ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

LOGISTICS & SUPPLY CHAIN MANAGEMENT DEPARTMENT

FACTORS AFFECTING INTEGRATED LOGISTICS PERFORMANCE: THE CASE OF ETHIO TELECOM

A THESIS SUBMITTED TO THE DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN DEPARTMENT FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF ART IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

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ID No: GSE/6728/13

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June 2023

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DECLARATION

I Yonatan Afrasa Gultie hereby declare that this work has not been previously submitted and approved for award of a Master of Art degree by Addis Ababa University or any others. To the best of my knowledge and belief, the thesis contains no material previously published by another person except where due reference is made in the thesis itself.

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STATEMENT OF CERTIFICATION

Statement of Certification this is to certify that the thesis carried out by Yonatan Afrasa Gultie on the topic entitled: “Factors Affecting Integrated Logistics Performance in case of ethio telecom” is his original work and is suitable for submission for the award of Master of Art Degree in Logistics and Supply Chain Management.

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Approval Sheet

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ABSTRACT

The aim of the study was to investigate the factors affecting integrated logistics performance of Ethio telecom. The research adopted explanatory and descriptive research design. The study's target population were ethio telecom head quarter employees and management. The research used a standardized questionnaire in collecting data from 216 respondents and the instrument used in this study was close-ended questionnaires. Data collected was analyzed by using descriptive statistics and statistics such as correlation and regression. The study used reliability of data collection instrument measured by Cronbach's Alpha. The study resulted that there is a positive relationship between independent variables and integrated logistics performance of the company. The regression analysis resulted information technology, organizational structure, employee competence and bank process has a moderate positive effect on integrated logistics performance. The study showed that there existed a weak positive relationship between infrastructure, custom process and supplier's performance on integrated logistics performance of the company. The regression analysis resulted information technology, organizational structure, employee competence and bank process has a positive significant effect on integrated logistics performance. The study found that infrastructure, custom process and supplier's performance has a weak positive effect and insignificant on integrated logistics performance of the company. The study concluded that information technology, organizational structure, employee competence and bank process has a moderate positive significant effect on integrated logistics performance. Whereas, infrastructure, custom process and supplier's performance has a week positive effect and insignificant on integrated logistics performance.

Key Words: Information technology, inventory management, transportation management, organizational structure, employee competence, and integrated logistics Performance

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CHAPTER ONE

INTRODUCTION

This chapter presents an overview of the study. It includes background of the study, statement of the problem, research questions, objectives of the study, definition of terms, significance of the study and scope of the study.

1.1 Background of the Study

Logistics is the process of planning, implementing, and managing procedures for the efficient and effective movement and storage of commodities, including services, and related information from the point of origin to the point of consumption in order to meet customer demands (CSCMP, 2010).

According to European Logistics Association, logistics is a concept involving the organization planning, control and execution of the flow of goods from their places of manufacture through the realm of production and distribution to the final consumer with the aim of satisfying the demands of the market using minimum effort and cost.

According to the Council of Logistics Management (CLM), logistics management is concerned with the development and implementation of a methodology for ensuring the efficient and cost-effective attainment of logistics objectives. The objective of logistics objectives is delivering the right product in the right quantity, in the right quality, at the right location, at the right time, and with the right price to the right consumer.

Logistics integrates all internal and external organization operation activities into a single activity or process and resulting in improved customer service at the lowest possible total cost (Martin K. et al. 2017).

Because of its multidimensionality, performance is a challenging term to describe. It can be defined as a company's ability to satisfy its clients, according to Masudin et al. (2018). According to this viewpoint, logistics is seen as being crucial for both organizations and consumers in the age of globalization, where the supply chain runs more than ever in a global setting.

It is widely acknowledged that logistics performance is a significant factor in organizational performance since various firm services (inventory, warehouse, supply, etc.) rely on logistics performance. According to resource theory, logistics performance is defined as the ratio of services given to resources used. Efficient logistics ensures customer satisfaction by using less resource. In other words, effective logistics management entails managing the operational processes (manufacturing, routing, storage, packing, and delivery) in a way that ensures the availability of high-quality goods in the right quantities at the right times and locations (Ndjambou, 2018). Logistics performance plays a crucial role in organizational performance through boosting the company's competitiveness by enhancing the quality and timeliness of the supply chain and lowering coordination costs and transaction risks (Masudin et al. 2021).

Integrated logistics is management (forecasting, planning, organizing, operational management, control) of information and financial flows related to the life cycle of a product, from product development to delivery, production and distribution to final consumers in order to maximize customer satisfaction at the lowest possible cost and its ultimate effect is to increase productivity. The goals of integrated logistics management include movement consolidation, minimum variance, quick reaction, and low inventory (Martin K. et al. 2017).

Also Martin K. et al. (2017) concluded that, integrated logistics is made up of a variety of supporting components and combination of all these components results in highly efficient processes that significantly boost productivity, optimize logistics networks, harmonize global logistics procedures, cut costs, enhance customer service, and open the door to the use of virtual reality tools for logistics improvement.

As ethio telecom is the company that has been established on 1894 and restructured and renamed itself as ethio telecom in 2010. Telecommunication sector was a monopoly in Ethiopia with a government-owned company, Ethio telecom and its monopoly was ended when license given to Safaricom in 2021. The telecommunications industry moves at a breakneck pace in order to comply with international regulations, boost profitability, meet the needs of its customers, and deliver cutting-edge communication technology. Therefore, in order to meet the difficulties of the global telecom business, and the competitive environment, ethio telecom has kept pace by continuously enhancing its business operations through innovative products and services,

employees' performance and using its logistics capacity and channels. To obtain such critical products, the logistics of ethio telecom needs to integrate with sales, inventory, transportation, warehouse, procurement and information technology departments to harmonize logistics processes. Therefore, this study will assess that factors affecting integrated logistics performance of ethio telecom and forward some suggestions to solve the problem at hand.

1.2 Statement of the Problem

Globally telecom industry becomes more competitive, and operators are struggling to find paths to profitable growth. The same will be true in Ethiopia. Ethiopian telecom market which was a monopoly market no longer continue with only a single telecom operator. Two operators; Ethio telecom already in the market and Safaricom is expanding its accessibility both in infrastructure and channel. In more competitive industry, markets are saturated and new subscribers are getting more expensive to acquire. To get a better deal, current subscribers can easily switch operators ("churn out"). The rising pressure to retain existing customers and the need to improve contributions to customers' business, is making operators to view provide beyond customer expectation as a key capability to stay competitive. All services can be considered as a factor that could have a considerable impact on the customer's satisfaction and logistics activities can a means to achieve the goal. As such, companies need to have a well-defined relationship between their competitive strategies and their logistical missions and concepts.

Logistics is a basic tool or it is an important weapon in the battle for competitive advantage. To ensure companies productivity in competitive environment, a well-defined relationship between strategies and logistical missions and concepts is vital. Logistics helps firm in several scenario like having the right resources in place at the right time to get the goods delivered to the right location in the correct condition.

To compete and survive in the industry, telecom operators are using and implementing different techniques by transforming their business models around customer value to act quickly to the new opportunities, existing challenges and upcoming competition. In competition it is known that customers have multiple options, they can do everything due to balance of power is in the hands of customers and customers are impatient and want immediate satisfaction which is not concern in monopoly industry. logistics performance in addressing and add value to customers'

needs and wants through timely response can contribute a lot for customer satisfaction and can be used as competitive advantage.

To increase success and ensure survival, it is expected from organizations to overcome challenges that are presented by logistics (Neeraja, et al., 2014). Survival is difficult if the product or service does not reach the customer at the right place and correct time. Organizations must fulfil the needs of their customers by responding strategically, and globalization has altered how businesses make decisions. Because logistics has been incorporated into operations that provide services to clients, it is critical that businesses focus on this part of the business. Competition demands that customers receive products or services that are cheaper, better, and faster (Pienaar & Vogt, 2016). Firms need to achieve high levels of productivity in order to be cost leaders and market leaders.

Companies can be the best in class and boost their competitiveness by obtaining value from the supply value chain's linkages, notably logistics, and by providing excellent customer service (Du Toit & Vlok, 2014). The goal of logistics is to be efficient and effective across the value chain, and to ensure that the value chain is profitable for all supply chain players. Logistics is defined as ensuring that information and items are made available to the client at an acceptable price, delivered to the proper place, and available in the right quality and numbers (Sreenivas & Srinivas, 2015). Integrating logistics activities to ensure productivity is great factor of survival and win the competition. In integrated logistics, there is synergy between all activities, and this helps to increase collaboration among different functions and higher visibility of the tasks, anticipating and serving customers beyond their expectation, reduction in operational costs, higher profit margins due to excellence in logistics activities and flexibility of the channel and its members.

Impact of logistics activity on company performance is significant and critical. Performance of logistics impacts tremendously on the performance of an entire organization (Paulraj and Chen, 2007); this is mainly because it links the organization to the customers and thereby has much influence on customer satisfaction which influences customer loyalty, arguably the single most important asset of an organization. There are many factors that affect logistics performance like tore managers was lack of delivery of the right products in time and in good condition and other factors. According to Tang Ying (2013), inventory, facilities & warehouses, transportation,

purchasing & sourcing, information & communication technology management are among factors affecting integrated logistics activities. It was also concluded by Lee et al (2017) factors like industrial policy priorities, strategic infrastructure development, public-private logistics market growth, and communication network configuration. Habtamu Mekonnen (2020) internal and external factors affect integrated logistics performance. Internal factors such as Inventory practice, Transportation practice, IT infrastructure, Procurement process and external factors like Custom process, Banks procedure, Supplier records and Pre import document affect logistics performance of a firm.

The report identifies procurement related issues (i.e. requirements, foreign currency, inspection), demand forecasting error, covid-19 pandemic, limited human resource, vehicles regulation during shipment and quality of devices were the difficulties in integrated logistics of ethio telecom (ethio telecom annual report, 2021/22). It is observed in ethio telecom context; it is common to wait for long time to get several devices after payment is issued for the product. Based on gap detected and pilot survey conducted considering critical customers and shops of ethio telecom, it is confirmed that delivering a product at exact time is challenging task. This has critical impact on customer experience and customers may look to shift to other telecom business providers. Competitors consider this gap and start to approach customers. Logistics related gap has its own contribution. Several studies conducted on of factors affecting integrated logistics in different industry: telecom or others industry. But in Ethiopian context, studies conducted in telecom sectors are limited and were conducted under monopoly environment in which customers have no alternatives to churn. Considering above discussion, industry change from monopoly and limited research on integrated logistics in case of Ethiopian telecom industry, this study aimed and carried out to investigate factors affecting integrated logistics performance in case of ethio telecom to give some data based insights.

1.3 Objective of the Study

1.3.1 General Objective

The main objective of this study is to examine factors affecting integrated logistics performance in case of ethio telecom.

1.3.2 Specific Objectives

- To assess the integrated logistics practices in case of ethio telecom.
- To identify the internal factors affecting the performance of integrated logistics in case of ethio telecom.
- To identify the external factors affecting the performance of integrated logistics in case of ethio telecom.
- To assess the performance of integrated logistics in case of ethio telecom.

1.4 Research Questions

1) How integrated logistics is being practiced in ethio telecom?
2) What are the internal factors affecting the performance of integrated logistics in case of ethio telecom?
3) What are the external factors affecting the performance of integrated logistics in case of ethio telecom?
4) What/how is the performance of integrated logistics in case of ethio telecom?

1.5 Significance of the Study

The study expected to give both practical and theoretical significance. It helps the company to look at its problems and provides additional input for top management in designing ways to enhance the current gaps in order to satisfy the required demand of customers.

Findings of the study is useful to researchers and scholars as it contributes to the body of knowledge in the area of integrated logistics. It also assists other researchers to conduct further studies on areas of interest not yet exploited. It assists the management of the company to evaluate how effective they have been in integrated logistics performance and may enable them to identify the gaps of integrated logistics practice to enhance their integrated logistics performance.

Finally, the findings of the study can be used those scholarly interest in integrated logistics of telecommunication industry and other sectors, and the study provide a source of reference, literature review and can serve as a starting point for additional research.

1.6 Scope of the Study

The study delimited to factors affecting integrated logistics performance which is adopted by the company, these are inventory, warehouse, transportation, procurement and information technology. These factors are identified among others from various existing theories, models and have been used previously conducted studies to examine factors affecting integrated logistics performance. The study conducted from November 2022 to June 2023 and the researcher based the study on head office of ethio telecom, Addis Ababa.

1.7 Limitation of the Study

In this study, the researcher tackled a constraint of delayed feedback from respondents but the researcher tried to gain the respondents' support by clearly specifying the importance of the study especially for marketing staffs. Carelessness of respondents to fill the questionnaire was another limitation that tackled to the researcher in order to accomplish the study.

1.8 Definition of Key Terms

Integrated Logistics: Integrated logistics is defined as "the process of prediction of customer needs", where the interests of company leads to raising capital, high-quality raw materials, plenty of experienced people, using of latest technologies and precise information are necessary to fulfill the needs and wishes, requirements of customers. The management of integrated logistics chain is called the integrated logistics management. (John Snow, Inc., 2017).

Logistics: Logistics comprises all information and material flows inside an organization; it is the act of strategically managing parts and finished inventories (and related information flow) around the business in order to fulfill orders at the lowest possible cost (Christopher, 2016).

Inventory Management: It is the process of constantly having the optimal number of row materials for transformation and finished goods available in order to provide them quickly and in a competitive manner to meet a customer's inventory demand (Bowersox et al., 2010).

1.9 Organization of the Study

The study contained five chapters. The first chapter present introduction of the study whereby backgrounds of the study, statement of problem, objectives of the study, research questions, significance of the study, scope and organization of the paper discussed. Chapter two deals with different kinds of literatures directly related to the subject which focuses on factors affecting integrated logistics practice and related empirical reviews. The third chapter is research methodology implemented to conduct the study. Chapter four is data analysis and result part of the paper. Chapter five is summary of findings, conclusion and recommendation of the researcher considering the output.

CHAPTER TWO

RELATED LITERATURE REVIEW

Introduction

This chapter's deal with theoretical review, empirical review and conceptual framework of the study. It summarizes what has been said and who the primary writers are.

Theoretical review of the research: This part is deals with definition of concepts on integrated logistics, historical development of integrated logistics, integrated logistics strategy, benefits of integrated logistics, and integrated logistics practice and factors of integrated logistics performance.

Empirical review of the research: it outlines important research findings in connection to the study area.

Conceptual framework: It demonstrates the nature of correlations between research variables based on the literature review portion of the theoretical and empirical review.

2.1. Theoretical Literature Review

2.1.1. Integrated Logistics Concept

Logistics is an integrator of all activities and systems that directly or indirectly are related to the flow of material and information (Slats et al., 1995). Bowersox, Close & Cooper, (2010) summarized integrated logistics as; a) The management of material and information flows as a single entity places more focus on overall performance than on the execution of individual operations. The new framework places a lot of emphasis on integration, and the material and information flows are considered as integrating several dimensions. b) Multiple organizational coordination levels, inventories, or slack on various types of waste, which were used in the traditional structure to coordinate material flow, are no longer necessary. Instead, the structure of the supply chain incorporates control over the movement of information and material. c) Instead of optimizing the material flow to fit the structural premises, it is more important to control the structural premises in order to manage the material flow. d) Integration of procedures, roles, academic fields, organizational units, and other elements is absolutely essential. It means that managing interactions and teamwork is essential.

Logistics combines all internal and external company activities into a single activity or process, providing customer service at the lowest possible cost. To maximize client satisfaction and cut costs, integrated logistics management entails (forecasting, planning, organizing, operational management, control) flows of information and financial to product life cycles, from product development to delivery, production, and distribution to final consumers. The critical effect is increased productivity. Because integrated logistics is complex to implement, it may take several years. (Integrated Logistics Support) (John Snow, Inc., 2017).

2.1.2 Historical Development of Integrated Logistics

A brief history of logistical integration and the logistical integration process can be broken down into four stages:

Stage 1. The first stage in the process is generally considered to have been the "revolution in physical distribution management," which started in the early 1960s in the U.S.A. and involved the integration into a single function of activities concerned with the outbound distribution of finished goods. Formerly, logistics "was a fragmented and frequently disorganized set of activities distributed across several organizational functions, with each separate function having its own budget, set of priorities, and measures. (Lambert and Stock, 1993). For the first time, separate distribution departments that managed transport, warehousing, inventory management, materials handling, and order processing could be established. The integration of these activities within physical distribution management (PDM) had three beneficial effects: (1) It enabled businesses to take advantage of their close d interdependence between them, creating a "distribution mix" that could meet client requirements at minimum cost. In designing an integrated distribution system, they aimed to achieve an optimal trade-off between the costs of the various activities. In the past, conventional accounting frameworks have blocked this. The creation of a new "total cost approach" to distribution accounting, which was a need for PDM, made it possible to analyze distribution expenses in much greater depth. This frequently revealed, for example, that a considerable proportion of a company's overall output was supplied in little quantities at a high unit delivery cost. In order to maximize income, sales teams were willing to supply very tiny orders, even if it meant losing money in some circumstances. Companies began to raise minimum order volumes, cease deliveries to small shops, and successfully rationalize their delivery networks after these inefficiencies were uncovered (McKinnon, 1999). (2) It strengthened the client

focus of distribution. PDM was first driven by a desire to reduce costs, reflecting the conventional perception of distribution as merely a resource drain on companies' resources. Therefore, distribution may have an impact on the balance sheet's profitability on both the cost and revenue sides. A closer coordination of order processing, warehouse, and delivery operations was the foundation for the new distribution divisions' efforts to build more explicit customer service initiatives. (3) It raised the status of distribution within the management hierarchy. Distribution started to assume its position alongside production, marketing, and sales after it was recognized as a distinct activity, with its own budget and frequently independent representation at the company board level. A new generation of managers was appointed to oversee the complete range of distribution activities and develop distribution plans for their companies.

Stage 2. PDM's initial focus was solely on the delivery of finished goods. Later, the same fundamental idea was utilized for the inbound transportation of materials, components, and subassemblies, also referred to as "materials management." With total responsibility for the movement, storage, and handling of goods upstream and downstream of the production operation activity, many businesses had created "logistics departments" by the late 1970s. As a result, they were able to take advantage of higher level synergies, share the usage of logistical resources between inbound and outbound flows, and apply logistical principles more uniformly throughout the company (Bowersox, Close & Cooper, 2010). Fabbes-Costes and Colin (1999) use the term "integrated logistics" to describe how production, distribution, and inbound supply are coordinated. Additionally, they distinguished between later stages of this process where logistics expands its effect downstream into after-sales support and the recycling and disposal of waste and upstream into product development. The result of this process was referred to as "total logistics."

Stage 3. After achieving a high level of integration within the logistics function, several businesses attempted to better integrate logistics with other departments. The "vertical" structure of most firms is based on a number of distinct operations like production, purchasing, marketing, logistics, and sales, each with its own goals and budgets. These functions are often represented as "silos" or "stovepipes" (Christopher, 2016). Senior managers frequently prioritize the profitability of their functions over the success of the company as a whole. Given that logistics interacts with the majority of other tasks, it can play a significant coordinating role in these situations. As Morash et al. (1996) observe, "the strong boundary spanning role found for logistics implies that logistics

can be used as a vehicle for cross-functional integration, a nexus of communication and co-ordination, and for better system performance.” According to their argument, "functional boundaries need to be made flexible and virtually transparent in the pursuit of cross-functional excellence."

Business process re-engineering (BPR), which first gained popularity in the early 1990s (Hammer and Champy, 1993), changed the relationship between logistics and associated functions. A number of basic processes that transcend conventional functional lines and are primarily customer-focused are identified by BPR. The creation of additional cross-functional teams and the creation of new working connections between functions are necessary for the effective management of these activities. These are acknowledged to be the fundamental operations that power most businesses, with order fulfillment the purpose of all logistical operation activities is arguably the most important (Christopher, 2016).

Bowersox, Close & Cooper (2010), who put an emphasis on four elements that are “common to all logistical reengineering initiatives”, have applied the BPR principles to logistics. The first and most significant one is "systems integration." Though they admit that "effective application of systems integration in logistics is operationally difficult," the authors argue that "a logistical system with cross-functional integration should achieve greater results than one deficient in co-ordinated performance." The other three factors are benchmarking, “decompositional” analysis of individual logistics activities, and the quest for continuous improvement.

Stage 4. So far, every change has been considered in relation to the management of a single company. It is improbable that the movement of goods throughout a supply chain will be optimized if each company in the supply chain optimizes its logistical operations independently. Companies at various levels in the chain must coordinate their operations in order to achieve greater supply chain optimization. This is what supply chain management (SCM) is all about. The goal to reduce inventory has certainly been the primary motivator of SCM over the last 20 years. According to supply chain (or "pipeline") mapping, a large portion of a supply chain's inventory is located at "organizational boundaries," or the points where goods are transferred from one business to another (Scott and Wesbrook, 1993). Firms build up buffer stock as a result of uncertainty about supplier and customer behavior. Companies can minimize lead times and stock levels to their mutual advantage as well as the advantage of the supply chain as a whole with a more open

information exchange and closer integration of logistical activities. While others accept the importance of freight transportation in the creation of successful supply chain links. The European Logistics Association (2000) recommended that participants in an integrated supply chain work together to standardize handling systems that make efficient use of vehicle and warehouse capacity and to increase vehicle load factors, reduce empty running, and achieve optimal freight allocation between modes. It is challenging to pinpoint the precise timing of the integration process because it has spread at varying rates across various industrial sectors, nations, and company size categories. There are still a lot of small and medium-sized businesses whose distribution management is still highly fragmented and which have not fully adopted the PDM concepts. The sequencing of the four stages has been more consistent, even though the logistical integration process has moved at varying rates at the level of each particular organization. There is general agreement, for instance, before attempting to connect internal logistics operations with those of external suppliers and distributors, companies must first integrate their internal logistics operations.

According to Stevens (1989), who looked at the nature of the transitions between the various stages of integration, different factors are more important at each stage. He argues that the main factor advancing businesses from stage 1 to stage 2, or "functional integration," has been the deployment of new technologies. Stage 3 (internal integration) transition generally entails a change in organizational structure, whereas stage 4 (external integration) requires management to go through a significant attitudinal adjustment.

It is also important to note that outsourcing of logistical tasks reflects the multistage integration of businesses' logistical operations. Companies have been externalizing an increasing percentage of their logistical spending while this integration process has been ongoing (McKinnon, 1999). In the past, they would individually outsource tasks like transportation or warehousing. In especially in nations with deregulated road freight markets, like the UK, it became popular for businesses to contract out their whole distribution operation during the 1970s and 1980s.

2.1.3. Integrated Logistics Practice

The item must first be ordered and then delivered. The item must be properly stored after receipt till distribution. The inventory control plan of a country determines how much stock to keep and where to keep it. To meet client requests, adequate stock should be available until a fresh order is

received; however, supplies that expire, are squandered, or exceed storage capacity must be avoided. Products are stored for two reasons: (1) to ensure their quality or condition, and (2) to make them ready for distribution (Desalegn, 2015). Integrated logistics often encompasses a number of tasks such as demand forecasting, procurement, supplier selection, item transportation, and inventory management (John Snow /DELIVER, 2004).

2.1.3.1 Procurement Practice

Procurement is the acquisition of the goods, services, capabilities, and knowledge needed by businesses from the right source, the right quality, in the right amount, at the right price, and at the right time to sustain and manage both the primary and auxiliary operations of a firm (Triantafillou, 2007). An effective and efficient procurement system is crucial for the success of a business. The main objectives of procurement are to provide continual raw material flows at the lowest possible cost, improve the quality of manufactured finished items and to maximize customer satisfaction. Procurement can help to achieve these goals by actively looking for better materials and dependable suppliers, collaborating closely with strategic suppliers to improve the quality of raw materials and utilizing their expertise, and involving suppliers and purchasing staff in product design and development efforts (Wisner et al., 2012). An organization's procurement practices are a collection of actions made to support efficient supply chain management (Coggburn, 2017).

2.1.3.2 Inventory Management Practice

Inventory management is essentially a set of policies, procedures, and controls that systematically monitor and observe inventory levels and intelligently decide at what levels the inventory should be maintained, when the inventory should be replenished, and how much of an inventory quantity should be ordered. Planning, organizing, and managing inventory is a continuous activity that aims to reduce the investment in inventory while also maintaining supply and demand balance (West, 2009). Backward and forward logistics integration can help firms to save operational costs with optimum inventory level in the digital era. The information technology in logistics can help to reduce costs including inventory management cost and has been shown to benefit for suppliers, particularly in times of unpredictable environment (Agrawal et al., 2015).

2.1.3.3 Transportation Management Practice

Transportation is the process of transferring goods from the point of manufacture or supply to the final destination or location of consumption. It is the art of getting the right items in the right

quantities to the right places at the right time to the appropriate facilities. It entails commodity transportation, delivery, and receipt, correct storage, and inventory control for receipt and distribution, as well as information systems (Mulken L. 2015).

Today several types of uncertainty impact road transport operations. Delivering superior customer value in this industry is frequently hampered by uncertainty in the form of delays, poor coordination, delivery constraints, and fluctuating demand (Sanchez-Rodrigues et al., 2010). Real-world data demonstrates that transport companies that lack high-quality information eventually incur higher costs and undesirable stock holdings (Sanchez-Rodrigues et al., 2010). Due to these disruptions, the transportation sector must rely heavily on information and communication technology (ICT) to make its operations more efficient and effective (Cetinceviz and Bayindir, 2012).

2.1.3.4 Information Technology Practice

Information communication technology can be defined as a set of technologies used to analyze, store, and transmit information, as well as to encourage interoperability, efficiency, cost reductions, and machine-to-machine interactions in order to improve a company's performance. Previous studies has indicated the importance of ICT in supply chain management and its impact on firm performance (Kassem et al., 2019). Information technology has been recognized as an essential factor in integrating various processes across functional departments, including upstream and downstream partners, in order to improve logistics practices. In today's digital age, the function of information technology is not only auxiliary, but also active, resulting in continuous competitive advantage for a supply chain. Information technology helps in reducing the bullwhip effect and thus improving supply chain effectiveness and logistics efficiency (Han et al., 2017).

Real-time information exchange is made possible by technology, and supply chain members benefit from increased connectivity and supply chain visibility, which increases the robustness and resilience of supply chains (Wankhade and Kundu, 2020). The lack of real-time insight into goods movement or dynamics on both the supply and demand sides leads companies to hold greater stocks than actual demand in order to anticipate unexpected requests, and limits demand forecasting by relying solely on historical data and static lead times. Lead time, demand uncertainty, and supply variability are crucial in the supply chain when logistical activities are influenced by unpredictable tasks such as port and traffic delays or irregular customer demand

caused by price swings. As a result, supply chain visibility becomes critical in assisting organizations in better understanding the external factors that will influence decision-making in changing supply to meet demand. With increased visibility, supply chain members can estimate ideal inventory levels and minimize order fulfillment challenges (Wankhade and Kundu, 2020).

The use of technology to improve inventory visibility and tracking, speed up delivery with on-demand fulfillment, and satisfy customer demand with an agile inventory strategy are all ways for improving on-time delivery, according to Karl Siebrecht (2019). One of the most popular technologies used by companies to manage their road transport operations is the global positioning system ("GPS") technology. Some of the most emphasized advantages of GPS use include cost savings and faster internal operations (Mintsis et al., 2004). However, the degree to which these advantages are realized primarily depends on the accuracy of the information provided to dispatchers, such as details regarding the location and motion of a vehicle, the amount of time a driver spends driving, and a driver's break periods (Mintsis et al., 2004). The positive impact of information communication technology enabled quality information on decision-making and company performance, particularly when firms operate in highly competitive and uncertain situations, has already been highlighted in information communication technology literature regarding GPS use in road transportation (Rishel et al., 2003). The information technology components assist in gathering qualitative data from the supply chain process and interpreting it for dissemination among stakeholders. Information technology assists in tackling critical issues like as cyber-security, anti-counterfeiting, and enterprise resource planning enabled supply chain. Information technology also contributes to the social-exchange theory for the mutual benefit of supply chain partners in order to increase overall performance (Ambrose et al., 2010).

Supply chain management and information communication technology work together to support organizational information processing theory for the provision of information exchange and quality across stakeholders (Dubey et al., 2018). Logistics integration across the network necessitates the ability to learn and collaborate. Thus, dynamic capability theory assists networked actors in supply chain procurement, storage, and distribution. As a result, information exchange, information quality, suppliers, and logistics networks are the most related in the supply chain and have the most impact on the organization's performance (Bag et al., 2018).

Information technology resources can be transformed into a value element to the firm and other stakeholders through an efficient supply chain and it improves communication and has a direct impact on the firm's operational and overall performance success. (Kecek et al., 2019). The information technologies can improve the SCM capabilities by the way of responding as per market conditions. Furthermore, these technologies assist in supply chain coordination, which has a favorable impact on information sharing and helpful in generating value for the firms at process level (Alderete et al., 2018).

2.1.4. Importance of Integrated Logistics

Logistics and supply chain management, the process of managing material and information flows from the source to the firm and to the customer, have been identified as critical components of organizational strategy. Logistics and supply chain management are critical to a company's capacity to remain competitive in the marketplace. Managers in the logistics or supply chain process employ tactics that are compatible with delivering high-quality items at competitive prices and service levels (Rutner et al., 2012).

Logistics and supply chain integration is seen as an important inter-firm practice that leads to improve the organization performance. Nevertheless, logistics integration remains a challenge due to the complexity and involvement of various organizations (Villena et al., 2011).

Both academic and practitioner literature have addressed the importance of supply chain integration in improving supply chain performance. According to the literature, supply chain integration gives several performance benefits such as higher return on investment, higher return on assets, lower cost, improved quality of products and/or services, higher level of customer service, and effective knowledge management methods. Companies gain operational and strategic efficiency both internally and externally through integrated logistics by collaborating with internal functions and with other companies (Wong et al., 2011).

Managers focus on the improvement of this function since logistics is an integrated approach that integrates the management of material and information flows and attempts to satisfy consumer demand. Managers aim to develop sustainable supply chains in order to boost supply chain effectiveness and achieve their goals, thus they must focus their efforts on the strategic role of integrated logistics. Integrated logistics strategy determines the selection of products, services, and

markets, as well as the goals of each company's logistics system; consequently, it should be connected with business strategy (Maharaj and Brown, 2015).

2.1.5. Integrated Logistics Performance

Huber et al. (2015) define logistics as the process of planning, implementing, and regulating procedures for the efficient and effective movement and storage of goods, services, and related information in order to meet the needs of customers. Logistics, thus, encompasses the entire transportation chain from point of production to point of consumption, including inbound, outbound, internal, and external movements of products and services. Logistics performance is described as a system's ability to deliver the right goods at the right location at the right time and at the lowest cost (Zhang and Okoroafo, 2015). Similarly, Leonczuk (2016) defines logistics performance as the ability of the entire system to meet end-customer needs by guaranteeing optimal inventory levels and timely and proper product delivery. To summarize, integrated logistics performance, according to all of these definitions, relates to the ability to satisfy customer expectations, ensure product availability and on-time delivery, and maintain cost-efficiency.

To optimize quality service, integrated logistics is a performance-enhancing strategy that connects information, procurement, distributor/transportation, inventory management, and supply chain activities. The goals of integrated logistics are to improve efficiency and reduce redundancy. Supply chain integration aims to better integrate demand and supply, which can improve service quality while also lowering costs. Well-functioning integrated logistics is distinguished by clear roles and responsibilities, agility, efficient procedures, information visibility, trust and collaboration, and goal alignment. The logistical efficiency of a business can influence its competitiveness. An efficient integrated logistics reduces the cost of transit, transport and production (Giusti et al., 2019). In the case of an inefficient logistics system, businesses must maintain a large quantity of inventory at each stage of the supply chain, which adds to the company's costs (Oluwaseyi et al., 2017). Integrated logistics is critical in the industry supply chain for warehousing and transportation operational performance to achieve the organizations objectives (Routroy and Behera, 2017). The efficient integrated logistics management system provides firms with numerous benefits, including (1) avoiding stock-out situations, (2) low inventories, and (3) efficient customer service (Fernandes et al., 2018).

Integrated logistics can also help firms achieve greater coordination when operating in a geographically dispersed supply chain virtual mode. According to the literatures, organizations with a good fit between integrated logistics and geographical dispersion have superior operational and financial performance success (Alon et al., 2019). There are various opinions on the impact of integrated logistics on the company's performance. Some authors believe integrated logistics practices do not directly influence organizational performance, but that they do influence it indirectly through quality practices and have a positive effect on organizational performance (Syapsan, 2019). Whereas other research show that integrated logistics has a direct positive effect on organizational performance (Prajogo et al., 2016). Thus, all integrated logistics tasks are required for an organization's performance to increase (Stadtler, 2015).

2.1.5.1 Measurement of the Performance

The purpose of performance measurement is to correctly analyze how well the firm is performing; therefore, some quantitative measurements must be designed. The measurements would clearly show which aspects of your company operations require improvement and which are running smoothly. Performance metrics can be used by organizations to examine their company's productivity during a given time period. This critical function of performance measures is reinforced by research in the field of integrated logistics performance measurement, which has also proven that success in performing logistics activities and capacities is linked to improved organizational performance (Fugate, et al., 2010).

Various indicators are promoted for use in evaluating the success of an integrated logistics performance in the literature and in corporate organizations (Folan & Browne, 2005). However, there have been few attempts to define the least number or set of indicators required to monitor the performance of logistics and supply chain management with optimum effectiveness and minimum operational cost (Gunasekaran & Kobu, 2007). According to Aromyan et al. (2007), research has indicated a lack of precise performance indicators for comparison, benchmarking, and decision-making in supply chains. Traditionally, companies have always tracked performance using financial accounting methods that date back to the ancient Egyptians and Phoenicians (Bora, Chiamsiri & Krairit, 2004). Bora et al. (2004) mention the Balanced Scorecard, the Supply Chain Operations Reference model, the Logistics Scoreboard, Activity-Based Costing, and Economic Value Analysis as performance-based indicators. The Supply-Chain Council created the Supply-Chain Operations Reference (SCOR) model to provide a

process-based approach to SCM and to help organizations in measuring the success of their supply chains. Table 2.1 develops a list of potential metrics for improving logistics and supply chain performance.

Table 2.1: Indicators of Logistics and Supply Chain Performance

Quality	• Adherence to quality performance requirements • Product sales per unit and usability
Flexibility	• Response time in the supply chain
Cost	• Internal cost-cutting methods inside the organization • Total cost of supply chain management
Lead Time (Order Delivery Time)	• On-time order fulfillment • Damage-free shipping • Delivery satisfies the needs of the customers

(Source: adopted from Petterson, 2009)

Quality

A performance indicator indicates compliance with requirements or fitness for usage. All stakeholders must maintain product quality throughout the supply chain. Managing quality in the supply chain necessitates the integration of the supplier quality system, the internal system of the vantage point business, and the quality that the client expects. Quality indicators include a formal quality assurance system, continuous improvement, statistical process control, six sigma limits, fail-safe lot tracking, and incoming quality assurance. The quality of a product specification is related to design decisions and actions, as well as the quality of compliance to the design. Design quality and conformance ensure that the product meets the needs of the consumer. This is sometimes referred to as "fitness for use," and it entails determining the dimensions of the desired product as well as implementing a quality control procedure to ensure that the dimensions are satisfied (Petterson, 2009).

Flexibility

The supply chain's flexibility, according to Wisner, Tan, and Leong (2012), is its agility in adapting to unanticipated changes in the marketplace in order to attain or sustain a competitive advantage. According to Jonsson (2008), flexibility is a performance measure that assesses how quickly car manufacturers can respond to individual consumer requests. It is proven especially essential in the development of new products. Supply chain response time and production

flexibility are the two indicators of flexibility. Supply chain response time is the number of days it takes the supply chain to respond to a market without incurring cost penalties (Bowersox, Close & Cooper, 2010).

Costs

Cost is an important performance metric in the supply chain. Supply chain costs encompass all costs connected with running the supply chain, such as the cost of commodities and overall supply chain management cost. Cost performance is critical, and it must be monitored more closely and methodically than any other facet of competitive performance. Cost management and cost reduction capabilities must be embedded into an organization's structure, procedures, culture, and technology base for it to survive and prosper. A lean supply chain focuses significantly on inventory, logistics, and distribution cost savings. The just-in-time (JIT) technique can help you save costs and inventory levels. However, this may have an impact on order fulfillment performance, resulting in lower customer satisfaction or damage to the company's reputation Griffis et al. (2012).

Response Time

According to Brabazon et al. (2010), organizations must adapt quickly to the demands of the product requested in order to meet the ever-changing expectations of customers. The delivery of an order lead time, according to Wisner et al. (2012), involves the execution of the average proportion of requests across supply chain participants that reach on time, complete, and damage-free, thereby meeting the needs of customers. According to Handfield et al. (2011), Order lead time is a critical and major source of competitive advantage for top-performing logistics and supply chains, as well as the firms that comprise them. This metric should specify the total cycle duration as well as its essential components. Measures should be aimed at eliminating delays and achieving continuous improvement in meeting deadlines. Failures in order fulfillment, such as order lateness, lead time variance, and incorrect quantity supplied, and so on, have significant effects on logistics and supply chain performance and result in the loss of customers, order referrals, and future purchases (Griffs et al., 2012).

2.2. Empirical Literature Review

2.2.1. Integrated Logistics Practice

2.2.1.1. Inventory Management

Inventory, also known as stock, is one of the most significant and challenging assets in a company's statement of financial position (previously known as balance sheet) to manage effectively and efficiently, regardless of its size, whether a major corporation or a small or medium organization (Elsayed and Wahba, 2013). This is due to the fact that inventory and the processes associated with it necessitate significant investment, particularly in sophisticated and modern technologies that must be fixed for an extended period of time (Dennis and Meredith, 2000). For example, enterprise resource planning can be used to connect all systems in a corporation, including inventory managementIt may detect possible cost overruns and instantly notify managers (Suhaimi et al., 2016). However, this technology is often costly and complicated.

According to Capkun et al. (2009), less research have been conducted to investigate the relationship between inventory performance of the discrete components on inventory, which include finished items, raw materials, packaging materials, and work in progress, and financial performance. Stakeholders to assess a company’s performance typically use a financial statement. As a result, customers want to know what factors, such as inventories, can contribute to the statistics in the financial statement.

Inventory control is one of the elements that can affect corporate success, along with macroeconomic-industry and firm-specific factors including ownership structure, human capital, excellent governance procedures, high work ethics, strategic direction, an effective board, and innovation (Ahmad et al., 2016). However, many businesses struggle with inventory management, which can harm financial performance as a producer or distributor. Companies, for example, will not know they have lost money due to missing merchandise until the year-end stock count, when there are discrepancies between physical stock and system records. This error in inventory records can reduce the company's profit (Chuang and Oliva, 2015) and may be too late to prevent.

Another issue that businesses confront is the transportation of goods to customers and third-party warehouses. Inventory management might also fail due to a lack of communication between departments. For example, the supply chain department does not inform the plant and operations departments on the status or balance of raw material inventories available. When an urgent order

must be manufactured and raw materials are necessary, the production process is hampered, and the client does not receive the items on time. Price fluctuation is another major issue in inventory management that necessitates the attention of all parties concerned. This circumstance will have an impact on the company's performance because customers will not hesitate to seek out alternative manufacturers and suppliers.

Good inventory management, on the other hand, will boost a company's performance. According to Koumanakos (2008), industrial sectors in Greece that make food, textiles, and chemicals and display good inventory management as a result of lean operations have greater rates of return and improved financial performance. Inventory costs such as storage, insurance, ordering, obsolete stock, and other related costs will be at an ideal level when inventory is efficiently managed (Samad et al., 2006).

According to Cheung et al. (2004), a company's profitability is significantly influenced by how well it manages its inventory, particularly when it comes to cutting costs associated with stock-handling and streamlining the production process. This is corroborated by research from Shin et al. (2015), who discovered that US manufacturing companies with lower inventory to sales ratios had higher profit margins. Additionally, small businesses profit from improved inventory efficiency more than larger businesses do. The authors' findings support Mittal et al. (2014)'s claim that fertilizer companies in India had a longer average inventory conversion duration, indicating slower stock movement, as well as lower profitability statistics. This empirically demonstrated that good inventory management promotes the company's beneficial performance. According to Talavera et al. (2015), the average time spent manually looking for a finished product was 15.5 minutes, which is significant. Search times can be shortened, saving labor expenses, by utilizing improved inventory management control devices like radio-frequency identification technology.

2.2.1.2. Information Technology

Information and communication technology has become critical to the management of flows across integrated logistics functions by enabling integration, synchronization, visibility, and responsiveness. To increase logistics performance, organizations' logistics departments have begun to offer logistical services with more added value, while also increasing their usage of

information and communication technology to become more efficient. Many different information technologies have enabled these changes in the logistics service market, including transportation management systems, warehouse management systems, track and trace systems, routing systems, radio frequency identification, barcode, electronic data interchange, and the internet in different organizations and enhanced their logistics operation (G1 Economia, 2011).

2.2.1.3. Transportation Management

Transportation is at the core of the logistics concept and any savings in transportation will directly contribute to the bottom line (Holcomb et al., 2014). Organizations must act to improve their performance and competitiveness in more chaotic and dynamic marketplaces, where competition is not only between companies, but also between global supply chains (Christopher, 2016). In such a context, transportation management has emerged as a critical component of companies' and governments' strategic agendas, not only from the perspective of cost reduction and service improvement, but also as a means of reducing resource consumption, carbon emissions, and traffic congestion (Santen, 2017). According to many research, lean approaches to transportation optimization have found a means to reduce waste and raise the efficiency of an organization's logistics operation (Sternberg and Harispuru, 2016). Among all of the transportation modes, road transportation is the most extensively used means of transportation, especially for freight and other commercial activity. Given their benefits in terms of accessibility to locations of origin and final destination, as well as the comparatively cheap capital requirements for industry entry, road haulers have surpassed other modes of transportation in terms of market share, employment, and the number of enterprises. (Allen et al., 2005).

According to Wath M., (2016), a study was conducted on the effect of transportation method on competitive advantage and logistics performance. This study conceptualizes and develops three dimensions of transportation practice (career relationship management, Intelligent Transportation Systems, and freight transportation and commercialization) and investigates the relationships between these transportation practices, competitive advantage, and logistics performance. The study's data was gathered from significant organizations, and the framework's claimed links were tested using rigorous/exact statistical procedures. According to the findings, higher levels of transportation practice can lead to increased competitive advantage and improved integrated logistical performance.

2.2.1.4. Procurement Management

Procurement is now considered as a strategically essential function capable of driving and delivering competitive advantage to various companies. According to Shaw (2010), the process of identifying sources of supply that can meet an organization's immediate and future demands for goods and services is known as sourcing. The sourcing procedure used will be decided by the circumstances and the amount of time available for sourcing. In a rapid on-set emergency, for example, the need to respond quickly means there will be little time to gather sourcing information and authorize vendors; hence, an organization may use existing suppliers.

Every organization purchases items, i.e., every organization requires the purchase of supplies, such as raw materials, components, subassemblies, parts, equipment, services, and consumables (Zhelyazkov, 2011). Enabling strategic procurement development has long been acknowledged as contributing to an effective organization, but firms in the private and public sectors appear to find it difficult (White et al., 2016). There are several procurement concepts that can be identified and shared by most, if not all, public procurement systems. These concepts are implemented through a number of channels, including legal and regulatory laws that control public procurement processes (Arrow, S. 2010). According to Shaw (2010), the procurement procedure can be broken down into three steps. These include identifying needs, planning and specifying required goods or services, as well as sourcing, awarding, and supplier management to assure on-time delivery. After identifying the needs, the procurement department should develop or explain a strategy for delivering the required products and services. The plan must be developed in coordination with other functions within the company in order to be integrated into the organization's strategy and so effectively provided for. To be able to purchase the appropriate goods or services, the organization's procurement requirements must be clearly defined. These specifications are intended to inform the supplier of what is required and what should be supplied. As a result, it is critical to have clear, exact, and accurate specifications. Most companies have standard procurement specifications for the most commonly purchased items and services, such as automobiles, telecommunications, medical equipment, and building materials Shaw, (2010).

Following the evaluation and granting of tenders, the next stage in the process is to place orders for goods or services with the supplier, or to establish contracts that must be sent to suppliers. In critical circumstances, companies approval levels and limitations are altered based on an agreed

process in order to expedite the acquisition of products and services. Under normal conditions, the approval processes may be more elaborated. The orders formalize the organization's and the supplier's contractual connections Shaw, (2010). When goods or services are received and accepted into stock, procurement assists the supplier in receiving payment by submitting necessary documentation to the finance department. Orders are often generated in procurement as products are delivered to warehouses and transferred to final distribution locations; additional documentation are prepared to support transactions as they occur. Finally, all of these documents are combined to support vendor payments Shaw, (2010).

2.2.1.5. Employee Competency

Integrated logistics necessitated a significant amount of knowledge and skill; consequently, in order to provide successful and efficient integrated logistics services, businesses must have the necessary experience, expertise, and capable personnel (S. Jaideep, 2017). Advanced skill, according to Hisham Makki and Siddig Balal (2018), is a key personnel capability that influences service performance and organizational excellence. Employee skill always determines the level of performance, and performance has a high positive association with employees' competency (Xu and Ye, 2014). Employee skills are critical for improved performance in service providers' business companies and corporations must prioritize employee skills to achieve successful service performance. Training is one of the most significant components in enhancing and developing employees' competency, which affects the operation's performance. Employee competency influences company operation performance as well as integrated logistics performance (Siddig Balal Ibrahim, 2018).

2.2.1.6. Organizational Structure

The manifestation of systematic thought is the conceptualization of organizational structure. The organization is made up of elements, relationships between elements, and structure as a generalization that makes up a unit. Structure is a high-level mixture of relationships between organizational elements that comprise the basic philosophy of organizational action. A systematic approach of organization to structure reveals that structure is made up of hard and soft parts on one side. The review of literature examines structural relationships from a variety of perspectives. An organizational structure is a strategy or system for dividing, organizing, and coordinating organizational operations. Organizations established structures to coordinate the

actions of work factors to regulate employee performance. Organizational structure is the framework of the relations on jobs, systems, operating process, people and groups making efforts to achieve the goals. Organizational structure is a set of methods dividing the task to determined duties and coordinates them (Johatch, 2014). The structure of an organization is the result of power conflict between internal organization coalitions with specific benefits and each requires a structure and their benefits are fulfilled better instead of general benefits of organization (Arabi, 2007).

2.2.1.7. Supplier Performance

According to Agbor (2011), product quality, pricing, availability, reliability, responsiveness, and customer service are all important elements in determining supplier performance. However, the size of a supplier's firm will have an impact on their performance. A good supplier will be able to give additional items to their customers, reducing the need for customers to work with many suppliers. Effective communication can benefit both parties since it can prevent difficulties such as delivery delays, product nonconformities, and problems related to product quality and quantity. As a result, a good supplier will understand how to keep their clients satisfied by communicating effectively with them.

According to Othman and Ghani (2008)'s research, a strong supplier-retailer relationship is dependent on suppliers developing precise HRM codes of practices that would allow them to satisfy their customers' requirements. Thus, in the case where a retailer has placed an order for 500 units of tomato ketchup two days prior to their supplier's terms of notice, the Chief Logistics Officer must be able to fulfill their customer expectations in order to create retailer satisfaction.

When retailer expectations are met, it indicates that the supplier's service quality is present. According to Giovanis and Binioris (2018) research, there is a strong link between the five components of service quality and customer satisfaction that is used to prioritize strategic plans of organizations in supply chains. This meant that the five service quality components, such as reliability, responsiveness, assurance, empathy, and tangibles, needed to be considered by determining the proper components (divided into major and minor) to be applied to the right retailers. When the proper components are obtained, suppliers will examine their strengths and weaknesses in these identified "components" and attempt to improve their current service quality. As a result, customer satisfaction can be achieved. Therefore, this study is identifying

the five components of service quality with an additional consistency aspect through conducting an interview with retailers.

2.2.1.8. Bank Process

Trujillo-Ponce (2013) analyzed the factors that determine the profitability of Spanish banks for the period of 1999–2009. Firstly, the empirical finding reveals differences in the performance of commercial and savings banks. Secondly, the results indicated a strong positive relationship of asset quality, capitalization, concentration, inflation, economic growth and logistics and supply chain management.

2.2.1.9. Custom Process

Custom delays in Sub-Saharan Africa were the longest in the world, averaging 12 days in 2016, but were the shortest in other nations such as Estonia and Lithuania, which take only one day for custom clearance; Ethiopia averages more than 30 days (Debebe Dessalegn Sirika & Teklu Kassu Gizaw (2016). According to the literature, the complexity or ease of custom and administrative procedures has an effect on integrated logistics.

According to Debebe Dessalegn Sirika and Teklu Kassu Gizaw (2016), the primary determinants of custom clearing costs and time delays in the clearance process increase, which is immediately transmitted to end-users. Furthermore, this investigation discovered that the clearance wait time at the Kality Custom Branch Office is 4 days, and it might last up to months if there is a disagreement over the amount of custom duty. Custom clearance time is increased by one hour, and the cost of clearance is increased by birr 42.165 at the kality branch office. The time typical for import custom clearance is 10 minutes for Green risk categories, 2-3 hours for Yellow risk categories, and 6-8 hours for Red risk categories (Former ERCA customer charter doc, 2007). The researchers emphasized in his study on the custom valuation system in Ethiopia that it largely indicates about procedural problems and how these problems effect logistics efficiency.

2.2.1.10. Infrastructure

Ethiopia has made tremendous infrastructure progress in recent years, and its infrastructure indices compare favorably with low-income nation counterparts. Ethiopia airlines (today one of the three major African airlines) and associated regional air transport hubs were built in the country. It has begun an ambitious investment program to modernize its trunk road network

and is developing a new financial framework for road maintenance. The key challenge in mobility is to enhance Ethiopia's extremely low rural accessibility and to guarantee that recent investments in the road network are properly maintained. Ethiopia has one of the most difficult infrastructure situations in Africa, with significant investment required to update the country's infrastructure platform. According to evidence from enterprise surveys, infrastructure constraints contribute to around 50% of the productivity deficit faced by Ethiopian firms. Ethiopia is landlocked country and relies on the Port of Djibouti for imports and exports and will benefit from improvements there. The port serves as a major transit point for Ethiopian cargo as well as potential East African container transshipment hub and it has attracted a full port concession with significant greenfield development pledges. In recent years, more than half of Sub-Saharan Africa's railroads have been issued as concessions, and the clear lessons acquired from this experience may be relevant to Ethiopia. Overall, train concessions have improved logistical operating performance and increased traffic (Vivien F, 2015).

2.3 Conceptual Framework

Considering literature review, below conceptual framework were used for the study to achieve the goal.

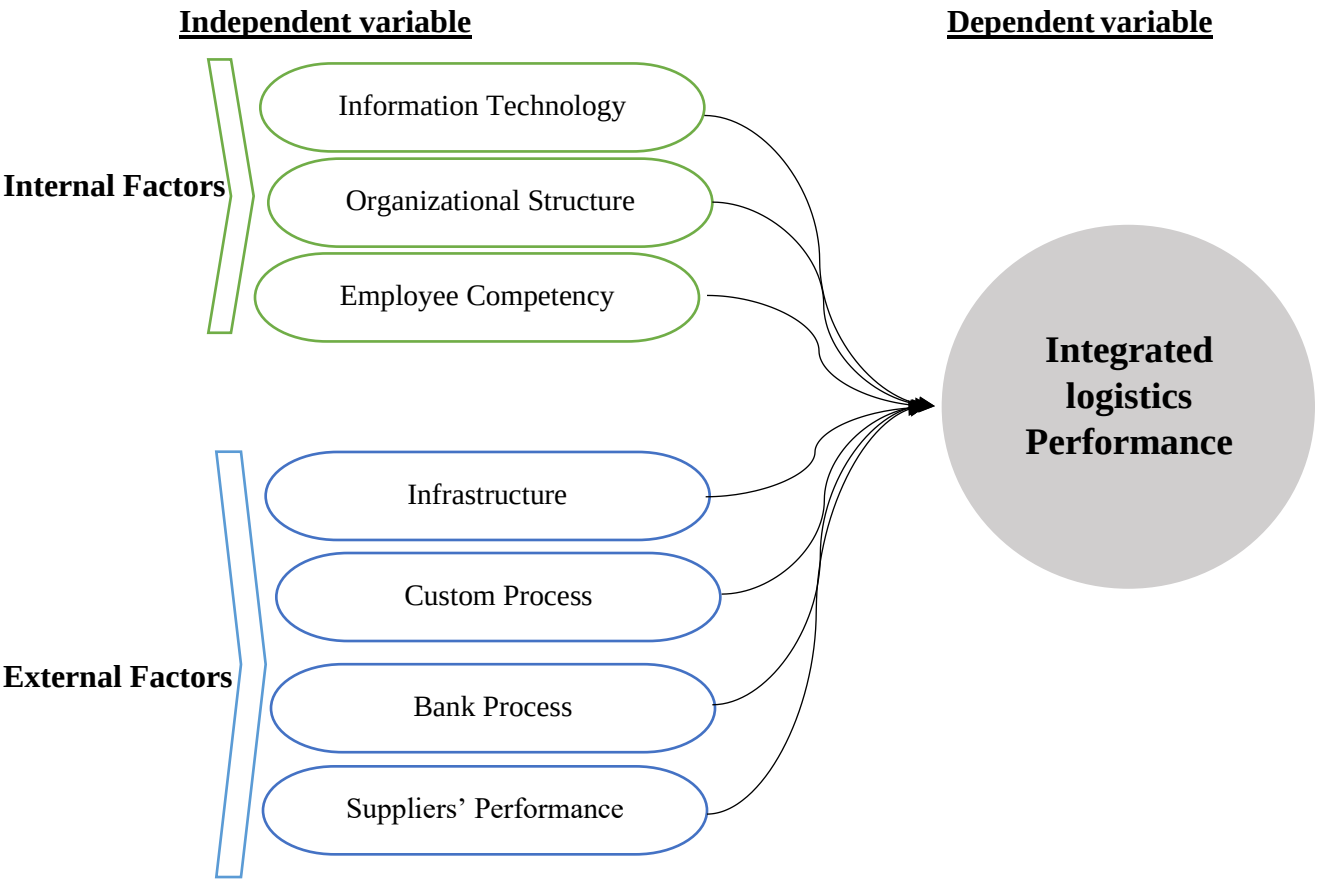

Fig: 2.1 Conceptual Framework of the Study

(Source: adopted from Huan Neng Chiu, 2017)

CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

This part show how the research outcome at the end obtained is in line with meeting the objective of the study. This chapter discuss the research methods to use during the research process. It includes methods considered to undertake the research. In this chapter, the researcher will outline and presents the research design, the study area, data sources such as primary data sources and secondary data, population consideration and sample size determination, data collection method through questionnaires, methods of data analysis, data analysis software, the reliability and validity analysis and ethical consideration of the research.

3.1 Description of the Study Area

This study conducted at ethio telecom and it has been engaged in telecommunication service provider since 1894. Since this year, the technological scheme contributed to the integration of the Ethiopian society throughout the country and ethio telecom structured on 21 divisions and 2 departments by aiming to provide reliable communications and digital financial services to simplify customers' life and expedite the digital transformation of Ethiopia. The company identified 20 strategic issues after reviewing policies, strategies, SWOT analysis, internal & external stakeholders, competition, enablers & challenges and considering missed opportunities. Among these strategic issues financial growth, offering differentiated products and services, smart phone penetration, business agility and customer experience and retention implementation needs seamless integration between marketing, procurement, logistics, sales and transport functions.

3.2 Research Approach

The goal of this study is to investigate factors affecting integrated logistics performance in case of ethio telecom. The researcher used both quantitative and qualitative research methods to investigate and explore the different claims to knowledge and both methods were designed to address a specific type of research question. The qualitative method enables the researcher to investigate and gain a deeper understanding of the intricacy of a phenomenon whereas the quantitative method offers an objective measurement of reality. Creswell (2005) asserted,

quantitative research is a type of research in which the researcher decides what to study, asks specific narrow questions, collects numeric (numbered) data from participants and analyzes these numbers using statistics, and conducts the inquiry in an unbiased, objective manner. Variables can be defined as attributes or characteristics of individuals, groups, or sub-groups of individuals. Qualitative research described as an effective model that occurs in a natural setting to enable the researcher to develop a level of detail from being highly involved in the actual experiences (Creswell, 2005).

3.3 Research Design

Explanatory and descriptive type of research design used as a main research design for this study for the realization of intended objectives. The reason behind using descriptive research design is because the researcher is interested in describing the existing situation under study. Calderon (2006) defined descriptive research as a type of research that provides an in-depth description of the phenomenon or population being studied. Explanatory research design used to explain, understand, and predict the relationship between independent variables and dependent variable. Explanatory studies are studies that show relationships between variables to explain certain problems or events (Saunders, et al., 2007).

3.4 Data Sources and Types

The gathering of precise evidence that enables the researcher to appropriately examine the results of all activities by his study design and procedures is referred to as data collecting (Singh, 2006). In order to conduct this study both primary and secondary sources of data is used.

3.4.1 Primary Source

The primary data gathered from respondents of the study using standard questionnaires that are arranged in 5-point Likert‘s scale and interview data collection method.

3.4.2 Secondary Source

As secondary data for this study gained from different sources like books, journals, articles, magazines, reports by research scholars and students.

3.5 Population and Sample

3.5.1 Target Population

The target population is a group of elements or objects that contain the information sought by the researcher and from which conclusions are to be drawn. To conduct this study, the subject or target population were employees and management of marketing, logistics department, inventory management, transport department, procurement department and sales division. Total population of these departments are 375.

3.5.2 Sampling Technique

To reduce sample error, the population representative assigned was chosen with care. Purposive sampling technique used in selecting employees with the right knowledge of the company's logistics activities, so the researcher used purposive sampling because respondents who work in logistics, procurement, warehouse, transport and sales department are more aware of integrated logistics activities which is adopted by the company. Hans et.al (2004) demonstrated that, in purposive sampling also called non-probabilistic sampling, samples are selected more or less deliberately. This can be done on the basis of the judgment of the sampler of what is a desirable sample or whatever sample happens to be convenient to collect.

3.5.3 Sample Size

According to Polit (2001), a sample size is a proportion of a population. Tustin, Ligthelm and Van (2005), state that sample size is a smaller set of the larger population. Use of a sample enables a researcher to save time and money hence get more detained information for its respondents.

The study used 375 staff from Ethio telecom as the target group. The sample size for this study calculated using (Yamane's, 1967) simple formula for calculating sample sizes.

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

$$n = \frac{375}{1 + 375 \times 0.05^2}$$

$$n = 227$$

Where, n = required sample size, N = population size, and e = level of confidence = 95% (0.05). As a result of the mentioned sampling technique, 227 respondents from the from Ethio telecom with logistics related activities considered.

The total population of the study were 375 and from this total population the researcher took 227 employees as sample size by using 95% confidence level.

Table 3.1 Sampling Proportion

No	Department	Section	Total Number of Employees	Proportional Sampling
1	Logistics	Inventory	15	9
2		Warehouse	71	43
3		Custom Clearance & Shipment	40	24
4	Procurement		68	41
5	Transport		22	13
6	Marketing		122	74
7	Sales	Business Logistics	13	8
		Zonal Shop Coordinators	24	15
Total			**375**	**227**

3.6 Data Collection Methods

The data in use to analyze the factors affecting integrated logistics performance in case of ethio telecom within a population collected by questionnaire and interview.

The first part of the questionnaires related with respondents' general (demographic) information. The second part is about independent variables of the study (factors affecting integrated logistics performance). The second half of the questionnaire is divided into sections, each of which represents a variable in the research model. Responses were measured on a 5-point Likert scale, ranging from one (Strongly disagree) to five (Strongly agree). The third part associated with dependent variable (integrated logistics performance).

3.7 Validity and Reliability

3.7.1 Validity

To eliminate subjectivity, the questionnaire was amended multiple times based on both external (with other individuals) and internal (inside the organization) discussion. Correction of questionnaires conducted based on comments of advisor. Different research experts and professionals analyzed and commented on the questionnaire. Participants were asked to provide comments and opinions on the clarity and completeness of statements used in the questionnaire. Following the pilot survey, adjustments were made to items that are unclear in order to eliminate all ambiguities and increase the validity of the questionnaires before they are used in the full-scale survey.

3.7.2 Reliability

When numerous measurement ideas or constructs are used, calculating Cronbach's alpha (α) is typical practice because it is easier to utilize in contrast to another estimate (Hair et al., 2010). Cronbach's alphas were utilized in conjunction with inter-item correlation to establish the internal reliability of the measurement instrument.

Table 3.2 Reliability test

Dimension	Cronbach's Alpha	N of Items
Information Technology	**.709**	**4**
Organizational Structure	**.734**	**4**
Employee Competence	**.773**	**4**
Infrastructure	**.749**	**4**
Custom process	**.805**	**4**
Bank process	**.80**	**4**
Supplier Performance	**.763**	**4**
Integrated Logistics Performance	**.713**	**5**
Overall Scale Reliability	**.81**	**33**

(Source: Survey Result, 2023)

Cronbach's alpha is used to measure the reliability, or internal consistency, of a set of scale or test items for Likert scale-type questions. According to Hair et al., (2010) A good alpha value is 0.7 or above. The statistical analysis of this study confirms that Cronbach's alpha is greater than 0.7, which was 0.809 (81%).

3.8 Method of Data Analysis

Following the collection of data from various sources (primary and secondary), activities such as examining and analyzing to generate some sort of results and conclusion were critically reviewed and narrated. The percentage and table were used to evaluate and analyze the collected data. To check the relationship of variables and effect i.e., factors affecting integrated logistics performance and to give necessary conclusion and recommendations correlation and regression analysis adopted. Correlation analysis used to determine the amount of association between variables. Regression analysis used to examine the effect of independent variables on dependent variable. To analyze the data, the researcher used SPSS software.

Model of the Study

The model for this study is.

$$\mathbf{Y = \beta\ 0 + \beta\ 1X1 + \beta\ 2X2 + \beta\ 3X3 + \beta\ 4X4 + \beta\ 5X5 + \beta\ 6X6 + \beta\ 7X7 + \varepsilon}$$

Y- Dependent Variable

β0- Constant (Coefficient of Intercept)

X1…X7 - Independent Variables

β1… β7- Regression Coefficient of Independent Variables

ε - Random Error

The model for this study is,

$$\mathbf{Y=\beta\ 0+\beta 1\ (IM) + \beta 2(OS) + \beta 3\ (EC) + \beta 4\ (CP) + \beta 5\ (BP) + \beta 6\ (I) + \beta 7\ (SP) + \varepsilon}$$

Y= Integrated logistics performance

IM= Information technology

OS= Organization Structure

EC= Employee Competency

CP= Custom Process

BP=Bank Process

I=Infrastructure

SP=Supplier Performance

3.9 Assumptions of Regression Analysis

Multi-collinearity occurs when the independent variables are too highly correlated with each other. It checked through variance inflation factor (VIF) and tolerance. Tolerance is an indicator of how much of the variability of the specified independent variable is not explained by the other independent variables in the model and is calculated using the formula $1–r^2$ for each variable.

Normality and linearity test also conducted. Assumption of Normality asserts that the distribution of sample means (across independent samples) is normal. Normality claims that the sampling distribution of the mean is normal or that the distribution of means across samples is normal. It is assumed that points in the normal probability plot lie in a sufficiently straight diagonal line from bottom left to top right (the dot should be along the line). Linearity teste assumes that there must be a linear relationship between the outcome variable and the independent variables. Scatterplots can show whether there is a linear or curvilinear relationship.

3.10 Ethical Considerations

The researcher addressed ethical considerations of confidentiality and privacy. The researcher used a rigorous and conscious effort to sustain this promise. A guarantee given to the respondents that their names should not be revealed in the research report. Participation in the study was voluntary and all participants' responses is confidential and can quiet to respond the question anytime they like.

CHAPTER FOUR

DISCUSSION OF RESULTS

Introduction

This chapter presents the study's data presentation, analysis, and interpretation. To successfully and conclude the research, both descriptive and explanatory results were discussed and presented. Out of 227 questionnaires distributed to respondents to the study, 222 (98%) were returned. 216 (97%) were valid and used for statistical analysis. As descriptive analysis of the study, percentage and mean analysis were used in examining the degree of respondent agreement regarding internal and external factor variables. To determine the relationship and effect of independent variable on dependent variable, correlation and regression analysis were practiced.

4.1. Response Rate and Demographic Data

Table 4.1 Respondents' demographic characteristics

Variable	Category	Frequency	Percent
Gender	Male	135	62.5
	Female	81	37.5
	Total	**216**	**100.0**
Educational Background	Certificate/Diploma	5	2.3
	Degree	129	59.7
	Postgraduate and above	82	38.0
	Total	**216**	**100.0**
Age of the respondents	< 35 year	101	46.8
	35 to 45 year	95	44.0
	>45 years	20	9.2
	Total	**216**	**100.0**
Work experience of respondents	Less than 5 year	8	3.7
	5 to 10 years	32	14.8
	11 to 15 years	108	50.0
	Greater than 15 years	68	31.5
	Total	**216**	**100.0**

(Source: Survey Result, 2023)

It is shown in Table 4.1 that 135 (62.5%) of the respondents were males and 81 (37.5%) were females. Based on this, it is possible to conclude that majority of respondents of ethio telecm are male employees. Males are the dominant ones compared with female.

Educational status of the respondents is also discussed in table 4.1 The table shows that most of the respondents have Certificate/Diploma 5 (2.3%), First Degree 129 (59.7%) and 82 (38%) of the postgraduate and above. Using the result of the study, it is possible to conclude that respondents are well educated. It shows that the company is engaging employees who can understand and overcome challenges of integrated logistics. In other word, it is possible to understand that the firm is paying attention for logistics and supply chain management operations. In addition, employees can easily adopt advanced technologies and improvement ideas regarding logistics operation in order to enhance the company's integrated logistics performance effectively and efficiently.

It was revealed in Table 4.1 that the range of the respondents was largely dominated by the range of less than 35 (46.8%) followed by the age group that falls between 35 to 45 year (44%) and the least available age group in the sample was the age group comprising respondents >45 years (9.2%). Based on the result of the study, 91% of the respondents' age range is less than 45 and they are adults, innovative and productive that can help to improve the company's integrated logistics performance by triangulating the global logistics current and trend.

Based on the evidence from respondents revealed in Table 4.1, 108 (50%) of the respondents work experience is between 11 to 15 years. 68 (31.5%) respondents working experience is greater than 15 years. 32 (14.8%) of respondents have working experience of between 5 to 10 years and only 8 (3.7%) of employees have less than 5 years working experience. The study shows that the majority; 176 (81%) of respondents have greater than ten years working experience. From this, we can understand that most employees are well experienced that helps them to be familiar with ethio telecom working culture, company processes & procedures, logistics operational activities and integrated logistics each actor roles and responsibilities.

4.2. Descriptive Analysis

This sub-section is related to variables that affect integrated logistics performance. The respondents were asked to indicate their level of agreement by using 5 point Likert's scale ranging from 1=strongly disagree to 5=strongly agree. The discussion includes the responses of the respondents about each variable in detail. These variables are internal (Information Technology, Organizational Structure & Employee Competency) and external factors (Infrastructure, Custom Process, Bank Process and Supplier's Performance). Specific statements represent each variable. The responses were analyzed the descriptive statistics mainly by using mean and standard deviation. The findings are contained in each table with mean and standard deviation to analyze and measure determinants of integrated logistics performance. The measure for this study defines the criteria to measure the level of variables using five levels Liker's by utilizing width of class interval (Wathon et al, 2003) as follows.

Interval width of each level = $\frac{\text{the highest score-the lowest score}}{\text{Interval number}}$ That is $\frac{5-1}{5} = 0.80$

Therefore, the result of the date analysis regarding each variable was defined using the following classification.

Strongly agree = 5, agree =4, neutral = 3, disagree =2, strongly disagree =1

Table 4.2 Width of Class Interval in 5 scales

Strong agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)
4.21-5.00	3.41-4.20	2.61-3.40	1.81-2.60	1.00-1.80

4.2.1 Integrated Logistics Practices of Ethio Telecom

4.2.1.1 Inventory Management Practice

Table 4.3 Inventory Management Practice

Statement	N	Min	Max	Mean	Std. Dev
The Economic Order Quantity technique is used by Ethio Telecom to manage inventory.	216	1	5	3.72	1.164
Ethio telecom experiences neither excess nor deficit of inventories.	216	1	5	3.81	.942
Ethio telecom disposes of expired materials in a timely manner.	216	2	5	3.91	.836
Ethio telecom using bar code to manage its inventory.	216	1	5	3.56	.986
Valid N (listwise)	216	Mean of Mean 3.75			

(Source: survey result, 2023)

As shown in table 4.3, the respondents agreed with inventory management practice with several level of agreement, for example ethio telecom manages inventory using economic order quantity approach scores mean of M=3.72. Respondents agreed that ethio telecom experience no surplus or shortage of inventory with mean value of 3.81. Respondents also agreed with statement of ethio telecom disposes expired items timely since mean value is greater than average (M=3.91). Respondents agreed that the Ethio telecom uses bar code to manage its inventory at mean value of (M=3.56). Generally, majority of respondents agreed with the above statements which is confirmed by mean of mean M=3.75. According to Cheung et al. (2004), a company's profitability is significantly influenced by how well it manages its inventory, particularly when it comes to cutting costs associated with stock handling and streamlining the production process. This is corroborated by research from Shin et al. (2015), who discovered that US manufacturing companies with lower inventory to sales ratios had higher profit margins. Additionally, small businesses profit from improved inventory efficiency more than larger businesses do. The authors' findings support Mittal et al. (2014)'s claim that fertilizer companies in India had a longer average inventory conversion duration, indicating slower stock movement, as well as lower profitability statistics. This empirically demonstrated that good inventory management promotes the company's beneficial performance. The findings from descriptive statistics revealed that there is good

inventory management practice in ethio telecom and this good inventory management practice can enhance the company's integrated logistics performance.

4.2.1.2 Transportation management practice

Table 4.4 Transportation management practice

Statement	N	Min	Max	Mean	Std. Dev
Ethio telecom transportation practices to move safely.	216	1	5	3.72	1.051
Ethio telecom's transportation management is eager to move products on time.	216	1	5	3.90	.991
Ethio telecom employs the most cost-effective transportation system.	216	1	5	3.87	1.072
Ethio telecom's transportation management team collaborates with outside transportation providers.	216	1	5	3.93	1.004
Valid N (listwise)	216	Mean of Mean 3.85			

(Source: survey result, 2023)

Table 4.4 is all about transportation management practice. Four items were used to analyze transportation management practice. The maximum mean is 3.93 with the statement that the ethio telecom's transportation management team collaborates with outside transportation providers and the minimum mean is 3.72 with statement of ethio telecom transportation practices to move safely. The respondents agreed that ethio telecom's transportation management is eager to move products on time at mean value of M=3.9 and followed by ethio telecom using least cost transportation system at mean value of 3.87. Overall, the respondents agree on statements which is indicated by mean of mean M=3.85. According to many research, lean approaches to transportation optimization have found a means to reduce waste and raise the efficiency of an organization's logistics operation (Sternberg and Harispuru, 2016). According to Wath M., (2016), a study was conducted on the effect of transportation method on competitive advantage and logistics performance. According to the findings, higher levels of transportation practice can lead to increased competitive advantage and improved integrated logistics performance of the organizations. Therefore, ethio telecom transportation management good practices has direct contribution for the efficient and effective logistics operations and its performance.

4.2.1.3 Procurement Practice

Table 4.5 Procurement practice

Statement	N	Min	Max	Mean	Std. Dev
The items specifications are confirmed prior to selecting a supplier.	216	1	5	4.08	.936
Contract management is carried out in accordance with the terms and conditions of the bidding and contract documents.	216	1	5	4.05	.764
Ethio telecom working units organize and plan their purchase needs.	216	1	5	3.78	.898
Ethio telecom practices piecemeal purchasing.	216	1	5	3.80	.897
Valid N (listwise)	216	Mean of Mean 3.92			

(Source: survey result, 2023)

The respondents asked four questions about procurement practice. The above table shows that the maximum mean score is 4.08 with the statement that the items specifications are confirmed prior to selecting a supplier followed by the statement that contract management is conducted according to the bidding and contract document terms and conditions (Mean=4.05). Ethio telecom practices piecemeal purchasing (Mean=3.8) and ethio telecom working units organize and plan their purchase needs (Mean= 3.78). The result shows that most of respondents agreed with items related to procurement practice since mean for all items was above average and mean of mean is M=3.92. Enabling strategic procurement development has long been acknowledged as contributing to an effective organization, but firms in the private and public sectors appear to find it difficult (White et al., 2016). Based on the interviewees of procurement manager, the researcher proved that there is well organized procurement practices in ethio telecom including master frame agreement with different suppliers to purchase commercial and noncommercial products and service which has relatively good to address the company's inventory shortage and seasonal demand occurred in the market.

4.2.1.4 Information Technology Practice

Table 4.6 Information Technology Practice

Statement	N	Min	Max	Mean	Std. Dev
Ethio telecom practices IT infrastructure for inventory management modernization.	216	1	5	2.93	1.151
Ethio telecom uses IT infrastructure to manage transportation.	216	1	5	3.53	1.086
Ethio telecom uses IT infrastructure to expedite the procurement process.	216	1	5	3.23	1.061
Ethio teleocm uses IT infrastructure to expedite the logistical integration.	216	1	5	3.27	1.348
Valid N (listwise)	216	Mean of Mean 3.24			

(Source: survey result, 2023)

As shown in table 4.6, the respondents agreed with information technology practices with several level of agreement, for example ethio telecom practices IT infrastructure to modernize inventory management scores mean of M=2.93. Respondents agreed that ethio teleocm uses IT infrastructure to manage transportation with mean value of 3.53. Respondents also agreed with statement of ethio telecom uses IT infrastructure to expedite the procurement process since mean value is greater than average (M=3.23). Respondents agreed that the ethio teleocm uses IT infrastructure to expedite the logistical integration at mean value of (M=3.27). Generally, majority of respondents agreed with the above statements which is confirmed by mean of mean M=3.24. This indicates that there is good information technology practice in ethio telecom. Many different information technologies have enabled these changes in the logistics service market, including transportation management systems, warehouse management systems, track and trace systems, routing systems, radio frequency identification, barcode, electronic data interchange, and the internet in different organizations and enhanced their logistics operation (G1 Economia, 2011).

4.2.2 Internal Factors Affecting Integrated Logistics Performance

4.2.2.1 Information Technology

Table 4.7 Information Technology

Statement	N	Min	Max	Mean	Std. Dev
The implementation of IT infrastructure improves the quality of integrated logistics operations.	216	1	5	3.77	1.116
IT-skilled labor improves the responsiveness of integrated logistics performance.	216	1	5	3.85	.915
IT infrastructure improves the flexibility of integrated logistics performance.	216	2	5	3.93	.809
IT training reduces the cost of integrated logistics performance.	216	1	5	3.60	.974
Valid N (listwise)	216	Mean of Mean 3.78			

(Source: survey result, 2023)

As shown in table 4.7, the respondents agreed with information technology practice with several levels of agreement; for instance The implementation of IT infrastructure improves the quality of integrated logistics operations scores by a mean of M = 3.77. Respondents agreed that ethio teleocm IT skilled labor improves the responsiveness of integrated logistics performance with mean value of 3.85. Respondents also agreed with statement of ethio telecom IT infrastructure improves the flexibility of integrated logistics performance since mean value is greater than average (M=3.93). Respondents agreed that the IT training reduces the cost of integrated logistics performance at mean value of (M=3.6). Generally, majority of respondents agreed with the above statements which is confirmed by mean of mean M=3.78. This indicates that the information technology variable influences integrated logistics performance in ethio telecom. The Marketing Device and Terminal Manager and Fleet Operation Manager interviewees supported the result that is addressed how the business was not broadly utilizing IT infrastructure to streamline office operations, such as the integration of user departments with procurement, procurement with finance, and procurement with transportation management. Furthermore, the company is unable to provide frequent and updated information technology trainings to its employees in order to refresh and expand their IT skills. These issues have an impact on the ethio telecom's integrated logistics performance since information technology has a significant impact based on the study.

4.2.2.2 Organizational Structure

Table 4.8 Organizational Structure

Statement	N	Min	Max	Mean	Std. Dev
Ethio telecom structure increases the quality of integrated logistics performance.	216	1	5	3.72	1.051
Ethio telecom structure boosts the responsiveness of integrated logistics performance.	216	1	5	3.90	.991
Ethio telecom structure enhances flexibility of integrated logistics performance.	216	1	5	3.87	1.072
Ethio telecom structure reduce the cost of integrated logistics performance.	216	1	5	3.93	1.004
Valid N (listwise)	216	Mean of Mean 3.85			

(Source: survey result, 2023)

Table 4.8 is all about internal factor of organizational structure. Four items were used to analyze organizational structure internal factor variable, the maximum mean is 3.93 with statement ethio telecom structure reduce the cost of integrated logistics performance and followed by the mean value of 3.9 which statement is ethio telecom structure increases the quality of integrated logistics performance. The respondents agreed that ethio telecom structure enhances flexibility of integrated logistics performance at mean value of M=3.87 and the minimum mean is 3.72 with statement of ethio telecom structure increases the quality of integrated logistics performance. The review of literature examines structural relationships from a variety of perspectives that organizational structure is the framework of the relations on jobs, systems, operating process, people and groups making efforts to achieve the goals. Organizational structure is a set of methods dividing the task to determined duties and coordinates them (Johatch, 2014). The overall the respondents are agreed statements which is indicated by mean of mean M=3.85 and that affecting the integrated logistics performance of the organization since an organizational structure is a strategy or system for dividing, organizing, and coordinating organizational operations including logistics operations.

4.2.2.3 Employee Competence

Table 4.9 Employee Competence

Statement	N	Min	Max	Mean	Std. Dev
Employees' skill helps to manage seasonal demand.	216	1	5	4.08	.936
Employees' skill helps to enhance ethio telecom's product delivery time.	216	1	5	4.07	.807
Employees' skill helps to improve transportation management.	216	1	5	3.80	.941
Logistics related trainings enhance integrated logistics performances.	216	1	5	3.82	.940
Valid N (listwise)	216	Mean of Mean 3.94			

(Source: survey result, 2023)

As shown in table 4.9, the respondents agreed with employee competence internal variable with several level of agreement, for instance employees' skill helps to manage seasonal demand scores mean of M=4.08. Respondents agreed that employees' skill helps to enhance ethio telecom's product delivery time with mean value of 4.07. Respondents also agreed with statement of employees' skill helps to improve transportation management since the mean value is greater than average (M=3.80). Respondents agreed that the logistics related trainings enhance integrated logistics performances at mean value of (M=3.82). Generally, majority of respondents agreed with the above statements which is confirmed by mean of mean M=3.94. Employee skills are critical for improved performance in service providers' business companies and corporations must prioritize employee skills to achieve successful service performance. Employee competency influences company operation performance as well as integrated logistics performance (Siddig Balal Ibrahim, 2018). The study result shows that the employee competence variable influences integrated logistics performance in ethio telecom.

4.2.3 External Factors Affecting Integrated Logistics Performance

4.2.3.1 Infrastructure

Table 4.10 Infrastructure

Statement	N	Min	Max	Mean	Std. Dev
The country's infrastructure helps to minimize the cost of integrated logistics performance.	216	1	5	3.60	.993
The country's infrastructure improves the responsiveness of integrated logistics performance.	216	1	5	3.69	.975
The country's infrastructure improves the quality of integrated logistics performance.	216	1	5	3.75	.962
A country's infrastructure maximizes the adaptability of integrated logistics performance.	216	1	5	3.69	.979
Valid N (listwise)	216	Mean of Mean 3.67			

(Source: survey result, 2023)

Table 4.10 is all about external factor of infrastructure. The researcher were used four items to analyze infrastructure as external factor variable, the maximum mean is 3.75 with statement of the country's infrastructure improves the quality of integrated logistics performance. Followed by the mean value of 3.69 that the items are country's infrastructure improves the responsiveness of integrated logistics performance and a country's infrastructure maximizes the adaptability of integrated logistics performance. The minimum mean is 3.6 with statement of the country's infrastructure helps to minimize the cost of integrated logistics performance. Generally, the respondents are agreed statements which is indicated by mean of mean M=3.67 and this infrastructure external factor affecting the integrated logistics performance. According to evidence from enterprise surveys, infrastructure constraints contribute to around 50% of the productivity deficit faced by Ethiopian business companies (Vivien F, 2015). The study result shows that the infrastructure variable influences integrated logistics performance in ethio telecom.

4.2.3.2 Custom Process

Table 4.11 Custom Process

Statement	N	Min	Max	Mean	Std. Dev
The country's custom procedure improves the responsiveness of integrated logistics performance.	216	2	5	3.74	1.006
Custom procedure of the country reduces the cost of integrated logistics performance.	216	1	5	3.73	1.058
Custom procedure of the country enhances the flexibility of integrated logistics performance.	216	2	5	3.69	1.020
Custom procedure of the country increases the quality of integrated logistics performance.	216	2	5	3.66	.994
Valid N (listwise)	216	Mean of Mean 3.7			

(Source: survey result, 2023)

As shown in table 4.11, the respondents agreed with custom process external variable with several level of agreement, for instance the country's custom procedure improves the responsiveness of integrated logistics performance. scores mean of M=3.74. Respondents agreed that the country's custom process lowers the cost of integrated logistics performance with mean value of 3.73. Respondents also agreed with statement of the country's custom process enhances the flexibility of integrated logistics performance since the mean value is greater than average (M=3.69). Respondents agreed that the country's custom process improves the quality of integrated logistics performance at mean value of (M=3.66). Generally, majority of respondents agreed with the above statements which is confirmed by mean of mean M=3.7. This shows that the custom process external factor influences the integrated logistics performance in ethio telecom. According to Debebe Dessalegn Sirika and Teklu Kassu Gizaw (2016), the primary determinants of custom clearing costs and time delays in the clearance process increase, which is immediately transmitted to end-users. Regarding, factor affecting integrated logistics performance, Custom clearance Manager exclusively agreed on that custom clearance processes are critical factor affect performance of integrated logistics operation of the company based on the interview.

4.2.3.3 Bank Process

Table 4.12 Bank Process

Statement	N	Min	Max	Mean	Std. Dev
The country's banking method lowers the cost of integrated logistics performance.	216	1	5	3.95	.836
The country's banking process improves the responsiveness of integrated logistics performance.	216	1	5	3.95	.817
The country's banking process improves the quality of integrated logistics performance.	216	1	5	3.96	.818
A country's banking process maximizes the flexibility of integrated logistics performance.	216	1	5	4.07	.841
Valid N (listwise)	216	Mean of Mean 3.98			

(Source: survey result, 2023)

As shown in table 4.12, the respondents agreed with bank process external variable with several level of agreement, for instance the country's banking method lowers the cost of integrated logistics performance scores mean of M=3.95. Respondents agreed that the country's banking process improves the responsiveness of integrated logistics performance with mean value of 3.95. Respondents also agreed with statement of the country's banking process improves the quality of integrated logistics performance since the mean value is greater than average (M=3.96). Respondents agreed that a country's banking process maximizes the flexibility of integrated logistics performance at mean value of (M=4.07). Generally, majority of respondents agreed with the above statements which is confirmed by mean of mean M=3.98. This indicates that the bank process external variable affects integrated logistics performance in ethio telecom.

4.2.3.4 Supplier Performance

Table 4.13 Supplier's Performance

Statement	N	Min	Max	Mean	Std. Dev
Supplier's performance practices increases the quality of integrated logistics performance.	216	3	5	4.02	.841
Supplier's performance decreases the cost of integrated logistics performance.	216	3	5	4.01	.804
Supplier's performance enhances the responsiveness of integrated logistics performance.	216	3	5	4.00	.846
Supplier's performance increases the flexibility of integrated logistics performance.	216	3	5	3.98	.838
Valid N (listwise)	216	Mean of Mean 4.00			

(Source: survey result, 2023)

As shown in table 4.13, the respondents agreed with suppliers performance external variable with several level of agreement, for instance the performance practices of suppliers improve the quality of integrated logistics performance scores mean of M=4.02. Respondents agreed that supplier's performance decreases the cost of integrated logistics performance with mean value of 4.01. Respondents also agreed with statement of supplier's performance enhances the responsiveness of integrated logistics performance since the mean value is greater than average (M=4.00). Respondents agreed that the supplier's performance increases the flexibility of integrated logistics performance at mean value of (M=3.98). Generally, majority of respondents agreed with the above statements which is confirmed by mean of mean M=4.00. Based on the interview with commercial item procurement manager, supplier's performance is critical factor to complete the products procurement process successfully with the intended quality and time. Those findings implies that the suppliers' performance variable influences integrated logistics performance in ethio telecom.

4.2.4 Integrated Logistics Performance in Case of Ethio Telecom

Table 4.14 Integrated Logistics Performance

Statement	N	Min	Max	Mean	Std. Dev
In ethio telecom, the cost of inventory management decreased over the last three years.	216	1	5	3.79	1.116
In ethio telecom, the quality of procurement items increased over the last three years.	216	1	5	3.81	1.042
In ethio telecom, the responsiveness of transportation management increased over the last three years.	216	1	5	4.07	.910
In ethio telecom, the flexibility of employee increased over the last three years.	216	1	5	3.86	.894
In ethio telecom, the quality of information technology utilization increased over the last three years.	216	1	5	4.08	.800
Valid N (listwise)	216	Mean of Mean 3.92			

(Source: survey result, 2023)

Table 4.14 is all about integrated logistics performance in case of ethio telecom. The researcher were used five items to analyze ethio telecom integrated logistics performance, the maximum mean is 4.08 with statement of the quality of information technology utilization increased over the last three years in ethio telecom. Followed by the mean value of 4.07 that the item is the responsiveness of transportation management increased over the last three years in ethio telecom. Respondents agreed that the flexibility of employee increased over the last three years in ethio telecom with mean value of 3.86. Respondents also agreed with statement the quality of procurement items increased over the last three years in ethio telecom since the mean value is 3.81 and the minimum mean value is 3.79 with statement of the cost of inventory management decreased over the last three years in ethio telecom. Generally, the respondents are agreed statements that is indicated by mean of mean M=3.92 and the integrated logistics performance of ethio telecom is good. The interview with Logistics department director supports that the logistics cost of the last couple of years indicates that as a reason of practices of integration among stakeholders in logistics operation and company do to save strategy which focus on cutting cost of operation, logistics cost operation cost shows decrement.

Logistics operations activities improved in terms of quality and responsiveness as a result of practices of integrated logistics operation like adaption of advanced technology in logistics operation, work process automation, integration with internal stakeholders and suppliers.

4.3 Correlation Analysis

Correlation is used to test relationships between variables or it's a measure of how variables are related. Based on this we can call that the study of how variables are correlated is referred to as correlation analysis. A value of correlation coefficients is between **-1 and 1**. **A "0"** means there is no relationship between the variables at all, while **-1** means that there is a perfect negative while **1** means that there is positive correlation between variables.

According to Ratner (2009), the following points are the guidelines for interpreting the correlation coefficient.

- Values between 0 and 0.3 (0 and −0.3) indicate a weak positive (negative) linear relationship.
- Values between 0.3 and 0.7 (0.3 and −0.7) indicate a moderate positive (negative) linear relationship.
- Values between 0.7 and 1.0 (−0.7 and −1.0) indicate a strong positive (negative) linear relationship.

Table 4.15 Correlation Analysis

		ILP	IT	OS	EC	I	CP	BP	SP
ILP	Pearson Correlation	1							
	Sig. (2-tailed)								
	N	216							
IT	Pearson Correlation	.571**	1						
	Sig. (2-tailed)	.000							
	N	216	216						
OS	Pearson Correlation	.503**	.648**	1					
	Sig. (2-tailed)	.000	.000						
	N	216	216	216					
EC	Pearson Correlation	.487**	.216**	.255**	1				
	Sig. (2-tailed)	.000	.001	.000					
	N	216	216	216	216				
I	Pearson Correlation	.001	-.026	.034	-.017	1			
	Sig. (2-tailed)	.987	.700	.620	.800				
	N	216	216	216	216	216			
CP	Pearson Correlation	.105	.138*	.095	.092	-.035	1		
	Sig. (2-tailed)	.125	.042	.163	.179	.611			
	N	216	216	216	216	216	216		
BP	Pearson Correlation	.312**	.216**	.249**	.068	.003	.023	1	
	Sig. (2-tailed)	.000	.001	.000	.322	.965	.739		
	N	216	216	216	216	216	216	216	
SP	Pearson Correlation	.121	-.011	.018	.070	.007	-.038	-.024	1
	Sig. (2-tailed)	.077	.877	.794	.305	.917	.583	.722	
	N	216	216	216	216	216	216	216	216

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

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

(Source: Survey Result, 2023)

ILP- Integrated logistics performance	I- Infrastructure
IT- Information Technology	CP- Custom process
OS- organizational Structure	BP- Bank process
EC- Employee Competence	SP- Supplier performance

As shown in table 4.15 that is all about relationship between independent variable; information technology, organizational structure, employee competence, custom process, bank process, infrastructure, supplier performance and dependent variable (integrated logistics performance). From the table one concludes that the relationship between dependent variable and all independent variables is positive and but they are different on degree of significance. Based on output of the data, there is a moderate positive relationship between the dependent variable and four predicator variables. The relationship between information technology and integrated logistics performance is moderate and significant (with r= 0.571 and significant level of p=.000). The relationship between organizational structure and integrated logistics performance is moderate and significant (with r= 0.503 and significant level of p=.000). The relationship between employee competence and integrated logistics performance is moderate and significant (with r= 0.487 and significant level of p=.000). Similarly, the relationship between bank process and integrated logistics performance is moderate and significant (with r= 0.312 and significant level of p=.000). On the other hand, the relation there is a weak and insignificant but positive relationship between the dependent variable and three predicator variables. The relationship between dependent variable and infrastructure is weak and insignificant (with r= 0.001 and significant level of p=.0987. The relationship between dependent variable and custom process is weak and insignificant (with r= 0.105 and significant level of p=.125. Similarly, the relationship between dependent variable and supplier performance is weak and insignificant (with r= 0.121 and significant level of p=.077 which is greater than common alpha.

4.4 Multiple Linear Regression Analysis

4.4.1 Assumptions Testing in Multiple Regression

Multi-collinearity- multi-collinearity occurs when the independent variables are too highly correlated with each other. One of the assumptions to check multi-collinearity is through:

We can check multi-collinearity through correlation coefficients and variance inflation factor (VIF) values.

Correlation coefficients- all predictor variables in a correlation matrix coefficient magnitude are less than .80 and confirms correlation coefficient method is fulfilled since maximum magnitude is .571.

Variance Inflation Factor (VIF) - is another method to check multi-collinearity. The VIFs of the linear regression indicate the degree that the variances in the regression estimates are increased due to multi-collinearity. It is just the inverse of the tolerance value (1 divided by Tolerance). VIF values higher than 10 indicate that multi-collinearity is a problem and recommended if less than 5. This condition is satisfied from table 4.16, the maximum VIF result is 1.81.

Tolerance is an indicator of how much of the variability of the specified independent variable is not explained by the other independent variables in the model and is calculated using the formula $1–R^2$ for each variable. If this value is very small (less than 0.10), it indicates that the multiple correlation with other variables is high, suggesting the possibility of multi-collinearity. Tolerance value is greater than 0.1 (the minimum tolerance value was 0.552). This shows that there was no multi-collinearity problem within the model.

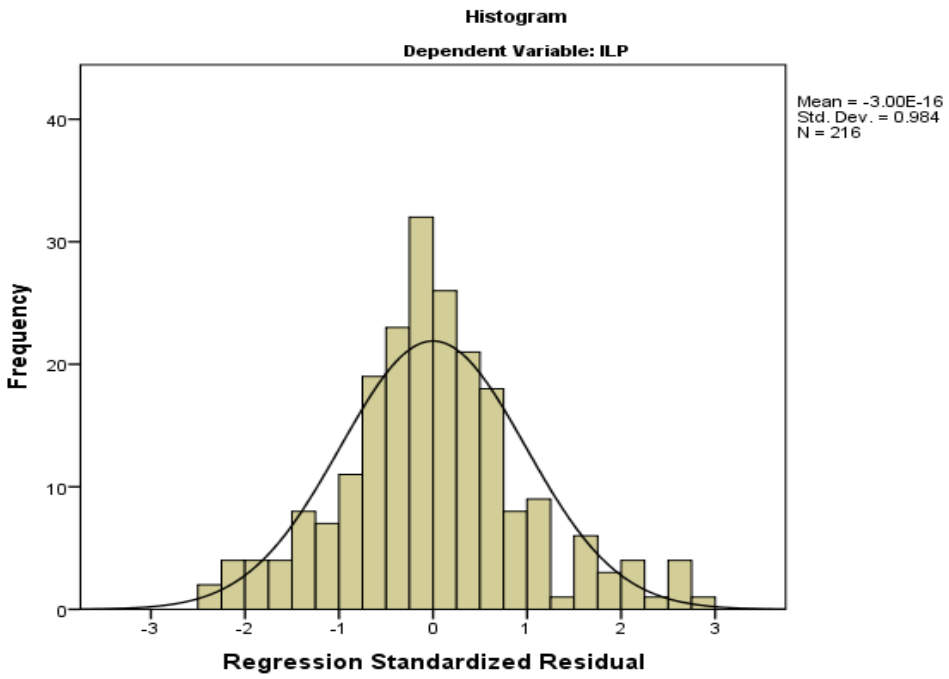

Figure 4.1 Histogram of regression standardized residual

The shape of the histogram follows the shape of the normal curve well. Q-Q plots display the observed values against normally distributed data (represented by the line). Scatterplots show that assumption the assumption of linearity is fulfilled. The points were distributed proportionally around a diagonal line, resulting in a linearity shape. Data that is normally dispersed falls along the line. It is expected that points in the Normal Probability Plot lie along a substantially straight diagonal line from bottom left to top right (the dot should be along the line). Data that aligns closely to the dotted line indicates a normal distribution. This would imply that there are no significant deviations from normality because the points on the graph form a line, as seen in the figure below.

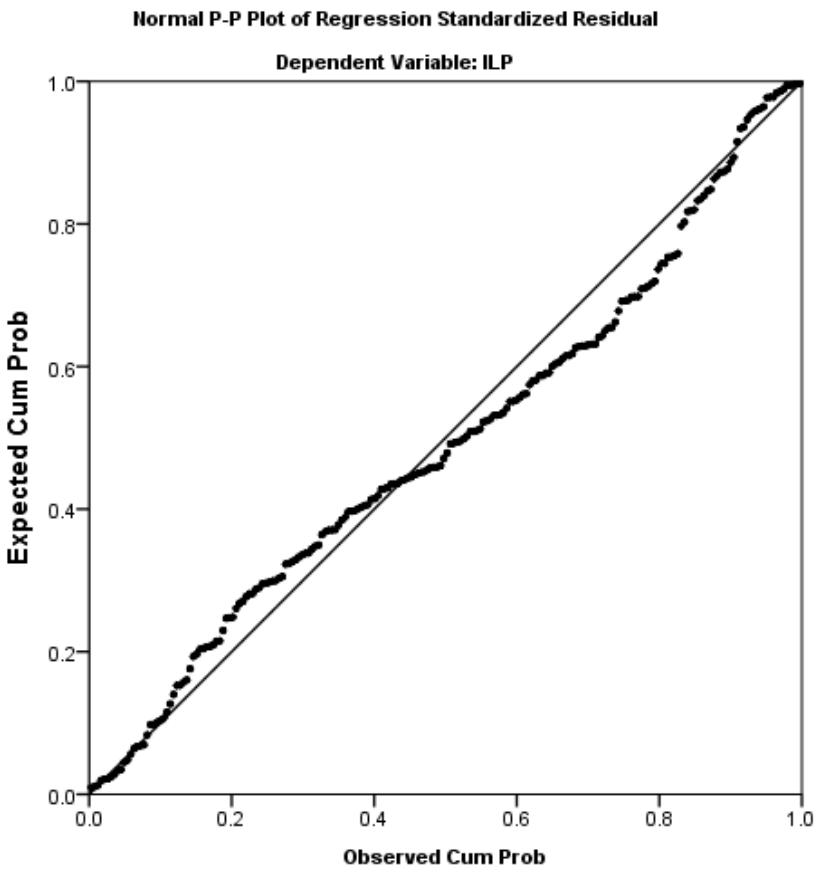

Figure 4.2 Normal P-P plot of regression standardized residual

4.4.2 The Regression Analysis Model

A regression coefficient can be positive or negative which is all about the correlation between each independent variable and the dependent variable. A positive coefficient of regression indicates that as the value of the independent variable increases, the dependent variable also increases. A negative coefficient indicates while the independent variable increases, the dependent variable will decrease. Regression analysis is related with determining how variations in the independent variables are related with changes in the dependent variable.

The coefficient value signifies how much the mean of the dependent variable changes given a one-unit shift in the independent variable while holding other variables in the model constant. This allows to predict the effect of each variable in loneliness from the others.

R Square is all about proportion of the variance in the dependent variable that can be explained by the independent variables, in other word it is degree of dependent variable predicted by independent variables.

Table 4.16 Regression Analysis

Model Summary

Model	R	R Square	Durbin-Watson
1	.720	.518	1.893

a. Predictors: (Constant), SP, I, BP, CP, EC, IT, OS
b. Dependent Variable: ILP

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.032	.361		.088	.930		
	IT	.324	.055	.378	5.910	.000	.567	1.764
	OS	.094	.051	.120	1.860	.064	.552	1.812
	EC	.305	.043	.355	7.083	.000	.922	1.085
	I	.010	.039	.012	.252	.801	.993	1.007
	CP	.006	.036	.009	.178	.859	.974	1.027
	BP	.165	.046	.179	3.593	.000	.932	1.073
	SP	.097	.046	.102	2.117	.035	.991	1.009

(Source: Survey Result, 2023)

Table 4.16 summarizes the regression analysis of the study. As shown in this table, the effect of all predictors was positive. In regression model of this study, the size of the coefficient for each independent variable gives us the size of the effect that variable have on the dependent variable, and the positive sign on the coefficient tells us the positive direction of the effect. Coefficients of the study tells us about changes. From the regression output, we can see that the regression coefficient for information technology is 0.378. This means that, on average, each additional information technology is associated with an increase of 0.378 on the

integrated logistics performance, assuming others predictor variables held constant. The same is true for others.

The p-value from the regression table all about whether the regression coefficient is statistically significant. As shown in the table, the p-value for four predictors; information technology, employee competence, bank process and organizational structure is statistically significant at an alpha level of 0.05 or it is confirmed by p-value of less than 0.05 common alpha. On the other hand, p-value for three predictors; infrastructure, custom process and supplier performance is statistically insignificant at an alpha level of 0.05 or it is confirmed by p- value of greater than 0.05 common alpha.

By the regression analysis, it is possible to discuss about predict level of independent variables related to dependent variable. The value of R square 0.518 means that the predictor variables forecast 51.8% of the change in integrated logistics performance while 48.2% was predicted by other variables.

Based on the analysis, the below model was developed.

$$\mathbf{Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta 6X6 + \beta 7X7 + \varepsilon}$$

Y- Dependent variable
$\beta 0$- Constant (Coefficient of Intercept)
X1 … X4 - Independent variables
$\beta 1 \ldots \beta 4$- Regression coefficient of independent variables
ε - Random error for this study the model was,

Y=.032+.378 (IT) +.120 (OS) + .355 (EC)+.012(I)+.009 (CP)+.179 (BP)+.102 (SP)+ε

ILP- Integrated logistics performance	I- Infrastructure
IT- Information Technology	CP- Custom process
OS- organizational Structure	BP- Bank process
EC- Employee Competence	SP- Supplier performance

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter summarizes the major findings of the study in accordance with the research objectives. It also includes a conclusion, recommendations, and future study recommendations.

5.1 Summary of Major Findings

The result of demographic information indicated that from the total respondents (62.5%) were male and (37.5%) were female. The largest group of respondents in terms of age that contains (46.8%) was less than 35 years, whereas the smallest group of respondents that contains (9.2%) was aged above 45 years. This indicates that most of Ethio telecom employees are young people. In terms of level of education, from entire population 129 respondents which contains (59.7%) were degree holders and 82 respondents which contains (38%) were postgraduate and above. Regarding working experience, the largest group of respondents that contains (50%) have between 11 to 15 years. This indicates that majority of Ethio telecom employees have long experience in the company.

The findings revealed the company has a moderate correlation between information technology and integrated logistics performance. The regression analysis revealed that information technology has a moderate positive significant effect on integrated logistics performance at P=0.000 which is less than P= 0.05. Under the information technology statement, the majority of respondents agreed with the implementation of information technology infrastructure improves the quality of integrated logistics operations (M=3.93), information technology skilled labor improves the responsiveness of integrated logistics performance (M=3.85) and information technology infrastructure improves the flexibility of integrated logistics performance (M=3.77). The study found that a moderate relationship between organizational structure and integrated logistics performance. The regression analysis revealed that organizational structure has a moderate positive significant effect on integrated logistics performance at P=0.000 which is less than P= 0.05. Under the organizational structure statement, the majority of respondents agreed with Ethio telecom structure reduce the cost of integrated logistics performance (M=3.93), Ethio telecom structure boosts the responsiveness of integrated logistics performance (M=3.90) and Ethio telecom structure enhances flexibility

of integrated logistics performance (M=3.87). The study further revealed that the company has a moderate relationship between employee competence and integrated logistics performance. The regression analysis revealed that employee competency has a moderate positive significant effect on integrated logistics performance at P=0.000 which is less than P= 0.05. Under employee competency, the majority of respondents agreed on employees' skill helps to manage seasonal demand (M=4.08), employees' skill helps to enhance ethio telecom's product delivery time (M=4.07) and logistics related trainings enhance integrated logistics performances (M=3.82). The study found that the company has a weak relationship between infrastructure and integrated logistics performance. The regression analysis revealed that infrastructure has a weak positive relationship and insignificant effect on integrated logistics performance at p=.0987 which is greater than P=0.05. Under infrastructure statement, the majority of respondents agreed on the country's infrastructure improves the quality of integrated logistics performance (M=3.75) and the country's infrastructure improves the responsiveness of integrated logistics performance (M=3.69). The study further revealed that the company has a weak relationship between custom process and integrated logistics performance. The regression analysis revealed that customer process has a weak positive relationship and insignificant effect on integrated logistics performance at p=.125 which is greater than P=0.05. Under custom process, the majority of respondents agreed on the country's custom procedure improves the responsiveness of integrated logistics performance (M=3.74), the custom procedure of the country reduces the cost of integrated logistics performance (M=3.73) and custom procedure of the country enhances the flexibility of integrated logistics performance (M=3.69). The study further revealed that the company has a moderate relationship between bank process and integrated logistics performance. The regression analysis revealed that bank process has a moderate positive significant effect on integrated logistics performance at P=0.000 which is less than P= 0.05. Under bank process, the majority of respondents agreed on a country's banking process maximizes the flexibility of integrated logistics performance (M-4.07) and the country's banking process improves the quality of integrated logistics performance (M=3.96). The study found that the company has a weak relationship between supplier performance and integrated logistics performance. The regression analysis revealed that supplier performance has a weak positive relationship and insignificant effect on integrated logistics performance at p=.077 which is greater than P=0.05. Under the supplier performance, the majority of

respondents agreed on supplier performance practices increases the quality of integrated logistics performance (M=4.02), the supplier performance decreases the cost of integrated logistics performance (M=4.01) and the supplier performance enhances the responsiveness of integrated logistics performance (M=4.00).

5.2 Conclusions

This study has assessed the factors affecting the integrated logistics performance in case of ethio telecom. The study concluded that these identified internal and external variables have a positive relationship to enhance ethio telecom integrated logistics performance with different degree of significant level. These includes information technology, organizational structure, employee competency, infrastructure, custom process, bank process and supplier performance.

Based on the study results, the study concluded that Ethio telecom has adopted information technology and resulted a moderate positive significant effect on integrated logistics performance of Ethio telecom. Adopting information technology by the company helps achieving business goals through simplifying the collaboration and integration among departments and this leads to a wide range that influences integrated logistics actors as well as increases its performances.

The study concluded that employee competence has a moderate positive significant effect on integrated logistics performance of Ethio telecom. Empowering the company's back line employees and energizing and motivating employees through incentives and bonus are best ways in order to enhance integrated logistics performance of the company as well as satisfying its customers and increase the company's profitability.

The study concluded that the organizational structure has a moderate positive significant effect on integrated logistics performance of Ethio telecom. Enhancing the company's structure and keeping its alignment with automated processes and procedures assists to implement agile logistics operational activities and achieve the company's target.

The study concluded that infrastructure has a weak relationship and insignificant effect on integrated logistics performance of the company. From this conclusion, it can be interpreted that even though there is a weak relationship and insignificant effect between infrastructure and integrated logistics performance of a company yet infrastructure is an important tool to ensure sustainable logistics operations of the company.

The study concluded that bank process has a moderate positive relationship and significant effect on integrated logistics performance of Ethio telecom. Engaging partnership with different commercial banks through successful collaboration and win-win partnership approach improves the integrated logistics performance of the company.

The study concluded that custom process has a weak positive effect on integrated logistics performance and statistically insignificant. Even though custom process has insignificant effect on integrated logistics performance, yet custom process is very important in terms of availing items to market at the right time and place and this helped the company to have seamless logistics operations.

The study concluded that supplier performance has a weak positive effect on integrated logistics performance and statistically insignificant. From this conclusion, it can be interpreted that even though there is a weak relationship and insignificant effect between supplier performance and integrated logistics performance of a company yet supplier performance is the basic stakeholder in integrated logistics operation in order to deliver the right product at the right time with the intended quality as per the product specifications. Generally, adopting these variables (information technology, organizational structure, employee competency, infrastructure, custom process, bank process and supplier performance) has impact on the company's integrated logistics performance.

5.3 Recommendations

Based on the findings and conclusions, the researcher recommended that the below listed points.

- Ethio telecom should continually adopt employee competency enhancement strategy (give frequent training to staffs, motivating them and selecting the right people who know their duty well) using these tactics the company can have positive effect of employee on integrated logistics performance. Successfully competent employee improves delivery of high quality of service and contribution to the customer satisfaction and this leads to efficient integrated logistics performance, increment of the company's revenue and profitability. Besides, the company should continuing employees' responsiveness towards on customer satisfaction because satisfied customers and high customers' concentration are indicators for the company's integrated logistics performance.
- Ethio telecom should continually adopt updated information technologies with latest equipment and the company should be strengthen advanced information technologies implementation to serve its customers well in time through regulating each logistics operation activities such as GPS for heavy vehicles that transports the company's product in order to deliver at the right time with the intended quality. This influence employees and stakeholders positively and also have a positive impact on integrated logistics performance of the company.
- The company should continually engage with suppliers even if there is a weak positive relationship between supplier performances has insignificant effect on integrated logistics performance, it has a critical role to have world class product and service through supplier's improvement proposals on the company's products and services following their experience internationally or nationally.
- The company should continually try to coordinate with different commercial banks through implementing win-win approach to simplify bank processes and facilitate the requests rapidly in order to obtain the required service from banking sector and this stimulate suppliers to produce and deliver the products at the right time so that the company keep order delivery time to customers.

5.4 Limitation and Suggestion for Further Study

The researcher recommends the following points for future researchers to take in to consideration;

- Since this study conducted within single company as a case study, the result is only partly generalizable. Further research should focus on more companies from different industries in order to study if there are differences from one industry to another.
- The research was done in ethio telecom by taking logistics stakeholders staffs and management of the company as a total population, which are limited in numbers. So, to found more sounding generalization the future researchers are recommended to broaden a base of their target total population.
- There might be important critical factors excluded from this study, so further intensive literature investigation is recommended to sort additional significant factors to be studied.
- Finally, integrated logistics is complex task that involve a lot of stakeholders. Therefore, the future research is recommended to incorporate key stakeholders like suppliers in to target population to identify more gaps and recommend potential tips for effective and efficient integrated logistics performance.

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Appendices

APPENDIX

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

LOGISTICS & SUPPLY CHAIN MANAGEMENT DEPARTMENT

Dear Respondent,

My name is Yonatan Afrasa Gultie. I am a post-graduate student at Addis Ababa University School of Commerce. Currently, I am conducting research on a title "Factors Affecting Integrated Logistics Performance in the Case of ethio telecom", for the partial fulfilment of Master of Art Degree in Logistics and Supply Chain Management. Hence, you are kindly requested to participate in this research by filling the following questions. The objective of this questionnaire is to gather information on research entitled above and only for academic purpose. Therefore, your genuine and sincere cooperation in filling this questionnaire will be highly helpful for successful accomplishment of the study.

Thank you in advance for your cooperation!

Section One:

1. Gender:

Male [ ] Female [ ]

2. Age:

< 35 years [ ] 35-45 years [ ] > 45 years [ ]

3. Education:

Diploma [ ] Degree [ ] Postgraduate and above [ ]

Other, if any (specify) _____

4. Years of Service

Below 3 [ ] 3-6 [ ] 6-9 [ ] 9-12 [ ] Above 12 [ ]

Section Two:

Directions: Based on your experiences in ethio telecom, you are kindly requested to rate each of the following statements by putting "X" on the appropriate number with respect to your level of agreement/disagreement against each statement using 5- point Likert scale whereas,

1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

No.	Items related to Inventory management practice	1	2	3	4	5
1	The Economic Order Quantity technique is used by Ethio Telecom to manage inventory.					
2	Ethio telecom experiences neither excess nor deficit of inventories.					
3	Ethio telecom disposes of expired materials in a timely manner.					
4	Ethio telecom using bar code to manage its inventory.					
	Items related to Transportation management practice					
5	Ethio telecom transportation practices to move safely.					
6	Ethio telecom's transportation management is eager to move products on time.					
7	Ethio telecom employs the most cost-effective transportation system.					
8	ethio telecom's transportation management team collaborates with outside transportation providers.					
	Items related to Procurement practice					
9	The items specifications are confirmed prior to selecting a supplier.					

10	Contract management is carried out in accordance with the terms and conditions of the bidding and contract documents.					
11	Ethio telecom working units organize and plan their purchase needs.					
12	Ethio telecom practices piecemeal purchasing.					
	Items related to Information technology practices					
13	Ethio telecom practices IT infrastructure for inventory management modernization.					
14	Ethio telecom uses IT infrastructure to manage transportation.					
15	Ethio telecom uses IT infrastructure to expedite the procurement process.					
16	Ethio teleocm uses IT infrastructure to expedite the logistical integration.					

Section Three: Factors affecting integrated logistics performance of ethio telecom

Directions: Please rate each of the following statements by putting "X" on the appropriate number with respect to your level of agreement/disagreement against each statement using 5- point Likert scale whereas,

1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

No.	**Items related to Information Technology**	**1**	**2**	**3**	**4**	**5**
1	The implementation of IT infrastructure improves the quality of integrated logistics operations.					
2	IT-skilled labor improves the responsiveness of integrated logistics performance.					

3	IT infrastructure improves the flexibility of integrated logistics performance.					
4	IT training reduces the cost of integrated logistics performance.					
	Items related to Organization Structure					
5	Ethio telecom structure increases the quality of integrated logistics performance.					
6	Ethio telecom structure boosts the responsiveness of integrated logistics performance.					
7	Ethio telecom structure enhances flexibility of integrated logistics performance.					
8	Ethio telecom structure reduce the cost of integrated logistics performance.					
	Items related to Employee Competency					
9	Employees' skill helps to manage seasonal demand.					
10	Employees' skill helps to enhance ethio telecom’s product delivery time.					
11	Employees’ skill helps to improve transportation management.					
12	Logistics related trainings enhance integrated logistics performances.					
	Items related to Infrastructure					
13	The country's infrastructure helps to minimize the cost of integrated logistics performance.					
14	The country's infrastructure improves the responsiveness of integrated logistics performance.					
15	The country's infrastructure improves the quality of integrated logistics performance.					

16	A country's infrastructure maximizes the adaptability of integrated logistics performance.					
	Items related to Custom Process					
17	The country's custom procedure improves the responsiveness of integrated logistics performance.					
18	Custom procedure of the country reduces the cost of integrated logistics performance.					
19	Custom procedure of the country enhances the flexibility of integrated logistics performance.					
20	Custom procedure of the country increases the quality of integrated logistics performance.					
	Items related to Bank Process					
21	The country's banking method lowers the cost of integrated logistics performance.					
22	The country's banking process improves the responsiveness of integrated logistics performance.					
23	The country's banking process improves the quality of integrated logistics performance.					
24	A country's banking process maximizes the flexibility of integrated logistics performance.					
	Items related to Suppliers' Performance					
25	Supplier's performance practices increases the quality of integrated logistics performance.					
26	Supplier's performance decreases the cost of integrated logistics performance.					
27	Supplier's performance enhances the responsiveness of integrated logistics performance.					

28	Supplier's performance increases the flexibility of integrated logistics performance.					

Section Four: Integrated logistics performance of ethio telecom.

Directions: Please rate each of the following statements by putting "X" on the appropriate number with respect to your level of agreement/disagreement against each statement using 5- point Likert scale whereas,

1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

No.	**Items related to Integrated logistics performance**	**1**	**2**	**3**	**4**	**5**
1	In ethio-telecom, the cost of inventory management decreased over the last three years.					
2	In ethio-telecom, the quality of procurement items increased over the last three years.					
3	In ethio-elecom, the responsiveness of transportation management increased over the last three years.					
4	In ethio-telecom, the flexibility of employee increased over the last three years.					
5	In ethio-telecom, the quality of information technology utilization increased over the last three years.					

Interview Questionnaire

Dear respondent,

First, I would like to thank you in advance for taking your time to fill this interview questionnaire.

My name is Yonatan Afrasa, I am MA graduating student in logistics and supply chain management at Addis Ababa University, School of Commerce. I am studying the factors affecting integrated logistics performance of ethio telecom. Therefore, I kindly request you to participate in this study by completing this interview questionnaire. This research is only for research purpose and no other party will have the access to the collected data.

1. How integrated logistics is being practiced in ethio telecom?

2. What are the internal factors affecting integrated logistics performance of ethio telecom and to what extent these factors influence logistics performance?

3. What are the external factors affecting integrated logistics performance of ethio telecom and to what extent these factors influence logistics performance?

4. What is the performance of integrated logistics performance of ethio telecom in terms of cost, quality and responsiveness?