



SEEK WISDOM, ELEVATE YOUR INTELLECT AND SERVE HUMANITY!



The Effect of Logistics Challenges On Organizational Performance: The Case Ethiopian Shipping
and Logistics Service Enterprise

By: Sirak Belachew

A Thesis Submitted to Addis Ababa University School of Commerce

In Presented in Partial Fulfillment of the Requirements of Masters of Arts

Degree in Logistics and Supply Chain Management

Adviser: Dr. Kirubel Biruk (PhD)

June, 2024

Addis Ababa, Ethiopia

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Student Declaration

I, hereby confirm that this thesis, The Effect of logistics challenges on organizational performance in case of Ethiopian shipping and logistics service enterprise, is my own original work and has not been submitted for credit towards a degree at another institution of higher learning. All sources used to support this research have also been properly referenced.

Signed: _____ Date: _____

SIRAK BELACHEW

STATEMENT OF CERTIFICATION

This is to certify that, this research “the effect of logistics challenges on organizational performance in case of Ethiopian shipping and logistics service enterprise”, undertaken by Sirak Belachew Tufa in partial fulfilment of the requirements for Master of Arts in Logistics and Supply Chain Management at Addis Ababa University School of Commerce, is an original work and not submitted earlier for any Degree either at this university or any other university.

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ABSTRACT

The primary goal of the research is to examine the effects logistics challenges issues have on Ethiopian shipping and logistics service companies' (ESLSE) organizational performance. The study attempts to identify barriers that prevent Ethiopian businesses from maximizing their performance through logistics sector, such as inadequate technology, a scarcity of experienced labour, and infrastructural issues.

The study is conducted in Ethiopian shipping and logistics service enterprise. The study used explanatory and descriptive research designs. The research assessed quantitatively using structured five point Likert scale questionnaire the research used correlation and regression methods using SPSS version 16. the study reveals a positive correlation between the dependent variable (performance) and the independent factors (infrastructure, informational technology, skilled man power) even though positive correlation are seen the result of the regression analysis suggests that infrastructure is the only significant variable. And it's recommended that the organization takes action to upgrade their level of infrastructure to enhance the performance.

Keywords: Performance, Infrastructures, Information Technology, Skilled Man Power

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CHAPTER ONE

INRODACTION

1.1 Back ground of the study

Logistics is the process of organising, carrying out, and managing the efficient and successful transportation and storage of products, services, and related data from their origin to their destination in order to satisfy client demands, according to the Council of Logistics Management. Supply chain management, as defined by fekadu Debela (2013) is the process of arranging two or more logistical activities in a network in order to maximise value, increase productivity, and satisfy customer needs.

One such business is involved in the logistics industry. Inventory management, purchasing, shipping, warehousing, goods forwarding, and customs clearance are all included in this logistics process. It oversees the storage of raw materials to the ultimate distribution of the completed product, involving both physical and informational processes (Alan & Phil, 2006).

Logistics management includes more than just the actual moving of items; it also calls for efficient accounting, planning, processing of documents, and oversight. Because of this, logistics management includes all infrastructure and system capabilities.

As logistics service providers work to increase production and efficiency by integrating services and making the most use of information technology, Rahman (2011) claims that the rate of outsourcing is rising.

According to Llopis (2010), companies may improve their flexibility and take care of their information demands as they arise by regularly updating their contracts. Additionally, outsourcing gives the service provider greater control over how IT workload changes, allowing for more flexibility in the use of IT resources and easier transitions during periods of business instability.

Victor (2012) asserts that the results of outsourcing take time to manifest. A 20% reduction in worker productivity occurs in many organisations in the first year of an outsourcing contract.

This is mostly because of the time required to transmit expertise to the outsourced supplier. However, organisations may work together more productively and cut costs by coordinating their goals and improving their comprehension of suppliers and consumers.

When it comes to outsourcing, companies frequently choose to work with other organisations, sometimes known as "third parties," on a variety of projects. Increased flexibility is another reason to outsource as the outsourcing partner may modify the service level to suit the needs of the outsourced firm, saving it from having to commit internal resources. Decisions about outsourcing are also influenced by cost effectiveness since the external partner may be able to provide the service for less money than the corporation could if it handled it internally (Mugo, 2013).

The two main motivations for outsourcing are cost reduction and increased competitiveness overall for a business. Outsourcing also helps to lower lead times and financial outlays, boost accountability and value, enhance efficiency and service quality, and give access to resources and world-class expertise that can be shared.

Logistics companies may choose to fill specialised tasks with underqualified personnel in an effort to reduce expenses and increase income. Inexperienced workers may learn on the job as a result of this circumstance, which might result in expensive mistakes, damage to priceless equipment, and monetary losses (Bajec, 2013).

As a result, in order to increase employee competency, logistics organisations should choose knowledgeable and experienced staff members and conduct continuous training initiatives. To pool resources and knowledge in areas seen as lacking, collaborative training might be formed with an emphasis on timely service delivery and high-quality work.

Lack of Skilled Workforce: Workers in the logistics sector, according to Govindan et al. (2014), also lack specialised education, training, and technical knowledge. The absence of skilled workers to supply the necessary logistical services is a serious barrier, even with the sector's considerable GDP contribution (Thai et al. 2011& Abdulrahman et al., 2014).

Companies can obtain a competitive advantage by innovating. They can take a broad approach to innovation, taking into account both novel technologies and operational procedures (Porter, 1990).

Logistics service providers seek to boost operational efficiency through the constant application of automation or information technology based on their specific business requirements (Mason-Jones & Towill, 1999; Sauvage, 2003).

Distribution centres and other logistics service providers possess distinct operating protocols and proficiencies. Logistics service providers must learn and use their knowledge and abilities in an efficient and consistent manner in this era of information-based economies. To be competitive, logistics organisations must transform into innovation-based logistics service providers by making better use of their expertise (Chapman et al., 2003).

Technology has lately gained increased significance in the service sector, despite the fact that it was once believed to be the key to industrial efficiency (Bitner et al., 2000; Howells & Tether, 2004). Technology has made it possible for service businesses to operate more effectively and efficiently.

Urbanisation and economic growth have been shown to be significantly facilitated by infrastructural constraints, with logistics infrastructure playing a critical role. India's prominence in global trade is being bolstered by globalisation, which is increasing transportation (Venkatesh et al., 2017). The Indian government has started taking action to update airports and harbours, as well as to improve and expand the country's present road and rail networks (Mitra, 2013).

One of the most important problems that growing countries like India must initially solve is infrastructure constraint. Terrible road conditions, a lack of roads, a lack of space for seaports and airports, poor connections, extreme traffic jams, issues at checkpoints and toll booths, etc. are only a few of the issues (Mitra, 2006).

According to Sahay and Mohan (2006), poor road conditions, constrained air and seaport capacity, exorbitant tolls, poor connection, and corruption in the hinterlands and on highways are the primary causes of infrastructural bottlenecks.

The lone exception is Yeaple and Golub (2007), who examine how variations in sectoral total factor production throughout the globe are influenced by the accessibility of power, telephones, and transportation.

Infrastructure has a direct impact on transportation costs and finance expenses, which are the main components of logistics costs. Inventory levels have an indirect impact. A country's competitiveness is greatly impacted by the quality and quantity of its infrastructure since it lowers logistical costs, according to several studies (World Bank, 2016).

1.2 Statement of the problem

Efficiency of a company's supply chain since 3PL providers offer services that are still integrated into the chain but are outsourced to boost efficiency. A company's ability to capitalise on domestic and international trade opportunities is enhanced by achieving supply chain efficiency. We call this logistical performance.

the effectiveness of third-party logistics providers, with a focus on how these providers affect the supply chains of outsourced companies and a further analysis to pinpoint issues that affect 3PL performance. Because it can be challenging to determine cause and effect when managing foreign suppliers, globalisation raises the need for tight, transparent controls on outsourced work that is close to the core competency. As a result, agents and providers must establish reasonable price. The Ethiopian logistics system is characterised by inadequate fleets of goods vehicles in terms of both quantity and age, damage and quality deterioration of goods during handling, transporting, and storing, poor logistics practices and a lack of coordination of goods transport, and a low level of development of logistics infrastructure (Fekadu, 2013). Moreover, the analysis and assessment of logistical processes might help detect important issues, such emerging patterns and areas of concern, and make it easier to put corrective measures in place (Srivastava, 2006 as cited in Fekadu, 2013) performance standards.

This study's primary goal was to show how issues with logistics service impact the organisational performance of Ethiopian shipping and logistics service businesses (ESLSE). The organization's primary business, despite being landlocked, is offering logistical services to customers, which is very important to the nation. These days, a nation's ability to manage its logistics is a major factor in its ability to grow economically and compete on a national and worldwide level. Being able to move goods quickly, cheaply, and without damage is crucial in today's fast-paced world if you want to compete, rule, and prosper in a worldwide market.

Even while Ethiopian organisations stand to benefit from logistics service, a variety of barriers keep them from operating at their best. These challenges include insufficient infrastructure, a lack of competent workers, and outdated technology. It is necessary to conduct a thorough assessment and understand how these barriers affect organisational effectiveness and logistics sector. By comprehending the specific challenges associated with each challenge, it is possible to develop practical solutions to get beyond them all and enhance overall organizational performance in Ethiopia's logistics service process.

1.3 Research questions

Main research question

1. How do logistics challenges impact organizational performance of Ethiopian shipping and logistics?

Sub research questions

1. How does infrastructural challenges affect the performance of Ethiopian shipping and logistics service enterprise?
2. How does skilled manpower influence the performance Ethiopian shipping and logistics service enterprise?
3. How does information technology adoption impact the performance Ethiopian shipping and logistics service enterprise?

1.4 Objective of the study

General objective of the study

1.To investigate the effect of logistics challenges on organizational performance of the Ethiopian shipping and logistics service enterprise.

Specific objective of the study

- 1.To assess the effect of infrastructural challenge on the performance of Ethiopian shipping and logistics service enterprise.
- 2.To evaluate the effect of skilled manpower on the performance of Ethiopian shipping and logistics service enterprise.
- 3.To determine the effect of information technology adoption on performance of Ethiopian shipping and logistics service enterprise.

Significance of the study

This study's practical ramifications for Ethiopian shipping and logistics industries make it significant. The results can offer useful information to assist organizations in overcoming obstacles and enhancing performance. Furthermore, by improving business competitiveness and offering scholarly contributions to the subject of logistics management, the study can aid in policy suggestions. The study's overall importance stems from its capacity to influence policy, boost industrial competitiveness, advance academic understanding, and guide decision-making in the Ethiopian logistics and shipping sector.

1.5 Scope of the study

With regard to Logistics service, this study took place on three attributes (Infrastructure, information technology and skilled man power) of logistics sector based on the researches made by Sénquiz-Díaz, C. (2021). “Transport infrastructure quality and logistics performance in exports Economic and Organizational Innovations and Knowledge”, Lin, C.-Y. (2008). “Determinants of the adoption of technological innovations by logistics service providers in China” and Lin, C.-Y. (2007). “Factors affecting innovation in logistics technologies for logistics

service providers in China”. But there are other attributes that can be added by future researchers which will help discover more challenges of logistics service on organizational performance. Therefore, future researchers have options of expanding the scope of the study by including other attributes/ challenges. Furthermore, in case of organizational performance the study focused mainly on time and quality. Future researchers could broaden their scope by adding other attributes/ factors.

1.6 Limitation

It's crucial to remember that the study's focus is on the difficulties associated with logistics sector (infrastructure, information technology and skilled man) and how it affects organizational performance with a particular emphasis on the Ethiopian shipping and logistics sector. The research was confined to the following primary limits of the subject matter due to time and resource restrictions, as well as the remote location of several of the dry ports where the firm works. Other industries, logistics companies are not included in the research.

1.7 Conceptual definition

Supply Chain Management (SCM): is the act of managing supplier and customer connections both upstream and downstream in order to optimise customer value while reducing supply chain costs, according to (Christopher 2011 p. 3).

Third-party logistics (3PL): is the practice of contracting out a range of transportation and logistical tasks. The manufacturer and supplier are frequently in meetings with the service provider.

Operational definition

Logistics: The methodical process of arranging the acquisition, transportation, and storage of components, completed goods, and related information flows via the company and its marketing channels in order to maximize present and future profits through efficient order fulfilment (Christopher, 2011, p. 2).

Freight Forwarder: is an agent who acts on behalf of importers, exporters, or other companies to organize the safe, efficient, and cost-effective transportation of goods. A freight forwarder is responsible for transporting goods from one destination to another. It involves multiple steps, including warehousing, shipping, and ensuring that customs requirements are met" (International Federation of Freight Forwarders Associations, 2023).

Performance: According to Hofer (1983), performance is a contextual notion related to the event under study. When referring to an organization's financial performance, performance is a measure of how its financial situation has changed or the financial consequences that arise from management choices and how those decisions are carried out by organization members.

Outsourcing: According to Rushton and Walker (2007) outsourcing is the strategic use of outside, specialized service providers to carry out and manage tasks or operations that are typically viewed as non-core to the company.

Inbound Logistics: The transportation of goods from vendors and suppliers into manufacturing lines or storage facilities is known as "inbound logistics" (Vitasek 2006, p. 75).

Outbound Logistics: The process of moving and storing goods from the end of the manufacturing line to the final consumer is known as outbound logistics (Vitasek 2006, p. 104).

1.8 ORGANIZATION OF THE STUDY

The research consists of five chapters. Chapter one the introductory part contains background of the study, statement of the problem, research questions, research objectives, significance of the study, limitation and scope of the study and Organization of the study. Chapter two provides a literature review informing the reader of what is already known in this area of study. Chapter three discusses the research methodology and design employed in the study. Chapter four discusses the data analysis and interpretation. Finally, chapter five contains summary of the key finding, conclusions and recommendations based on the finding of the study.

CHAPTER TWO

2. Literature Review

2.1. Introduction

Books, websites, archival journal articles, theses, and other papers from international institutions focusing on the topics of challenges, performance of logistics activities, and managing logistics activities empirical studies have all been included in the literature review on logistics management methods.

2.2. Theoretical review

LOGISTICS

Information management, inventory management, material handling management, warehouse management, and transportation management are among the logistics activities methods (Forslund, 2012).

When an organisation outsources, its normal business operations functions and processes are transferred to an outside service provider, who then returns the services to the organisation in accordance with the terms of a usually long-term contract (Denis, 2003).

Since managers in many industries and businesses deal with the same context-based cost problems, they typically share the same motivation to cut operational expenditures. Given the location of industries in Nigeria, the issues include bad roads, expensive car components, and insufficient power supplies (Chete, Adeoti, Adeyinka, & Ogundele, 2021).

Using logistics outsourcing, which gives manufacturing companies the opportunity to focus on their core competencies by forming partnerships with experts in the field of logistics, is one suggested solution to these issues. Studies (McCarthy & Anagnostou, 2004; Meixell, Kenyon, & Westfall, 2014; Zailani, Shaharudin, Razm, & Iranmanesh, 2015) have demonstrated that such an attempt can minimise cost of production.

Outsourcing logistics has become more and more important in recent years, and it is now used by many companies in almost every industry in the globe. A broad range of services have been

created by logistics service providers, mostly for cost-cutting purposes, to enhance logistics operations (Deepen, 2007).

Businesses and other organisations are striving to become more efficient at delivering superior customer service while simultaneously reducing operating expenses in order to prosper in the present environment. To achieve these two objectives simultaneously, the supply chain must be well-organized, and transportation is critical to the system's overall effectiveness. You may think of transportation as the link in the supply chain. The intelligent transport system is one element of Metro Police's transport plans, with the goal of improving transport services' efficacy and safety.

By enabling a business to concentrate its limited resources on its core skill, logistics helps save money. Businesses that thrive in research or design no longer have to make costly mistakes when branching out into the production or marketing industries. Due to their lack of assistance and industry knowledge, small and medium-sized enterprises find logistics particularly appealing as opposed to huge international firms. Businesses can lower opportunity costs associated with allocating resources to non-critical business tasks and retain their comparative advantage in their core expertise by outsourcing logistics sector business process functions.

Countries' trade and transport facilitation friendliness may be measured using the most comprehensive international comparison tool available—the Logistics Performance Index (LPI) from the World Bank. According to celebi (2014) nations can enhance the efficiency of goods movement and identify areas where international collaboration might assist remove obstacles by comprehending and breaking down the components of commerce and logistics performance.

Information technology (IT), transportation infrastructure, and efficient logistics services are essential elements for enhancing logistics performance (World Bank, 2016).

Nations with established infrastructure have the ability to offer cutting-edge transport and communication services at competitive prices and with short response times, making a significant impact on the global commercial landscape. In contrast, developing nations' inadequate transport infrastructure prevented them from being able to sustain their international

commerce as needed. More precisely, it is thought that the optimal logistical practices—achievable through the enterprise's integration of those logistical operations and internal interactions—produce an improved level of service delivery.

TRANSPORT INFRASTRUCTURE

Transportation infrastructure and services, such as roads, railroads, ports, and shipping, are crucial for international commerce in goods and associated supply chains. In areas with inadequate transportation infrastructure, improving a company's performance may not be simple. According to UNCTAD (2006), infrastructure that can handle containers must be in place in order to get the greatest benefits from the business.

It is now widely acknowledged that containerization is a prerequisite for the growing offer of commodities and intermodal goods commerce, particularly in emerging nations. Containerization is common in the transport chain, particularly in multimodal transportation. Containerized cargo reduces the need for more skilled but less manpower in ports, where many developing nations still lack necessary reforms. Ports, train, and road infrastructure, as well as the corresponding laws and labor laws, are also necessary. These interior lines are frequently unfinished and badly maintained in many emerging nations, especially the least developed nations. According to UNCTAD (2003), this is one of the primary barriers to transport companies providing transport services.

QUALITY OF ROADS

Inland goods modes are used to transport products to seaports and airports (Rodrigue & Notteboom, 2017). The quality of these modes is important for on-time delivery, particularly of fragile items. Beyond a nation's socioeconomic needs, highways have become an essential means of transportation, particularly for those that rely heavily on trade deals, like Mexico. Transporting goods to ports and borders in order to facilitate further regional commerce puts other areas, such as Central America, at risk (Carballo, Schaur, & Volpe, 2017).

According to Celbis, Nijkamp, and Poot (2014), poor quality roads may result in increased transportation expenses due to increased fuel consumption and transit times. Previous studies

proved that road infrastructure is beneficial to trade. For instance, Cosar and Demir (2014) found that improvements to Turkey's road network increased exports and decreased transportation costs, especially when it came to timely delivery of commodities from the place of origin to ports and airports.

The economy of Sub-Saharan Africa was found to be impacted by higher road infrastructure expenditure and accessibility enhancements. Less developed economies gain more than developed ones, according to the authors' findings, suggesting the endogenous influence of growing infrastructure assets.

QUALITY OF PORTS

Around 80% of international trade is carried out through marine ports, according to the United Nations Conference on Trade and Development (UNCTAD 2018). For this reason, a nation's ability to develop depends on its ports' effectiveness and quality. According to Rodrigue and Notteboom (2017), containerisation is a leading aspect of market globalisation due to its many links and alternatives for transshipment. Following the mid-1960s containerization revolution, transportation to distant destinations was made possible by ocean shipping UNCTAD (2006) and specialized ships (Rodrigue & Notteboom, 2017) (Fink 2002). According to Suárez-Alemán, Morales, Serebrisky, and Trujillo (2015), maritime transport is regarded as a crucial element of international trade. It is generally employed for limited and high-volume items that either (1) cannot be carried by air or (2) have lower values.

Port infrastructure has been shown to have favorable benefits on emerging economies by (Munim and Schramm 2018). A 2010–2012–2014 study that examined 91 nations came to the conclusion that ports' quality influences logistics and maritime trade in a beneficial way. According to the study's findings, port quality differs between developed and developing nations and has a favorable impact on commerce in the former. Suárez-Alemán et al. (2015) previously provided evidence of the significant positive impact that port efficiency has on emerging areas through connection levels. But in reality, space is a restriction on port infrastructure, leading to congestion and higher transportation costs (Celbis et al., 2014).

QUALITY OF RAILROADS

Railroads are seen to be an effective inland transportation method, particularly for large, long-distance loads. Through economies of scale 112 ECONOMICS by Rodrigue & Notteboom, (2017), railways in particular enable greater benefits, such as easier access to inputs, raw materials, and intermediate goods needed by manufacturers (Aritua, 2019).

Diverse conclusions about railway infrastructure may be found in the literature as it stands now. Research findings by Arbués, Baños, and Mayor (2015) highlighted the advantages of roads over trains, airports, and ports in Spain's economic provinces based on a comparison of various transport assets. Their research showed how the site of an infrastructure project benefits not just the country itself but also its surrounding areas, with positive spill over effects on the economy. Wang, Lim, Zhang, Zhao, and Lee's (2020) static spatial study of the Belt and Road Initiative (BRI) on the other hand, showed that the initiative's effects varied depending on the region in China, with roads having a greater positive impact on neighbouring countries than railways. Additionally, railroads in India reduced pricing and trade expenses while boosting regional and interregional commerce, according to Donaldson (2018).

INFORMATION TECHNOLOGY

The use of information technology (IT) and electronic data interchange was crucial for logistics players. (Ali and associates 2008). Raus et al. (2009) state that the use of EDI and IT might reduce informal payments, stop criminal activity, and increase cost effectiveness. However, a successful transition from the traditional to the e-customs procedure depends on the transition process.

Information technology plays a vital role in the management and supervision of documents and departments, with primary offices located in Addis Ababa and the port of Djibouti. Additional apps assist in managing the daily distribution of containers and maximizing the number of deliveries.

ICT is not used at all in logistics. Supermarket payment registers employ an area bar code Fikadu, (2013), however this code is not linked to an inventory or warehouse management

system. The goal of MOT is to use GPS tracing and tracking along with software, databases, and other ICT applications for logistics. Furthermore, IT systems automate tasks like inventory control, distribution, and document control with a more operational and short-term 16 emphases. ESLSE has been able to better economically utilize its infrastructure, systems, and processes by utilizing information technology.

The primary differentiator and method of differentiation among logistics service providers is technological innovation (Sauvage, 2003). According to Nixon (2001), in order to improve their service capacity in the era of e-commerce, logistics service providers should make use of modern information technology. Speakman (2002) suggests that by utilizing new technology, logistics businesses might improve their performance. According to Chapman, Soosay, and Kandampully (2003), the logistics sector ought to focus more on innovation in logistics services. This innovation in logistics may be applied through the use of technology, knowledge, and relationships. Logistics service companies may be able to improve their level of customer service by implementing new technology.

Though historically seen to be the key to industrial efficiency, technology has recently come to mean more in the service industry (Bitner, Brown and Meuter, 2000; Howells and Tether, 2004). Service companies may increase service efficacy and efficiency with the use of technology.

Data acquisition technologies, information technologies, warehousing technologies, and transportation technologies are the four categories into which technical developments in the logistics sector may be divided, according to the logistical operations.

DATA ACQUISITION TECHNOLOGIES

Typically, logistics service providers handle a lot of products and data. For the administration and control of logistics information, data interchange and collection are essential. Logistics service providers may deliver clients' goods more precisely and effectively with the use of high-quality data collecting. Acquisition technologies like radio frequency identification (RFID) and bar codes can make it easier to exchange and collect logistics data.

INFORMATION TECHNOLOGIES

Technologies are the instruments or structures that increase the effectiveness of corporate information transfers amongst various entities. Many logistics managers believe that information technology is a major factor in their company's increasing efficiency and competitiveness. Information technologies may foster the development of inter organizational networks and increase an organization's flexibility, competitiveness, and production.

Information technologies that are commonly used in the logistics industry include electronic data interchange (EDI), the Internet, value added networks (VANs), point of sale (POS) systems, electronic ordering systems (EOS), logistics information systems, computer telephony integration, and enterprise information portals. Electronic data interchange is the process of exchanging business documents in similar formats across computers within the same organization. More recently, extensible markup language (XML) has improved the efficiency of data exchange.

WAREHOUSING TECHNOLOGIES

The majority of people imagine a warehouse as a place to keep goods. However, the role of the warehouse is best understood as a switching facility rather than a storage facility in many logistical systems. Storage is a crucial part of any logistics system. Product flow and physical facility elements should be taken into account while designing a warehouse management system's layout.

Automated storage and retrieval systems (AS/RS), computer-aided picking systems, thermostat warehouses, and automatic sorting systems are among the warehousing technologies that are often utilized in the logistics sector. A fast and effective approach to search through and transfer storage from a warehouse is to employ an automated storage and retrieval system, which may also be used to high density, hands-free buffering of products in production and distribution situations.

TRANSPORTATION TECHNOLOGIES

Among logistics operations' most noticeable components is transportation. Movement of products is mostly facilitated by transportation functionality. Moving products from an origin place to a destination while reducing expenditures and damage charges is the main goal of a transportation management system. Simultaneously, the movement needs to happen in a way that satisfies customer requirements about order fulfilment and shipping data accessibility.

Transport information systems, radio-frequency communication systems, global positioning systems (GPS), geographical information systems (GIS), and transportation data recorders are among the transportation technologies that are often utilized in the logistics sector. Logistics managers may plan, handle, and regulate transportation-related difficulties with the use of the geographic information system and the transportation information system. Products may be tracked and drivers can be guided during product transportation by using radio-frequency communication systems and global positioning systems.

Skilled man power

Employees retain tacit information about the logistics process in their heads. Employees will have varying levels of knowledge about logistics procedures, perspectives, and working ways despite dealing with the same working processes since they come from varied backgrounds (Chow et al., 2006).

Logistics companies always own their own technology and organizational expertise, which includes standardized processes, managerial abilities, and company culture and regulations. The majority of workers, however, lack thorough awareness of these technology and organizational expertise. Logistics companies are primarily concerned that staff members utilize unique resources in a strategic manner. The aggregate expertise and experience of logistics companies is referred to as their "knowledge," which implies that companies will draw on their historical experiences to develop new solutions. They understand how to use the resources available to them to provide top-notch customer service and product delivery (Chow et al., 2006).

People collaborate in many logistical processes, including buying, production, and customer support, within the process-oriented logistics industry. Successful logistics still require

standardized processes that adhere to company policies. Employees were well aware of the use of resources, but they consistently disregarded the procedure because they thought it was too difficult. Employees in logistics should be very knowledgeable about working processes and the rationale behind proper logistics rules.

Lack of Leadership

Management and leadership are essential elements of every organization. Managers who combine leadership abilities with management characteristics can provide higher productivity and more opportunities for advancement. However, there is little distinction between a manager and a leader.

The fragmented nature of the current logistics industry necessitates integration for improved functionality and efficiency. But to do this, we need a stronger, more visionary leader. Employee motivation will suffer as a result of the system being inefficient and lacking potential growth due to a lack of leadership. Since there is no incentive to advance within the company and the profile is not attractive, no one would be willing to take the initiative to alter the present organizational structure and take a prudent risk. Managers must be assigned tasks that allow them to demonstrate their captivating leadership abilities.

Non-Profitable Industry

The traditional definition of logistics has been limited to shipping and storage, which are jobs that fall under the category of driver or storekeeper. Thus, there is a lack of motivation for working in logistics. People with advanced degrees don't always see opportunities for job advancement. Despite being a key area, individuals do not view it as a profession because of how disorganized and fragmented it is. A shortage of skilled laborers exists. Logistics is not developing any more, and it will continue to be a secondary business for consumers. Technology advancement will be hindered by a lack of funding. Inadequate work descriptions, a lack of appropriate degree programmers to advance one's abilities, and a lack of opportunity awareness are some of the causes.

No Awards/Recognitions for logistics Sector

Annual awards have to be given out for every category, from top management to drivers who put in a lot of effort to meet the company's objectives. Workers ought to be inspired to put in more effort than they are capable of. The majority of excellent work is produced by lower-level staff members. To recognize their diligence and reward them for their excellence, awards should be given. People who receive rewards are more likely to work harder and submit their work on a frequent basis. This would highlight the work profile's challenges, problems, and opportunities. They will act in this way to get a prize. Employee confidence and morale would rise as a result of the happiness and sense of accomplishment. Lack of knowledge about the information and expertise of the task is the cause of the lack of rewards.

TECHNICAL ADVANCEMENTS ERP DEPLOYMENT, INTEGRATION AND WORKFLOW

Not every business can afford to spend a significant amount of money on SAP-ERP and other complex technologies. Many people are also unaware of the potential advantages of these systems. Even those who own such software are unaware of all of its features. A firm that does not have an ERP incurs significant additional costs that could have been avoided with the implementation of such a system. It also results in a lack of timely and well-informed decision-making.

An ERP's high cost is the reason it isn't used. To use and filter the valuable information from such software, a great deal of training and competent personnel are also needed. It takes skill to interpret graphs, charts, and other MIS information and turn them into a possible opportunity. There is no centralized database of employees across many organizations, and the smaller, less expensive software does not offer these kinds of facts or allow users to interact with clients and other corporate systems personnel.

KNOWLEDGE DATABASE SYSTEM (PERSONAL PROCESS DOCUMENTATION)

There is very little paperwork in the logistics industry. The personnel are unaware of the

advantages of documentation. There is no awareness of appropriate procedures or guidelines for documenting what has to be done. However, there is no financial impact on the firm from not recording the procedure. However, possible long-term gains are lost. The advantages are operational rather than financial. Businesses view documentation as an added burden since it requires paying a separate employee to complete documentation on a constant basis, which adds no value. Additionally, it may require additional work from the managers or other employees to complete this task.

SKILLS NOT RELATED TO TECHNOLOGY

Customer relations, value-added services Value-added services are the newest thing in all industries. Their goal is to satisfy customers since that will ultimately result in "customer delight" and repeat business. Employers wish to utilize them, but the frontline staff lacks the necessary training. Value-added services provide many benefits when used, yet there are no drawbacks to not using them.

Value-added services cause customers to recommend the business to their colleagues, which increases brand awareness. Value-added services are used because the logistics industry is highly competitive, with several businesses vying for the same clientele. Thus, a business can only set itself apart from competitors by providing "Value Added Services." For instance, monitoring, labelling, packing, serving with a smile and the appropriate attitude, awarding and recognizing the best clients, and continuously receiving feedback on the consignments are all examples of ways to improve. (Mitra, 2010)

THE LOGISTICS INDUSTRY'S NATIONAL SKILLS REGISTRY

The logistics industry is experiencing a skills deficit. There is a lack of personnel to manage specialized equipment, drive on high altitude routes, handle specific cargo, etc. Training individuals for these demands takes a significant financial and temporal investment. Additionally, there is concern about attrition, which might lead to a loss of income and training time. For the logistics industry, there isn't a database of individuals with these kinds of credentials.

When an employee is hired by a different company after leaving their prior one, extensive background checks are one of the consequences of not registering their talents. This results in a loss of both money and time. Furthermore, it is improper to keep track of a person's employment history, skill set, etc. The government and business community don't support this plan, which is the reason. However, this concept is already in use in the IT sector under the moniker NSDL.

INCOHERENT SKILL SET

Many logistics employees possess a variety of talents that they have picked up from job switching, brief consignments, and other experiences. However, training did not include the instillation of these abilities. Therefore, there is no relationship between different skills. Some floor personnel, or those handling the operational side of logistics, find it difficult to connect their diverse skill sets to provide a workable solution. Time and resources are wasted as a result of this. This is due to a deficiency of appropriate hands-on training. (Asthana 2012 and Kaur 2011)

LACK OF INSTITUTIONALIZED TRAINING

Three groups will be included in this general discussion: drivers, loading supervisors, and managers/senior level managers. In the road freight industry, truck drivers fit a certain profile where skill shortages are particularly severe. The majority of those drawn to the trade are uneducated and lack professional training.

Approximately 3 million people work as truck drivers (KPMG, 2008). By 2015, this is probably going to increase to around 5 million. This indicates that around 0.15 million additional truck drivers are needed, and at the size about 100 institutions are needed if we estimate that half of them must get training. By 2015, there will likely be 0.5 million loading supervisors worldwide, up from the present estimated 0.3 million. But there's no official training programmer for supervisor loading. Few companies provide training materials to their absorbed new hires. The logistics sector offers extremely few educational opportunities and certifications.

Making recruits accessible in the market becomes difficult as a result of inadequate training and institutions. Furthermore, without enough and trained labor, operations won't become more efficient and standards won't be established. The transportation and logistics sector ought to support driver education programmers as the government's licensing examination has shortcomings. Supervisors need to be prepared with training modules, and incentives need to be provided to encourage them. In a similar vein, a facility need to be established to instruct and prepare managers to steer the company. This can be provided as an industry-related degree. in order to match the candidate's talents to the industry demand. They can prepare them for upcoming issues given the rising need for global logistics.

LOGISTICS PERFORMANCE

Measurement of performance by evaluating the provider's performance on a regular basis, provision allows both parties to pinpoint service inadequacies. In the context of logistics, the most critical performance metrics might include timely shipments, inventory correctness, shipping mistakes, a shorter cash-to-cash cycle, lower logistical costs, and a decrease in customer complaints (Bhatnagaret al 1999).

The most common metrics for measuring performance are delivery timeliness; other criteria include cost, overall quality, inventory management, picking accuracy, responsiveness, and adaptability.

Other research measures the efficacy of strategy by looking at various aspects of procurement performance such cycle time, customer satisfaction, productivity, and cost savings (Goldstein, Malhorta, & Carney, 2015).

As said by Hummels, D. (2007) If delivery is dependable and demand is steady, a long lead time shouldn't be an issue. Even if the client knows exactly when the goods will arrive, a long lead time might be expensive if there is uncertainty about future demand.

Cost has always been the primary, crucial factor to consider when evaluating the performance of logistics (Andersson et al., 1989). Only a small number of research concentrate on additional

factors such lead time, quality, and adaptability (Andersson et al, 1989). According to Forslund (2012) Transportation and carrying inventory expenses make up the core logistics costs.

2.3. Empirical review

The country of Ethiopia is categorized as "Not Yet Ready" and "Not Attractive" on a readiness chart for outsourcing and offshoring, according to a study on Ethiopia's outsourcing opportunities conducted at (DePaul University in Chicago, Illinois, America 2004). The 56k dialup connection, which is mostly prevalent in Ethiopia's large cities, is the primary source of high speed internet access, with little to no availability in rural regions. This is the reason provided for the Not Yet Ready score.

The country's Not Yet Attractive result is attributed to three factors: the economy is primarily based on agriculture, which does not translate well to the networked world; language barriers (since only the well-educated speak English; the majority of the population still speaks the local languages), and the lack of policies or standards for the ICT workforce.

The industry of offshoring was sparked by this crisis, but it gained traction when it was realized that most businesses could not ignore the financial and strategic benefits of offshoring due to the reduced labor costs as well as its flexibility and scalability.

The World Bank (2010) posits that the logistics performance in developing nations is impeded by low infrastructure performance, which includes poor road condition, excessive time consumption, service delivery, and information and communication technology.

The World Bank Report from (2011) states that during the previous ten years, Ethiopia's yearly per capita GDP growth was influenced by its infrastructure by 0.6 percentage points. Ethiopia's infrastructure metrics are still far below those of middle-income nations in Africa, notwithstanding their favorable comparison with counterparts in low-income countries.

Despite recent advancements in many areas, the industrial and service industries remained challenged by inadequate infrastructure development. As a result, conducting business grew costlier, which lowered competitiveness and limited access to domestic and international markets.

Both operationally and managerially, logistics operations need a lot of work. Companies' performance in logistics is closely linked to the quantity and calibre of their workforce (Gravier, Farris, 2008 & Ecorys, et al., 2015). But according to recent research, there may be a global scarcity of individuals with the necessary abilities and interest in all facets of the logistics industry (Fawcett & Rutner, 2014). Maloni et al. (2016) and Dubey and Gunasekaran (2015), for instance, note a shortage of supply managers at the junior, middle, and senior levels. The lack of truck drivers, who are desperately required everywhere, is highlighted by Staats et al. (2017). The circumstances are comparable for order pickers, who are essential to logistics (Grosse, Glock, & Neumann, 2017).

Among 3PL providers, technology orientation is a key component of both exceptional business performance and IT capabilities. According to the findings, a 3PL provider's technology orientation can be a potent indicator of the management and operational activities of the company as well as the value that IT is placed on. These initiatives direct the allocation of IT resources and the participation of upper management in the planning and execution of IT initiatives, all of which have an impact on the advancement of IT capabilities. The senior management teams of 3PL providers might justify their involvement in IT innovation by demonstrating a strong technological focus. (Et al., Chatterjee 2002). With a focus on technology, 3PL providers may also advise their clients on how much money to allocate for IT implementation. (Dean, Segers 2001 & Grover, Bhatt 2005).

IT expertise has become a crucial component for 3PL providers in gaining business from logistics customers, as more companies choose to outsource their logistical operations to 3PL providers. The rapid expansion of China's logistics sector has created enormous opportunities for logistics suppliers, but it has also made international competitors more fiercely competitive. Many 3PL providers have been compelled to reevaluate their strategy due to the rising competition in China's logistics market.

This study has created an integrated model to comprehend how service providers may increase their IT competence and how IT capability influences competitive advantage, drawing on the strategic management literature. The results indicate that the strategic IT orientation of logistics

enterprises significantly impacts both resource commitment and managerial engagement in the development of IT competence. The model was evaluated using data gathered from 105 Chinese 3PL firms. The development of a 3PL provider's IT competency is aided by both managerial commitment and resource effort, and the competitive advantage of 3PL enterprises is largely determined by their IT capabilities.

In the field of human resource management, one Korean management method stands out. In order to incentivize employees to concentrate on their individual performance outputs, Korean companies are shifting from traditional payment systems to performance-based compensation (Chang, 2003). This approach has been applied by more than 42% of Korean businesses, and 22.6 percent more organizations want to do the same.

Nowadays, logistics management plays a major role as a facilitator in multimodal transportation. The containerization of the movement of products has resulted in the integration of many modes, maybe by taking this into consideration. These modes include road, rail, and water. (ESLSE 2006 E.C.).

One of the strategic areas that the Ethiopian government is concentrating on is expanding the import and export market. Ethiopian Shipping and Logistics company, also known as a day the company provides liner services via multi-modal transportation operation, may directly contribute to the strategic action. (ESLSE 2006E.C)

A number of variables are brought up in relation to the operation of Ethiopian shipping and logistics service companies. Fekadu (2013) states that the primary factors are supply chain dependability and consistent service. The limitations of Ethiopian logistics activity, according to him, are the logistics management system, coordination of the goods transport system, logistics infrastructure, and insufficient fleets of goods vehicles in terms of quantity and condition (older vehicles). They also include ICT infrastructure and warehouse management systems.

In order to enhance ground transport, Ethiopia initiated a massive investment programmer to modernize its trunk network and established a contemporary financial system for road maintenance (ERC, 2013). For ESLSE to provide effective services, infrastructure expansion in the form of transit facilities is crucial. Ethiopia's transport industry performs worse than the rest of Africa.

In general, businesses that handle logistical tasks on behalf of their clients are considered logistics service providers. Storage, shipping, inventory control, order processing, and packing are among the logistics services providers' related operations (Sink, Langley, Gibson, 1996 & Delfmann et al., 2002).

Many logistics service providers increase the efficiency of their services by continuously using automation or information technologies in order to completely meet the increasingly diverse needs of their clientele (Mason-Jones, Towill, 1999 & Sauvage, 2003).

According to Coleman, Bardi, and Langley Jr. (1996) and Delfmann, Albers, and Gehring (2002), a logistics service provider is a firm that offers logistical services and handles all or a portion of a client company's logistics function. Many logistics service providers have taken steps to expand the breadth of their offerings in order to completely meet the growing demands of clients for one-stop shopping (Murphy & Daley, 2001). Logistics service providers can offer value-added services, information-related services, materials management services, and transportation and storage tasks in addition to these (Berglund et al., 1999).

According to their business characteristics, a lot of logistics service providers have been attempting lately to increase the effectiveness of their operations through the continuous installation of automation or information technology (Mason-Jones, Towill, 1999 & Sauvage, 2003). Distribution facilities and other logistics service providers have unique operational procedures and expertise. In this era of information-based economies, it is critical for logistics service providers to acquire and use their knowledge and abilities effectively and consistently. Logistics organizations need to become innovation-based logistics service providers by using knowledge more effectively in order to maintain their competitive advantage (Chapman et al., 2003).

Customers become enraged when logistics managers make risky decisions that lead to issues like delivery delays or failures. One such potential issue in logistics management is the negligent transportation of goods that causes harm. Inadequate logistical software may lead to more issues. Ineffective logistics planning causes expenses to rise constantly. Most of these problems stem from bad outsourcing choices, such as selecting the wrong vendor or assigning inadequate personnel to delivery tasks.

Rha (2010) defines operational performance as an organization's capacity to attain high levels of efficiency and customer service as well as its adaptability to a changing business environment.

The organization should require this evaluation of performance and efficiency in order to change its logistics management strategy in order to accommodate its changing demands. The ultimate achievement of an organization is its performance, which encompasses the realization of efficiency and effectiveness as well as the existence of specific objectives that must be fulfilled and a timeline for doing so.

Organizational performance encompasses a variety of actions that support the establishment of the organization's goals and track its progress towards them. It is imperative that a business develop strategies based on the skills that will raise the company's success.

Lyson and Farrington (2012) demonstrated that the degree to which a company possesses the appropriate amount of inventory at the appropriate location and time is a necessary condition for evaluating the successful performance of inventory. Transportation is the most crucial component of logistics as it affects both cost structure and customer service. revealed that in order to meet customers' demands for prompt delivery and to give information on the products in transit, it is essential to reduce the loss and damage of goods being carried.

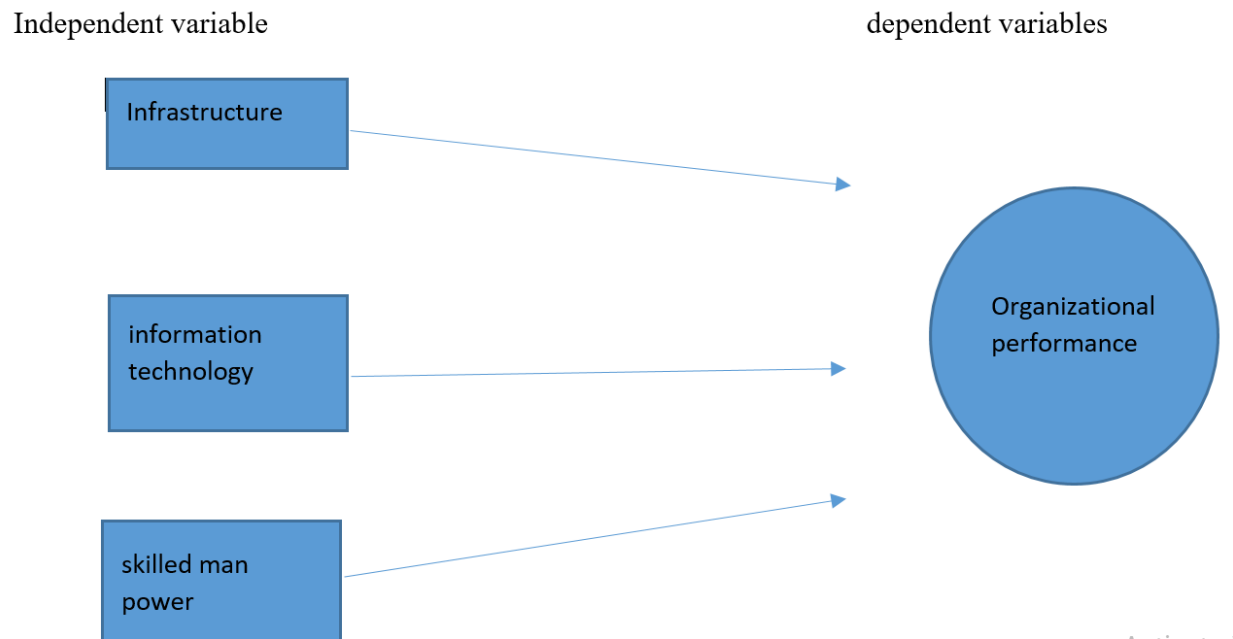
2.4.Literature gap

there is a literature gap in terms of research focused on this specific topic within the Ethiopian context. The lack of existing studies exploring the challenges faced by organizations when it comes to logistics activities and the subsequent impact on organizational performance is evident. This highlights the limited amount of research conducted on the topic of assessing the challenges of logistics activities on organizational performance. This gap in literature suggests that there is a significant lack of scholarly attention to this specific area within the Ethiopian context.

2.5. Conceptual frameworks

With an effort to also demonstrate the impact and direction of challenges of logistics activities on organizational performance, the conceptual framework attempted to explain the connotation between the activities of challenges of logistics management and organizational performance.

Figure 2.1: conceptual frame work



2.6. Research Hypothesis

The following is the research hypothesis;

H1a: the effect of Infrastructure challenges faced in logistics activities on organizational performance is significant and positive.

H1b: the effect of skilled man power challenges faced in logistics activities on organizational performance is significant and positive.

H1c: the effect of information technology challenges faced in logistics activities on organizational performance is significant and positive.

CHAPTER THREE

3. METHODOLOGY

3.1.Introductions

Evaluating the impact of logistics difficulties on ESLSE organization performance was the primary goal of the research. The research methods used for the study is covered in this chapter. It provides information on the population, sample size, sampling methods, validity, and reliability as well as the study methodology and approach.

3.2. Research design

Both descriptive and explanatory research approaches were employed in the study. With an explanatory study design, the researcher explains why or how the phenomenon being studied occurs, going beyond merely listing the characteristics to look at. An explanatory investigation will try to demonstrate causes and consequences in order to explain a phenomenon. While descriptive research designs have been used to characterize features of a population or phenomena in terms of those characteristics in order to produce an accurate verbal or numerical profile of a group of variables, explanatory research was used in this study to test the effect of logistics challenges on organizational performance. Operational performance of the firm. In order to obtain the most recent data, the study also conducted cross-sectional research, in which respondents were only contacted once.

3.3. Research approach

Approaches to quantitative research were used in the study. enhance the study's effectiveness
Quantitative approach: data is presented via numbers, as the name suggests. When doing research, an investigator using quantitative methods selects what to look into, develops specific questions, collects numerical data from participants, analyses this data using statistics, and conducts the study in an unbiased and objective manner (Creswell, 2005).

3.4. Sample design

3.4.1. Target Population

The population of this research was employees of ESLSE at head office. Employees found at this sectors which are in freight forwarding, unimodal and multimodal and commercials sectors.

3.4.2. Sampling technique

There are two types of sampling method, but for this study the non-probability sampling method was applied, as the chance of the unit in the population will be included in the sample is unknown. From the non-probability sampling method purposive sampling method was employed because respondents are selected depending on their availability and have pertinent data. Again purposive sampling is applied since we have small sample size.

3.4.3. Sample size

According to C.R Kothari (2004), sample size means the number of respondents taken from the population used for the study. The size of sample should neither be excessively large, nor too small. It should be optimum. An optimum sample is one which fulfils the requirements of efficiency, representativeness, reliability and flexibility. Having this, the number of the sample is determined by using sample size determination formula developed by Yamane (1967). According to Deborah Rumsey (2010), the most commonly used confidence interval is 80%, 90%, 95%, 98% and 99%.

$$n = \frac{90}{1 + 90(0.05)^2} = 73$$

Where; n=sample size,

N=population size,

e=the error of sampling (precision)

3.5 Sources of Data

3.4.4. Primary source

In order to gather data for the study, both primary and secondary sources of information was employed. The sample respondents/employees were given a questionnaire in order to get the primary data.

3.4.5. Secondary source

The secondary data was collected from the previous studies, journals, articles and other publications on the effect of logistics practice on organizational performance.

3.6 Data Collection methodologies

Questionnaires were the main tool the researcher used to collect data. Owens (2002) suggests using questionnaires because of their capacity to contact a big number of respondents in a short amount of time, their ability to give respondents enough time to answer, and their ability to provide respondents a sense of privacy and secrecy. For this reason, the researchers decided to use this tool as a rapid and affordable means of gathering data.

3.7 Data collection instrument

For the variable skilled man power, the questionnaire was taken from the article Lin, C.-Y. (2008). “Determinants of the adoption of technological innovations by logistics service providers in China”.

For the variable infrastructure the questionnaire was taken from the article Sénquiz-Díaz, C. (2021). “Transport infrastructure quality and logistics performance in exports”, *Economic and Organizational Innovations and Knowledge*.

For the variable information technology, the questionnaire was taken from Lin, C.-Y. (2007). “Factors affecting innovation in logistics technologies for logistics service providers in China” *Journal of Technology Management in China*

Additionally, a structured questionnaire with closed-ended questions and a Likert scale with five possible responses was employed and distributed to the company drop-and-pick approach.

The questionnaire was divided into three parts: Part A provided the demographic information and respondent profile, Part B addressed the level of use of logistics methods, and Part C looked at how logistics management practices affected organizational performance.

3.8 Data analysis methods

In this study, Inferential statistics data analysis used to analyse the acquired data. Persons correlation coefficient was used to assess the relationship between logistics and organizational performance. And qualitative analysis was done on the quantitative data that was gathered from respondents using a questionnaire, Likert scale. The gathered information was summarized using tables. In order to assist in the computation of the quantitative data, SPSS version 16.0 data was used.

3.9.1 Validity

The most important criteria, validity, describes how well a measuring tool measures what it is intended to measure, Validity focuses on what the test or measurement strategy measures and how well it does so. Content validity was addressed through rigorous review by a group of academics to ensure the items reflected the intended variables. Construct validity is concerned with the theoretical relationship a variable appears to have with another variables as indicated by their respective measures. Thoroughly reviewed literature and empirical review and the adopted questionnaire used. A measurement device is trustworthy if it offers consistent outcomes The following stage is to cross-check the consistency and dependability of the instruments after the research instrument's validity was determined.

3.9.2 Reliability

Reliability refers to the extent to which data collection techniques or analysis procedures yield consistent findings as stated by Saunders. Reliability refers to the precision and accuracy of a measurement technique. The most widely used measure known as Cornbrash's alpha is used to test reliability which assesses the consistency of entire scale. One way to try to ensure that measurement error is kept to a minimum is to determine properties of the measure that give us confidence that it is doing its job properly. Reliability is whether an instrument can be interpreted consistently across different situations as stated by Field. The lower limit for Cornbrash's alpha

is 0.70, although it may decrease to 0.60 in exploratory research Hair et al., (2010). included in this study by Cronbach's alpha using SPSS version 16 and found reliable since the results of the reliability analysis exceeded 0.70.

For the test of reliability Cronbach's alpha was used as a measure of internal scale consistency using SPSS (Statistical package for social science studies).

Table 3.1 Reliability test

List of Variables	Cronbach's Alpha	Number of items
Reliability Statistics for infrastructure	0.989	7
Reliability Statistics for skilled man power	0.992	8
Reliability Statistics for information technology	0.950	6
Reliability Statistics for performance	0.983	5

Excellent internal consistency across all assessed items is indicated by the unusually high Cronbach's Alpha values for the various constructs, indicating strong reliability in assessing each construct. In particular, the infrastructure architecture has excellent internal consistency, with a Cronbach's Alpha for its seven elements of 0.989. In a similar vein, the skilled manpower construct has remarkable internal consistency, scoring 0.992 on the Cronbach's Alpha scale across its eight elements. The dependability of the information technology construct is likewise quite good; its six elements have a Cronbach's Alpha of 0.950. Finally, the performance construct's five elements have a Cronbach's Alpha of 0.983, indicating strong dependability. Together, these findings confirm that each construct's components are consistently trustworthy in their corresponding measures.

3.10 Ethical consideration

there are four ethical issues that need to be addressed in the process of undertaking a research: That are protection from harm, informed consent, right to privacy, and honesty with professional colleagues. As a result, the participants in this study were chosen with their full consent, given information about the purpose of the study so they could respond to questionnaires with confidence, and the researcher gave them his word that he would keep their information private and only use it for that purpose.

CHARTER FOUR

4. DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

In this chapter, we will examine the data gathered on the impact of logistics difficulties on organizational performance in the Ethiopian shipping and logistics industries. The results will be presented and discussed, with a focus on major discoveries and trends. These findings will be interpreted in light of how infrastructure, skilled labour, and information technology challenges affect organizational performance in the logistics sector. This chapter attempts to provide significant insights into the significance of these difficulties, as well as solutions for improving operational efficiency within the industry.

4.2 Response rate

The response after distributing 80 questionnaires were 73 which has a response rate of 91.25%. According to Mugenda (1999) a 50 % response rate is adequate, 60% is good and above 70 % is rated very well so 90% rate is very good.

4.3 Respondents Profile

The demographic information considered in this study included gender, age, level of education, Year of Experience, experience with in company and current position in the company.

Table 4.2: Respondents Profile

Description	Respondents	
1.Gender	Frequency	Percentage
Male	42	57.5
Female	31	42.5
2.age	Frequency	Percentage
Under 25	0	0
25-30	41	56.2
31-36	12	16.4

37-42	11	15.1
Above 42	9	12.3
3. work experience in the company	Frequency	Percentage
1-3	6	8.2
4-7	27	37
8-11	27	37
12-15	13	17
4. education background	Frequency	Percentage
Diploma	3	4.1
BA/MSc	53	72.6
MA/MSc	17	23.3
PHD	0	0
5. year of experience	Frequency	Percentage
Less than 1 year	0	0
1 – 5 year	31	42.5
5- 10 year	26	35.6
Above 10 year	16	21.9
6. position in the organization	Frequency	Percentage
Operation manager	40	58.8
Logistics manager	22	27.5
Supply chain manager	4	5
Missing	7	8

The study's respondent demographic analysis provides crucial information on the makeup of the sample. According to the gender breakdown, 42.5% of respondents were women and 57.5% of respondents were men. Regarding age, the age group of 25–30 years old comprised 56.2% of the

respondents, with the next age groups being 31–36 years old (16.4%), 37–42 years (15.1%), and above 42 years old (12.3%). The respondents' range of work experience was 8.2% with 1-3 years, 37% with 4-7 years, 37% with 8-11 years, and 17% with 12-15 years. Regarding educational background, no responder possessed a PhD, whereas 72.6% held a BA/MSc, 23.3% an MA/MSc, and 4.1% a diploma. In terms of years of experience, the distribution was as follows: 42.5% had 1–5 years, 35.6% had 5–10 years, and 21.9% had more than 10 years. Within the organization,

the majority of managers (58.8%) held the job of operation manager, followed by logistics manager (27.5%) and supply chain manager (5%). These demographic insights offer a thorough grasp of the respondent characteristics, which is crucial for evaluating the study findings in relation to various demographic subgroups.

4.4 Descriptive statistics of Independent variables (Infrastructure, information, skill)

The descriptive statistics of the variables included in the study was presented by using measures of central tendency (mean) and measure of dispersion (Standard Deviation). Likert scale ratings were used for the responses, with the results shown in the table. On a 5-point Likert scale, where 1 represents strongly disagree and 5 represents strongly agree, the response was given. According to Zedatol (2008), cited by Oumar (2012), mean score 3.80 is high, 3.40 – 3.79 is moderate and below 3.39 is low.

Table 4.3:Infrastructure mean and standard deviation

Description	Mean	Standard deviation
Supporting logistics	2.25	1.22
Aspects of infrastructure	2.5	1.29
Road transportation	2.75	1.31
Rail transportation	2.80	1.29
Warehouse and storage	2.75	1.31
Port facilities	2.80	1.29
Infrastructure limitation	2.72	1.27

The data indicates that respondents gave all components of infrastructure negative ratings, with mean scores falling below 3.39. This suggests that people typically don't think the infrastructure is enough. Even though the average impression is low, there is a great amount of diversity in the responses, as seen by the high standard deviations across all questions.

Table 4.4:Information technology mean and standard deviation

Description	Mean	Standard deviation
Encourage IT	2.75	1.24
IT usage	3.1	1
Employee resist	3.1	0.99
IT equipment	3	0.89
Computerized	3.3	1
Improved since IT	2.4	0.92

All components of information technology have mean ratings below 3.39, according to the descriptive statistics, indicating that respondents' perceptions of it are largely negative. "Computerized" has the greatest mean score (3.3), however even with that low score, it falls short of the specified requirements.

Table 4.5: Skilled man power mean and standard deviation

Description	Mean	Standard deviation
Encourage employee	3.2	0.99
Support employee	3.2	1
Employee problem	3.2	1
Reward employee	3.3	1
Quality of employee	3.3	1
Technology easily	3.4	0.99
New idea	3.3	0.94
Knowledge sharing	3.3	0.99

According to the descriptive statistics, most factors pertaining to skilled labor have mean scores lower than 3.39, indicating that respondents' opinions of these factors are largely negative. On the other hand, the category "Technology easily" has a mean score of 3.4, showing a modest level of favorability for employees' ease of adopting technology. Although average impressions are typically low, there appears to be considerable variance in respondents' perspectives, as indicated by the standard deviations, which range from 0.94 to 1.0 and show substantial variability around the averages. This variation might be a result of various personal experiences or organizational settings involving skilled labor.

Table 4.6: Independent variable mean and standard deviation

Description	Mean	Standard deviation
Infrastructure	2.65	1.23
Information	2.99	0.83
Skilled	3.3	0.92

The mean scores of the three independent variables (skill, information, and infrastructure) all point to a poor perceived value based on (Zedatol's 2008) categorization. The answers appear to be dispersed to differing degrees, according to the standard deviations, with information exhibiting the least variability and infrastructure the most. This suggests that respondents generally felt there were limitations in these areas, with some maybe indicating that there were greater deficiencies in Infrastructure than in Information and Skill.

Table4.7:Dependent/Performance mean and standard deviation

Description	Mean	Standard deviation
Time information doc	2.6	1
Mistake and damage	2.4	1
Improved quality	2.4	1
Timely delivery service	2.4	1
Timely delivery materials	2.4	1

Table4.8:Performance

Descriptions	Mean	Standard deviation
Performance	2.6	1

All performance categories had mean ratings below 3.39, according to the descriptive statistics, indicating that respondents' evaluations are mainly negative. This suggests that respondents do not have a very positive perception of timely information documentation, errors and damages, quality improvement, timely delivery services, and timely material delivery.

All of the questions' 1.0 standard deviations point to moderate variability around the means, which suggests some variation in the respondents' attitudes. This variation might result from various personal experiences or organizational performance circumstances.

4.5 Pearson's Correlations

The degree of significance and link between the variables, as well as the amount of variance in the dependent variable due to the explanatory variables, were all predicted using correlation analysis. The degree of association between two variables is examined using the correlation technique.

According to Freeman and Young (2009), a correlation coefficient is a measure of linear association between two continuous variables and represented by „r“. The correlation coefficient „r“ takes a value between -1 and +1 ($-1 < r < +1$), -1 means there is perfect negative association between the variables, 0 means there is no association among the variables of interest and +1 indicates there is perfect positive relationship between the variables. In addition, Mukaka (2012) recommended a range of size for the interpretation of the correlation coefficients.

		Performance	infrastructure	Information	Skilled
Pearson correlation	Performance	1.00	.688	.743	.743
	Infrastructure	.688	1.00	.802	.757
	Information	.743	.802	1.00	.942
	Skilled	.743	.757	.942	1.00
Sig.(1-tailed)	Performance		.000	.000	.000
	Infrastructure	.000		.000	.000
	Information	.000	.000		.000
	Skilled	.000	.000	.000	
N	Performance	73	73	73	73
	Infrastructure	73	73	73	73
	Information	73	73	73	73
	Skilled	73	73	73	73

The correlation between performance and independent variable

The correlation summary in table 11 indicates that the association between each of the independent variable and dependent variable were all significant at the 95% confidence level. The correlation analysis to determine the relationship between performance and infrastructure, Pearson correlation coefficient computed and tested at 5% significance level, the result ($R=0.68$) indicate that the level of strength is moderate relationship between them have a positive relationship. Researcher found the relationship to be statistically significant at 5% level ($p=0.000, <0.05$).

The correlation analysis to determine the relationship between performance and other two independent variables information, skilled on Pearson correlation coefficient computed and tested at 5% significance level, the result ($R=0.74$) indicate that the level of strength is strong relationship between them have a positive relationship.

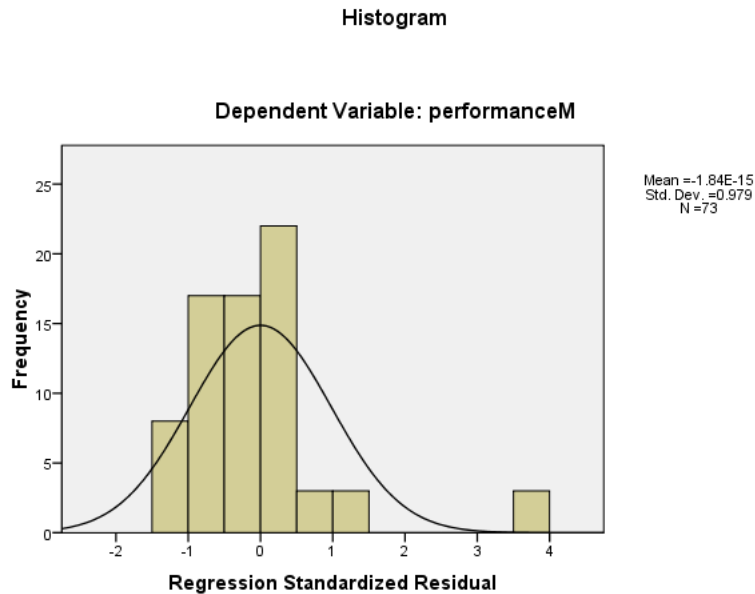
Researcher found the relationship to be statistically significant at 5% level ($p=0.000, <0.05$). Therefore, the finding of the correlation analysis shows that all the independent variables (infrastructure, information and skill) are positively related with the dependent variable organizational performance at 95 percent confidence interval.

Assumption teste

The assumption teste contains: Histogram, Normal p-plot, Scatterplot, Model Summary, ANOVA model and Coefficients.

4.6 Results of regression analysis

Figure 4.1: Histogram fig



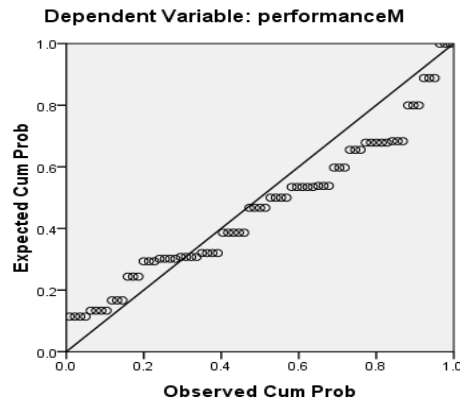
Histogram

This histogram displays the distribution of the regression standardized residuals for the dependent variable performance; Here is a detailed interpretation:

The histogram shows a slightly left-skewed distribution, meaning that there are more negative residuals than positive ones. This is indicated by the longer tail on the left side of the histogram. The distribution is not perfectly normal, as evident from the departure from the bell-shaped curve overlay. The most frequent residuals (the mode of the distribution) are slightly negative, around -0.5 to 0. There are fewer residuals on the positive side, particularly for values greater than the negative side. Since the residuals are not perfectly normally distributed and exhibit skewness, this might indicate some issues with the model fit, such as non-linearity, presence of outliers, or heteroscedasticity (non-constant variance of residuals). Overall, while the residuals are approximately centered around zero, the left skewness and non-normality suggest that there may be some underlying issues with the model that should be further investigated.

Figure 4.2:p-plot fig

Normal P-P Plot of Regression Standardized Residual

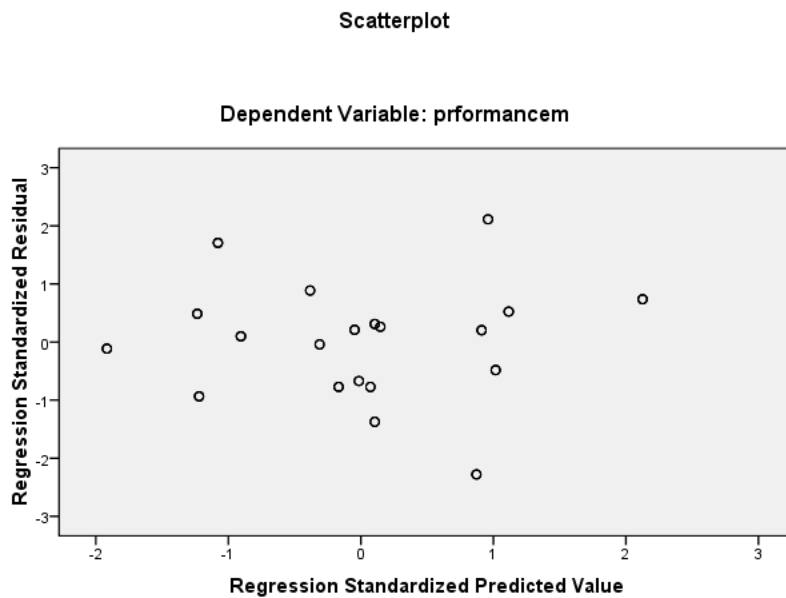


p-plot

This P-P plot (Probability-Probability plot) assesses the normality of the regression standardized residuals for the dependent variable performances a detailed interpretation:

The points in the plot generally follow the 45-degree reference line, but there are noticeable deviations at the lower and upper ends. At the lower end (left side of the plot), the points fall below the line, and at the upper end (right side of the plot), the points rise above the line. The deviations at the tails suggest that the residuals may be slightly skewed or that there are outliers in the data. The middle section of the plot (between the 0.2 and 0.8 probability range) follows the line more closely, indicating that the central part of the residual distribution approximates normality more closely than the tails do. While the residuals show some deviation from normality, particularly at the extremes, this does not necessarily invalidate the model but suggests that there might be some issues like outliers, skewness, or other violations of the normality assumption that need further investigation. Overall, the P-P plot indicates that while the residuals are approximately normally distributed in the central part of the distribution, there are some deviations from normality at the extremes that should be investigated further.

Figure 4.3 Scatter plot



Scatter plot

It looks like there is no discernible pattern or trend in the residuals, which are distributed rather uniformly along the horizontal axis. This implies that the homoscedasticity condition is probably satisfied. However, it may be more difficult to discern trends with a small sample size.

A small number of residuals, maybe representing outliers or high leverage points, are relatively high (around +3) and low (about -2). To comprehend why these data points are distant from the center, it is important to look at each one separately.

Table 4.10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.769 ^a	.592	.574	.71225

- a. Predictors: skilled, infrastructure, information
- b. Dependent: performance

In this model regression analysis was used to determine the significance of the relationship between the dependent variable and all the independent variables pooled together. Regression analysis was conducted to find the proportion in the dependent variable (performance) which can be predicted from the independent variables (infrastructure, skill, information technology).

Table presents the results of regression analysis revealed there is a significant positive relationship between dependent variable and the independent variable. The independent variables reported R value of 0.769 indicating that there is perfect relationship between dependent variable and independent variables. R square value of 0.592 means that 59.2% of the corresponding variation in performance or predicted by infrastructure, skilled and information technology.

Table 4.11:ANOVA model

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	50.760	3	16.920	33.353	.000 ^a
	Residual	35.003	69	.507		
	Total	85.763	72			

a. Predictors: (Constant), skilled, infrastructure, information

b. Dependent Variable: performance

According to Field (Creswell 2018), an ANOVA indicates if the model adequately explains the data (value less than .05 in the Sig. column). Given that the significant value of p is less than .001, the table indicates that the model was effective in predicting the outcome variable, which is the company's performance.

The dependent variable's explained variability by the independent factors is substantially larger than the unexplained variability, as indicated by the F-value of 33.353

The findings of the ANOVA model show that performance, the dependent variable, is strongly predicted by the combination of the independent factors (skilled, infrastructure and information technology). The very significant ($p < .001$) regression model indicates that variations in skilled labor, information technology and infrastructure can account for performance variance.

Table 4.12 Coefficients initial

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.233	.275		.847	.400		
	Infrastructure	.229	.115	.256	1.988	.050	.357	2.800
	Information	.212	.290	.184	.732	.467	.094	10.679
	Skilled	.408	.249	.376	1.636	.106	.112	8.932

- a. Dependent Variable: performance
- b. Independent variable:
 infrastructure, information
 technology and skilled man power

Interpretation of Tolerance and VIF Values

Tolerance and Variance Inflation Factor (VIF) are metrics used to detect multicollinearity in a regression analysis. Tolerance is defined as $1 - R^2$ for a predictor when it is regressed on all the other predictors in the model. A low tolerance value (close to 0) indicates that the variable is highly collinear with the other predictors, whereas a high tolerance value (close to 1) indicates low collinearity. Variance Inflation Factor (VIF) is the reciprocal of tolerance (i.e., $VIF = 1/\text{tolerance}$). A VIF value above 10 is often considered indicative of significant multicollinearity that might require correction.

Interpretation of Tolerance and VIF Values in the Tables (Initial Model)

Infrastructure: Tolerance: 0.357 VIF: 2.800, Information: Tolerance: 0.094 VIF: 10.679, Skilled: Tolerance: 0.112 VIF: 8.932. The initial model shows that: Information has a VIF value of

10.679, which is higher than the commonly accepted threshold of 10. This indicates significant multicollinearity. From the tolerance table we can see that the value 0.094 which is less than 0.1 to show that there is issue of multicollinearity in this dataset. Skilled has a VIF value of 8.932, which is below 10 but still indicates some degree of multicollinearity. Infrastructure has the lowest VIF value of 2.800, suggesting it is less affected by multicollinearity compared to the other variables.

The Variance Inflation Factor (VIF) and tolerance are both widely used measures of the degree of multi-collinearity of the independent variable with the other independent variables in a regression model. Unfortunately, several rules of thumb – most commonly the rule of 10 – associated with VIF are regarded by many practitioners as a sign of severe or serious multicollinearity (this rule appears in both scholarly articles and advanced statistical textbooks). When VIF reaches these threshold values researchers often attempt to reduce the collinearity by eliminating one or more variables from their analysis; using Ridge Regression to analyze their data; or combining two or more independent variables into a single index. O'Brien, R. M. (2007) Due to the high VIF value for technological information, it was eliminated from the model.

Table 4.13 Coefficients revised

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.260	.271		.958	.341		
	Infrastructure	.263	.105	.294	2.505	.015	.427	2.341
	Skilled	.564	.127	.520	4.437	.000	.427	2.341

a. Dependent Variable: performance

Revised Model

Infrastructure: Tolerance: 0.427 VIF: 2.341, Skilled: Tolerance: 0.427 VIF: 2.341. In the revised model: Both infrastructure and skilled have a VIF value of 2.341, which is well below the threshold of 10. This indicates that after removing information, the multicollinearity among the remaining predictors has been significantly reduced, and also the tolerance value increased well above the threshold.

In the initial model, the variable information showed a high degree of multicollinearity (VIF = 10.679), necessitating its removal. The revised model, with information excluded, shows acceptable VIF values (2.341 for both infrastructure and skilled), indicating reduced multicollinearity and suggesting that the remaining predictors are more reliable for regression analysis. This adjustment improves the stability and interpretability of the regression coefficients.

Initial Model

The initial model includes three predictors: infrastructure, information, and skilled. Below are the key statistics and interpretation for each variable:

1. Infrastructure

Unstandardized Coefficient (B): 0.229 Standard Error: 0.11 Standardized Coefficient (Beta): 0.256 t-value: 1.988, Significance (p-value): 0.051 Tolerance: 0.357, VIF: 2.800. Interpretation: Infrastructure has a positive relationship with performance, as indicated by the positive B and Beta values. The t-value is close to 2, and the p-value is just above 0.05, indicating that infrastructure is marginally significant. The VIF value of 2.800 suggests that there is some collinearity, but it is within acceptable limits.

2. Information

Unstandardized Coefficient (B): 0.212 Standard Error: 0.290, Standardized Coefficient (Beta): 0.184 t-value: 0.732, Significance (p-value): 0.467 Tolerance: 0.094, VIF: 10.679. Interpretation:

Information shows a positive but weak relationship with performance, as the t-value is low and the p-value is high, indicating it is not statistically significant. The VIF value of 10.679 indicates high multicollinearity, suggesting that this variable is highly correlated with other predictors, which can distort the regression results.

3.Skilled

Unstandardized Coefficient (B): 0.408 Standard Error: 0.249, Standardized Coefficient (Beta): 0.376 t-value: 1.636, Significance (p-value): 0.106 Tolerance: 0.112, VIF: 8.932. Interpretation: Skilled has a positive relationship with performance, but the t-value and p-value indicate it is not statistically significant. The VIF of 8.932 suggests moderate to high multicollinearity.

Revised Model

In the revised model, the information variable was removed due to its high VIF value, leaving infrastructure and skilled as predictors:

Infrastructure

Unstandardized Coefficient (B): 0.263 Standard Error: 0.105, Standardized Coefficient (Beta): 0.294 t-value: 2.505, Significance (p-value): 0.015 Tolerance: 0.427, VIF: 2.341. Interpretation: Infrastructure now has a stronger positive relationship with performance. The t-value is above 2 and the p-value is 0.015, indicating statistical significance. The VIF value has decreased to 2.341, suggesting lower multicollinearity.

Skilled

Unstandardized Coefficient (B): 0.564 Standard Error: 0.127, Standardized Coefficient (Beta): 0.520 t-value: 4.437, Significance (p-value): 0.000 Tolerance: 0.427, VIF: 2.341. Interpretation: Skilled now shows a much stronger and statistically significant positive relationship with performance. The t-value is 4.437 and the p-value is less than 0.001, indicating a highly significant effect. The VIF value of 2.341 indicates acceptable multicollinearity.

Initial Model Issues: The initial model had issues with high multicollinearity, especially with the information variable (VIF > 10). This multicollinearity could inflate the standard errors of the coefficients, making it difficult to assess the true relationship between the predictors and performance.

Revised Model Improvements: By removing the information variable, the revised model addresses the multicollinearity issue. Both remaining predictors, infrastructure and skilled, show statistically significant positive relationships with performance. The VIF values for both predictors are now within acceptable limits, indicating reduced multicollinearity and more reliable regression results.

The regression analysis highlights the importance of addressing multicollinearity to ensure reliable and interpretable results. In the revised model, infrastructure and skilled are significant predictors of performance, suggesting that improvements in these areas could positively impact performance. The removal of the information variable was necessary to reduce multicollinearity and improve the stability of the model.

Regression equation

$$Y = \beta + \beta_1 X_1 + e$$

Y = the dependent variable

β = the y-intercept (the value of y when all x's = 0)

β_1 = infrastructure,

X_1 = the score on the first predictors,

$$\text{Organizational performance} = 0.233 + 0.256X_1 + e$$

Hypothesis testing

Table 4.14: hypothesis

	Hypothesis	p- value	Remark
H1a	Infrastructure positively and significantly enables performance	0.051	H1a= accepted
H1b	Information technology positively and significantly enable performance	0.467	H1b= rejected
H1c	Skilled man power positively and significantly enable performance	0.106	H1c= rejected

H1a: the effect of Infrastructure challenges faced in logistics activities on organizational performance is significant and positive.

Referring to the coefficient table the effect between Infrastructure and organizational performance ($p > .05$) is significant because its lower than 0.05

H1b: the effect of Information technology challenges faced in logistics activities on organizational performance is significant and positive.

Referring to coefficient table the effect between Information Technology and organizational performance ($p > .467$) is not significant because its higher than 0.05.

H1c: the effect of skilled man power challenges faced in logistics activities on organizational performance is significant and positive.

Referring to coefficient table the effect between skilled man power and organizational performance ($p > .106$) is not significant because its higher than .005.

Discussion

Impact of Multicollinearity on Significance

Multicollinearity occurs when two or more predictors in the model are highly correlated, meaning they provide redundant information about the variance in the dependent variable. This can inflate the standard errors of the coefficients, leading to the following issues:

Unstable Estimates: The coefficients can become very sensitive to small changes in the model.
Insignificant Results: The inflated standard errors make the t-statistics smaller, potentially making significant predictors appear insignificant (higher p-values).
Interpretation Issues: It becomes challenging to determine the individual effect of each predictor on the dependent variable.

Example from the Data Initial Model Infrastructure: p-value = 0.051 (marginally significant), Information: p-value = 0.467 (not significant), Skilled: p-value = 0.106 (not significant)

In the initial model, information had a VIF of 10.679, indicating high multicollinearity, which likely inflated the standard errors of the coefficients for all predictors. As a result: Infrastructure was only marginally significant. Skilled was not significant. Information was not significant. The high VIF values suggested that the predictors were not independently contributing to the explanation of variance in the dependent variable.

Revised Model (After Removing Information)

Infrastructure: p-value = 0.015 (significant), Skilled: p-value = 0.000 (highly significant).

After removing the information variable, the multicollinearity was reduced (VIF values for both remaining predictors dropped to 2.341). This had the following effects: Reduced Standard Errors: With less collinearity, the standard errors of the remaining predictors' coefficients

decreased. Increased t-Values: Smaller standard errors led to higher t-values. Lower p-Values: Higher t-values resulted in lower p-values, making the predictors more statistically significant.

Why Significance Changed

Reduction in Standard Errors: Multicollinearity inflates the standard errors of the coefficients. By removing information, the standard errors of infrastructure and skilled decreased, leading to higher t-values and lower p-values. Improved Stability: The coefficients of infrastructure and skilled became more stable and reliable, allowing for a clearer assessment of their individual contributions to performance. Clearer Relationships: Without the interference of the highly collinear information variable, the true relationships between infrastructure, skilled, and performance became more apparent.

Infrastructure and performance

The effect of infrastructure on performance is sig ($p=0.051$) and positive (coefficient=0.256). Infrastructure has a statistically significant positive impact on performance ($p = 0.051$). The unstandardized coefficient (0.229) suggests that a one-unit increase in infrastructure is associated with a 0.256unit increase in performance, holding other variables constant. The standardized coefficient (0.256) indicates a moderate positive relationship. Thus, improvements in infrastructure are likely to enhance performance. This result implies that the better the infrastructure the better the performance of organization would be. Therefore, increasing the infrastructure to a higher level helps the organization to make its performance. This result is consistent with past studies about the relationship between the two variables. For example, Inadequate transport infrastructure affects productivity, promoting weak market integration and impacting export levels (Garcia Escribano, Goes, & Karpowicz, 2015). The significance of transportation infrastructure to is well-established in the literature. It leads to increased productivity, reallocation of labor, and capital Bruinsma, Nijkamp, and Rietveld, (1989), supports the reorganization of global production networks, and facilitates coping with diverse

markets Hummels, (2007), there is a positive relationship between the variable, this article Snquiz-Daz, C. (2021). “Transport infrastructure quality and logistics performance in exports”, proof to support this study.

Skilled man power and performance

This paper conducted on find that the adoption of technological innovations is significantly influenced by technological, organizational and environmental characteristics and that adopting new technologies will increase supply chain performance for the logistics industry in China, (Lin, C.-Y. 2008). “Determinants of the adoption of technological innovations by logistics service providers in China”, which does not support this study.

From this pervious study of Amina R. Malik, Laxmikant Manroop and Pankaj C. Patel (2017) An empirical examination of the relationship between skills shortage and firm performance: The role of high-performance work systems.an empirically examine the influence of high-performance work systems on firm performance in the midst of skills shortages. Results from a study of 211 US firms with 50 or more employees demonstrate that internal skills shortages are not related to firm profitability. Findings further show that the use of high-performance work systems is more detrimental to firm performance for firms when they face an internal skills shortage.

The results from previous studies indicates that human resource development practices are significantly related to employee performance in the enhancement of organizational effectiveness. Also, the results show that there is a statistically significant relationship between employee performance and organizational effectiveness. Furthermore, this study recommends that the decision makers of universities should strive to develop HRD strategies which will enable them to improve employee competency and enhance the capability of the employees to achieve desired goals and objectives of the organization. This article contributes to human resource development, employee performance and organizational effectiveness literature. Also, this study provides key theoretical and practical implications which are discussed in detail (Mohamad Ali KAREEM 2019). discussed the significant relationship between human resource

development practices and employee performance. This study, while acknowledging the importance of HRD practices, does not directly support the notion that skilled manpower alone is sufficient for improved performance without other supportive practices.

Information technology and performance

The effect of information technology on performance is not significant. This paper conducted on survey on China's logistics service providers and showed that organizational encouragement, quality of human resources, environmental uncertainty, and governmental support all have significant positive influences on the adoption of innovative logistics technologies for logistics service providers in China, Lin, C.-Y. (2007). Factors affecting innovation in logistics technologies for logistics service providers in China. This article found that factors like organizational encouragement and governmental support positively influence the adoption of innovative logistics technologies in China. However, the effect of information technology on performance itself was not significant, suggesting that other factors might play a more crucial role.

As Melville, N., Kraemer, K., and Gurbaxani, V. (2004) stated on "Review: Information Technology and Organizational Performance: An Integrative Model of IT Business Value, we apply the integrative model to synthesize what is known about IT business value and guide future research by developing propositions and suggesting a research agenda. A principal finding is that IT is valuable, but the extent and dimensions are dependent upon internal and external factors, including complementary organizational resources of the firm and its trading partners, as well as the competitive and macro environment. this Article emphasized that while IT has business value, its impact on performance depends on internal and external factors, including complementary organizational resources and the competitive environment. This integrative model suggests that IT alone may not be a guaranteed driver of performance improvements.

As stated by Anandhi S. Bharadwaj (2000) on A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation , The resource-based view of the firm attributes superior financial performance to organizational resources and

capabilities. This paper develops the concept of IT as an organizational capability and empirically examines the association between IT capability and firm performance. Firm specific IT resources are classified as IT infrastructure, human IT resources, and IT-enabled intangibles. Results indicate that firms with high IT capability tend to outperform a control sample of firms on a variety of profit and cost-based performance measures, this journal article argued from a resource-based perspective that firms with high IT capabilities tend to outperform others. However, this performance is attributed to the broader set of IT capabilities, including infrastructure, human IT resources, and IT-enabled intangibles, rather than IT alone. While infrastructure improvements are generally linked to better performance, the relationship between skilled manpower and performance, as well as information technology and performance, is more complex. These findings suggest that organizational performance is influenced by a combination of factors, including but not limited to infrastructure, skilled manpower, and IT capabilities. Addressing these elements holistically, rather than in isolation, is crucial for sustained performance improvements.

CHAPTER FIVE

5. Summery, conclusion and recommendations

5.1 Summary of finding

5.1.1 Infrastructure

The primary goal of the study was to assess the effect of infrastructure challenges on the performance of Ethiopian shipping and logistics service enterprise. According to the statistics, all infrastructure components received poor ratings from respondents, with mean scores below 3.39. This implies that most individuals don't believe there is enough infrastructure. The substantial standard deviations for all questions indicate that there is a significant degree of answer variation despite the low average perception. The correlation indicates a positive sign and also the regression analysis shows that the relationship between them is statistically significant.

5.1.2 skilled man power

The second goal of the study was to evaluate the effect of skilled man power challenges on the performance of Ethiopian shipping and logistics service enterprise. The majority of the skilled labour-related characteristics had mean scores below 3.39, which suggests that respondents' perceptions of these elements are generally unfavourable, according to the descriptive statistics. Conversely, the category "Technology easily" had a mean score of 3.4, indicating a moderate degree of favourability about how simple it is for employees to use technology. Despite the fact that average perceptions are generally modest, the standard deviations, which range from 0.94 to 1.0 and demonstrate significant fluctuation around the averages, suggest that respondents' viewpoints appear to vary significantly. Different personal experiences or organisational environments employing skilled labour may be the cause of this difference. Even though the correlation indicates a positive sign, the regression analysis shows that the relationship is not statically significant.

5.1.3 information technology

The final goal of the research was to determine effect of information technology adaption on the performance of Ethiopian shipping and logistics service enterprise. The descriptive data show that all information technology components have mean ratings below 3.39, suggesting that respondents' opinions are generally unfavourable. The term "computerised" gets the highest mean score (3.3), however despite its low score, it does not meet the required standards. The correlation indicating a positive sign, the regression analysis shows that the relationship is not statically significant.

5.1.4 Performance of Ethiopian shipping and logistics service enterprise

The goal of the study was to investigate the effect of logistics challenges on the performance of Ethiopian shipping and logistics service enterprise. The descriptive data show that all performance categories received mean scores below 3.39, suggesting a predominantly unfavourable assessment from respondents. This implies that respondents' opinions on timely information documentation, mistakes and damages, quality enhancement, timely service delivery, and timely material delivery are not particularly favourable. The 1.0 standard deviations of all the questions indicate considerable fluctuation around the averages, indicating some diversity in the respondents' opinions. This variance may arise from different individual experiences or conditions related to the functioning of the organisation. Each variable on the performance of Ethiopian shipping and logistics service enterprise have a positive sign. At 95% confidence level it was discovered that the infrastructure challenge one of the independent variables had a statistically significant relationship with the dependent variable.

5.2 conclusion

According to the descriptive statistics, respondents think poorly of all three of the independent variables: skill, information, and infrastructure. This suggests that there is a common feeling of insufficiency in these crucial areas, which, depending on the study's context, may be cause for serious worry. The wide range of answers, particularly the high number for Infrastructure,

indicates that although insufficiency is widely acknowledged, respondents' perceptions of it differ in degree. To satisfy the requirements and expectations of the respondents, addressing these areas may need focused interventions to enhance infrastructure, information quality/accessibility, and skill levels.

The mean scores of all performance indicators time information documented, reduced error and damage, enhanced quality, on-time service delivery, and on-time material delivery fall below the 3.39 level, designating them as poor. This implies that the respondents think these areas' overall performance is lacking. The moderate degree of variety in perceptions, indicating some variations in opinion but a broad consensus on the insufficiency of performance, is indicated by the constant standard deviation of 1 across all variables.

Improving infrastructure and skilled man power is expected to result in better performance, independent variable that has a statistically significant impact on performance.

Despite having favorable correlations with performance, information technology and skilled man power have no statistically significant effects on performance. This implies that advances in knowledge and skill levels might not significantly alter performance within the parameters of this study. It is advised to concentrate on enhancing infrastructure in order to get improved performance results; nevertheless, further research may be required in order to fully comprehend the roles that information technology and skill play.

5.3 Recommendation

From the above research findings and conclusions, the following recommendations are made;

- Based on the result of the study the inferential analysis reveals a significant, positive effect on infrastructure. Therefore, company need to give attention to it, because by increasing infrastructure they can improve performance.

Roads

Upgrade and Maintain Road Networks: To ease traffic, boost security, and facilitate effective transportation, funds should be allocated for the development and upkeep of road networks. Use IoT and AI-based intelligent traffic management systems to monitor traffic flow, control

congestion, and shorten travel times. Sustainable Practices: To reduce your building's negative environmental effects, use recycled materials and environmentally friendly designs. Enhancements to Safety: Improve pedestrian walkways, lighting, signs, and routine maintenance to make roads safer.

Ports

Build More Docks, Storage Facilities, and Up-to-Date Cranes to Expand Port Capacity: Ports can manage higher cargo volumes by building more docks and storage facilities. Use Advanced Technology: To increase productivity, cut down on turnaround times, and simplify processes, make use of automation, robots, and real-time tracking systems. Boost Connectivity: To ensure smooth transportation of commodities to and from ports, improve connectivity to hinterlands by building new road and rail connections. Environmental Compliance: Put into effect environmentally friendly measures include enhancing waste management systems, cutting emissions, and providing shore power for ships.

Railways

Modernize Rail Infrastructure: To increase dependability and speed, invest in updating rolling stock, signaling systems, and rail lines. Boost Capacity: To boost capacity and lessen bottlenecks, extend train networks and add more lines or double tracks where necessary. Implement High-Speed Rail: To improve the swift and effective transportation of people and products over large distances, think about creating high-speed rail lines. Security and Upkeep: Maintain infrastructure, trains, and tracks on a regular basis to guarantee dependability and safety. Install cutting-edge monitoring tools to anticipate and stop malfunctions.

Warehouse

Expanding the capacity of existing warehouses and constructing new ones is necessary to meet the rising demand for storage. Automation and Robotics: To boost productivity, use automated storage and retrieval systems (AS/RS) and employ robotics for sorting and transporting cargo. Warehouse Management Systems (WMS): To maximize inventory control, increase accuracy,

and streamline processes, utilize cutting-edge WMS software. Sustainable Methods: To lessen your influence on the environment, include sustainable practices like temperature control systems, energy-efficient lighting, and green building certifications.

Direction for future researcher

For future researcher to achieve a balance between development and environmental preservation, studies should examine sustainable practices, evaluate the environmental implications of infrastructure upgrades, and examine the larger economic and social effects of these measures research must focus on the role of policy and regulatory frameworks, resilience and risk management techniques, and thorough cost-benefit analyses of infrastructure projects in order to optimize infrastructure development, enhance performance, and benefit society as a whole.

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ANNEX 1

ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE GRADUATE STUDIES MA PROGRAM

Questionnaire

Dear Respondent,

The questionnaire has been designed to assist the researcher collect data on the research topic: “effect of logistics challenges on organizational performance in the case of Ethiopian shipping and logistics” in partial fulfilment of Requirements for award of Master Degree in Logistics and Supply Chain Management. The information gathered will be used only for academic purpose and will be held confidential. The success of this study depends on your frank response to the questions given below. No need to write your name in any place on this questionnaire.

Should you have any enquiry feel free to contact the researcher at the following contact address.

Email:sirakbit@gmail.com

Phone: +251967339560

Thank you in advance for your full cooperation! APPENDIX I: RESEARCH QUESTIONNAIRE

Section A. Demography of Respondents

1. Gender

- a. Male b. Female

2. Age

- a. Under 25 b. 26-30 c.31-36 d. 37-42 e. above 42

3. Education Level

- a. Diploma b. BSc/BA c. MSc /MA D.PHD

4. Work experience
 a. less than 1 year b. 1-5 c. 5-10 d. above 10 year
5. Number of total work experience working in the company
 a. 1-3 b. 4-7 c. 8-11 d. 12-15
6. What job position do you hold
 a. Operation Manager ()
 b. Logistics Manager ()
 c. supply chain manager ()

SECTION B: Logistics Management Practices in the Firm

Tick as appropriate using the following Likert scale of 1-5 where: The means recorded were interpreted as follows: 1= strongly disagree 2= disagree; 3= neutral; 4= agree; 5= strongly agree

No	Infrastructure related questions	1	2	3	4	5
1	How would you rate the overall infrastructure in Ethiopia in terms of supporting logistics operations					
2	Do you believe infrastructure pose challenges for logistics in Ethiopia					
3	please rate the challenges you have faced with road transportation infrastructure in Ethiopia					
4	please rate the challenges you have faced with rail transportation infrastructure in Ethiopia					
	please rate the challenges you have faced please rate the challenges you have faced with Warehousing and storage facilities					

5	infrastructure in Ethiopia					
6	Please rate the challenges you have encountered with port facilities in Ethiopia when outsourcing logistics operations					
7	Overall, please rate the impact of infrastructure limitations on the success of logistics in Ethiopia					

	Information technology related questions	1	2	3	4	5
9	The management encourages the use of IT within the company					
10	The level of IT usage is very low within the company					
11	Employees resist the usage of IT within the company					
12	The IT equipment's within the companies are not effective					
13	All activities within the company are computerized					
14	The customers service delivery has improved since the incorporation of IT within the firm					

	Skilled man power related questions	1	2	3	4	5
15	Company's leaders encourage employees to learn new information					
16	Our company provides supports for employees to learn new information					
17	Company's leaders can help employees when they face new problems					
18	Our Company provides rewards for innovative employees					
19	Quality of human resources Employees possess abilities to use technologies to solve problems					
20	Employees can learn new technologies easily					
21	Employees usually provide new ideas for companies					
22	Employees can share knowledge with each other's					

	Performance related outsourced Logistics Functions	1	2	3	4	5
23	There is on time response of information & documents					
24	There is less Mistakes and damages in delivery					
25	There is improved quality of service					
26	There is timely delivery of service					
27	There is timely delivery of materials					