



Adoption and Utilization of E-Commerce among Ethiopian Exporters: The Case of Coffee Exporters

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**THESIS APPROVAL**

This is to certify that the thesis prepared by Jemal Sali entitled: Adoption and utilization of e-commerce among Ethiopian exporters: the case of coffee exporters: in partial fulfillment of the requirement of master's degree in Electronics and Digital Resource Management and complies with the regulations of the University, meets the expected standards with respect to originality and quality.

**Signed by the Examining Board**

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### **STATEMENT OF DECLARATION**

Through my signature below, I honestly declared that this research thesis on Adoption and utilization of e-commerce among Ethiopian exporters: the case of coffee exporters. The thesis submitted in partial fulfillment of the requirement for a master from Jimma University, Faculty of Computing and Informatics Department of Information Science. Every effort has been made to avoid plagiarism in the preparation of this thesis and all the sources that I have used indicated and acknowledged by means of complete references and citation. This work has not been submitted before for any other degree in any other institutions.

Name: Jemal Sali

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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## **ACRONYMS AND ABBREVIATION**

AC:	Electronic Commerce
B2C:	Business to Commerce
DOI:	Division of Innovation
DTI:	Department of Trade and Industry
EDI:	Electronic Data Interchange
GDP:	Growth Domestic Product
ICT:	Information Communication Technology
ISP:	Internet Service Provider
ITC:	International Trade Centre
SME:	Small and Medium Enterprise
TAM:	Technology Adoption Model
TPB:	Theory of Planned Behavior
UK:	United Kingdom
USA:	United States of America
USD:	United State Dollar
UTAUT:	Unified Theory of Acceptance and Use of Technology

**ABSTRACT**

*E-commerce has been predicted to be a new driver of economic growth for developing countries. Enterprises and firms are a key sector in today's global economy. This study was aimed to investigate the adoption and utilization of electronic commerce among coffee exporter enterprises in Ethiopia. Mixed method quantitative and qualitative research design was employed. The Quantitative primary data was collected using structured self-administered questionnaires and analyzed by SPSS version 23.0. The qualitative study was conducted by using two different models, adoption ladder model and the transporter model that provide basis for interview. Descriptive studies which include mean and standard deviation were used for Likert-scale responses to summarize the data while frequency tables were used to analyze the general information and e-commerce adoption and utilization. The factor analysis or regression analysis statistical method was used to determine what combination of factors mostly appealing to the manager of coffee exporters or owners. According to the finding of this research, 51.9% of coffee exporters make a good use of e-commerce tools like computers, internet, email, and websites. Based on regression factor analysis, the training of managers, numbers of employee, awareness of benefits, and Knowledge had a significant relationship on e-commerce adoption. However, the study did not find a statistical significance difference between the ages, environmental factors and cost of e-commerce. E-commerce trading has not been implemented by the majority of Ethiopian coffee exporters. By technology acceptance models, Ethiopian coffee exporters are only on the website stages. It can be concluded that coffee exporters are unable to fully benefit from e-commerce and its benefits that come due to a lack of sufficient knowledge, skill sets, and infrastructure to make use of the technology, and also absence of rigorous government monetary and banking regulations on electronic payments. The study recommended that building infrastructure, formulating suitable policy for online financial transactions and intensifying knowledge and skills of employee on e-commerce by government and coffee Exporters enterprises.*

**Key words: Adoption, utilization, e-commerce, coffee, exporters.**

## **CHAPTER ONE: INTRODUCTION**

### **1.1. Background of the Study**

Electronic commerce contains fundamental business ways of buying and selling things, facilities as well as information through the internet. It refers wide range of internet use of business works and activities for goods and services and the use of electronic communications and digitally available resource processing technology in economic transactions activity to create a simple ways in order to transform and redefine the relationships for value creation between organizations and individuals (Mr. Harjot Kaur, 2015).

The fascination of all actors – government, the public, business – with the digital economy is easily understood as one looks at the dynamics of its growth. The digital economy is worth an estimated \$11.5 trillion globally; equivalent to 15.5 percent of global gross domestic product (GDP), and it has grown two and a half times faster than global GDP over the past 15 years. The central part of the digital economy is e-commerce, which is singled out for its fast expansion and resilience (United Nations, 2019).

The use of ICT provides many strategic and operational benefits to SMEs. These include development of closer relationships with customers and business partners, intense integration of internal and external processes, better access to external resources, and improved access to information. These benefits are likely to improve decision-making, strengthen trade relations and, in turn, improve e-commerce development and the international visibility of SMEs (UNCTAD, 2019).

Empirical evidence on the effect of ICT on SME exports is scarce, however, due to the lack of data on SMEs (St-Pierre, Monnoyer and Boutary, 2017) St-Pierre, Monnoyer and Boutary (2017) find that for 294 Canadian manufacturing SMEs, the use of ICT stimulates innovation and monitoring activities but has no effect on collaboration and search for marketing information. In addition, they find that innovation collaboration, and marketing research activities positively and significantly affect exports, while monitoring activities negatively influence exports. For a sample of 43 Sub-Saharan African countries, Wamboye, Adekola and Sergi (2016) conclude that the adoption of ICT by companies is associated with productivity growth through an increase in output, confirming the existence of a

network effect. To develop e-commerce and increase export capacity, an increasing number of African SMEs are working to establish their own digital identity by creating websites and having their own e-mail addresses (Coste, 2017).

The export earnings of Ethiopia for the budget year concluded July 7, 2020, has increased by 13 percent to surpassing \$3 billion from the previous year. The Ministry of Trade and Industry stated that Ethiopia has secured \$3.029 billion of which 77 percent is generated from agricultural commodities export. Income from export of coffee, flower, cereals, oil seeds, Khat (stimulus plant), fruits and vegetables have generated (newbusinessethiopia.com)

During Ethiopia's budget year, 2020, Ethiopia has earned \$854.2 million from export of coffee, according to the Ministry of Trade and Industry data (www.capitalethiopia.com).

What motivated me to do my thesis on the title 'Adoption and Utilization of E-Commerce among Ethiopian Exporters: The Case of Coffee Exporters' is my personal and job experience I have before. I was working in Jimma city trade office for more than four years. I have realized that our business and trade technological linkage is still at very low level. Although the government and private sectors currently working to increase usage of e-commerce in commercial system; still there are many problems that hinders technological adoption and usage in commercial system. Now days every countries on the globe are using electronic technology to facilitate their commerce system and try to adopt the system easy doing business. As we know online and digital marketing is rapidly growing in recent time than before. But in our country a lot of thing should be done to go with technological advancement in e-commerce globally. So, I decide and select this title to investigate more deeply about e-commerce to fill knowledge gap and promote e-commerce in our setting.

## **1.2.Statement of the Problem**

The fast growth of the Internet has led to increasing adoption of e-commerce business models among firms globally. Enterprises and firms are a key sector in today's global economy. Despite the important role that Enterprises play in the global economy and the potential benefits of e-commerce, e-commerce adoption among enterprises are limited (Yeng, Osman, Haji-Othman, & Safizal, 2015).

The adoption rate of e-commerce by SMEs is fairly low (Govindaraju, Wiratmadja, & Rivana, 2015). SMEs, particularly in Africa, have generally been slow in adopting such initiatives. They could be

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unaware of the potential of e-commerce to enhance their business operations and growth. Although many studies have been conducted regarding e-commerce adoption, the majority were mainly carried out in developed countries (Kurnia, Choudrie, Mahbubur & Alzougool, 2015), and only a few focused on SMEs in developing countries. It should also be noted that many past studies on the factors that influence e-commerce adoption have been carried out mainly in developed countries; and there is little empirical evidence to explain the extent of e-commerce adoption among Enterprises in developing countries and also greater focus on the level of e-commerce knowledge within an organization (Ahmad et al., 2015).

According to (Kibuko K ,2013 ) the study conducted in Kenya on the topic of e-commerce adoption by formal micro and small enterprises shows that:- e-commerce allows enterprises to sell the products, advertise, purchase supplies, bypass intermediaries, track inventory, eliminate paperwork, and share information, it helps in reducing the expenses, time, distance and space in carrying out business activities which leads to better customer service, increased efficiency, as well improved products and high profits for the enterprises and the study shows the extent of ecommerce adoption in small medium enterprises in these countries is not more common. Enterprises that use e-commerce for business transactions achieve higher sales growth than their competitors who do not use e-commerce (Abebe, 2014). The results suggest that e-commerce adoption has a significant, positive influence on enterprises and e-commerce adoption positively affects the growth of the enterprises. The other study done (Abdulghader, 2019) on business organization in Libya shows that major barriers constraining adoption of e commerce is the fraud associated with the internet transaction.

Manish & Theodros , (2020) had conducted beginning of E-Commerce era in Ethiopia. The development of the Information and Communication Technology (ICT) remains to have a marvelous influence on commercial. Lacks of knowledgeable labors, inappropriate technical infrastructure are some obstacle faced by organizations when they start e-commerce in Ethiopia. The study was conducted by reviewing different data and literature. It needs Ethiopians should be informed on the benefits of virtual shopping and how it would not only help improve their lives but also decrease the rate of joblessness.

The other study conducted in Ethiopia by Yasin Ali Hassen & Ann Svensson (2014) on the topic of the role of e-commerce for the growth of small enterprises in Ethiopia was evaluate the degree of e-commerce adoption in small Ethiopian businesses and demonstrated that their business needs and

perceived e-commerce benefits were linked to business growth. The study used qualitative approach, which consists primarily of a case study of five small Ethiopian businesses that are all engaged in import and/or specialist business and are located in the capital, since such enterprises are barely existent in the rest of the country. Thus, we can conclude that the small enterprises are using e-mail and websites, but are not gaining any benefits of e-commerce. Small Ethiopian businesses are still in the planning stages of adopting some basic level e-commerce, according to the two outer findings, and have not yet invested in it.

The study is mainly focus on SME and does not address specifically about the Ethiopian exporter enterprises. In addition to that the researchers use the explanatory study methods (qualitative) instead mixed method which is more accepted.

Generally, most of the previous study that conducted on the adoption and utilization of e commerce were focus on SME that doesn't address about the adoption and utilization of e commerce in the case of coffee exporter and identify the trends and the factors that affect the adoption and utilization of e commerce of SME. But they fail to address the adoption and utilization of international e commerce enterprises such as importer/exporter, since SME is most of them are works within the domestic commerce. This study was conducted to identify the adoption and utilization e commerce beyond the domestic e commerce enterprises. So, this study was fulfilling information gap of previous study. Thus the aim is that, by understanding opportunities and challenges to associate with e-commerce to adopt and utilizes e-commerce, was contribute to fill the gap identified, and thereby lay the foundation for a coherent body of Knowledge, in the field.

### **1.3.Research Question**

In attempting to investigate the adoption, utilization, opportunities and practical challenge of Electronic commerce of exporter enterprises in Ethiopia the investigator draw the following questions.

1. What is the status of e-commerce adoption and utilization among coffee exporter enterprises in Ethiopia?
2. What are the challenges to adoption and utilization of e-commerce among coffee exporter enterprises in Ethiopia?

3. What are the opportunities to adoption and utilization of e-commerce among coffee exporter enterprises in Ethiopia?
4. What are the factors determines e-commerce adoption among coffee exporter enterprises?

#### **1.4.Objective of the study**

##### **1.4.1. General Objective**

The general objective of the study is to assess the adoption and utilization of E-commerce among coffee exporter enterprises in Ethiopia.

##### **1.4.2. Specific objectives**

1. To determine the status of E-commerce adoption and utilization among coffee exporter enterprises in Ethiopia
2. To assess the challenges of E-commerce among coffee exporter enterprises in Ethiopia
3. To identify opportunities of E-commerce among coffee exporter enterprises in Ethiopia
4. To determine factors associated with e-commerce adoption among coffee exporters in Ethiopia.

#### **1.5.Scope of the study**

The study focused on Coffee exporters enterprises in Ethiopia. The coffee exporters are registered legally and compliance with rule of Ethiopia ministry of trade and industry at the time of the study. The study sample was drawn from a population of 291 coffee exporters. The study was using mixed method qualitative and quantitative, descriptive, and inferential approaches and specifically proportions, graphical/diagrammatical representation, and logistical regression technique.

#### **1.6.Limitation of the study**

The findings reported of this research limited to coffee exporters company due to feasibility issue. So other business company should be incorporated in future research. This study examines only limited factors/Variables that taken from TOE model so more related variables should be considered in the future study.

## **1.7.Operational Definition and Study Variables**

The research variables are determined by the theoretical foundation in this study. There are two main variables, namely the independent variable (predictor), the dependent variable. The independent variables and the dependent variable was measured using a Likert scale using five scales answers to assess how far the perceived level of agreement with each statement from the respondents. In addition, demographic variables are added in this study to measure the characteristics of respondents who entered into the sample. The description of operation definition variables can be illustrated as follows:

### **Independent variable operational definition**

**Technology context**, Technology readiness is used to describe the technology context construct.

**Technology readiness**: its organizational structure, and the availability of knowledgeable and skilled human resources.

**Human resources**: refer to the knowledge, skill, and availability of personnel to implement and to adopt e-commerce

**Organizational context**, two variables describe the organization context construct, namely: top management support and firm size.

**Management support**, Management support means properly guiding the allocation of resources, the integration of services, and the re-engineering of *exporters enterprises*.

**Firm size**: The number of employment and capital Company owned.

**Environmental context**, two variables describe the environmental context construct: competitive pressure and regulatory support.

**Competitive pressure**, an organization that remains agile and adaptable can more readily respond to competitive pressure

**Regulatory support**, Means also government regulations can influence organization.

## **1.8.Significance of the Study**

The benefits of the e-commerce adoption are still unevenly distributed between the developed and developing countries, and within societies themselves processes.



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**For Government bodies** this study uses for policy makers to make informed decisions. As the implementation of e-commerce requires certain input from the environment, knowing the current status of readiness at the macro-level would enable policy makers to facilitate such desirable conditions. The competitiveness of a country in the emerging global economy depends on its e-commerce development and it is a must for a nation to make the necessary preparations to successfully assimilate e-commerce, one such preparation being measuring e-commerce adoption.

**For researcher** uses as baseline information for future research on e-commerce adoption among exporters enterprises.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1. Adoption and Utilization of E-Commerce among Exporter Enterprises**

There are numerous studies explaining e-commerce in organizations or firms and in various countries. E-commerce research spans topics such as technology readiness, factors for adoption, critical success factors, challenges and barriers, e-commerce solutions, and other factors influencing e-commerce. While most of the studies in developed countries focus on e-commerce success factors, payment methods, and institutions, studies in developing countries still focus on e-readiness and e-commerce adoption factors.

According to (Ramdansyah, & Taufik, 2017), conducted study on the title of:- Adoption Model of E-Commerce from SMEs Perspective in Developing Country Evidence – Case Study for Indonesia suggests that the total number of Indonesia people using internet have increased within the advances in information technology, and the activity of electronic commerce is growing. This is a huge potential market for businesses including for SMEs. However, there are only a few Enterprises in Indonesia which have adopted E-Commerce.

The beginning of e-commerce has re-landscaped the business world. It has been more than a decade, governments encouraging the adoption and use of E-Commerce among Small Medium-sized Enterprises (SMEs). E-Commerce has been widely advertised as a technology that enables SMEs to compete with their larger counterparts. Previous research shows that the demand from customers and pressure of competitiveness in the business sector are two of the important driving factors for E-Commerce adoption by SMEs. In terms of benefits, considerable attention in the extant literature had been devoted to identify the benefits or values of E-Commerce in SMEs, such as reducing the operational cost, improving customer retaining and improving external linkages (Kartiwi, M, 2018).

Ndonga, (2012) had conducted study on the E-Commerce in Africa: Challenges and Solutions. The problem raised was the absence of sufficient ICT infrastructure, lack of basic ICT knowledge and threat of cyber-crimes has produced a significant obstacle to the implementation and growth of e-commerce in many African countries. The methodology used was article analyses. They recommended the growth or development to be brought about by the systems would pull more people from below the poverty line and eventually make basic ICT affordable to everyone. It is good to recommends monitoring solutions to resolving them.

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E-commerce adoption in South Africa from the perspective of benefit did not find any benefits related to transaction cost and strategic management. They suggested some possible causes of this finding; however, more systematic analysis would be required to accurately identify them. Taylor et al. (2012) examined the factors that affect Internet and e-commerce adoption in Ghana. The result showed that perceived benefits of the technology, lack of qualified staff, and limited resources were the internal factors whereas the limited number of Internet Service Providers (ISP), lack of online payment process, and limited availability of online banking services were the external factors that influenced e-commerce adoption in Ghana. Another recent descriptive study on the African countries is Mashanda et al. (2012) that explores the factors that influence B2C e-commerce adoption by SMEs in Zimbabwe. It showed that environmental factors such as unreliable network infrastructure and the unreliability of electrical power have a huge impact on the decision to adopt e-commerce.

### **2.2.Factors Related to Adoption and Utilization of E-Commerce**

These include factors that can encourage or prevent different export companies from embracing e-commerce. From developing countries (AlBar & Hoque, 2017; Kapurubandara & Rahayu & Day, 2015) and developed economies (Ahmad, Abu Bakar, Faziharudean and Mohamad Zaki, 2015; Altayyar & Beaumont-Kerridge, 2016 ) Research has been conducted in various business sectors in different economies to determine the drivers of e-commerce adoption.

As an innovative technology, e-commerce was first introduced in developed economies; so many researchers in developed economies use different frameworks, models, and theories to increase the adoption rate of e-commerce. However, due to differences in cultural background, business environment, and government regulations, many studies on advanced economies (Kurnia et al., 2015).

According to Mthembu, P(2018), the study conducted on the title of Barriers to E-commerce adoption in African countries examined barriers of e-commerce that at a business level influence e-commerce adoption in developing countries. It identified a number of factors that need to be overcome in order for the adoption of e-commerce to be a success in developing countries. While some of the identified barriers are specific to the South African, most are generally prevalent in other African countries. The most prominent barriers are infrastructural, socio economic and cognitive barriers, which include factors such as broadband connectivity, Internet security, online payments, logistics, managements' understanding of the core business as well as a

comprehension of the English language. In particular, the study revealed that businesses cannot operate without broadband connectivity and Internet security.

Abualrob and Kang (2016) surveyed 161 business owners in Palestine and used structural equation modeling to investigate barriers to e-commerce adoption. In their research, these obstacles can be divided into the following two categories:

- i. External obstacles including government instability, occupancy restrictions and logistical obstacles,
- ii. Internal obstacles including perceived loss, perceived uncertainty, and perceived complexity within. Their research shows that occupancy restrictions and political factors are the main obstacles preventing Palestinian business owners from adopting e-commerce. In addition, some obstacles have little impact on their adoption of e-commerce, such as perceived financial losses.

In addition, another study on Pakistan as a developing economy in the Southeast, Abrar-ul-haq et al. (2015) studied e-commerce adoption factors such as marketing, technology, finance, government support, and education. The results show that, except for technology, all factors play a vital role in the development of SMEs. Technology has not contributed much to the development of Pakistani SMEs because they are not technology-based. On the other hand, a study conducted in Iran showed that the adoption of e-commerce by small Iranian companies is strongly influenced by the characteristics of owner-managers and the nature of management innovation; and the previous Pakistan study (Abrar-ul- Haq et al., 2015; Dar et al., 2017; Subhan et al and Mustafa, 2017).

According to Abrar-ul-haq, Jali, and Islam (2015), developing economies rarely adopt e-commerce due to lack of management skills, financial channels, and government support; it is considered a critical factor for company development. In Bangladesh, Uddin and Bose (2013) found that business plans, distribution channels, management skills, and government support are strongly positively correlated with SME success factors. In contrast, people, products, and services are slightly negatively correlated. Regarding its remaining three variables: technology, customer management, and capital acquisition, these were found to have a slight positive correlation. This result is an interesting reading about the success factors of SMEs in Khulna. In an empirical study in Kuwait, Al-Alawi and Al-Ali (2015) clarified the factors that led SMEs to adopt e-commerce. The statistical results show that the organizational environment (management

support), technological environment (perceived benefits) and environmental environment (government support) play a vital role in the adoption of e-commerce.

Similarly, Shemi and Procter (2013) studied the challenges faced by SMEs in adopting e-commerce in the context of Botswana. Various data collection methods were implemented, including the use of unstructured and semi-structured face-to-face interviews, website analysis, observations, and documentation. The challenges identified by are typical management, technical and environmental issues faced by each company. Biden et al. (2018) also confirmed that different economies have different socio-economic and political conditions, which will affect the results of business development. Therefore, e-commerce adoption factors that may contribute to the adoption of e-commerce in one country may not be applicable in another country. For example, in most economies, financial constraints (Lussier et al., 2016) and the quality of technical infrastructure affect the adoption of e-commerce by SMEs. However, in some economies, the quality of infrastructure and the availability of financial resources serve SMEs, allowing full adoption of e-commerce in the SME structure.

### **2.3.Theory and Models about E-Commerce Adoption and Factors**

The TOE framework and the DOI theory are considered to be common frameworks for considering the adoption of e-commerce (Chatzoglou and Chatzoudes, 2016) the adoption and utilization of e-commerce (Trang et al. 2016). The empirical research investigating e-commerce adoption aims to show various impacts related to e-commerce adoption based on the technological readiness of the included companies. Empirical research involves the use of e-commerce, with the purpose of emphasizing the value of e-commerce and its impact on the development of e-commerce.

In the past, research has used many innovation diffusion theories to study technology adoption. Although the Technology Adoption Model (TAM) is one of the most used frameworks to study adoption at the individual and organizational level, few academics such as Oliveira and Martins (2011) pointed out that most theories such as the Technology Adoption Model (TAM), Theory of Planned Behavior (TPB)) and the Unified Theory of Acceptance and Use of Technology (UTAUT) are suitable for the study of adoption between individuals, while other theories such as the theory of diffusion of innovation (Rogers , 1983), the diffusion / implementation model (Kwon & Zmud, 1987), the three-core model and the TOE framework are applicable to adoption at the research organization level. However, with the exception of TOE, these theories focus on

the stages and processes of adoption at different levels of the organization and are therefore too broad for the current scope of research.

This study uses a more compact TOE framework. Evidence from TOE-based empirical research is always visible in the field of information technology and business research regarding the contribution of gap analysis and literature review, this investigation aims to determine whether to promote or ban Ethiopian exporters to adopt and use electronic commerce.

### **Conceptual Framework**

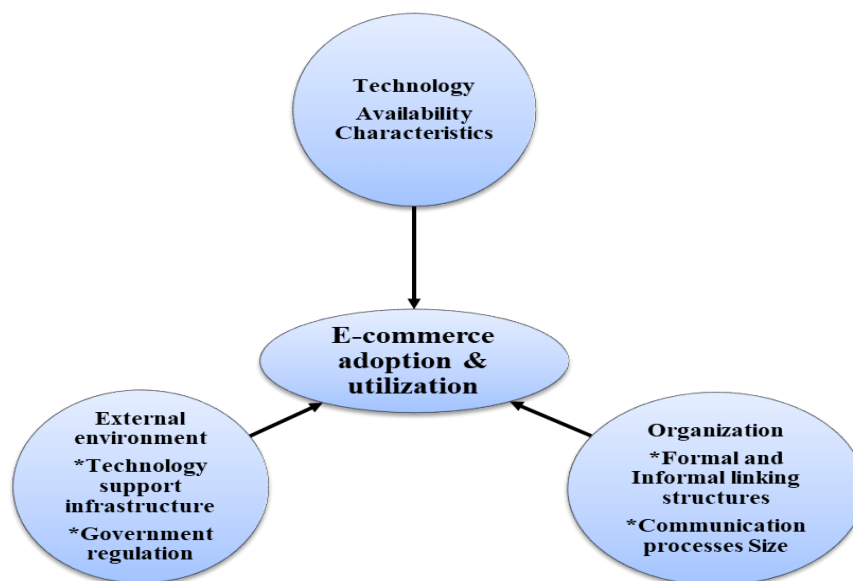


Figure 1: Adopted from Technology, Organization, and environment framework (Jani et al, 2011)

The TOE framework above identifies three aspects of the corporate background that affect the business adoption and implementation process of technology innovation, organization baggage, and environmental baggage. Technical baggage describes the internal and external technologies related to the business. Organizational environment refers to descriptive measures of the organization, such as scope, scale, and management structure, while environment is where the company conducts business (Jani et al, 2011).

#### **2.4.Theory and models about Levels of Adoption and Utilization of E-commerce**

The level of use of e-commerce by different types of organizations varies greatly. This is mainly due to the lack of homogeneity of the companies in terms of size, age, industry, motivation, organizational model, location and knowledge base in addition to the above factors; companies are at different levels of e-commerce utilization depending on the amount of their financial or

human capital. Large companies seem to conduct business through advanced ICT equipment and complex systems managed by highly skilled employees. Although small businesses generally only embrace a small part of the enormous potential of technology, some companies also only conduct business on the Internet. One of the other reasons for determining the scope of e-commerce use is the influence of complex interactions that exist in many small businesses, such as family, friends, other businesses, and e-commerce solution providers (Taylor and Murphy, 2004).

The theory describing the level of e-commerce adopted by the company as a model that has been different views on the ways and reasons for the company's use of the Internet. E-commerce uses adoption ladder model and a transportation model. The first "adoption ladder" model describes the evolution of business organizations in using e-commerce and the Internet as a means to achieve their business development and profit maximization goals, presenting the level of adoption as a ladder through which organizations can grow (Taylor et al,2004).

The second is the "Transporter" model, which sees Internet adoption by small businesses based on the value of the owner's Internet use and their business growth plan. Describe this in a two-by-two matrix. On the one hand, it is the combination of the highest and lowest levels of the owner's business value and, on the other hand, it is the business growth planning or not, to give four types of the adoption levels (Levy & Powell, 2002).

#### **2.4.1. The Adoption Ladder Model**

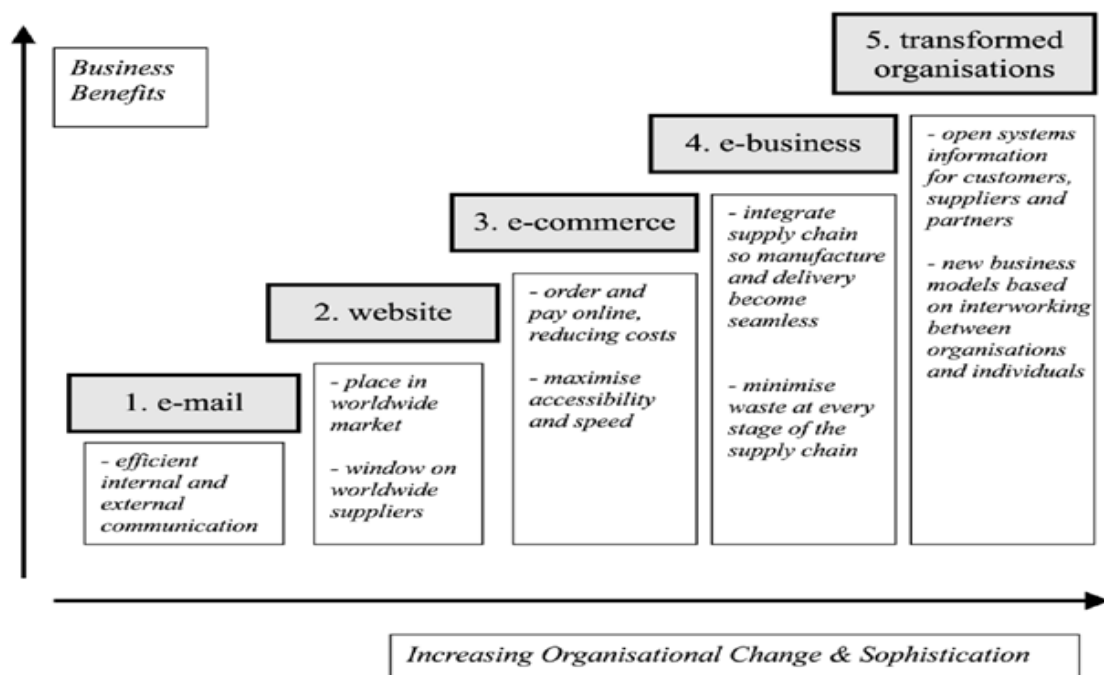
This approach is one of the recruitment level models of e-business and is preferred by the British Government Trade Industry Office (DTI). The ICT adoption level in this model is a purely technical point of view, and the participation of companies with e-business technology is sequential and progressive (Taylor & Murphy 2004). According to the models, we usually use the Internet to communicate only for communication purposes and then develop the development of websites used as Windows. In that case, as the level of use grows on the e-commerce scale, there is a real transaction that takes orders, purchases, sales and payments over the Internet.

As the company's sophistication increases at the level of e-business, the management of the supply chain reaches an image in the relaxation of the flow of material. This reduces corporate processing costs by minimizing resource residues. According to the model, the level of definitive use allows a total commitment integrated into technology that allows business organizations to be substantially to all other people. The built system is included. You will have your customers,

suppliers and more open systems. And we allow interaction for business opportunities among other organizations and individuals.

The model means that the benefits of organizational changes promoted by the Internet and the increase in ICT advance. In addition, changes are progressive, and also mean sophisticated corporate sophisticated companies assumed from the four unique qualities of the Internet, universality by allowing access from anywhere. The speed of helping your company compatible early by promoting collaboration and your intelligence by providing the ability to search, save and process information (Taylor & Murphy 2004).

As shown in Figure 2, the use of a ladder model demonstrates the components of organizational complexity, as a typical business effort will gradually progress to the next level on the ladder. Therefore, as the complexity of the organization increases (x-axis independent variable), so do the level of utilization and business benefits (y-axis dependent variable)



Source: Martin and Matlay (2001) adapted from Cisco-led Information Age Partnership study on e-commerce in small business

Figure 2: The DTI Adoption Ladder (Taylor & Murphy, 2004, p. 283)



The Local Futures Group cited by Chen, T. F. (2011), to achieve the goal of full maturity; the company must bridge two digital gaps. The first is to master basic ICT skills to operate email and navigate simple brochure websites for information. The second digital divide is the threshold of the e-commerce stage, which requires advanced ICT skills including research and development, as well as a number of professional business skills and knowledge in the fields of management, strategy and marketing.

As a critique of the model, one of the main points mentioned is that the use of the ladder method mainly emphasizes the evolution of technology adoption and the social process it produces. Therefore, this appears to be a deterministic view of change, implying that all small businesses must follow a prescribed process. If they don't complete the process to the top of the ladder, their growth efforts was somehow fail (Taylor and Murphy, 2004).

#### **2.4.2. Transporter Model**

According to this model, impulses from business needs and perceived benefits usually lead to the development of the Internet. He believes that despite the broad and intuitive defense, there is not much evidence that SMEs follow the "growth stage" (or "ladder") model when adopting ICT. On the contrary, some people believe that the "transporter" model that shifts from one level of use to another without an inherent concept of growth may be more helpful in understanding the level of ICT and Internet adoption (Levy and Powell, 2002).

The comparative development model proposed by Levy and Powell (2002) shows that there are two key factors that determine the use of the Internet by SMEs. The first is business growth, and the second is the commercial value that can be obtained from the Internet. Some companies' business growth is achieved through plans, while others have no plans. This attitude of planning and expected growth determines the investment decisions of ICT owners.

On the other hand, the commercial value of using ICT is established by the company's competitiveness and the knowledge of related industry developments. Businesses are usually cautious about adopting the Internet. Some owners do see the value of its growth, but they need to understand the actual benefits obtained before investing. The combination of these two drivers at different levels has led to four subdivisions in the Internet adoption model, as shown in Figure 3, namely: brochure products, business opportunities, business networks, and business support (Levy & Powell, 2002).

Business Value of the Internet	High	Business Opportunity Some perceived benefits Owner has knowledge of IT Some competitive pressure	Business Network High perceived benefits Good Knowledge of IT opportunities High competitive pressure
	Low	No perceived benefit Little or no knowledge of IT value to the business No competitive pressure  Brochureware  Not Planned Business Growth	Some perceived benefits Owner has knowledge of IT No Competitive pressure  Business Support  Planned

Figure 3: Segmented Internet Adoption Patterns (Levy & Powell, 2002, p. 519).

According to the observation, if there is no planning of low commercial value, you can find a company in the first category at the level of brochures wear. Companies that are classified in this category search Internet with the use of email, and are not relevant to companies only as information announcement boards. This group contains the highest percentage of the case it confirmed, and it was decided that the most convenient part is a website that is used as email and online brochure. Therefore, they are also recognized that ICT should not be reversed in ICT (Levy & Powell, 2002).

The second category is a business opportunity. The companies that fall here are high value for the Internet, and consider it an important means for information and opportunities applied to the industry. They believe that the Internet has some value in your business, but it is limited to improving internal efficiency. However, they are not recognized as important and do not plan to move on to electronic commerce. The main difference with the first category recognizes its value and its use of its use and the opportunity, but does not act for growth. . The next category of company's plans to grow growth, but in the immediate future, we cannot see the tangible work value. They do not believe they changed how they do business in the near future, and sometimes customers prefer personal contacts and, therefore, there is little need for electronic commerce. We recognize that it is worth the Internet.

The final category of companies granted by the best value for the website attainable and electronic commerce is under the business network. This group acts on the development of online systems and verifies the opportunity as a key to business development efforts. They pursue transactions. Complete information through Electronic Data Exchange (EDI) and

integrate online sales of Back Office systems. Sometimes, these companies may not work completely using all scaled systems on the Internet, but they have the attitude and real plans to do so. The company's Internet roles support business networks and, therefore, are important.

### **2.4.3. Justification of the Two Models**

The adoption ladder and the transporter models both depict the utilization levels of Internet and e-commerce in terms of where the organization stands with regard to the usage of these technologies rather than the mere adoption behaviors. Nevertheless, they have different bases for their assessment and the latter does not agree with the former's theory that SMEs would follow consecutive stages to each next level.

The adoption ladder model depends its scaling on organizational changes and the growth in their ICT sophistication level (Taylor & Murphy 2004) while the transporter model holds the basis on the owners' attitudes to growth and their understanding of the business value of the Internet and ICT to determine its level of utilization (Levy & Powell 2002). Hence, these models provide the research parameters for the intended evaluation and study by this particular paper.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1. Research Design**

The research design chosen for this study is mixed method quantitative and qualitative. Accordingly, a descriptive cross sectional design method was used to collect information by interviewing or administering a questionnaire to a sample of individuals. The data was collected at one point in time from a sample of firms selected to represent a larger population. This study addressed adoption and utilization of e-commerce and investigating the factors that influence the adoption of e-commerce in Ethiopia among coffee exporters.

### **3.2. Population**

#### **3.2.1. Study population**

The study population comprised of all of coffee exporters found in Ethiopia. All of selected coffee exporters managers or employers after final sample were drawn.

#### **3.2.2. Target Population**

The target populations are all of coffee exporters where sample of exporters was drawn. The total coffee exporters are 291 (Ministry of Trade and Industry, 2021).

### **3.3. Sampling size and sampling procedures**

#### **For quantitative study**

The Cochran formula allows you to calculate an ideal sample size given a desired level of precision, desired confidence level, and the estimated proportion of the attribute present in the population.

Cochran's formula is considered especially appropriate in situations with large populations. A sample of any given size provides more information about a smaller population than a larger one, so there's a 'correction' through which the number given by Cochran's formula can be reduced if the whole population is relatively small (Glen, S. 2021).

The Cochran formula is:

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where:

- e is the desired level of precision (i.e. the margin of error),
- p is the (estimated) proportion of the population which has the attribute in question,
- q is 1 – p.

Z  $\alpha/2$  is standard score value for 95 % confidence level,

Where Z=standard score at 95% CI which is 1.96, 3.8416

e is margin of error (5%)

P=50%

$$((1.96)^2 (0.5) (0.5) / (0.05)^2 = 385.$$

The sample size of this study was 385 by this formula.

### **Modification for the Cochran Formula for Sample Size Calculation in Smaller Populations**

If the population we're studying is small, we can modify the sample size we calculated in the above formula by using this equation:

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Here  $n_0$  is Cochran's sample size recommendation, N is the population size, and n is the new, adjusted sample size. In our earlier example, if there were just 291 coffee exporters in the target population, we would calculate  $= 385 / (1 + (384 / 291)) = 167$

### **For Qualitative Study**

The researcher has taken 5% of quantitative study for qualitative data collection. So the final sample size for qualitative study was eight (8) coffee exporters (Malterud, K., Siersma, V. D., & Guassora, A. D. 2016). By simple random sampling these eight companies (Arfasa, Kerchanshe, Keta muduga, ECX, Hadeed, ABBAHAWA, Horizon and S. Sara coffee exporter are selected.

### **3.4.Data Collection Procedure**

The main source of data was primary data. The primary data collection instrument is a structured questionnaire that taken from previous study (Kibuko K, 2013). The Quantitative primary data was collected using structured self-administered questionnaires which constituted of Likert Type scale and was subdivided into the following sections; Section A: comprised of the general information, Section B comprised of the e-commerce application seeking to determine the frequency of use of e-commerce tools such as the computer, internet, email, and/or website while Section C captured the factors that influence the utilization of e-commerce. The structured questionnaire was administered through personal interviews with the exporter owners or the managers of the exporters.

The qualitative study was conducted by using two different model adoption ladder model and the transporter models that provide basis for interview. The qualitative data was collected using semi-structured questionnaires' that used by previous study ((Yasin Ali at el, 2014).

The method to be used for this qualitative study is mainly a case study performed on small enterprises in Ethiopia (Yin, 2003). The qualitative method is used because the enterprises are investigated in order to get a reflective understanding on the core influences of e-commerce usage on their growth endeavors. Dubé & Paré (2003), state that case research has gained respect in the information systems field for several reasons because the interest is focused on organizational issues.

A key characteristic of case research is a holistic investigation where it is important to understand the complex interactions among organizations, technologies and people. This leads to the creation of new ideas and new lines of reasoning again leading to identify the opportunities and challenges that owners and managers face. According to Basias, N., & Pollalis, Y. (2018), the case study research method is superior in attempts to understand a complex issue and it underlines a detailed analysis of conditions with their relationship by taking only a limited number of cases and the related context.

Eight Ethiopian exporters' enterprises were selected for this study. The companies are all involved in exporters' enterprises are located in Ethiopia, since such enterprises are barely existent in the rest of the country. For each of the exporters' enterprises interviews was conducted with the owner or with the manager, sometimes the very same person.

### **3.5.Data Analysis Method**

The quantitative data was entered on epidata version 3.1 then imported and analyzed by SPSS version 23.0. The data was presented by different statistics method. Descriptive studies which include mean and standard deviation was used for Likert-scale responses to summarize the data while frequency tables was used to analyze the general information and e-commerce adoption data. On receiving the feedback from the respondents, the factor analysis statistical method was used to determine what combination of factors most was appealing to coffee exporter's managers or owners. The cronbach alpha was 0.75 on in this study. The cut off point for significance multivariate analysis was p value less than 0.05. Anova linear regression analysis was used to identify variables that determinant for adoption of e-commerce among coffee exporter's enterprises in Ethiopia.

The qualitative data was on the qualitative part this paper was elicited the thoughts, beliefs and opinions of the owners' or managers' perspective regarding the role and growth of e-commerce in Ethiopia. According to this the two different models the adoption ladder model and the transporter model used to provide a basis for the themes in the interviews. Open-end question was presented to the owners or managers of the enterprises in order to get the required information and grasp possible diverse situations in the area of concern. The interview was held in local languages (Afaan Oromo and Amharic languages).

The qualitative data was tape recorded during interview of respondents of coffee exporters for validity of the study .The qualitative data was thematically analyzed based on adoption ladder model and transporter model. Then all of company owner's respondent response analyzed through two models and the interpreted in terms of models. After that all companies involved in the study categorized according to their status on adoption ladder model and transporter model.

## CHAPTER FOUR: RESULT AND DISCUSSION

### 4.1. Quantitative Results

#### Descriptive Results

The respondent rate was 95%. Among the respondent 41.8 % ( 66) that is majority of them were only manager of the firm. Majority of the study participants were male (84.8%). Most of study participants (72.2%) age were between 31-40 years age group. Out of 158 the 51.9% there education level is at university level. From the 158 respondent 118(74.7%) respondent did not take any management training. Among company that export coffee in Ethiopia about 75.3% are private limited (PLC).

Most of company has full time employers 45.6% between 100-500 ranges. Manager of the companies mostly have 3-4 experience of years. All of the firms were use internet/e-commerce applications or IT tools in their business. Out of total companies majority of them 51.9% has good utilization of e-commerce tools such as the computer, internet, email, and/or websites. Among the total company managers about 53.8 of them had aware about e-commerce benefits. Out of total study participants 51.9% were said e-commerce not expensive in terms of cost. Majority of employers and staff of companies (60%) had knowledge and technical skills of e-commerce. All-out of companies manager said there were good environmental factors.

**Table 1: Descriptive results of different variables among Ethiopia coffee exporters.**

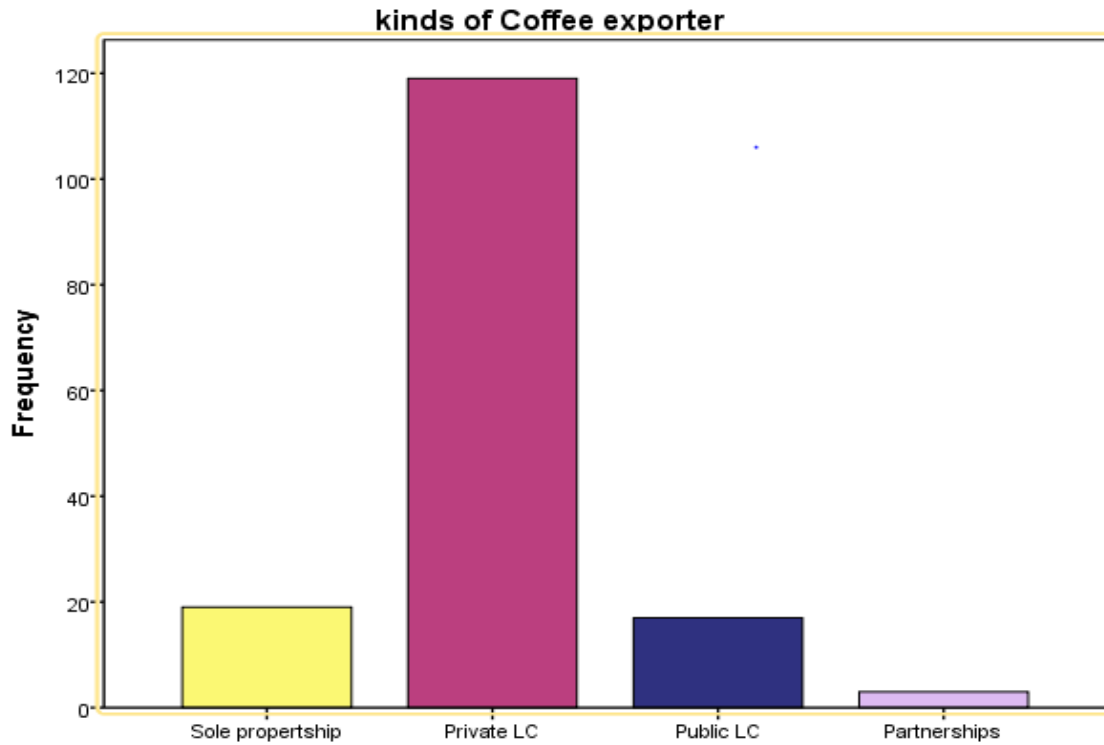
Variable name		Frequency	Percent	C. Frequency
Respondent of the company	owner only	45	28.5	28.5
	manager only	66	41.8	70.3
	both owner and manager	47	29.7	100
Gender	Male	134	84.8	84.8
	Female	24	15.2	100
Level of Education	Elementary	0	0	0
	Secondary	1	0.6	0.6
	College	16	10.1	10.8
	University	59	37.3	48.1
	Post Graduate	82	51.9	100
Age	below 21 years	0	0	
	between 22-30 years	21	13.3	13.3



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	between 31-40 years	114	72.8	85.4
	between 41-50 years	23	14.6	100
Management training	Yes	40	25.3	25.3
	No	118	74.7	100
Kind of exporter	Sole proprietorship	19	12	12
	Private Limited Company	119	75.3	87.3
	Partnership	17	10.8	98.1
	Public Limited Company	3	1.9	100
Full time employee	less than 500	76	48.1	48.1
	between 501-1000	54	34.2	82.3
	between 1001-2000	19	12	94.3
	Above 2000	9	5.7	100
Managerial years	1-2 years	46	29.1	20.3
	between 3-4 years	95	60.1	88
	above 5 years	17	10.8	100
Utilization of e commerce app or IT tool in business	Good	82	51.9	51.9
	Poor	76	48.1	100
Awareness of e commerce benefits	good awareness	85	53.8	53.8
	poor awareness	73	46.2	100
Knowledge and technical skills	Knowledgeable	95	60.1	60.1
	Not knowledgeable	63	39.9	100
Cost of e-commerce	not expensive	82	51.9	51.9
	Expensive	76	48.1	100
Environmental factors	Good	82	51.9	51.9
	Bad	76	48.1	100

Among company that export coffee in Ethiopia about 75.3% are private limited (PLC). Most of company has full time employers 45.6% between 100-500 ranges. Manager of the companies mostly have 3-4 experience of years.



**Figure 4: Type of Coffee exporters Company in Ethiopia**

From the 158 respondent 118(74.7) respondent did not take any training management.



**Figure 5: The Taking management training status of Coffee exporter's company managers**

## 4.2. Factors Affects E-Commerce Adoption

### 4.2.1. Regression Analysis

The main importance of this study was to investigate relationship between the adoption of e-commerce among coffee exporters and the factors that lead to the adoption process. The researcher therefore performed a linear regression analysis to establish the association between the independent and the dependent variable

The following regression model was used as follows.

$Y = \beta_0 + \beta_1 X + \epsilon$  where

Y is the dependent variable

X is independent variables

$\beta_0$  is the constant or intercept

$\beta_1$  is x' s slope or coefficient

$\epsilon$  is the error term

Table 2: Model summary

Model	R	R square	Adjusted R square	Std. Error of estimate
	.887a	.768	.758	.245

- a. Predictors: Environmental factors, age, training, numbers of employee, awareness benefits, and cost of e-commerce.
- b. Dependent Variable: Adoption of e-commerce

The coefficient of determinant, adjusted R Square is 75.8% meaning 75.8 %of the variation is explained by the determinants of e-commerce are Environmental factors, age, and training, numbers of employee, awareness benefits, and cost of e-commerce.

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Table 3: ANOVA of the data

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	29.958	7	4.280	71.100	.002
Residual	9.029	150	.060		
Total	38.987	157			

- a. Dependent Variable: adoption of e-commerce
- b. Independent Variables: Environmental factors, age, and training, numbers of employee, awareness benefits, and cost of e-commerce.

Table 4: Coefficient of the data

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-.089	.179		-.496	.621
Numbers of employee	-.060	.031	-.102	-1.965	.051
Awareness benefits	.305	.124	.303	2.459	.015
Knowledge	.421	.147	.414	2.871	.005
Cost of e-commerce	.120	.098	.118	1.228	.221
Age	.066	.038	.070	1.735	.085
Training	.197	.048	.172	4.069	.000
Env .factors	-.061	.084	-.062	-.732	.465

- a. Dependent Variable: adoption of e-commerce.
- b. Independent Variables Environmental: factors, age, and training, numbers of employee, awareness benefits, and knowledge, cost of e-commerce.

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From the results the training, numbers of employee (Firm size), Knowledge and awareness of benefits had a significant relationship on e-commerce adoption. However the study did not find a statistical significance between the age, environmental factors, and cost of e-commerce with the adoption of e-commerce.

**Table 5:** The model summary that significantly associated

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.873a	.762	.755	.247

- a. Independent Training, numbers of employee, awareness benefits, and knowledge
- b. Dependent Variable: adoption of e-commerce.

The coefficient of determinant, R<sup>2</sup> is 75.5% meaning 75.5% of the variation is explained by the determinants of e-commerce that is training, numbers of employee, awareness benefits, and knowledge

**Table 6:** ANOVA of the significantly associated data

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	30.123	10	3.012	49.951	.000b
Residual	8.865	147	.060		
Total	38.987	157			

- a. Independent Variables: Training, numbers of employee, awareness benefits, and knowledge
- b. Dependent Variable: adoption of e-commerce.

**Table 7:** Coefficients of the significantly associated data

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.154	.124		1.240	.217
No of worker	-.067	.030	-.115	-2.203	.029
A. Benefits	.316	.125	.313	2.531	.012
Knowledge	.535	.115	.526	4.664	.000
Training	.199	.049	.174	4.085	.000
En. factors	-.089	.083	-.089	-1.068	.287

a. Dependent Variable: Adoption of e-commerce

From the results the training, numbers of employee, Knowledge, and awareness benefits had a significant relationship on e-commerce adoption. However the study did not find a statistical significance between the environmental factors and the adoption of e-commerce.

### 4.3. Qualitative Results

Qualitative results are presented in terms of utilization level of e-commerce, challenges and opportunities of e-commerce system based on the data obtained from eight coffee exporters company have been selected for the study.

#### Coffee Exporter #1

The company has many computers in their office that are used for administrative and various purposes. The company uses Peachtree as offline system software for accounting purposes only. The company uses email and online system services websites to communicate with suppliers / customers and promote its products. Communication with consumers is also undertaken through email and websites, and the

## *Adoption and Utilization of E-Commerce....*

establishment of the coffee export market has been done by browsing the websites. The manager has good basic and advanced computer skills.

### **Coffee Exporter #2**

The company has six information technology personnel and many computers in the office. The company uses Peachtree in addition to others basic office applications used in the company. The Peachtree complete accounting software is used as offline system in company. The software is used in the company to provide services of account records and customer's database. The Enterprise has a website of its own where it announces the services given and uses it as an access to the global market. Identifying suppliers and connecting with suppliers are done through the website and e-mail. Yet, none of the office systems are connected to this web site and therefore it does not serve as a system for transactions to be recorded in a shared database to be accessible online.

### **Coffee Exporter #3**

This company has three computers in their office mainly used for writing different letters and documents. They make communications through e-mails with customers and potential clients for export constantly researched on the internet by the advertising personnel. The company does not have a website, but plans to develop one to a website update its information on export and import items for its current and potential consumers. It has signed up to some Ethiopian business portal websites, but not much has come out of it. The business owner has a good knowledge of the MS Office system.

### **Coffee exporter#4**

This e- company has more than 1235 full time employee out of which 11 of them working are information technology. They has many computers and separated IT office. The company has also marketing and promotion office in their head office separately. They have no offline system /software but have own network based software for all activities. They have new software called ERP (Enterprise resource planning) which is online based system for multipurpose functions. ERP provides an integrated and continuously updated view of core business processes using common databases maintained by a database management system. The company currently is using ERP systems to track business resources such as cash, raw materials, production capacity and the status of business commitments and payroll. The ERP has E-commerce platforms in that all allows order to cash, order entry service but company did not start

## *Adoption and Utilization of E-Commerce....*

to use e-commerce platform due to different reasons. The company has its own website that use for promotion and advertisement of products for customer.

### **Coffee Exporter#5**

The company has more than 18 full time employers. They have not ICT personnel's but they have a worker that gets training on basic computer skills. They have an of line system data base to controls the details data's of the office and as well as the employees information in their organization which is developed on excel. To communicate and promote the coffee they have their own website. Therefore the buyer can get about the detail information of the company, its coffee quality and its production places. But the system is only used for promotion, it not serve for placing order and receiving order. They use email for the communicating purpose and order. Because of its simplicity, no need of other special attention.

### **Coffee Exporter#6**

The company has more than 2000 employees and 4 IT employees. The company uses the ERP system for financial accounting. Having data in the ERP system is more important and easier than having data in emails. However, the company also uses email and the website. The company also uses the online ERP system all the information and who is our buyer and from where. ERP systems are managed by Indians abroad and customer from abroad can communicate with them directly. ERP offers an integrated and constantly updated view of core business processes using shared databases that are managed by a database management system. Currently, the company uses ERP systems to track business resources such as cash, raw materials, manufacturing capacity, and the status of business obligations and payroll. The ERP has e-commerce platforms that allow all cash orders and order receiving service, but the company has not started using the e-commerce platform for various reasons. The company has its own website that is used to promote and advertise products to customers.

### **Coffee Exporter #7**

There are many computers in the company. They have an IT worker in their organization even though there is a vacancy for IT specialist. They have a developed system that controls information's of the employees. These systems generally controlled the head office that found in Addis Ababa and which is much secured. The system developed by excels and generate all information and report automatically.



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The organization uses a portal and outlook system as an e trade system that is in house developed which is data support. With outlook selling activity is performed E-commerce trade system is performed by this system. But the system only perform internal money transfer cannot make online foreign currencies.

### **Coffee Exporter#8**

The company is engaged in different functions like farming but mostly depends on coffee exports the company has six IT workers in their organization. They use Peachtree for their accounting works as offline system. The company has its own email that he buys from German which helps them to make known and to communicate with buyers. The company also has its own website that used to promote the company products. Having its own website and email helps those when the workers are changed the buyers are not confused with the website and it is secured and managed by the IT workers. What makes their website unique is the production place of their coffee; its latitude and longitude as well as its demography were we set on their website. But the company website system doesn't support any online payment system.

#### **4.4. Analysis of Qualitative Results**

##### **Utilization Level of E-Commerce**

In order to review and relate the- respondents' answers for analysis with the aim of the study, let us reiterate the major themes upon which the research question aimed to base. See table 5.1 below

**Table 8: Utilization level of e-commerce of Ethiopian coffee exporters**

	Email Account	Web site	Has database Accounting system	Has other system	Plan to adopt to new system	Business Transaction or order through internet	Major advantages of e-commerce according to enterprise	Major constraint according to enterprise	suggested solution /opportunities
E#1	Yes	yes	Yes	no	No	No	minimize time, cost & increase sale	Human resources Lack of awareness E - trading	Globalization Privatization
E#2	Yes	yes	Yes	no	Yes	No	Time management, easily accessible	Lack of infrastructure ,knowledge and skills	Technology policy for the industrial system privatization initiatives

*Adoption and Utilization of E-Commerce....*

E#3	Yes	no	No	no	No	No	Quality enhancement ,maximize sale	Logistics and power problem. Strict Financial policy	Internet accessibility Government pays attention for the company
E#4	Yes	yes	Yes	no	Yes	No	Increase no of clients, suppliers decrease time, cost & customer complaint	Expansiveness, infrastructure problem and lack of policy controls.	Adopting new policies favor online transaction
E#5	Yes	yes	Yes	yes	Yes	No	minimum transaction cost &time	Lack of personnel trained, cost & policy issues	Training on adoption
E#6	Yes	yes	Yes	yes	Yes	No	increase sale & turn over	Rule and regulation on financial transaction	Utilization of Internet increasing
E#7	Yes	yes	Yes	no	Yes	No	ease communication, pay & order	Cost Electricity	Build infrastructures
E#8	Yes	yes	Yes	no	Yes	No	better performance	Lack of rule and regulation	Adopting new policies

Based on the data collected from the coffee exporters selected for this study, it can be concluded as follows:

- All companies have emails;
- Seven of them have websites, but one (E # 3) does not have websites;
- All but one (E # 3) do not have a database and
- Only one of the companies placed an order at least on locally online via the internet.

If we evaluate the companies that use the adoption ladder model with respect to the stages of the ladder, we can see that all eight companies use email and therefore all the organizations in this study achieve this first level of use. At the website level, seven out of eight companies (87%) have websites and one in eight (13%) has a history of ordering online locally but not internationally, showing a slight share at the e-commerce level.

#### **4.5.Challenges and Opportunities**

The major challenges that posed by most company was lack of policies to regulate online dollar transactions in the country to adopt foreign online transactions.

One of company manager said:

*The main problem to adopt fully functional online e-commerce systems in our country is lack of digital international currencies payment system because of strict policies on transfer of dollar (Company manager of #3).*

The other company ICT manager insists that other related concerns with Ethiopian monetary policies that make problem on online financial transactions in the country. He mentioned financial security as main matter for the strict policies foreign currencies in the country.

“This company website system doesn’t support any online payment system. Even there are not any such coffee export organizations that support e -payment in Ethiopia. As our company we have a developed system that can support/do on line payment. But no rule that allow the online payment and the national bank of as well as Ethiopian banking system doesn’t have credit card. Generally the infrastructure in our country not enough to implement the system and the rule and regulation of our countries still not changed with the technology of the world. In Ethiopia there are is the security issues is there (ICT manager of Company#4).

The other constraint mostly stated by many companies’ managers was absence of awareness and knowledge of clients and staff about E-commerce system and online payment system. One manager of company said:

*The other factor that hinders utilization of e-commerce is unawareness of our customer’s. Most of the suppliers of coffee don’t have knowledge about usage of website and information technology (ICT focal person one company).*

Most of coffee exporter stated the problem with absence of adequate infrastructure in the country. One of manager said

### *Adoption and Utilization of E-Commerce....*

*If the internet service, electric and other telecom system not properly function how you can adopt e-commerce system in Ethiopia. There is no fast internet service and consistent electric service system in our country (Company manager)*

The other constraint to implement is financial cost for some small company. One of manager rise cost issue for adopting online system.

*If our company grown enough, the cost to adopt e-commerce great obstacles since finance need buy computers, installing online system and others material without financial assistance from government (Manager of the company)*

Constraints of e-commerce the most common of the constraints picked out by the majority of the interviewees is lack of qualified technical staff to carry out the required functions. Seven out of the eight respondents express their opinions that there is shortage of experts in the area of e-commerce with adequate experience who are in a position to design and provide the required systems.

According to the results of the finding the Ethiopian coffee exporter enterprises set the following points as an opportunity in order to implement the adoption and utilization of e commerce when they compare with the past five years.

Internet using capacity of our customers is so increased now a day to simplify for the easy doing of business as explained majority of owners of the company. Therefore this is an opportunity for our enterprises to invest on the adoption of e commerce. The infrastructure and Privatization of ethio telecom shows the government have pays attention for this sector to solve the expensive price of the internet in the country. The increasing number user and technology adopting of an employee is another opportunities now in our enterprise. Another opportunities stated by most respondents is increasing in numbers of educated personnel on IT and digital system from higher education.

#### **4.6.Discussion**

The study has recruited eight and one hundred sixty seven coffee exporters companies operating in Ethiopia for qualitative and quantitative research, respectively. However, only 158 coffee exporters answered to surveys, resulting in a 95.1% response rate.

### *Adoption and Utilization of E-Commerce....*

According to this report, 51.9 % of them make good use of e-commerce tools like computers, the internet, email, and websites. Qualitative results indicated most coffee exporters in Ethiopia on website with the level of adoption.

According to this report, the majority of Ethiopian coffee exporters have yet to accept and embrace and leverage e-commerce. The majority of them merely managed to create website. They just care about getting email accounts and a website, but they do not even use them for money transactions or other commercial transactions. This study results conform to study done among SME in Ethiopia (Yassin Ali, 2014). But contrast to this finding the study done in Kenya showed that many business company use digital trading with international costumers (Achiando, H. A. (2018). This may be due to existence of different governmental regulations on online foreign currency transactions and telecommunication system in both countries.

The challenges of e-commerce adoption were lack of knowledge and skill information technology, inadequate infrastructures, absence managerial support and presence of strict foreign currency transactions policy among coffee exporters in Ethiopia.

The increase in numbers of graduate of information technology from higher educations, increase in aware of benefits of e-commerce among clients and Ethio telecom privatization are identified as major opportunities of e-commerce adoption among coffee exporters in Ethiopia

Both quantative and qualitative results were similar in many ways. On the quantative results the technological readiness and organizational context variables were determinants of e-commerce adoptions among coffee exporters in Ethiopia. Similarly the qualitative study results indicated that technological and organization factors were main determinants of e-commerce adoptions. In addition to these factors the environmental factors (managerial support and governmental regulation) were also determinant variable on the qualitative results. But the finding of quantative doesn't indicated as main factors of e-commerce adoption among coffee exporters in Ethiopia.

According to this study Perceived benefits (Awareness of benefits) from technological perspective of e-commerce adoption significantly associated e-commerce adoptions. This finding results constant with study done in Indonesia that showed the perceived direct benefits and the perceived indirect benefits have positive effect on e-commerce adoption. (Suryowati, B., & Pohan, F. S. (2020).

### *Adoption and Utilization of E-Commerce....*

Based on quantitative study, IT knowledge of managers and workers of coffee exporters company one of positive determinants of e-commerce adoption. This finding consistent with study done in South Africa on adoption of e-commerce by Small and Medium Enterprises in Pretoria East (Garg, A. K., & Choeu, T. 2015).

Another factor from technological context training on IT of staff and managers of company was also one of positive determinants with E-commerce adoption. This finding is similar to study done in Africa (Azlinna and A. Said (2014).

From Organizational readiness context number of employee of company (Firm Size) also significantly associated with e-commerce adoption. This finding is constant with previously studies done (Kinuthia and Akinnusi (2014). From environmental context governmental regulations on finance issue is one of determinants of E-commerce adoption according to qualitative study findings so this results similar with that Study done in Kuwait (Al-Alawi, et al. 2015).

The lack of legislation to govern digital dollar payments in the country to accept foreign online transactions, inadequate infrastructure, poor knowledge of E-commerce by staff and clients, and the advantages of e-commerce were all studied as e-commerce challenges. This result is consistent with studies done in Nigeria and other African countries (Nazir, M. A, 2020; Mthembu, P. S. 2018).

#### **4.7. Summary of Analysis**

Here the researcher correlates the prevailing trends in the utilization level of e-commerce among the Ethiopian small enterprises and the understanding of their owners and/or managers. The characteristics depicted by the enterprises are comparable with the levels in the adoption ladder and the researcher see that these enterprises would fall into one of the categories of the transporter model.

To begin with E#1 uses e-mail and has a website but no transaction is done online yet though there is a plan to do so. This puts it on the website level on the adoption ladder model. The owner has a high hope and anticipation on the benefits of e-commerce and has some self-attained knowledge on IT and believes there is an implied pressure to become the first to introduce online transactions and e-commerce. Therefore, this puts it under the category of business opportunity on the transporter model.

### *Adoption and Utilization of E-Commerce....*

The second company E#2 has a standalone offline system; it uses e-mail and has its own website. This lets it fall under the second level on the adoption ladder, which is the website user level. From the transporter view, the management has some perceived benefit and has some knowledge on ICT but no competitive pressure putting it on the business support category.

The company E#3, the researcher could see that it falls on the e-mail level under scrutiny of the adoption ladder model and it does not actually fall on the website stage. Since it has only been included in lists on other portal websites and does not have its own website. When inspecting this company with the transporter model, the owner has some perceived benefits, has knowledge of IT, and does not face competitive pressure; therefore it falls under the business support category.

The fourth company E#4 also uses e-mail and has a website which puts it on the second level, i.e. e-mail user on the adoption ladder. The owner has a good perception of the benefits that e-commerce could bring to his company and has some knowledge on e-commerce. His company faces pressure from competitors and shows interest to catch up with the demand which, all in all, puts it on the business opportunity category of the transporter model. The company #5 uses e-mail and website that helps for promotion and advertisement. This puts it on the website user level on the adoption ladder. The company manager has good IT knowledge and believes existence of competitive pressure. This puts it on the business network category of the transporter model.

The company E#6 uses e-mail and have its own website with a better usage in that it has a database of its export items and major customers and suppliers. This puts it on the website user level on the adoption ladder. The manager has a high anticipation on the benefits of e-commerce and working hard to incorporate it into the company. He also has a good knowledge of the technology and believes that the competition is global and therefore needs more effort and investment. This puts it on the business network category of the transporter model.

The other company E#7 has email and website to sell coffee online and interacts with buyers and suppliers. The Company has fully functional e-commerce system which performs online e-trading within the country but not internationally. This makes company on the e-commerce level on the adoption ladder. The company has IT knowledge and also perceived benefits of adoption of e-commerce system and external competitive pressure on the company. This puts the company on the business network category on the transporter model. The other coffee exporter E#8 has also website and email accounts in the

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company. The company has good IT knowledge and perceived benefits of e-commerce but no belief existence external competitive pressure from others. So the companies are categorized under business support category on the transporters model. On the adoption ladder the company puts on website level.

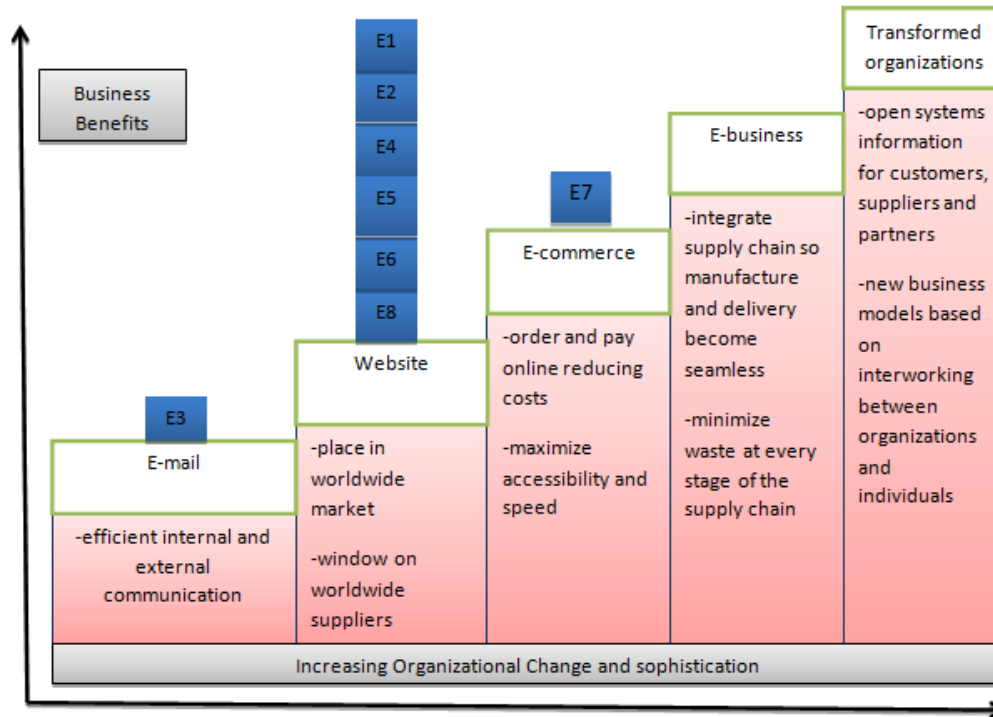


Figure 6: Positions Held by the Companies on the DTI Adoption Ladder Model

The researcher look at the coffee exporting companies in relation to the two models, the researcher can see that six of them are on the scale of the level of website adoption ladder. In terms of the transporter model, businesses are classified into three of the four categories of Segmented Internet Adoption Patterns, with two in the Business Support category, three in the Business Opportunity category, and three in the Business Networks category.



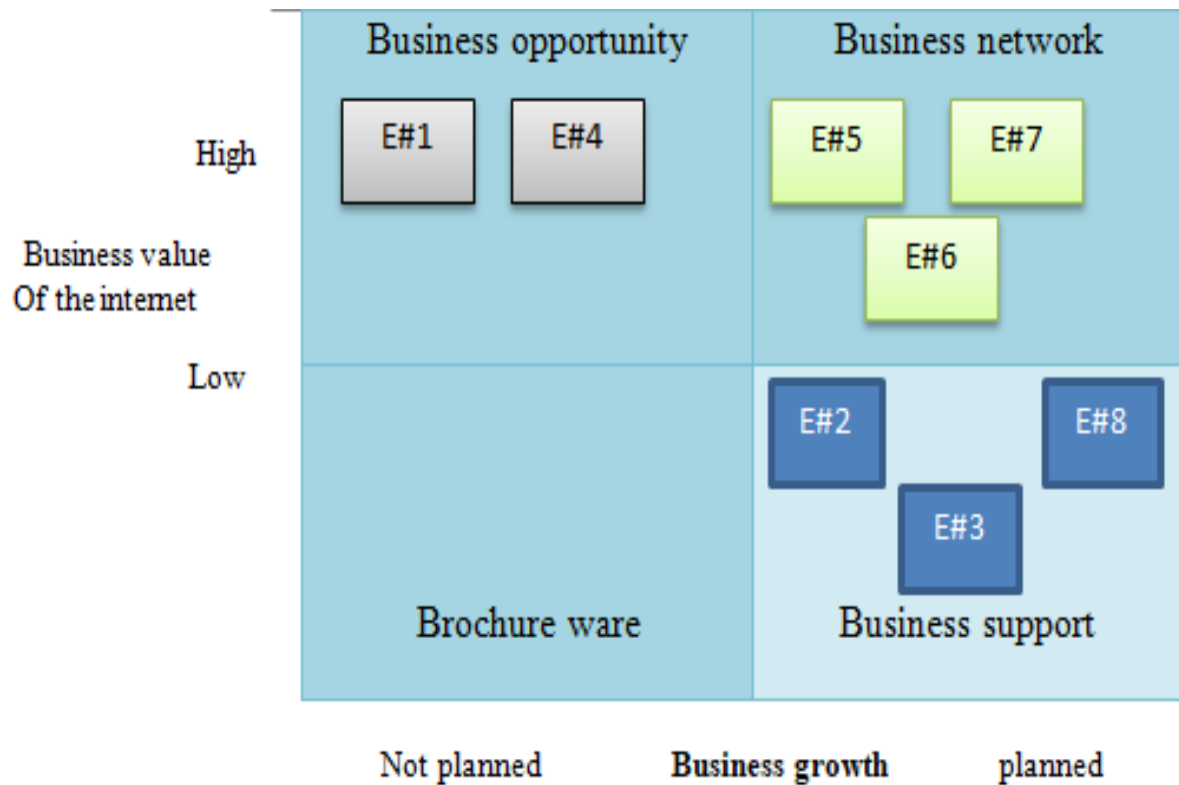


Figure 7: Positions held by the Companies on the Segmented Internet Adoption Patterns

In general, the adoption ladder model seems to focus on the practical achievements of the companies and, therefore, classify them in terms of lower level of use. On the other hand, the transportation business model puts more emphasis on the expected benefits and plans and thus places them at a higher level in terms of perception of e-commerce. Therefore, the Adoption Ladder Model appears to be more practical in determining the level of e-commerce usage by Coffee Exporters Company in Ethiopia. As the results based on both models are compared, there seems to be a minimal correlation between the use of e-commerce actually achieved by the companies tested with the ladder model; and the value of business planning and growth proven by the van model. This is because we see correlation between e-commerce usage levels and owners' plans based on business growth and value.

## **CHAPTER FIVE: CONCLUSION and RECOMMENDATIONS**

### **5.2 .Conclusion**

The study has recruited eight and one hundred sixty seven coffee exporters companies operating in Ethiopia for qualitative and quantitative research, respectively. According to this study, significant percent of coffee exporters company make good use of e-commerce tools like computers, the internet, email, and websites. According to the findings, a substantial percentage of coffee exporter's managers (48.2%) believe e-commerce is costly, and 40% of coffee exporter employees and company workers lack sufficient knowledge and technical abilities in e-commerce.

E-commerce trading has not even been implemented by the majority of Ethiopian coffee exporters. By technology acceptance models, Ethiopian coffee exporters are only on the website stages. They just care about getting email accounts and a website, but they do not even use them for money transactions or other commercial transactions. The lack of legislation to govern digital dollar payments in the country to accept foreign online transactions, inadequate infrastructure, poor knowledge of e-commerce by staff and clients were e-commerce challenges. According the result obtained from the qualitative result, the main benefits were increased sales, lower transaction costs, and faster processes. Based on regression analysis training, numbers of employee of company, awareness benefits, and Knowledge had a significant relationship with e-commerce adoption.

### **5.1.Recommendations**

- The government/policy makers should make polices that allow online foreign currency transactions.
- The Ethiopian government should have to build infrastructure and assist financially to adopt e-commerce in the Ethiopia
- The coffee exporters company should have work on their employee knowledge and skills on the use of e-commerce.
- The study also recommends that the coffee exporter's managers should undertake some training courses on e-commerce especially on website to enable them get the importance of implementing e-commerce.

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- The further studies should be done on e-commerce of other areas of exporting materials, like flower, gold and other that Ethiopia exports.

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**APPENDIX**

**Appendix 1: Consent Letter**

TO WHOM IT MAY CONCERN.

Dear Sir/Madam,

Request: permission to carry out a research on adoption and utilization of e-commerce among Ethiopian coffee exporter.

I am a Master of Information science degree student at Jimma University. In partial fulfillment of the degree, I am required to carry out a research as aforementioned.

Being one of Exporter enterprises your business is the main focus of the study. I kindly request your assistance through the filling of the questionnaire attached here. The information requested is needed purely for academic purposes and will be treated as confidential and will not be used for any other purpose apart from my research.

Yours Faithfully

Jemal Sali

**Appendix II: Questionnaire**

**INSTRUCTIONS**

This questionnaire seeks to collect information Adoption and utilization of e-commerce among Ethiopian exporters. Please provide information in the spaces provided unless indicated as optional and tick or circle the appropriate boxes. All the information received will be treated confidentially and will only be used for academic purposes.

**A. GENERAL INFORMATION**

- a) Name of Exporter(Optional) \_\_\_\_\_
- b) Telephone Number (Optional)\_\_\_\_\_
- c) E-mail address (Optional)\_\_\_\_\_

**Please tick your selection**

**1. Are you the manager, owner or both of this business?**

- A. Owner only (the business is managed by someone else)
- B. Manager only(the business is owned by someone else)
- C. Both Owner and Manager ( you own and manage the business)

**2. Please indicate your gender.** Male  Female

**3. Please Indicate your age.** Below 21 years  Between 22-30 years

Between 31-40 years  between 41-50 years  between 51-60 years  above 60 years

**4. Please indicate your highest level of education.**

- Primary  Secondary  College
- University  Post Graduate



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**5. Do you have a management training certificate?** Yes  No

**6. If your answer to question 5 is yes, please specify**

.....  
.....  
.....

**7. What kind of exporter?**

Sole proprietorship  Partnership   
Private Limited Company  Public Limited Company

8. How many full time employees do you employ in the company?

9. How long have you owned or managed these exporter enterprises?

**10. Do you use internet/e- commerce applications or IT tools in your business?**

Yes

No

**B. E-COMMERCE APPLICATION**

**11. Please indicate the frequency of use of e-commerce tools such as the computer,internet, email, and/or websites based on the scale given below.**

**Scale**

**1= Do not use at all, 2=rarely, 3=occasionally, 4=frequently, 5=Very frequently**

<b>Task</b>	<b>Scale</b>
To communicate with customers, suppliers and employees	
To perform financial Accounting	
To manage payroll	
To perform market/Product Research	
To carry out business banking	
To set-up customer/Supplier databases	
To locate suppliers	
To place and track orders via email	
To pay suppliers	
To receive orders	
To place orders	
To track and enquire about orders by customers via email	
To promote products or services	
To search for information	

**C. FACTORS INFLUENCING ADOPTION OF E-COMMERCE**

Using the scale below, please indicate the extent to which you agree or disagree with the statement.

Not at all	To a little extent	To a moderate Extent	To a great extent	To a very great extent
1	2	3	4	5

**AWARENESS OF BENEFITS OF E-COMMERCE**

**If we make use of e-commerce tool in our business:**

Statements		1	2	3	4	5
1	Efficiency in the business will improve					
2	Business costs will reduce					
3	Sales volumes will increase					
4	Number of New Customers will increase					
5	Overall customer satisfaction will be improved					
6	Customers will encourage other customers to get their products from us.					

**COST OF E-COMMERCE IMPLICATIONS**

Statements		1	2	3	4	5
7	Use of e-commerce is affordable in our business					
8	Subscription to the Internet is affordable for our business					
9	Buying a computer software is affordable for our business					
10	It's very expensive for our business to have its own website					
11	Paying for computer support for our business is affordable					
12	Computer Maintenance costs are too high					

**TECHNICAL SKILLS AND IT KNOWLEDGE OF OWNERS AND STAFF**

<b>Statements</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
13	I know how to use the internet					
14	I have some training in Information technology tools					
15	I know how to use Microsoft Office					
16	I am knowledgeable in website Maintenance					
17	I attend workshops to improve my computer skills regularly					
18	My employees know how to use the internet					
19	My employees know how to use computer software and IT Tools					
20	My employees are knowledgeable in website maintenance					
21	My employees regularly attend workshops to improve their Computer skills.					

**Environmental factors**

<b>Statements</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
22	This business enjoys financial assistance from the government					
23	This business enjoys infrastructural assistance from the government					
24	This business enjoys a good relationship with its suppliers and Customers					

22. Please rate the following factors in the order of importance in influencing the utilization of e-commerce in your business.

1=Very important, 2= Important, 3=Neutral, 4=Not very important, 5= Not important at all.

<b>Statements</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Awareness of e-commerce benefits					
2	Cost of e-commerce implementation					
3	Technical Skills and IT knowledge of owner/staff					
4	Environmental factors					

THANK YOU FOR TAKING TIME OUT OF YOUR BUSY SCHEDULE TO ANSWER THIS QUESTIONNAIRE.

**For qualitative study**

**Interview questions**

1. What type of business are you involved in?

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2. How many employees do you have? \_\_\_\_\_

Are there any personnel working on IT? \_\_\_\_\_

3. Do you use any offline IT system or software in your company? \_\_\_\_\_

4. If yes, what system/s are you using?

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Which functions are you performing with the system?

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(Eg. accounting, customer database)

5. . What online services are you currently using for your business

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(The next points could be used for clarification)

A. Communicate with suppliers and/or clients?

B. Browse websites of suppliers or clients for product or market search?

C. Systems of suppliers or clients for online order and/or payment?

6. What online presence or system does your company have?

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(The next points could be used for clarification)

A. An email account?

B. Your own website or an account on other websites with information about your business?

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C. A fully functional website that allows online order and / or payment?

7. Do you think you or your competitors are catching up with international companies in using online e-commerce systems?

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8. Have you seen or tested any other online systems for your business which may help you to perform better? \_\_\_\_\_

9. If so, what kind of system? \_\_\_\_\_

What advantages do you anticipate by adopting it? \_\_\_\_\_

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10. If you are using (or planning to adopt) an online system or e-commerce for your

Business, what benefits have you gained (or expect to gain) by using the system?

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(The next points could be used for clarification)

A. Increase in sales/turnover, number of clients, number of suppliers, etc.?

B. Decrease in total transaction time, total cost of transaction, or complaints from Customers, etc.?

11. What has e-commerce brought to your business (or would you expect it to bring, if you have plans) in terms of growth and efficiency of business processes?

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10. If you already have adopted or considered adopting an e-commerce system, what difficulties have you encountered on the process?

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11. Are there any other possible constraints from outside your company that might influence?

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**The adoption and utilization of ICT and e-commerce?**

12. What types of opportunities do you think are currently there in Ethiopia for the business?

Community to utilize e-commerce?

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13. What kind of support or solutions do you expect will help your business to utilize the

Opportunities that e-commerce provides?

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