



ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
SCHOOL OF COMMERCE

THE ROLE OF E-COMMERCE IN THE PERFORMANCE OF LOGISTICS
START UP COMPANIES IN THE CASE OF SELECTED LOGISTICS
COMPANIES IN ADDIS ABABA

BY:
NARDOS GIRMA TEKLU

ADVISOR: DR MENGISTU BOGALE

A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF
THE ADDIS ABABA UNIVERSITY, SCHOOL OF COMMERCE IN
PARTIAL FULFILLMENT FOR THE AWARD OF MASTER OF ARTS
DEGREE IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

JUNE 2021
ADDIS ABABA, ETHIOPIA

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APPROVAL SHEET
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Approved by Board of Examiners

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STATEMENT OF DECLARATION

I, **Nardos Girma Teklu** the undersigned, declare that this thesis “**THE ROLE OF E-COMMERCE IN THE PERFORMANCE OF LOGISTICS START UP COMPANIES IN THE CASE OF SELECTED LOGISTICS COMPANIES IN ADDIS ABABA**” is my own original work and has not been presented in any other University. All sources of materials used for this thesis have been duly acknowledged.

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CERTIFICATE

This is to certify that **Nardos Girma Teklu** has carried out his thesis work on the topic entitled “**THE ROLE OF E-COMMERCE IN THE PERFORMANCE OF LOGISTICS START UP COMPANIES IN THE CASE OF SELECTED LOGISTICS COMPANIES IN ADDIS ABABA**”. The work is original in nature and is suitable for submission for the award of Master’s Degree in Logistics and Supply Chain Management.

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Advisor

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Date

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TABLE OF CONTENTS

Contents	Pages
ACKNOWLEDGEMENT	i
LIST OF TABLES	v
LIST O FIGURES.....	vi
ABBREVIATIONS AND ACRONYMS	vii
ABSTRACT	viii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the study	1
1.2. Statement of the problem	3
1.3 Research questions	4
1.4 Research objective.....	4
1.5 Significance of the study	4
1.6. Scope of the study	5
1.7. Limitation of the study	5
1.8. Definition of terms study.....	5
1.9 Organization of the study	6
CHAPTER TWO	7
2. RELATED LITERATUER REVIEW	7
2.1 Theoretical background.....	7
2.2. What is electronic commerce?	7
2.2.1 Classification of e- commerce	7
2.2.2 Basic characteristics of E- commerce in business sectors	9
2.3 Logistics distribution.....	9
2.3.1 Logistics and supply chain management	10
2.3.2 E-commerce in the logistics context.....	10
2.4 Transaction cost theory	13
2.5 Diffusion of Innovation Theory	13
2.6 Technology Acceptance Model.....	14
2.7. The role of e-commerce for logistics service	14
2.7.1 cost minimization (efficiency).....	14
2.7.2 Quality of service (flexibility and responsiveness)	15

2.7.3 Speed of the service (effectiveness)	15
2.7.4 The characteristics of logistics distribution in e-commerce environment	15
2.8. Empirical Literature Review	16
2.9. Conceptual frame work	17
CHAPTER THREE.....	18
3. RESEARCH DESIGN AND METHODOLOGY	18
3.1 Introduction	18
3.2 Description of the Study Area	18
3.3 Research design.....	18
3.4 Research Approach	19
3.5 Target population	19
3.6. Sampling procedure.....	20
3.7. Data type and source	20
3.8 Data Collection Procedures	21
3.9 Data measurement	22
3.10. Data analyzing technique	23
3.11 Validity & Reliability.....	23
3.11.1 Validity	23
3.11.2 Reliability	24
3.12 Ethical Consideration	24
CHAPTER FOUR.....	25
4. RESULT, DISCUSSION AND INTERPRETATION.....	25
4.1. Introduction	25
4.2. Response rate.....	25
4.2.1. Response Rate of Respondents.....	25
4.2 Demographic Profile of the Respondent	25
4.3 Descriptive analysis of E commerce usage level	28
4.3.1 Descriptive analysis for application of e-commerce for information flow	28
4.3.2 Application of e-commerce for financial flow of a supply chain.....	29
4.3.3 Application of e-commerce for material flow of a supply chain.....	30
4.4 logistics and supply chain performance	31
4.4.1 Logistics Supply chain performance from efficiency perspective	31
4.4.2 Logistics Supply chain performance from responsiveness perspective	31
4.4.3 Logistics Supply chain performance from flexibility perspective.....	32

4.4.4 Supply chain performance from Customer service perspective	33
4.4.5 Performance of supply chain in Reliability perspective	33
4.4.6 Logistics and supply chain Supply chain profitability	34
4.5 Correlation Analysis.....	34
4.5.1 The relationship among the variables	35
4.6 Regression Analysis	36
4.6.1 The role of e-commerce application on supply chain Performance	36
4.6.2 Regression ANOVA	37
4.6.3 Regression coefficient	37
CHAPTER FIVE	39
5. SUMMERY, CONCLUSIONS AND RECOMMENDATIONS	39
5.1. Introduction	39
5.2 Summary	39
5.3 Conclusion.....	40
5.4 Recommendation.....	41
5.5 Future Research Recommendation.....	41
REFERENCE	43
Appendixes	45

LIST OF TABLES

Table 2.1 E-commerce in different field of supply chain management.....	11
Table 3.1 Cronbach's alpha level of the variables for reliability test	24
Table 4.1: Response rate of respondents.....	25
Table 4.2: Demographic profile of the respondent	26
Table 4.3: Frequency table e-commerce application for information flow level	28
Table 4.4: Frequency table e-commerce application for financial flow level	29
Table 4.5: Frequency table ecommerce application for material flow level	30
Table 4.6: Descriptive statistics of Efficiency.....	31
Table 4.7: Descriptive statistics of Responsiveness	32
Table 4.8: Descriptive statistics of flexibility.....	32
Table 4.9: Descriptive statistics of Customer service	33
Table 4.10: Descriptive statistics of Reliability.....	33
Table 4.11: Descriptive statistics of supply chain profitability	34
Table 4.12: Pearson's Correlation (r) Among Independent Variables, Dependent variables, and between Independent and Dependent Variables. N=120.....	35
Table 4.13: Supply Chain Performance model Summary.....	33
Table 4.14: regression ANOVA	37
Table 4.15: regression coefficient table	37

LIST O FIGURES

Fig 2.1 Conceptual frame work for the application of ecommerce by the researcher 17

ABBREVIATIONS AND ACRONYMS

ATM: Automated Teller Machine

B2B: Business-to-Business

B2C: Business-to-Consumer

C2C: Consumer-to-Consumer

E-commerce: Electronic commerce

EDI: Electronic Data Interchange

E- Payments: Electronic Payments

G2B: Government- to- Business

ICT: Information and Communication Technology

IT: Information Technology

O2O: Online- to-Offline

RFID: Radio frequency identification

SCM: Supply Chain Management

SC: Supply Chain

TAM: Technological Acceptance Model

WWW: World Wide Web

ABSTRACT

The purpose of this article was to evaluate the role of e-commerce in logistics startups. Most agencies have focused supply chains on competitive advantage as one of the unique traits in recent decades. Recent advancements in informational technology (IT) are, on the other hand, another aspect that is severely transforming corporate circumstances. All firms require a dynamic network based on cooperation in supply chain management in order to get a competitive edge and survive in a market with daily growing changes. A descriptive and explanatory research design was used in this study. A sampling strategy in which each sample has an equal chance of being chosen is known as random sampling. A sample of 154 online stores was judged to be the right sample size to match the population size of 250 shops, as it is designed to be an unbiased representative of the overall population. To determine the impact of ecommerce on supply chain performance and to state other variables, descriptive statistics were utilized. The associations between the variables were investigated using correlation and regression analytic techniques, as well as the extent to which the independent variables explained logistics supply chain performance. The findings reveal that there is a considerable beneficial relationship between ecommerce application and logistics performance of online retail stores. The use of ecommerce was discovered to have a significant impact on responsiveness, flexibility, and customer service. But efficiency shows moderate relationship to the application of ecommerce. Therefore online retail shops and platforms need to invest much more on ecommerce applications to benefit and have better supply chain performance especially in the areas of information flow, material flow and financial flow of the supply chain. To improve supply chain performance, the government and other stakeholders must focus more on ecommerce development finally; universities and research institutes should conduct more in-depth studies to assess the status and benefits of ecommerce from a variety of perspectives.

Keywords: *E-commerce, online retails, supply chain, supply chain performance*

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

According to Wikipedia, electronic commerce, sometimes known as E-commerce, is the trade of goods and services over a computer network such as the internet mobile transfer, electronic transfer of cash, marketing online, transacting online, having hole of inventory control system, which implements the www For the whole set of transaction process, though it uses other information technology as email. is becoming more and more demanding in terms of innovative business models and consumer expectations. Because of the growing diversity of products (such as books, apparel, home appliances, and building materials) of varying value, weight, and size, this market's logistical requirements are complex. Customers are increasingly expecting real-time information and value easy and free returns as well as various delivery alternatives (Žurek 2015).

E-commerce allows users to obtain information about goods and services as well as purchase them at any time, regardless of where they are situated (as long as they have access to the Internet).This eliminates the limitations imposed by time and space limits while purchasing goods or services. The user has the capacity to compare offers from different traders in terms of price, quality, and seller credibility in the electronic space.

The consumer can customize his purchase and avoid subjective variables for deciding on a product, such as the seller's persuasion or stated discounts (Isoraite and Miniotiene 2018).

“Logistics is the component of the supply chain management that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from manufacturing site to end customers. It also involves the complex processes to meet the needs and wants of customers.

Before the introduction of the E-commerce industry, shops obtained items through manufacturers or distributors; however, now that we have platforms of online shopping sites, intermediaries are no longer necessary, allowing suppliers and end users to conduct business directly. Logistics encompasses a wide range of activities, Order processing, Warehousing, Inventory, Transportation, Packaging, shipping payment.

For e-commerce businesses, forward and reverse logistics, as well as interpersonal ties, are crucial. Corporate are expanding market share all around the world and take advantage of better production and sourcing efficiencies in highly competitive environment. E-commerce has many challenges as well as prospects which has significant effect on the profitability of organization by decreasing and increasing cost of logistics and transpiration the logistics function is under immense pressure by international market outsourcers and operators to transport goods rapidly and at the lowest cost as possible (Gunasekaran and Ngai, 2004a). As a result, the logistics function's role in maintaining the seamless movement of supplies, products, and information throughout a company's supply chain is a crucial factor of corporate performance. Because of the nature of a physically distributed operations environment and worldwide marketplaces, logistics has recently gained prominence and recognition as a vital aspect in competitive advantage. (Sum et al. 2001).

Logistics distribution is a subset of e-commerce and the fast growth of e-commerce is facilitating the growth of logistics distribution. It raises the bar in terms of logistical distribution. In general, e-commerce and logistics distribution present themselves in the following ways: first, e-commerce encourages the development of logistical infrastructure. Because of High competence and worldwide nature of e-commerce, logistics distribution must also meet this objective. Following, e-commerce encourages the development of logistics technology and its success. The level of logistics technology is a critical aspect in achieving logistics efficiency. It is critical to build an effective logistics system that is tailored to the operation of e-commerce and to accelerate the advancement of logistics technology. The logistics distribution system is a critical component of the e-commerce system. Logistics distribution is an integral part of e-commerce. Logistics distribution is the backbone, foundation, and assurance of e-commerce activities, as well as the key to e-commerce practice. The value of e-commerce is realized through the realization of logistics distribution. The benefits and drawbacks of logistics distribution, as well as its efficiency, directly limit the normal growth of e-commerce logistics companies. (yue 2019)

There is some doubt about how widely the Internet and electronic commerce (E-Commerce) are used, and especially concerning their future expansion. At the same time, E-Commerce is a relatively new phenomenon that will undoubtedly have a huge impact on how individuals and businesses shop, manage their businesses, and distribute their products.

E-logistics, on the other hand, will relate to the impact that the Internet has on the supply chain process that “plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from manufacturing site to the end customers to suit consumers' requirements.” (Elkhateb 2012)

As a result, this research is being carried out to determine the impact of E-commerce on logistics performance in Ethiopia. And it measures the effects on logistics performance on chosen Ethiopian enterprises using performance indicator variables such as cost, speed, and quality.

1.2. Statement of the problem

The impact of e-commerce on supply chain management is unique, and it has the potential to minimize time intervals and ease inter-organizational connections. E-commerce provides an opportunity for a company that wants to expand its market globally. It is feasible to anticipate a growth in demand when a corporation describes its products and services. It is the role of the supply chain management system to effectively respond to any escalating demands. Furthermore, supply chain management should be sufficiently online to respond to all particular consumer requirements. This can be accomplished with the use of programming systems and/or virtual agencies-commerce will open up new avenues for connection and networking. (Isoraite and Miniatiene 2018).

Customer purchasing habits are changing at a faster rate than logistics and supply chains can keep up. Because of e-commerce customers' quickly changing delivery expectations, such as click-and-collect and next-day delivery, running an effective e-commerce supply chain and fulfillment operation poses a whole new set of issues. E-tailors must discover new solutions at every stage of the supply chain, from demand forecasting to inventory management, warehousing, technology integration, and delivery, to fulfill these new demands. With the rapid development of global economies, e-commerce is developing at a rapid and efficient pace. With the progressive maturation of information technology, Ecommerce has emerged as one of the future routes of global company development.

(2018, Kayikci) Traditional logistics distribution, as the last component of e-commerce, has, however, been unable to meet the needs of e-commerce due to a number of flaws. Logistics distribution is an integral part of e-commerce. Logistics distribution is the backbone,

foundation, and assurance of e-commerce activities, as well as the key to e-commerce practice. The benefit of e-commerce is realized when logistics distribution is realized.

The benefits and drawbacks of logistics distribution, as well as its efficiency, directly limit the natural growth of e-commerce. As a result, this thesis investigates the impact of e-commerce on the performance of Ethiopian logistics startups. A mixture of financial and non-financial resources will be required to accomplish this. Cost, speed, and quality were all taken into consideration. Using both financial and non-financial measurements will give you a more comprehensive picture to explain the impact of E-commerce on logistics performance and provide some reliable countermeasures.

1.3 Research questions

- To examine the role of e-commerce to decrease the cost of logistic service.
- To examine the role of e-commerce to enhance the speed of logistic service.
- To examine the role of e-commerce to enhance the quality of logistics service

1.4 Research objective

Major objective of this study is to explore the role of e-commerce on logistics performance of selected logistics startup companies in Addis Ababa. Like Addis Mercato, Addisbr.com, fetan mart, delivery Addis, small.

The specific objectives of this research are:

1. What is the role of the role of e-commerce to decrease the cost of logistic service?
2. What is the role of e-commerce to enhance the speed of logistic service?
3. What is the role of e-commerce to enhance the quality of logistics service?

1.5 Significance of the study

The identification of possibilities and obstacles can have a favorable impact on the performance of organizations who want to adopt or have already deployed ecommerce logistics solutions, as well as providing a framework for enterprises to plan their future paths as well as the ability to change their aims and objectives in response to real-world opportunities and difficulties. It also allows government organizations and trade groups to

create e-commerce logistics help for businesses that are tailored to the criteria found in this study. Provide an opportunity for organizational decision-makers and managers to consider and evaluate the opportunities and problems identified in current practices in order to take appropriate corrective measures in the area or scale-up the positive factors (if any) for the promotion of e-commerce logistics practices. The study will be used as a reference source as well as a jumping off point for other scholars who want to undertake more in-depth research on the topic. Apart from giving important information, it is meant to inspire other academics to conduct a thorough inquiry by broadening the scope of the problem.

1.6. Scope of the study

It is vital to demarcate the research project in order to ensure that it is manageable. Although this study was limited to a few logistics startup enterprises in Ethiopia's Addis Ababa metropolis, it does not rule out the need for similar studies in other locations and industries. Because the globe is currently dealing with an epidemic sickness known as the covid virus, which is highly contagious and necessitates special attention, assessing all organizations will be challenging. As a result, the study did not cover all e-commerce and logistics organizations companies thus the scope of this study is confined to assess the role of e-commerce on logistics performance of selected companies in Addis Ababa Ethiopia.

1.7. Limitation of the study

While conducting this research, the researcher ran into various limitations, including a lack of well-organized and documented material on e-commerce logistics studies in the country where I'm working. Since it's rarely used in poorer nations like Ethiopia, it was also done under a lot of pressure and stress due to the global spread of the covid virus.

1.8. Definition of terms study

Electronic commerce is a business in which information technology is used to increase sales, business efficiency and provide a basis for new products and services the uses of information communication technology to facilitate the business activity of searching information via e-mail to online payment which makes the whole buying processes fully digitalized .

Logistics and supply chain management is part of supply chain management that comprise of all aspects of product cycle from origin to end users. It plans implements and controls the efficient effective forward and reverses flow and storage of goods, services and related information between the point of origin and point of consumption in order to meet customer's requirement.

1.9 Organization of the study

This thesis is organized in to five main chapters The first chapter which is the background of the study, statement of the problem, the objectives of the study, the significance, scope, and limitations of the study, and the organization of the study paper And Operational definition are incorporated. The second chapter deals with the literature review; general information about e-commerce logistics is given; definition of e-commerce logistics, conceptual framework of electronic commerce logistics, classification of e-commerce, comparative analysis of The role of e-commerce for logistics service, Basic characteristics of E-commerce in business sectors, Logistics and Supply Chain Management and finally, The characteristics of logistics distribution in e-commerce environment. Chapter three incorporate research design and methodology, which describes the methodology undertaken in relation to justification of the research design, questionnaire design, sampling process and data collection, administration and the intended analysis strategy. Chapter four discusses survey results presentation, analysis and interpretation. Finally, conclusion and recommendation are presented in the Chapter five.

CHAPTER TWO

2. RELATED LITERATURE REVIEW

2.1 Theoretical background

In this chapter I have incorporated the role of e-commerce in the performance of logistics startup companies and the results of previous works by different authors. The secondary sources I used are books, past articles journals, previous thesis, and some documents from the government agencies and international institutions related to current ecommerce and logistics and supply chain management

2.2. What is electronic commerce?

E-commerce stands for electronic commerce. It means dealing in goods & services through the electronic media & internet. Any growth and development of IT could fundamentally change the economy. Any search for finding effective methods for commercial affairs has resulted to another revolution in business. It is named electronic commerce (e-commerce). E-commerce and electronic business are similar but not identical phrases. Commercial transactions, submission of services to clients, and commercial tasks via digital technologies are all covered by these words.

2.2.1 Classification of e- commerce

E-commerce utilizes information and communication technologies to carry out market transactions among two or more parties usually businesses and consumers. At times one of these parties may be the government as well. Turban and his colleagues [2010] classified e-commerce by the nature the transactions or the relationship among the participants into these categories: (Turban et al., 2002, cited in Alexander, 2014).

Business-to-Business B2B

E-commerce model in which all the participants are businesses or other organizations, for example dell sells its products to other companies.

Business-to-Consumer B2C

E-commerce model in which businesses sell to individual shoppers for example any Person can enter amazon.com and buy products from those web sites and sell it to HP which makes computers that final consumer can buy.

Consumer-to-Business C2B

E-commerce model in which individuals use the internet to sell products or services to organizations or individuals who seek sellers to bid on products or services they need. Priceline.com is a well-known organizer for C2B transactions.

Intra-business EC

E-commerce category that includes all internal organizational activities that involve the exchange of goods, services, or information among various units and individuals in an organization like online training

Business-to-Employees B2E

E-commerce model in which an organization deliver services and information's or products to its own employees. It is considered a subset of Intra-business EC.

Consumer-to-Consumer C2C

E-commerce model in which consumers sell directly to other consumers. Various marketplaces play the role of mediator by enable the user to buy from other users like ebay.com

E-learning

The online delivery of information for purposes of training or education. It is used heavily by organizations training and also practiced at virtual universities.

E-government

E-commerce model in which a government entity buys or provides goods, services, or information from or to business or individual citizens. Like electronic voting. (Saad Al-bayati 2011)

2.2.2 Basic characteristics of E- commerce in business sectors

(1) Increased the efficiency of transactions

Due to the fact that business transactions are being operated through the internet, the time it took for each process in the supply chain has reduced significantly making the transaction faster and convenient.

(2) Transparency and openness are improved in transactions From the negotiation of transactions to the process of signing contracts to the payment of goods on the network, transactions are carried It will prevent the spread f of fake information by its special retrieving mechanism of the internet and it can get all information back and see what was putted before.

(3) Lower transaction costs by

A. The waste of money due to traditional advertising and publishing has reduced

B. The business transaction done by the internet will enhance the efficiency of information, the amount of time spent could be reduced and decreasing management cost..

C. The inventory holding cost of an organization can become zero by using the internet and other alike networks where seller and buyer exchange and share information online. (YUE 2019)

2.3 Logistics distribution

A wide range of operations are included in logistics distribution all of these efforts are aimed at ensuring efficient distribution and transfer of finished goods. This is the process of getting items from the end of a production line to consumers. Logistics distribution is a modern means of transportation that is geared toward ecommerce clients. For a complete logistics distribution system, integrated information management and scheduling is built based on the peculiarities of e-commerce. Logistics Warehousing and Distribution Service have developed into the core industry link of E-commerce. Where the used order, schedule work is carried out at logistics plat forms an d the goods will be matched and deliver to the consignee (YUE 2019)

2.3.1 Logistics and supply chain management

Logistics is part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption in order to meet customers' requirements.(<http://www.clm1.org>). However, there is no clear consensus in literature on the definition of LM. Many authors refer to Logistics Management as Supply Chain Management (SCM), i.e. they defined LM as logistics applied across inter-organizational borders, and they used the words interchangeably. The following definition was given by Simchi-Levi, Kaminski, and Simchi-Levi (2000): "Supply chain management is tool applied to connect suppliers, manufactures, warehouses, and retailers so that products reach to end customers on time

The flow and transformation of information, goods and services from raw material stage to the end users in order to minimize the cost while maintain the service level . Is included in the supply chain Up and down the supply chain, materials and information flow.

A supply chain consists, basically, of the following elements: suppliers, manufacturing centers, warehouses, distribution centers, transportation systems, retail outlets and customers; raw material, work-in process inventory, finished goods and information that flows between the different elements. (yue 2019)

2.3.2 E-commerce in the logistics context

The definition of e-logistics , it is a logistics community network consisting of third-party logistics service providers including warehousing and transportation networks with suitable information technologies such as EDI, the Internet, wireless and mobile communication technologies, WWW and Radio Frequency Identification (RFID) with the objective of providing one-stop value-added services to customers. (Albert, Balan and David, 2016)

Over the last quarter-century, the inter-organizational business process that connects manufacturers, logistic companies, distributors, suppliers, retailers, and customers to support order creation, execution, and fulfillment has changed. Customers deal with businesses based on their capacity to handle and deliver products reliably, in addition to product quality. Supply chain management deals with three issues. Supply chain management deals with three issues. (Saad Al-bayati 2011)

a- Coordinating all the order processing activities that originate at the

Customer level.

b- Material related activities.

c- Financial activities

**Table 2.1 E-commerce in different field of supply chain management
(Nikakhtar and Yang 2011)**

Applicable fields of the organization	Effects of e-commerce
Marketing	Product development and distribution, new sales channels, direct economy, reduced order flow time, improved customer service, internet sales, sourcing new market parts, and discovering new markets
Research and development	Customer feedback, market research, product planning, quality control, data analysis, time engineering, customer relations management, and time reduction and increased precision planning of a new product
Purchase/supplies	Ordering, money transfer, supplier appointment, eliminating bureaucracy, shortening order flow, enhancing buyer-supplier cooperation, improving inter-organizational procedures, removing intermediaries, receiving consultants based on buying, and transferring power from seller to buyer
Stock management	Visibility, quick information transfer, and stock reduction; reduced updating costs and pricing; on-time delivery; reduced warehousing costs; ordering, accounting, and customer processing; on-time delivery, reduced warehousing costs; on-time delivery, reduced warehousing costs; on-time delivery, reduced warehousing costs; on-time delivery
Transportation	Browsing the raw materials orders, reducing loading and unloading timer, transportation management, assignment of transportation activities
Customer servicing	Customers can get a lot of information, browse their orders, and get quick answers to their questions.
Relations among suppliers	Ordering costs are reduced, and the bill is received faster. Improving coordination and cooperative business, improving ordering flow, improving completion process, and improving product delivery
Production	Electronic construction and production, sale assignment, pure production (through cooperative production programming, internet holder, mass ordering, sale transactions, quick transfer)of qualitative problems in the introduction of standard chain and qualitative definitions of knowledge management chain

In e-commerce, fulfillment is the most important aspect of logistics. Online marketplaces and retailers must figure out the most efficient approach to fill orders and deliver goods.

Because they cannot afford to hire other agencies, small businesses frequently manage their own logistical operations. Most large businesses engage a fulfillment service to handle their logistical needs. E-commerce allows users to buy things at any time and from any location, regardless of their location. Online marketers can provide lower prices, a larger product range, and a better efficiency rate; but, online merchants cannot provide the same physical experience as traditional stores, and another issue with the online market is security issues. (Navid N and Yang J 2011).

E-commerce security guards against illegal access, use, alteration, or destruction of business websites and customers. To avoid security issues, e-commerce websites employ a variety of techniques. Firewalls, encryption software, digital certificates, and passwords are examples of these tools. E-commerce has potential to integrate the basic flows of supply chain that are physical flow, financial flow and information flow which will make the total business operation efficient, effective and reliable.

Companies can also identify gaps they have by electronic means of solutions, with the emergence of e-commerce new capabilities such as implanting ERP systems like SAP, ERP, Xero or mega ventory have helped companies to manage operation with customers and suppliers. In general, e-commerce provides an efficient and effective means for firms to work with each other and within the supply chain. The political hurdles or cross-country changes are the major challenges faced by e-commerce application on the performance logistics service.

Advantages of e-commerce for logistics service

- Overcome geographical limitation
- Gain new customers with search engine visibility
- Lower costs
- Locate the product quicker
- Eliminate travel time and cost
- Provide comparison shopping
- Enable deals, bargains, coupons and group buying
- Provide abundant information

- Create targeted communication
- Remain open all the time
- Create market for niche products

2.4 Transaction cost theory

Economists have classified transactions among and within organizations as those that (a) support coordination between buyers and sellers, that is, market transactions, and those (b) supporting coordination within the firm. Williamson (1981b) points out that the choice of transaction depends on a number of factors, including asset specificity, the parties' interests in the transaction, and ambiguity and uncertainty in describing the transaction.

Transaction costs can be thought of According to the theory of transaction costs economics; there are four main types of transaction costs. These include search costs the cost of searching for products, sellers, and buyers, bargaining costs the cost of setting up and carrying out the contract, policing costs the cost ensuring that the terms of the contract have been met and Adaptation cost the cost incurred in making changes during the life of the contract Firms will choose transactions that economize on coordination costs ensuring that the terms of the contract have been met.

The unit cost of coordination transactions will approach zero as information technology continues to improve its cost performance, allowing for the creation of new coordination transactions to meet new business needs. (Benjamin & Wigand, 1995). The ever-increasing and innovative use of the World Wide Web (WWW) to conduct business and WWW-related forms of electronic commerce are clear examples of firms' desires to economize on transaction costs. (Rolf, 1997) This hypothesis backs up the study that the use of ecommerce in information, financial, and material flow can make transactions go more smoothly. The idea emphasizes on the importance of lowering transaction costs in any commercial application. This study looked at how ecommerce could be used to lower supply chain transaction costs.

2.5 Diffusion of Innovation Theory

Diffusion of innovation is a theory conveyed to members of a social system over time through certain routes (Rogers, 1995). This method explain how ,why, and what rate new ideas and technology spread the task at hand in the electronic commerce scenario; that is, a task or transaction must be conveyed to a group of enterprises or customers (social system

members) inside a market or industry. Electronic dissemination techniques and channels are, as previously stated, timely, cost-effective, and focused ways and channels for reaching target clients.

The qualities of the innovation determine the rate of diffusion or acceptance (e.g., the relative advantage, compatibility, complexity, trial ability, and observe ability). This theory contributes to the study's consideration of the research topic of whether the use of ecommerce may improve efficiency in terms of time and cost. (Rolf, 1997).

2.6 Technology Acceptance Model

The following factors were identified based on the previous examination of TAM and E-commerce related literature in order to extend the TAM to better serve as an E-commerce adoption model. The variables are process (Woodroof & Kasper, 1998) of E-commerce use satisfaction, outcome (Woodroof & Kasper, 1998) of the online shopping experience satisfaction, behavioral expectations (Venkatesh et al., 2003) about E-commerce use.

TAM includes five of the most essential variables: perceived utility, perceived ease of use, attitude toward usage, behavioral intention, and actual usage. The two main characteristics, perceived ease of use and perceived usefulness, are seen to be the key determinants of user acceptability. (Davis, 1989). Perceived usefulness is defined as the expectation that the technology will improve job performance and service delivery and perceived ease of use is defined as the belief that using technology will be free of effort (Davis, 1989).

2.7. The role of e-commerce for logistics service

E-commerce, as a new commercial activity, has features such as high efficiency, individuality, and cost point, as well as being all-weather, global, and so on Logistics distribution is a subset of e-commerce, and the rapid growth of e-commerce is fueling the growth of logistics distribution at the same time, it raises the bar in terms of logistical distribution Electronic commerce is an integrated system that improves the efficiency and effectiveness of companies performance

2.7.1 Cost minimization (efficiency)

A. Reducing the wastage of a large amount of money due to standard advertising and printing methods.

B. Some businesses can use the intranet to do business, enhancing the efficiency of information transfer over the internet, saving a significant amount of time and lowering management costs.

C. The network can allow buyers and sellers to exchange and share information in real time, allowing for the steady production and sale of zero stocks, and eventually lowering the cost of products inventory to zero. (YUE 2019)

2.7.2 Quality of service (flexibility and responsiveness)

Transparency and openness are improved in transactions from the negotiation of transactions to the process of signing contracts to the payment of goods on the network, transactions are carried out. It's simple to double-check each message in the fast information transfer process, preventing the spread of false information.

2.7.3 Speed of the service (effectiveness)

Because business transactions are becoming more standardized over the internet, transaction time is substantially reduced, making the entire transaction process faster and more convenient.

2.7.4 The characteristics of logistics distribution in e-commerce environment

In the modern e-commerce environment, logistics distribution Logistics distribution has gone through a lot of reforms and development facilitating the process of its business flow to be Finished, effectively shortened, and changed. However, the logistics process can be quickly achieved by people's lives and other areas of advancement. Traditional logistics distribution is made up of a number of business operations that are heavily influenced by human and temporal constraints. Traditional logistics distribution firms frequently use vast-area warehouses for inventory in order to achieve the sensible distribution of a large number of customers and resources However, due to the restricted space available in logistics warehouses, the amount and varieties of merchandise are limited while remaining vast Volume inventory consumes a significant proportion of cash flow, resulting in a rise in opportunity cost. In contrast, in the ecommerce environment, logistic distribution are connected by the internet and firms are combined with virtual firms in the forms of network

Real-time control and rapid response to physical distribution are possible with allocation and coordination management. (Yue 2019)

2.8. Empirical Literature Review

According to previous study by (zurek 2015) conclude that regardless of the promising figures, consumer expectations in the context of integrating online and offline sales will continually grow, and that logistics solutions, which are currently in place, still do not always meet the requirements of management processes of tens of thousands of products of various sizes with a relatively small number of pieces on the order, or processes of complaints via e-stores or returns of goods purchased online, in a traditional store. Meeting these requirements is already influencing changes in the design of logistics solutions dedicated to this sector as well as process management, which currently represents a major challenge for distributors and logistics operators on the local and global market.

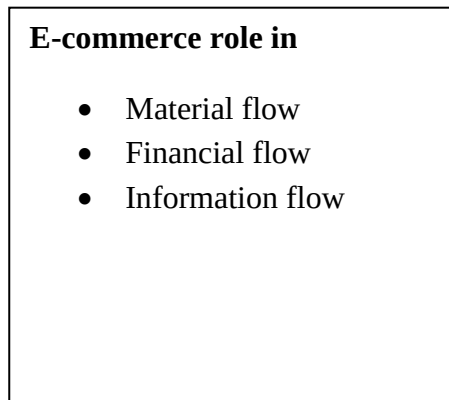
As (wang 2015) studied he have concluded that with the rapid development of e-commerce, customer demand for diversity and timeliness has also increased, in fact, B2C e-commerce business lead higher requirement for logistics service .Nikakhtar and Jianzheng 2011 on his study at the role of e-commerce in supply chain management on to minimizing cost, recent advances in informational technologies (IT) are the other factors of changing business circumstance seriously. In order to find a better competitive advantage and survive in the market with daily increasing changes, all organizations are in need of a dynamic network based upon cooperation in supply chain management.

As discussed in article review by (albers 2016) on title of The Impact of Electronic Commerce on Logistics Service Providers The logistical implications of ecommerce can be differentiated into two main categories

: (a) The rise of e-marketplaces and (b) the elimination of supply chain elements (disintermediation). By analyzing these two categories and their major logistical implications in detail it concluded that it can deduct strategic consequences for logistics service Providers.

2.9. Conceptual frame work

Independent variable



Dependent variable

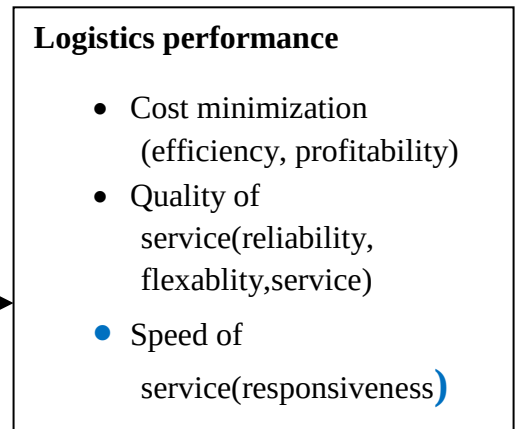


Fig 2.1 Conceptual frame work for the application of ecommerce by the researcher

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This section explains the technique used in the justification of the research design, questionnaire design, sample technique, data collecting, administration, and analysis strategy. The data collection technique, an ethical assessment of the study, data analysis and organization, as well as data validity and reliability tests, were all briefly described in this chapter.

3.2 Description of the Study Area

The research will be conducted in selected logistics startup companies which impalements the e-commerce concept in Addis Ababa Ethiopia like (Addisber.com, Addis Merkato, Fetan Mart, Delivery Addis and Zmall). it's obvious that e-commerce didn't grow in our country like developed countries like the Europe, Asia, America but there is a good hope in the implantation of the concept due to the current situation of covid -19 outbreak where movement from one place to another Is prohibited the need to do business through the internet is mandatory therefore new entrants to the business area has increased which makes the study visible.

3.3 Research design

A research design is the '*procedures for collecting, analyzing, interpreting and reporting data in research studies*' (Creswell & Plano Clark 2007, p.58). As Saunders, Lewis and Thornhill (2009), explained studies are classified into three categories based on their purpose i.e. exploratory study, descriptive study and explanatory study. Among these, the researcher used descriptive and explanatory research design.

Descriptive research is a sort of study that focuses on describing the nature or condition of the current situation in as much detail as possible.

The descriptive method of research, according to Creswell (1994), is used to obtain information on the current or existing condition. Whereas explanatory research designs was

used to explain and investigate the relationship between independent variables (e-commerce) and dependent variables (logistics performance).

Descriptive and inferential statistics were used to achieve the study's goal and to answer the research questions. To examine the implementation of e-commerce and analyze the influence on supply chain performance, the descriptive statistics used are frequency, percentage, mean, and standard deviation were employed. Statistics that can be used to make inferences, in order to the relationship between e-commerce and supply chain performance the researcher used correlation analysis and regression analysis were also applied.

3.4 Research Approach

The research approach was mixed method, in view of the fact that, the nature of the research data was qualitative leaning, in which perception and judgments of respondents were transformed into the form of survey questionnaire using Likert scale and analyzed quantitatively using SPSS tool. (Creswell, 2009), point out that, the researcher might collect qualitative data by transforming the qualitative themes into counts and comparing these counts with descriptive quantitative data. Sandelowski et al, (2014) cited (Collins & Dressler, 2008, p. 365) stated that to talk about converting qualitative into quantitative data is to assume that two kinds of data (qualitative and quantitative) exist and the two are not so much different kinds of data as these data are experiences formed into words or numbers, respectively.

3.5 Target population

The study's participants will be logistics start-up enterprises in Addis Ababa that employ internet retailers. Addisber.com, Addis Merkato, Fetan Mart, Delivery Addis and Zmall were chosen as platforms. After performing proportional calculations on each platform, probabilistic sampling was used to choose samples. The study will target logistics startup companies in Ethiopia Addis Ababa, The sample sizes of 250 as described in sampling method according to adequately manipulate the large number and reduce the cost of producing the questionnaire to the entire population. This research use the formula for estimating the sample size provided by Yaro Yamane (1969) which was cited in Obasi and Ekwueme (2011). I attempted to enlist the help of people from various parts of the sample area and organization in order to obtain primary data. The population of the study is made up

of specialists and experts from logistics and supply chain, as well as other functional areas, because they might all be involved in the organization's logistics supply chain management.

3.6. Sampling procedure

The principle governing the sample size is to choose such sample which would scientifically represent the larger populations that will be a total of 250 samples from different logistics companies. I will try to get as much diverse responses as possible. The sample size will be chosen as tried to engage people from different parts of the sample location, main target people essentially logistics organization using E-Commerce platforms at that particular time. The level of utilizing e-commerce varies with great deal among different types of organizations mainly due to the non-homogeneous character of businesses based on the size, age, sector, motivation, mode of organization, location, knowledge base and the like (Taylor and Murphy 2004, p. 281). Ecommerce stand in different levels of Enterprises" utilization based on their volume in financial or human capital on top of the preceding factors and the end users" extent of ecommerce usage. Sample size is a process of selecting a sufficient portion of the population for the purposes of generalizing the findings

3.7. Data type and source

To conduct this study, primary data was collected from a number of firms active in improving logistics performance in general Furthermore; secondary data is mostly utilized to supplement primary data. The questionnaires will be utilized to get a better understanding of the role of ecommerce in logistics service excellence in terms of cost, quality, and speed. In order to gather pertinent information with respect e-commerce role on logistics service in Ethiopia, the questionnaires were distributed to selected entity and top level management of respective organizations which are included in the sample. The current study consists of two dimensions theoretical and practical part. In the theoretical dimension the researcher depends on scientific studies /thoughts that are related to current study. Whereas in the practical side the researcher depends on descriptive methods using practical manner to collect, analyze data and test hypothesis.

Data source are: - secondary source: books, journals, articles, theses to write the theoretical framework of study. Primary source are: - the questionnaire that was designed to reflect the

study objective and questions. The first part of questionnaire is used to collect demographic data such as gender, age, level of education and experience.

The second part of the questionnaire was designed with the purpose of collecting data about e-commerce role in the logistics performance of logistics startup companies in Ethiopia. In order to ensure the comprehensiveness of data, these questionnaires consist of open ended and close ended statements, some of which are statements evaluated on a 1-5 Likert scale. Closed questions obtain responses by selecting from a given set of options such as yes or no, agree or disagree, or by checking preferred answers . Open ended part of the questionnaire consists of questions where the respondents are asked to describe the answers on the space provided for additional explanation and comments.

3.8 Data Collection Procedures

Questionnaires is prepared in paper forms and handed out as same, the questions have spaces for respondents to fill up in other to answer the questions. Statistics software and also used descriptive analysis and simple relative percentages to get an accurate interpretation of the responses; this is because of the peculiar nature of the questions. Limitation of Methodology: Challenges experienced in the administration of the questionnaires were largely due to the busy and rowdy nature of our sample, it is very difficult to get people to fill out our questionnaires, as people are busy transacting different businesses. Our goal is to obtain a wide range of viewpoints from the selected consumers in order to obtain as many and diverse viewpoints as possible, thus our choice of Broad Street, which serves as a gathering place for individuals from many walks of life and backgrounds.

The questionnaires designed after reading a number of literatures extensively. Some of them are adapted from prior studies and previously designed questioners but with certain modification to feet with Ethiopian context and the objective of the research. To make easy the interpretation, the following values are assigned to each scale, which was used to interpret the total responses of all the respondents for likert scaled survey question by computing the weighted mean: 1=strongly disagree, 2=disagree, 3= Neutral,4=agree, 5=strongly agree (Level of agreement).

3.9 Data measurement

The sample sizes of 154 will be chosen as we try to engage people from different parts of the sample location and organization. Technique analysis; as it is discussed in the methodology part of this study, data collected by using different techniques and analyzed using triangulation approach. A total of 154 questionnaires will be distributed to logistics organizations. In order to analyze the research results, Statistical Package for the Social Sciences (SPSS) software will be used.

The sample size is determined by the premise of selecting a sample that scientifically represents the broader populations. I have made an effort to obtain as many different responses as possible. The sample size will be determined by attempting to engage people from various areas of the sample area, with the major target persons being logistics organizations that use E-Commerce platforms at the moment. The level of utilizing e-commerce varies with great deal among different types of organizations mainly due to the non-homogeneous character of businesses based on the size, age, sector, motivation, mode of organization, location, knowledge base and the like (Taylor and Murphy 2004, p. 281). Ecommerce stand in different levels of Enterprises'' utilization based on their volume in financial or human capital on top of the preceding factors and the end users'' extent of ecommerce usage. Sample size is a process of selecting a sufficient portion of the population for the purposes of generalizing the findings. The aims of using sampling method according to adequately manipulate the large number and reduce the cost of producing the questionnaire to the entire population. This research use the formula for estimating the sample size provided by Yaro Yamane (1969) which was cited in Obasi and Ekwueme (2011).

$$n = \frac{N}{1 + N(e)^2}$$

$$= \frac{250}{1 + 250(0.05)^2} = \frac{250}{1.625} = 154$$

Where n = sample size N= population 1 = constant e = error estimate (0.05%) at 95% confidence interval The sampling process involves the drawing of individuals or entities in a population about the phenomena of ecommerce role in logistics from the sample of the population or entity. he most important aspect of sampling is selecting a sample frame that is representative of the population and entity from which it is derived When the population of interest to the researcher is too big or the researcher's time and resources are restricted,

sampling is utilized. or human resources to be able to investigate each and every element within the selected population or entity.

3.10. Data analyzing technique

The survey was created and disseminated. The primary difficulties were determined by a study of the interview data and observation issues when compared to the issues raised in the literature review, these were found to be lacking. The researcher examined and studied these problems when creating the questionnaire. Considering the peculiarity of this research work, the questions carefully selected and designed to feel the pulse of the consumer who is really uses these services and E-Commerce platforms that indicated the present trend and opportunity, examined the challenge and found out the growth factors in Ethiopia. In other to avoid complexities and ensure thoroughness in this research work, I decided to design the questionnaire and analyzed data by:

Gender, which allowed us know which gender actually uses E-Commerce platform more; Age group which gave me which particular age group uses E-Commerce plat-forms more frequently, why?, and the relationship that exists among these groups; and E-Commerce platforms, education qualification, experienced and non-experienced on the study subject, and also system developer or owners are also considered, grouping data this way, able to have a clearer view of type of transactions and which platforms are used to make these transactions by which gender and age group as we able to navigated easily through the data and cross tabulate among different issues and challenges with regards to benefits/difficulties, trust/safety, and also essentially how E-Commerce has been able to affected the level of business transactions among the respondent in a developing market if any which clearly show us the present trends of e-commerce in Ethiopia.

3.11 Validity & Reliability

3.11.1 Validity

The most important criterion is validity, which reveals how well an instrument measures what it claims to measure (Kothari, 2004). According to Malhotra (2010), there are three sorts of validity tests: content validity, predictive validity, and construct validity. This study addressed content validity through the review of literature and adapting instruments used in

previous research. Prior to the actual data collection, the questionnaires were tested, and modified.

3.11.2 Reliability

The three factors representing the independent variables were adopted from literatures (Moshari & Goncalves, 2015 & Kabra et al, 2015). To ensure the reliability of the instrument, the questionnaire was review by the experts and pilot test was carried out, and based on the feedback, instrument was modified to ensure item total statistics Cronbach's Alpha (α) would fall more than 0.7.

Table 3.1 Cronbach's alpha level of the variables for reliability test

	Reliability Statistics		
	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
E-commerce and logistics performance	0.795	0.749	30

Source: survey (2021)

3.12 Ethical Consideration

Permission to conduct the research as well as an authorization letter to the sample organizations were obtained from Addis Ababa University, which explained to the respondents why the study was being conducted and enhanced the confidentiality of the data collected from them, including the sample organizations under study. The questionnaires will be administered via email due to the current situation it may not be possible to administer the questioner in person the content briefed with information about the purpose of the research, expected duration and procedures and any prospective research benefits. Also understand restrictions of confidentiality, such as data coding, disposal, sharing and archiving, and when confidentiality must be broken.

CHAPTER FOUR

4. RESULT, DISCUSSION AND INTERPRETATION

4.1. Introduction

On this particular chapter the thesis attempts to provide the result of data analysis, discussion and interpretation of the data analysis. Mean standard deviation and percentage was used in order to demonstrate the demographic profile of employees in the online retail shops. Finally correlation and regression analysis were used to show the relationship between the independent and dependent variables.

4.2. Response rate

4.2.1. Response Rate of Respondents

Table 4.1: Response rate of respondents

Description	Respondents
Target population	250
Questionnaire distributed	152
Questionnaire returned	120
Response rate (%)	78.9%
Usable response	120

Out of the distributed 152 questioners, 120 were received .this constitutes 78.9% response rate

4.2 Demographic Profile of the Respondent

The table below shows the respondents personal information. It also shows the differences in their opinion towards e-commerce usage and factors that have direct influence on logistics performance.

Table 4.2: Demographic profile of the respondent**Sex**

		Frequency	Percent
Valid	Male	53	44.2
	Female	67	55.8
	Total	120	100.0

Age (Years)

		Frequency	Percent
Valid	18-30	70	58.3
	31-40	50	41.7
	Total	120	100.0

Educational Qualification

		Frequency	Percent
Valid	Diploma holder	17	14.1
	First Degree	68	56.7
	Masters or above	35	29.2
	Total	120	100.0

How long have you been in the business

		Frequency	Percent
Valid	Less than One year	18	15.0
	1 Year and more	17	14.2
	2 years and more	70	58.3
	5 years and more	15	12.5
	Total	120	100.0

How long have you been since you started online logistics?

	Frequency	Frequency	Percent
Valid	Less than One year	15	15.0
	1 Year and more	17	14.2
	2 years and more	70	58.3
	5 years and more	15	12.5
	Total	120	100.0

		Frequency	Percent
Valid	Clothing	85	70.8
	Jewelry Cars	16	13.3
	Grocery	18	15.0
	Other	1	.8
	Total	120	100.0

On the demographic information of employees 55.8% are females and 44.2% males this shows that the organization employees are more female than males. According to the age group classification of employees the organization 58.3% constitute of 18-30 years old and 41.7% 31-40 years of age this shows that there is no age group above 40years of age and majority of the employees are of younger generation .

On the educational background, the majority of respondents that constitute about 56.7% have bachelor's degree, the remaining 29.2% and 14.1% have master's degree and diploma respectively. This shows the majority of employees in retail outlet shops completed bachelors and master's degree.

The work experience result shows 58.3% of retailer has more than 2 years' experience, 15% of employees have less than 1 years' experience, and the remaining 14.2% and 12.5% have 1 year and more and more than 5 year experience in the organization. This means, most of the employees in the organization are recently hired but also there are enough employees who work for a long period of time so that they can share their experience to new comers. On the other hand, 58.3% of the employees have on line retail experience 15% of them have less

than one year experience 14.2% have one year and more experience, the remaining 12.5% have more than five years' experience. This indicates on online retail shops the majority of the employees have two years and more experience.

Finally, on the products the organization provide online the result shows, 70.8% of the products are clothes, 15% are groceries, 13.3% of the products are jewelry and cars and the remaining 0.8% are other products. The result shows that most of the products the organization sells on line are clothes but also the organization sells groceries, jewelry and cars online most often.

4.3 Descriptive analysis of E commerce usage level

On the descriptive statistics of the e-commerce application there are three measurement used which are information flow, material flow ,financial flow that are used in order to measure the performance of logistics and supply chain management of the retail shop. The current online retail shop plat forms application of ecommerce level is described by the analysis and interpretation of each main variable. On a five-point likert scale, respondents were asked to rate the variables. Starting with Strongly Disagree, up to Strongly Agree. Where 1 indicates Strongly Disagree, 2 indicate Disagree, 3 indicate neutral, 4 indicate Agree, and 5 indicate Strongly Agree.

4.3.1 Descriptive analysis for application of e-commerce for information flow

The table below shows about the information flow level of an e-commerce application which six dimensions has been used to explain the information flow. The responses mean and standard deviation are shown below

Table 4.3: Frequency table e-commerce application for information flow level

Application of E-commerce for information flow	Mean	Std. D
We provide the right product description online	4.02	1.316
We provide the exact price information online	4.29	1.387
We update information faster	5.00	.000
The platform is responsive to both mobile phone and pc	4.30	1.388
We offer after sales service information	3.98	1.322
We respond faster to customer requests	4.41	1.073
Total Mean	4.33	1.081

Source: survey (2021)

On table 4.2 the majority of respondents agreed at moderate level .to be more descriptive of each character, we update information faster have result of (M=5.00, SD =0.00) which shows that the employees update information at higher level. and we provide the right product description, exact price information , platform is responsive to both mobile phone an pc , respond faster to customers request shows that an average mean and standard deviation of (M=4.33, SD=1.081) this also mean that most of the employees are responsive on the information flow of their plat form One list score dimensions are scaled at medium a level which was: We offer after sales service information (M=3.98, SD=1.322) which means they moderately give after sales service . Most of the respondents agreed they are applying ecommerce for information flow at moderate level with total mean of 4.33 and Standard deviation of 1.081.

4.3.2 Application of e-commerce for financial flow of a supply chain

To measure the application of e-commerce for financial flow we have used five dimensions. And the result showed that there is a high degree of usage of financial flow applications

Table 4.4: Frequency table e-commerce application for financial flow level

Application of E-commerce for Financial Flow	Mean	Std.D
Our platform accepts mobile money transfer	4.30	1.388
Our plat accept internet banking transfer payment	4.73	.448
Our payment system is secured	4.16	1.360
We provide cash payment on delivery service	4.43	1.401
We refund for canceled or returned goods immediately	2.12	1.217
Total Mean	3.948	1.162

Source: survey (2021)

The table above 4.3 showed that employees agreed for the majority of the dimensions. To be specific about each our platform accepts mobile money transfer has (M=e money transfer has (M=4.30, SD= 1.338) this shows that the employees of retail shops use mobile transfer at higher level. our plat accepts internet banking transfer payment has (M= 4.73, SD=0.448) which shows that there is high level of agreement on the internet banking transfer also . about

the security of payment system ($M=4.16$, $SD=1.360$) which shows that many of the employees agree that the payment system is secured . we provide cash payment on delivery service ($M=4.43$, $SD=1.401$) shows that payment on delivery service is also highly practiced . the final result showed the least of all results ($M=2.12$, $SD= 1.02$ which shows that there is low refund police of the organization which needs to be improved because it will affect the overall performance of logistics.

4.3.3 Application of e-commerce for material flow of a supply chain

To measure the application of e-commerce for material flow we have used five dimensions. And the result showed that there is a high degree of usage of material flow the table listed below shows this.

Table 4.5: Frequency table ecommerce application for material flow level

Application of Ecommerce for Material flow	Mean	Std.D
We provide package delivery service	5.00	.000
We have third party logistics service provider partners for the delivery	4.58	1.051
We encourage customers to collect their orders by themselves	3.44	1.846
We have returned goods collection center	4.5750	1.05051
Total Mean	4.519	0.789

Source: survey (2021)

According to the survey collected, table 4.5 shows that we provide package delivery service shows high degree of agreement at ($M=5.00$, $SD=0.00$). We have third party logistics service partners for the delivery at ($M=4.58$, $SD=1.051$) which shows that there is high degree of the third party partner usage level. We encourage customers to collect order by themselves at ($M=3.44$, $SD=1.846$) this shows that the employees of retail shops moderately encourage customers to collect order by themselves .lastly we have returned good collection center has ($M=4.570$, $SD=1.05051$) which shows that employees of retail shops agree that they have return good collection center.

4.4 logistics and supply chain performance

4.4.1 Logistics Supply chain performance from efficiency perspective

To measure the supply chain performance level factors such as efficiency, effectiveness, responsiveness and adaptability are shown the table below. The descriptive statistics of mean and standard deviation values are regarded in this study as one of the variables for supply chain performance. According to Amit and Thomas (2004), e- business solutions have great impact on supply chain operation especially in terms of operational efficiency.

Table 4.6: Descriptive statistics of Efficiency

Efficiency	Mean	Std.D
Minimize cost of marketing	4.5667	.49761
Efficient time management	4.71	.456
Avoid cash handling cost	4.58	.717
Easy business reports	4.86	.350
Total Mean	4.679	0.50

Source: survey (2021)

The table above shows the efficiency dimension s which are of 4 .easy business report shows a(M=4.86, SD=0.350) which shows that there is high degree of agreement on the bases of easy reporting for online retail shops .efficient time management (M=4.71 ,SD=0.456) this shows that there is high degree of time management on the online retail shop. Avoiding cash handling cost (M=4.58, SD=0.717) shows that there is a high degree of agreement the cash handling cost is reduced. Generally the result showed that the online retail shops show high level of efficiency.

4.4.2 Logistics Supply chain performance from responsiveness perspective

The table below shows descriptive study of the supply chain responsiveness dimension and interpreted accordingly

Table 4.7: Descriptive statistics of Responsiveness

Responsiveness	Mean	Std.D
Helps to manage different quantity orders easier	5.00	.000
Faster transaction	5.00	.000
Total mean	5	0

Source: survey (2021)

The tables above shows two dimensions are described to measure the responsiveness of online retail shops of interest. Both helps to manage different quantity orders easier and faster transaction shows a ($M=5.00$, $SD=0.00$) this shows that the online retail shops are very responsive. Ecommerce, according to Alexander (2014), allows firms to share demand data, sales amount information, and production schedules more quickly and accurately, allowing adopting organizations to be more flexible and responsive, and it is a matter of survival for big businesses in an ever-changing environment

4.4.3 Logistics Supply chain performance from flexibility perspective

The table below shows the mean and standard deviation responses of flexibility dimensions in the online retail shops. It used three dimensions and it's listed in the table below.

The descriptions are similar to those provided by Abdulaziz (2016), who show how e commerce integration can increase supply chain agility, resulting in improved operational performance such as responsiveness and flexibility.

Table 4.8: Descriptive statistics of flexibility

Flexibility	Mean	Std.D
I can work from any where	4.73	.448
Easy to manage orders	4.73	.448
Different payment modes	4.86	.350
Total mean	4.77	0.415

Source: survey (2021)

The table above shows that I can work from anywhere (M=4.73, SD=0.448) shows high value of agreement that online retail shops that use e-commerce applications can work from anywhere. Easy to manage orders (M=4.73,SD=0.488) shows that there is also high agreement to the fact that online retail shops used easy manageable plat form to manage their orders. And the last is the online retail shopees use various payment modes (M=4.86, SD=0.350) which shows that majority of employees agree that they use different payment modes.

4.4.4 Supply chain performance from Customer service perspective

The table under shows the two dimension of customer service and interpreted accordingly

Table 4.9: Descriptive statistics of Customer service

Customer service	Mean	Std.D
Convenient to buy products easily	4.71	.456
Better contact for every individual customer.	4.42	1.074
Total mean	4.565	0.765

Source: survey (2021)

The result on the table above showed that both convenient to buy product easily and better contact for every individual (M=4.71, SD=0.456 AND M=4.42,SD=1.074) respectively shows that they show high mean value which implies that customer service is one of the significant dimension of supply chain performance .

4.4.5 Performance of supply chain in Reliability perspective

The table under shows the reliability dimensions results and interpretations

Table 4.10: Descriptive statistics of Reliability

Reliability	Mean	Std.D
Low Occurrence of bribe	4.16	.830
Return of goods granted	3.43	1.413
Easy after sells service	4.27	1.166
Total mean	3.95	1.136

Source: survey (2021)

The table above shows the reliability tests low occurrence of bribe and easy after sales service shows that ($M=4.16, SD=0.83$) and ($M=4.27, SD=1.166$) shows a moderate level of agreement and the last return of good granted showed the least result which means there is low level of agreement .in general the mean value for reliability is under medium category.

4.4.6 Logistics and supply chain Supply chain profitability

The table under shows the dimensions to measure the supply chain profitability. The descriptions is similar to those provided by Abdulaziz (2016), who show how e commerce integration can increase supply chain agility, resulting in improved operational performance such as responsiveness and flexibility.

Table 4.11: Descriptive statistics of supply chain profitability

Profitability	Mean	Std.D
Increase total sales amount	4.71	.456
Increase profit margin	4.71	.456
Total mean	4.71	.456

Source: survey (2021)

The table above shows clearly that the online retail shops showed an increase total sales amount ($M= 4.71, SD=0.456$) and increase profit margin ($M=4.71, SD=0.456$) this means that the profitability of the online retail shops has increased at high level .

4.5 Correlation Analysis

The most common methods for identifying relationship between variables is Pearson correlation For the purposes of inferential analysis of the link between the independent variables e-commerce for information flow, e-commerce for money flow, and e-commerce for material flow, and the dependent variable supply chain performance of online retail shops, Pearson correlation was used by the researcher to determine the degree and direction of the link between variables. (Robert and Richard, 2008).

4.5.1 The relationship among the variables

Pearson correlation between independent variables (e-commerce application for information flow, financial flow, and material flow) and dependent variable supply chain performance in terms of efficiency, responsiveness, and flexibility, as well as customer service and reliability, was determined using correlation analysis. The Pearson Correlation results range between 1 (perfectly linear positive correlation) to -1 (perfectly linear negative correlation). When the correlation value is 0, no relationship exists between the variables.

Table 4.12: Pearson's Correlation (r) Among Independent Variables, Dependent variables, and between Independent and Dependent Variables. N=120

E-commerce	Pearson correlation	Variable correlation with logistics performance
E-commerce for information flow	Pearson correlation Sig .(2-tailed) N	.462 .000 120
E-commerce for financial flow	Pearson correlation Sig .(2-tailed) N	.414 .000 120
E-commerce for material flow	Pearson correlation Sig .(2-tailed) N	.414 .000 120

The table shown above shows that there is strong relationship between the dependent variable that is logistics performance and independent variable e-commerce. To go to detailed view the application of e-commerce for information flow show value of ($r=0.462$ $p=000$) which is positive result that means information flow increases as logistics performance increases. Application of e-commerce for financial flow also shows ($r=.414$, $p=000$) which is positive that means as financial flow increase the logistics performance also increases. Application of e-commerce for material flow show that($r=0.414$, $p=000$) which is also positive that shows the direct relationship between the variables.

4.6 Regression Analysis

To study the association between ecommerce application and supply chain performance was estimated using multiple regressions in this study. by using ordinal data from a likert scale to do multiple regressions, Likert scale regression It's crucial to think about a true likert scale, which is made up of numerous items that all measure the same thing, each of which must have at least 5 points, and powerful results with a high significance value. While performing a Multiple Regression, some assumptions must be reviewed. It seeks to show how the independent variable or predictor variables can predict the dependent variable or outcome variable in order to examine reliability and validity.

4.6.1 The role of e-commerce application on supply chain Performance

The first hypothesis we can test is that the predictors of e-commerce applications for financial flow, e-commerce applications for material flow, and e-commerce applications for information flow play a role in supply chain performance of online retail shops with the effect of independent variables on the dependent variable is measured.

Table 4.13: Supply Chain Performance model Summary

Model summery				
Model	R	R square	Adjusted R square	Std. Error of Estimate
1	.729 ^a	0.531	0.523	.310

Source: survey (2021)

The table above shows that r-square is measures the goodness of fit the variables it explain the variation in measures the variable E-commerce for information flow, financial flow, material flow. as clearly described in the table 4.13 adjusted R-square value for the regression model was 0.523, this indicates the variable in this study explain 52.3% of the variation in logistics performance .the reaming 47.7% percent of the variation in logistics performance in logistics startup companies are explained by other variables which are not included in the model .therefore, E-commerce for information flow, financial flow, material flow. Are explanatory variables of logistics and supply chain performance.

4.6.2 Regression ANOVA

Table 4.14: regression ANOVA

ANOVA		Sum of squares	df	Mean square	F	Sig.
	Regression	12.705	2	6.352	66.243	.000
	Residual	11.220	117	0.096		
	Total	23.925	119			

Source: survey (2021)

The table above shows regression model shows that it predicts the dependent variable that is logistics performance very well. The regression raw at “sig.” column shows that 0.00 which is less than 0.05 the regression model significantly predicts the outcome variable of online retail shops.

4.6.3 Regression coefficient

Table 4.15: regression coefficient table

Coefficient					
Model	Unstandardized coefficients		Standardized coefficients	t	sig
	B	Std Error	Beta		
(Constant)	4.816	106		45.304	.000
E-commerce for information flow	.382	.036	.934	10.614	.000
e-commerce for financial flow	-.860	.097	-2.422	-8.904	.000
E-commerce for material flow	.663	.094	1.812	7.090	.000

Source: survey (2021)

The table above shows the dependent variable which is logistics performance predictors. E-commerce for information flow (0.382, $t = 10.614$, $p > 0.05$) this showed that information flow positive influence on logistics performance, financial flow. ($\beta = -0.860$, $t = -8.904$, $p > .05$) showed that financial flow has negative and significant influence on logistic

performance and material flow ($\beta = 0.663$, $t = 7.090$, $p > .05$) showed positive and significant influence on logistics performance, respectively.

The following shows the value of regression weight:

$$LP = 4.816 + 0.382 I - 0.860 F + 0.663 M + E$$

LP: logistics performance, I: Information flow, F: financial flow, M: material flow

E-commerce information flow: the findings reveal that there is a significant and positive relationship between logistics performance and e-commerce information flow. Financial flow of e-commerce: this reveals that there is a negative association with logistics efficiency, while the application of e-commerce in general has a positive but somewhat significant link with supply chain dimensions such as; The reliability and profitability of online retails have been linked to responsiveness, flexibility, efficiency, and customer service, indicating that there is a favorable association between logistics performance and Logistics Startup firms in AA. According to the findings, the firm has a strong habit of leveraging e-commerce to improve their overall performance. However, this is in conflict with the financial flow because it demonstrates a negative relationship. Companies' attempts to provide cash-based delivery services and refunds on canceled items appear to have a detrimental impact on logistics performance.

CHAPTER FIVE

5. SUMMERY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

Chapter five consists of the research findings; conclusion and recommendation .this study objective was to know the role of e-commerce on supply chain performance of logistics startup companies

5.2 Summary

The goal of this study was to determine the role of e-commerce in logistics startup firms.

It is based on the concept that the features of e-commerce greatly boost transaction efficiency. As transaction time is lowered and the entire transaction process is made faster and more easily, transactions become more transparent and open. Transactions are carried out from the negotiation of transactions, the process of signing contracts to payment of goods on the network. It's easy to check every message in the fast information transfer process while preventing the fast circulation of fake information, lowering transaction costs its concrete manifestations. As a result, e-commerce application and supply chain performance of online retail shops are being measured.

The findings demonstrated a strong positive relationship between e-commerce apps for material flow and e-commerce applications for financial flow, as well as a link between e-commerce applications for material flow and supply chain performance. In e-commerce, fulfillment is the most important aspect of logistics. Online marketplaces and retailers must figure out the most efficient approach to fill orders and deliver goods. Because they cannot afford to hire other agencies, small businesses frequently manage their own logistical operations. Most large businesses engage a fulfillment service to handle their logistical needs. E-commerce allows customers to overcome different barriers like geographical, lack of time to purchase and allows them to purchase products any time and from anywhere on line marketers can offer lower price, greater product selection and higher efficiency rate however online retailers can't offer the physical experience that traditional retailers can and the other problem regarding the online market is concerns about the safety of online transaction.

E-commerce has the potential to integrate all inter-company and intra-company tasks, as well as the supply chain's three flows (physical, financial, and information). Companies may find it challenging to deal with political barriers or cross-country change. In general, if they engage in e-commerce, it will provide an efficient and effective way to collaborate with each other and within the supply chain.

According to Abdulaziz (2016), adopting sophisticated e-commerce in the supply chain allows businesses to respond quickly and effectively to client wants and requirements, allowing them to meet their expectations. It also minimizes order lead times and increases business service levels. Among the independent variables, application of e-commerce for Information flow ($\beta=.382$, $p<.000$) was the one with the highest coefficient. Application of e-commerce for financial flow ($\beta=-.860$, $p<.000$) is a negative relation with supply chain performance. The third variable, application of e-commerce for material flow ($\beta=0.663$, $p<.008$) has also a significant positive relationship with the supply chain performance.

Though e-commerce has a positive but moderately significant association with supply chain aspects such as responsiveness, flexibility, efficiency, and customer service, it has a negative relationship with online retailers' reliability and profitability. This implies that in order to improve the performance of online retail shops, there is a need to increase application of e-commerce for material flow, information flow and financial flow specially the financial flow dimensions which is about refund for canceled or returned goods shows the lowest of all other dimensions need to be seen with more additional variables and with other factors to identify their relationships with application of e-commerce in a supply chain.

5.3 Conclusion

E-commerce offers the user the opportunity at any time, regardless of where it is located (as long as the user has access to the Internet) information on goods and services, as well as purchasing them. This removes the barriers associated with time and space constraints when acquiring goods or services. The user has the electronic space the ability to compare offers from different traders regarding price, quality aspect, and assessment of seller's credibility. The user can personalize his purchase and keep him from subjective criteria for determining the product's choice, such as seller's persuasion, alleged discounts. Businesses can use the internet to gain global visibility across their extended network of trading partners and help them to respond quickly to a range of variables, from customer demand to resource shortages.

The E-Business vision uses the internet to integrate the information flow across the traditional boundaries (Buy side – in side – Supply side). Transactions are now possible in a variety of formats considering that speed and accuracy of data flow re improved the cost per transaction falls. Customer relationships had improved by enhancing feedback and by creating customer communities therefore they can share their experience. The biggest shortage of online stores is there refund for returned good is not as such strong.

5.4 Recommendation

There are a lot of E-Commerce Solutions along the Supply Chain summarized in: A- the ability of all supply chain partners to view partner collaboration as a strategic asset B. Information visibility along the entire supply chain. C. Speed, cost, quality, and customer service as major factors in supply Chain success. This can be achieved through Integrating the supply chain more tightly, Order taking can be done over the Internet, EDI, EDI/Internet, or an extranet, Order fulfillment can digitized , Electronic payments, risk management, inventory management and collaborative commerce of supply chain management.

5.5 Future Research Recommendation

The impact of e-commerce on supply chain management is unique, and it has the potential to minimize time intervals and facilitate inter-organizational connections. E-commerce provides an opportunity for a company that wants to expand its market globally. When a company specifies its products and services, it is possible to expect an increase in demands. This is the responsibility of supply chain management system to reply all increasing demands in an effective form. Also, Supply chain management should be sufficiently online to respond to all particular client requirements. This can be accomplished with the use of programming systems and/or virtual agencies. E-commerce will open up new avenues for connection and networking. With the rapid development of world economies, e-commerce is also being developed quickly and efficiently. With the gradually mature on the development of information technology, Ecommerce has become one of the directions of global business development in the future. (Kayikci 2018) The realization of logistics distribution also realizes the value of e-commerce. The advantages and disadvantages of logistics distribution and its efficiency directly restrict the normal development of e-commerce. As a result, this article has discovered that e-commerce plays a key impact in the performance of logistics startup enterprises in Ethiopia. Using both financial and non-financial measurements will

give you a more comprehensive picture and to explain the impact of E-commerce on logistics performance and provide some reliable countermeasures. So the success of an E-Supply chain depends on the ability of all supply chain partners to view partner collaboration as a strategic asset. B. Information visibility along the entire supply chain. C. Speed, cost, quality, and customer service as major factors in supply Chain successful. D. Integrating the supply chain more tightly.

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Appendixes

Appendix A: Questionnaire

ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE
DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT GRADUATE
PROGRAM

First of all I would like to forward my heartfelt gratitude and respect to you for administering this questionnaire honestly and responsibly. The questionnaire is designed to collect the necessary information to undertake a research on the topic " the role of Electronic commerce in improving supply chain" in Addis Ababa" for the partial fulfillment of the requirements of the degree of Masters of Art in logistics and supply chain management at Addis Ababa University.

Electronic commerce is the basic and contemporary concept that embraces a complex amalgam of technologies, infrastructures, processes, and products and services. It describes the process of buying, selling, transferring, or exchanging products, services, payments and/or information through computer networks, principally the Internet. In this research context, E-commerce: refers to the application of ICT to undertake trading activity which include from simple information searching using web to electronic payment and full digitization. The main objective of this research is to explain the role of e commerce in the performance of logistics service in Addis Ababa city particularly on selected logistics startup companies. Please answer every question. You can tick the option that you choose or write your answer on the blank space provided. Space is provided for you to add further comments or explanations. Therefore, your genuine, frank and timely responses are quite vital to determine the success of this study. So, I kindly request your contribution in filling the questionnaire honestly and responsibly.(No need of writing your name) Finally, I would like to confirm you that all the information you provide in this Questionnaire will be strictly confidential and will exclusively be used for this research purpose. Thank you very much ahead for your cooperation!

Researcher's Name: Nardos Girma, Student at AAU

e-mail:nardosgt@gmail.com

If you have questions to this questionnaire - please contact by this address

Thank you again for your time and attention to this research, please fill out the forms below:

Personal information/Profile

1) Sex M ☐ F ☐

2) Age (Years):

Less than 18 ☐ 18-30 ☐ 31-40 ☐ 41 -50 ☐ above 50 ☐

3) Educational Qualification

Less than high school ☐ High school graduate ☐

Diploma holder ☐ First Degree ☐ Masters or above ☐

4) How long have you been in the business?

Less than One year ☐ 1 Year and more ☐

2 years and more ☐ 5 years and more ☐

5) How long have you been since you started online logistics?

Less than One year ☐ 1 Year and more ☐

2 years and more ☐ 5 years and more ☐

6) Which products or service you provide online (you can thick more than one)

Clothing ☐ Electronics ☐ Jewelry Cars ☐

House ☐ Grocery ☐ Others ☐

Part III applications of E commerce usage level

How is the ecommerce application level of your online logistics business?

	Strongly Disagree	Disagree	neutral	Agree	Strongly Agree
Ecommerce for information flow					
We provide the right product description online					
We provide the exact price information online					
We update information faster					
The platform is responsive to both mobile phone and pc					
We offer after sales service information					
We respond faster to customer requests					
Ecommerce for financial flow					
Our platform accepts mobile money transfer					
Our plat accept internet banking transfer payment					
Our payment system is secured					
We provide cash payment on delivery service					
We refund for canceled or returned goods immediately					
Ecommerce for material flow					
We provide package delivery service					
We have third party logistics service provider partners for the delivery					
We encourage customers to collect their orders by themselves					

We have returned goods collection center					
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Part II The role of E commerce on supply chain performance

7- Check your performance level those are gained because of e-commerce.

	Strongly Disagree	Disagree	neutral	Agree	Strongly Agree	Strongly Disagree
Efficiency						
Minimize cost of marketing						
Efficient time management						
Avoid cash handling cost						
Easy business reports						
Responsiveness						
Helps to manage different quantity orders easier						
Faster transaction						
Flexibility						
I can work from any where						
Easy to manage orders						
Different payment modes						
Customer service						
Convenient to buy products easily						
Better contact for every individual customer.						
Reliability of system						
Low Occurrence of bribe						
Return of goods granted						
Easy after sells service						
Profitability						
Increase total sales amount						
Increase profit margin						

8) Why should e-commerce be encouraged and facilitated in a logistics and supply chain in the current Ethiopian socio, economic, political and business environment?

Thank you for completing this survey!!