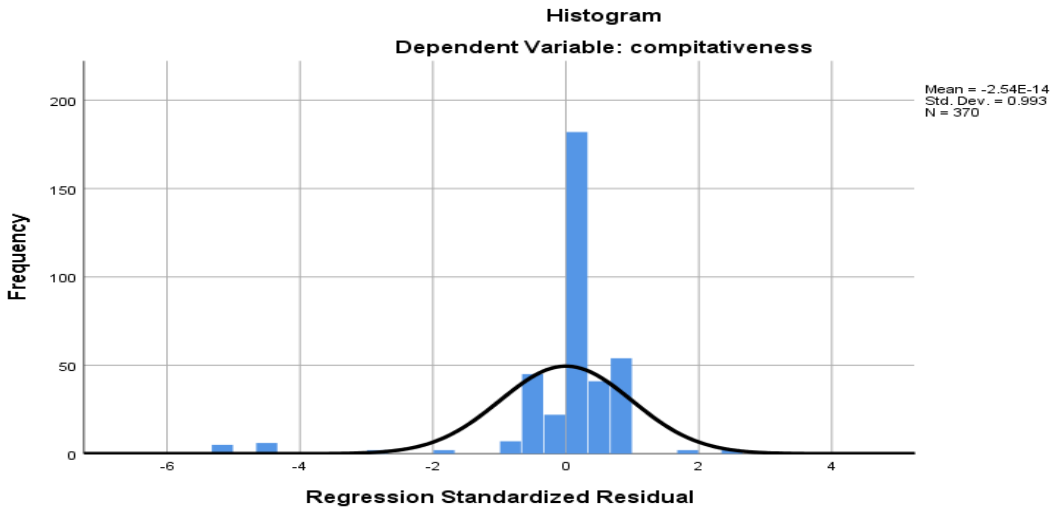
ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.358	5	3.872	13434.99	.000[b]
	Residual	0.105	364	0		
	Total	19.463	369			
a. Dependent Variable: competitiveness						
b. Predictors: (Constant), customer relationship, internal Integration, Level of information flow and sharing, Strategic supplier partnership, Quality of Information exchange						

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.092	0.016		5.569	0
	SP	0.164	0.003	0.31	61.823	0
	QI	0.131	0.005	0.18	26.321	0
	LI	0.192	0.004	0.256	47.197	0
	IE	0.247	0.006	0.306	41.81	0
	CR	0.242	0.004	0.36	68.925	0

a. Dependent Variable: competitiveness

Dw test

Model Summary[b]	
Model	Durbin-Watson
1	2.286[a]
a. Predictors: (Constant), customer relationship, internal & external Integration, Level of information, Strategic supplier partnership, Quality of Information exchange	
b. Dependent Variable: competitiveness	



VIF

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
internalex~n |      3.62    0.276246
QualityofI~e |      3.17    0.315481
Levelofinf~n |      1.98    0.504093
cutomerrel~p |      1.84    0.543937
Strategics~p |      1.70    0.588943
-------------+----------------------
    Mean VIF |      2.46
```

Omitted variable test

```
. ovtest

Ramsey RESET test using powers of the fitted values of compitativeness
      Ho:  model has no omitted variables
                  F(3, 361) =     95.35
                  Prob > F =      0.0000
```