

**CONSUMER TRUST AND ONLINE PAYMENT OPTIONS**

**BY**

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This Report Presented in Partial Fulfillment of the Requirements for the  
Degree of Master of Science in Management Information System

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## **APPROVAL**

This Thesis titled **Consumer Trust and Online Payment Options**, submitted by Omer Faisal Ali Nour to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of MS in Management Information System and approved as to its style and contents. The presentation was held on 24 January 2023.

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I hereby declare that this thesis has been done by me under the supervision of **Dr. Sheak Rashed Haider Noori**, Professor, Department of CSE Daffodil International University. I also declare that neither this thesis nor any part of this thesis has been submitted elsewhere for award of any degree or diploma.

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## **ABSTRACT**

Global business practices are evolving as a result of online sales. These days, shopping is increasingly done online, both for selling and for buying. However, this phenomenon is not very prevalent in under developing nations, particularly in Africa. This study therefore examines the impact of customer trust and online payment options on awareness and perception of electronic commerce in Somalia and East Africa generally, whereas other studies had a focus on the electronic retailers' side. I created a five-construct model and put it to the test empirically on Somalian professionals and university students. For path analysis, we used structural equation modeling SEM to probe responses for the investigated variables. The result of the research conclusions point to strong evidence that Somalia's impression of electronic commerce and its level of awareness are both influenced by online payment options. The awareness and perception of online purchasing in the nation were both found to be influenced by consumer trust. The currently accessible international payment methods also disregard regional technologies that are common in Africa. In Somalia, for instance, just having a mobile payment option would have a significant impact. The thesis finds that consumers have extremely little trust in internet retailers, a problem that can be fixed if they are given guarantees regarding their financial transactions. The report comes to the conclusion that more online payment solutions are required in Somalia and throughout East Africa. At the conclusion of this research work, constraints and ideas for additional research are provided.

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# CHAPTER 1

## Introduction

### 1.0 Introduction

Traditional brick and mortar stores were the most well-liked places to shop for a very long time. However, e-shopping has become a practical choice for customers as a result of technology improvements over the past three decades. Due to the fact that online sales growth exceeded that of conventional and regular sales channels, internet shopping is now the norm rather than just an alternative.

Electronic commerce (E-Commerce) enables consumers to have access to more product selections and is a cost-effective way for established businesses to extend their current and future clients through electronic stores created for online sales. Nielsen produced a research that described the situation of online shoppers globally. More than 875 million people, a 40% rise from the prior two years, engaged in online shopping, claims the research. With a staggering 99% of all online purchases, South Korean consumers led the pack of internet buyers. With 97%, 97%, 94%, and 94% of the vote each, the United Kingdom, Germany, Japan, and the United States of America were next on the list. Books were among the frequently purchased things on the internet [1].

The e-commerce picture, however, is not as appealing and eye-catching in Africa and the other emerging countries as it is in the rich countries, as shown by the aforementioned data. Africa still needs to do a lot of work to spread the Internet and increase e-commerce. Africa, for instance, has the lowest Internet penetration in the world, at 31.2%, according to Internet World Stats (ITU), when compared to other continents. Asia is 47.3%, Europe is 82%, and North America is 87%, for comparison. Furthermore, barely 10% of Africans utilize the Internet. When you consider that the continent is home to roughly 1.3 billion people, these are alarming numbers. But the amazing and encouraging part is that over the past 17 years, Internet usage in Africa has increased by 8,503 [2].

The crucial technological infrastructure is one of the main issues preventing the growth of online business in Africa, in addition to Internet access. In comparison to other parts of the world, the continent has inconsistent power supplies, expensive telecommunication, weak road networks, and ineffective postal services. These provide the basis of the ICT infrastructure required for the execution of electronic commerce.

for instance, "Internet and Somalia" are 2 keywords that are uncommon to find jointly in the literature. The main keywords for Somalian literature do not include "Internet." When you search practically all scholarly databases, you will find a large number of unappealing keywords, including corruption, piracy, poverty, Al-Shabaab, and female genital mutilation. However, comments and anecdotal information indicate that the tale of the Internet in Somalia is unexpected and fascinating. Despite having a penetration rate under 10%, the Internet has a significant national impact. Somali civilians utilize the Internet as a rapid way to contact their government because Somalia is the 2<sup>nd</sup> most corrupted nation in the world, allowing them to avoid the widespread corruption present in the various official organizations. For instance, when a citizen disobeyed traffic laws, he became a victim of a corruption case. The amount of money taken by the traffic officers exceeded the fine he was supposed to pay. The same user released images proving that he paid more than what was stated in the invoice on social media to publicize his issue (Since most Somalis utilize mobile banking, it is simple to demonstrate the amount paid). After the story went viral in Somalia, the government took action and detained a "alleged" police officer to conduct an inquiry.

## **1.1 Background**

The market has undergone changes as a result of the introduction of new technical advances like the Internet. The Internet provides a global network that links millions of people and enterprises, creating a global market with a wealth of commercial prospects. The benefit of using the Internet as a communication tool to reach customers anywhere and at any time is being realized by an increasing number of businesses [3]. Additionally, it makes it possible for customers to research products and services online. Electronic commerce is the term used to describe all internet transactions. We will conduct our research in the domain of electronic commerce (or "e-commerce"), and we will address customer trust in e-commerce throughout this dissertation. B2C (business-to-consumer) refers to the procedure when.

The everyday behaviors of consumers are becoming more and more ingrained with the Web. The Internet allows users more control over a variety of aspects of their lives, including their time, information, communication, finances, decisions, and level of pleasure. Consumer control should be made possible by Internet vendors. Customers require goods, services, methods of operation, and ways of living that are convenient and time-saving

In both an online and offline setting, trust is a crucial component of every transaction. Online

retailers' websites and themselves can be sources of confidence when it comes to e-commerce. Therefore, it's crucial for businesses to learn how to manage consumers' trust in online shopping. However, it might be difficult for online retailers to gain the trust of customers over the Internet. Because of this, we believe it would be fascinating to determine what elements are crucial for fostering consumer trust in the online shopping environment. We seek to identify key determinants of consumer trust in e-commerce by evaluating pertinent research online. The most significant findings will be outlined at the conclusion of our theoretical framework, along with instances of what we refer to as "trust establishing sub factors" for each of the primary components. We will attempt to choose a few of them to serve as the foundation for our empirical research, which will look at how customers view the significance of the characteristics we have chosen in order to feel confident making online purchases.

Therefore, I shall discuss the fundamental idea of trust in this essay and also look into the components of online trust and online payment options. The concept of trust is challenging to describe, in part because trust is constantly situation-specific. Different terminology, such as elements, underlying dimensions, or determinants, are used interchangeably by researchers when referring to aspects that can contribute to the development of a sense of trustworthiness or that can decide whether consumers will trust an Internet vendor or its website.

## **1.2 Problem statement**

Online purchasing lacks the physical cues that influence a consumer's perception of trust in a traditional store, such as the store's look and direct contact with salespeople. Establishing trust with customers is more challenging in the online environment since there are fewer tangible cues and opportunities for physical contact. Therefore, this poses a significant issue for businesses involved in e-commerce. Therefore, it's crucial to identify the elements that contribute to consumer trust in online commerce. This thesis uses Somalia as case study to examine ecommerce in the emerging world, particularly in Somali region, because it is one of the least developed nations in the world. The thesis specifically focuses on Somalia's level of ecommerce awareness and perception. In addition, given that the practice of mobile money is more widespread than Automated teller machine ATM cards, I will research consumer trust issues and the country's online payment choices.

Therefore, this study looks into how consumer trust and online payment options affect

people's knowledge of and attitudes toward e-commerce as well as their willingness to shop online.

### **1.3 Purpose of the Study**

Gaining a deeper knowledge of consumer trust and online payment options in electronic commerce is the aim of this dissertation. I am looking for crucial elements that support consumer confidence in online shopping. These variables will serve as the foundation for our empirical research, which will examine how customers perceive the significance of a few chosen variables for them to feel confident making an online purchase.

### **1.4 Scope of the Study**

This study looked at how well-informed professionals and universities students in Somalia were about e-commerce, how they perceived it, and how likely they were to shop there. Between August 2022 and January 2023, the study was carried out. The endeavor was intended for 225 respondents (graduates or current students).

### **1.5 Significance of the Study**

The results or outcomes of this study will be: -

- Will be a huge resource and aid to Somali's and foreign e retailers operating in Somalia or preparing to do so. To the best of the researcher's knowledge, no prior study has examined Somali consumers' online habits. Lack of knowledge about the market or consumer behavior is the biggest barrier preventing online retailers from opening up shop in Somalia.
- will serve as a resource for further e-commerce studies focusing on Somalia in particular and Africa in general. This is the key area where the academic literature

will find this research to be extremely valuable. This is particularly true of research work looking at electronic commerce in relation to least developed countries.

- will be useful to the Somali's government when establishing new Internet rules for the nation. The results of this study can provide public officials with consumer insights and advice since Somalia lacks laws and regulations governing businesses operating in the online space, enabling them to create effective policies that are simple to implement.
- will address the issue of obtaining reliable information on Somalia that the United Nations and other international organizations have in the country. One of the main issues Somalia is dealing with is the dearth of precise national-level statistics accessible to decision-makers.

Having precise data allows for more informed decision-making. Additionally, United Nation organizations place more trust in research results than in publications offering opinions. Consequently, there is a very high likelihood that this study work will be considered by international organizations that work in Somalia.

## **1.6 Research Questions**

1. What effect do the various online payment alternatives have on Somalia's understanding and perception of e-commerce?
2. How does customer trust affect Somalia's awareness and perception of e-commerce?
3. What is the impact of online shopping awareness and perception on Somalia's tendency to purchase online?
4. Do consumer trust and the availability of online payment methods affect Somalians' inclination to shop online?

## CHAPTER 2

### LITERATURE REVIEW

#### 2.0 Introduction

Global business practices are evolving as a result of online sales. Due to the fact that online sales are growing faster than traditional forms of sales, selling and purchasing on the internet is no longer just a choice but the predominant method of shopping today. Companies in developing nations, particularly those in Africa and Asia, have not yet fully jumped on this band wagon [4]. Online shopping is expanding more quickly and strongly in developing nations than in developed ones, according to the majority of the research, and is increasingly used to distribute goods and information. The third world has embraced the e-commerce trend. Electronic commerce, or e-commerce, provides established brick-and-mortar businesses with a special chance to reach new and existing clients through portals or websites created especially online purchases. Online sales rose dramatically from 45% to 85% between 2011 and 2015 alone [5]. Additionally, opening and running an online store is less expensive than opening a physical store. These are all excellent reasons for multinational corporations to jump on board, particularly those in developing nations.

Contrary to traditional approaches, selling over the Internet encompasses the complete shopping or selling processes, search for information to actual buy. This means that businesses may use the Internet as a single platform to carry out all of their marketing initiatives. However, compared to offline consumers, internet shoppers exhibit different behaviors.

offline consumers. For this reason, research on customer online behavior has dominated e-commerce for the past ten years

This literature review aims to combine specialists' understanding of online customer behavior. To do this, we research customers' perceptions of online shopping, awareness of it, and tendency to undertake it, primarily in Africa. Thus, the remainder of this chapter is organized as follows: the first part concentrations on the online payment options that are accessible and the awareness of online shopping; the second part covers literature on how people perceive e-commerce; the third and fourth parts, respectively, cover consumer trust and propensity to shop online; and the final section, which develops a conceptual framework and identifies a literature gap, is the last section.



## **2.1 Online Payment Options**

Due to the predominance of studies from the West in the literature, most studies have ignored several factors that are crucial in Africa, assuming instead that the features of African consumers are identical to those in the West or Asia. For instance, study is needed to determine the influence of e-payment choices on many stakeholders, including consumers, as they are new and still developing in Africa. Because of this, most studies on online consumer behavior neglected payment issues in Africa, even though they have an impact on how readily African customers adopt e-commerce. This absence makes sense because, because to their established and efficient financial systems, e-payments are not a problem in industrialized nations. However, in Africa, this aspect by alone prevents millions of buyers from leaping on the e-commerce bandwagon.

Additionally, the majority of consumers in East of Africa are unfamiliar with credit cards and debit cards. According to Ogun, and Lim, there is evidence that the level of knowledge of online buying is impacted by Nigeria's absence of an efficient electronic payments solution. Antwi, Hamza, and Bavoh found in another study that Ethiopian customers choose mobile money payment options over ATM cards, despite the fact that these mobile payment options are not accepted by the well-known international e-retailers [6]. Due to these issues, the majority of East of African customers believe that there are few payment methods available to them, therefore they ignore the e-commerce phenomena, which prevents the tendency to shop online in Africa from increasing. In light of this justification, this research created a model.

## **2.2 Awareness of Electronic Commerce**

E-commerce awareness varies between genders, just like it does in many other facets of life. For instance, Slyke and Hightower looked at gender based variations in the uptake of consumer focused electronic commerce. The authors especially looked at how beliefs affected intentions to shop online.

They discovered that the adoption of electronic commerce differs by gender: males consider the benefits and results that would influence their goal to use online shopping, but women choose the accessibility and compatibility of the online retailers. Nevertheless, when shopping online, both sexes take into account the user-friendliness and seller credibility. To better understand customer behavior, factors other than gender inequalities were looked at. To understand their online shopping habits, Singaporean Internet users were investigated by Keng, Tang, and Ghose . Internet users were divided into six groups by the authors, and each group's

replies were assigned to one of the following categories: information seekers, on-off shoppers, comparison shoppers, dual shoppers, traditional shoppers, and e-laggards.

This indicates that some customers prefer physical stores over online ones, others evaluate products before making decisions, while still others don't care which channel they use to shop. Because each group differs greatly from the others and has unique characteristics, the report advised marketers to first learn the preferences of each group before creating prices and promotional offers that would specifically target those groups.

Consumers' computer literacy and awareness of the availability of online portals or electronic stores have an impact on their awareness of and adoption of online shopping. For instance, Saleh investigated the relationship between the websites of electronic retailers, the demographics and computer skills of Saudi Arabian consumers, and the effects of these factors on consumers' electronic purchases. According to the study, online purchases made by consumers and their technological proficiency are significantly correlated. The study also found that there is no connection between the quantity of online transactions and the design of e-retailers' websites. Gender-wise, there are no differences between males and females that shop online. Raman investigated whether Indian adolescents were aware of the privacy risks associated with online buying in another study pertaining to computer education.

They compared how IT students and non IT students perceived electronic stores' online privacy. The researchers discovered that young people between the ages of 17 and 25 are unaware of the privacy risks associated with internet shopping. Again, there was no difference in this awareness between the sexes/gender. However, there was a notable disparity in the knowledge of online privacy between IT students and non-IT students.

### **2.3 Perception of Electronic Commerce**

The necessity to identify the precise components influencing perceptions became evident as attitude research progressed. The theory of planned behavior was used by Limayem et al. to study factors influencing online shopping and empirically test the model.

They discovered that subjective norms, attitudes, and beliefs influence the intention to shop online by influencing how the consequences of doing so are seen. The study also discovered that behavioral control and intention significantly influence actual online shopping. One of the most reliable indicators of a consumer's desire to engage in a particular behavior, such making an online purchase, is attitude. Delafrooz and Paim, investigated the variables influencing

Malaysian consumers' attitudes toward online shopping and their intention to make a purchase. They discovered that individuals who have a favorable view toward online shopping are more likely to engage in online purchasing [7]. Xu and Paulins looked at college students' views and behavioral intentions towards internet purchasing in another study focusing on customer perception. Students attending campuses in rural and urban areas were compared in the study. The paper took into account the students' access to cars, employment status, and Internet usage. The paper's main finding was that there was a highly significant correlation between college students' attitudes and their intention to purchase apparel products online, supporting the premise of Fishbein and Ajzen's Reasoned Action Theory from 1980 that attitudes can be a useful indicator of purchasing intentions. Consumers around the world have comparable attitudes toward internet purchasing since they have both similarities and differences. In a study comparing online and offline shoppers in 6 different nations, Brashear, Kashyap, Musante, and Donthu [8]. The study examined consumer demographics, attitudes, and motivations while contrasting Internet users and Internet shoppers. The consumers in the 6 countries are more innovative than non-shoppers, value and seek convenience, are impulsive, have higher incomes, use the Internet more frequently, and prefer direct marketing and advertising. However, the study found that there were some remaining distinctions among these consumers. For instance, online shoppers in the United States, UK, and New Zealand are less risk-averse than non-shoppers in these nations. [9]. China and Bulgaria experienced different outcomes, though. Online customers tend to be more brand aware than traditional ones. Cost was a concern for several nations. Additionally, online buyers are more educated than non-buyers. However, there is no appreciable gender disparity in the 6 countries looked at. Citizens, academics, and professionals all have different perspectives on how demographic considerations affect internet shopping [9]. Akman and Rehan looked into how sociodemographic characteristics affected the internet shopping habits of professionals. They specifically looked at the impact of variables like gender, income, age, education, and regular Internet usage on professionals' perceptions of online purchasing. The main finding was that professionals' use of the Internet for purchasing was significantly influenced by their income, age, and education [10].

Gender did not play a big role. The study is significant because it is one of the rare ones carried out in Turkey, a developing nation where the cultural, social, and economic background differs from that of the West, which predominated the internet shopping literature. In contrast to the bulk of research in the literature, which only focused on academicians and citizens, this study

includes professionals as a concept. Socio-demographic variables are crucial for forecasting consumer behavior. Since the website is the first contact of consumers and e-retailers, the website can be used in shaping consumers' attitude toward Internet shopping. For instance, Richard, Chebat, Yang, and Putrevu investigated and said whether gender differences exist in the effects of Internet experience and web environment on online surfing [11]. The authors specifically investigated whether consumer attitudes toward websites and pre-purchase evaluations were influenced by consumers' online experiences and online environments. According to the study, pre-purchase evaluation is influenced by challenge and website engagement, whereas website involvement, entertainment, and challenge all have an impact on website opinions.

Website participation is increased via entertainment and content. As a result, websites that were fun, difficult, and current were the most popular. Males and females navigate the web in ways that are different based on their gender. Women enjoy engaging in exploratory behavior and engaging with online material, whereas men are straightforward and choose websites that are well structured and simple to access. [12]. Additionally, the layout of e-websites and the services offered there can have a big impact on whether or not customers adopt online buying. Martin and Jiménez investigated the effects of 3 electronic website characteristics, namely service quality, warranty, security and privacy concerns, on customer satisfaction and trust in online buying. The signaling theory based on the three attributes was employed in the article to determine their impact on customer satisfaction and, consequently, trust in online retailers.

## **2.4 Consumer Trust**

In the vast majority of developing nations, particularly in East of Africa, trust is a significant barrier preventing the growth of internet shopping. However, many experts concur that consumers merely need to be persuaded that they are secure; Internet security risk is now more of a psychological concern than a true financial or technological risk. As a result, this is the primary difficulty facing retailers today. [13]

However, customers in many developing nations are still unconvinced about the dependability and delivery capabilities of these countries' online businesses. Hong investigated how perceived hazards affected Somali customers' attitudes toward internet buying. They discovered that for Malaysian consumers, psychological risk is insignificant compared to product risk, financial risk, and non-delivery risk in determining how consumers feel about online buying. Given that only 150 customers were included in the survey, these results cannot be applied to all developing countries. Different elements that are crucial for building customer trust in the online world have been emphasized by researchers. There is no standard model for trust in e-commerce because it is a multidimensional concept. In order to develop consumer trust, we will try to highlight some of the most frequently mentioned factors from the literature we have researched. We will summarize them at the conclusion of the chapter. As you read the remaining chapters, you'll notice that different terms—such as elements, underlying dimensions, tools, techniques, and methods—are frequently used interchangeably when researchers discuss elements that can contribute to creating a feeling of trustworthiness or that can determine whether customers will trust an online vendor or its website.

### 2.4.1 Trust Levels in Transaction Phases

Trust in online transactions is frequently cited as a critical component in determining whether e-commerce will succeed or fail. Each individual transaction's purchasing and selling of items goes through a number of stages, including the information, agreement, and settlement phases. The information phase typically refers to the process of visiting an online retailer. Customers choose products and accept prices to demonstrate their agreement during the agreement phase. Orders are placed and payments are made during the transaction's settlement phase. I think that the phases described above also apply to online service sales and purchases. Distinct levels of trust can be linked to different transaction phases. With the use of seals and insurance solutions, such as "seals of approval," money-back guarantees, and dispute resolution processes, confidence can be cultivated throughout the various phases. The trust levels at various stages of the transaction are depicted in Figure 2.1

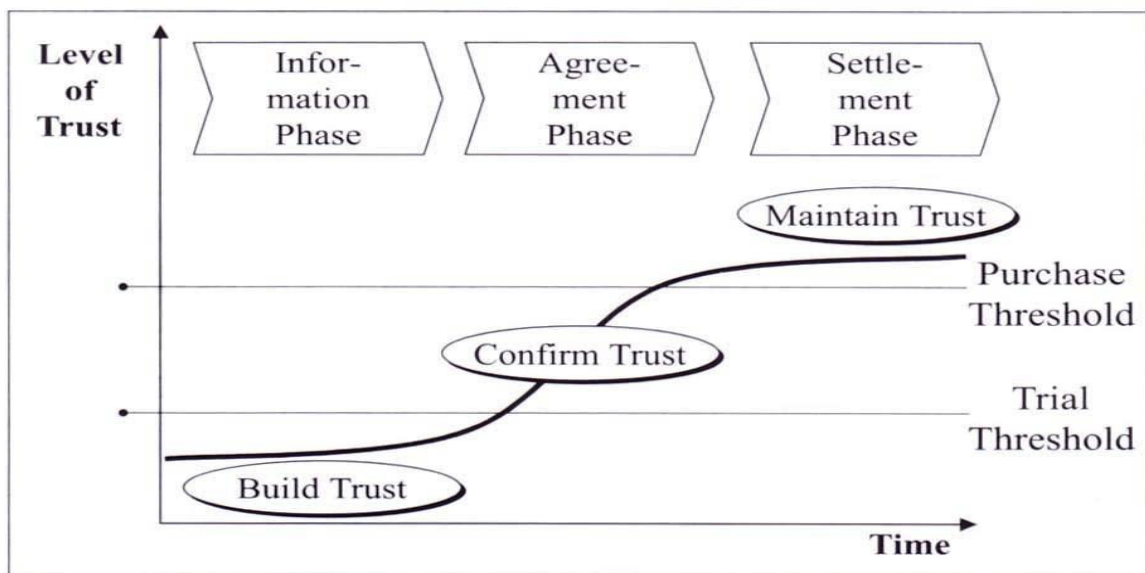


Figure 2.1 Trust levels during Transaction Phases

## 2.4.2 The Trust Pyramid

Building the kind of trust that results in happy consumers is a difficult and important undertaking. Six components are listed when integrated, they form a trust pyramid. Figure 2.2 depicts the six components, and the following section will give a brief explanation of each.

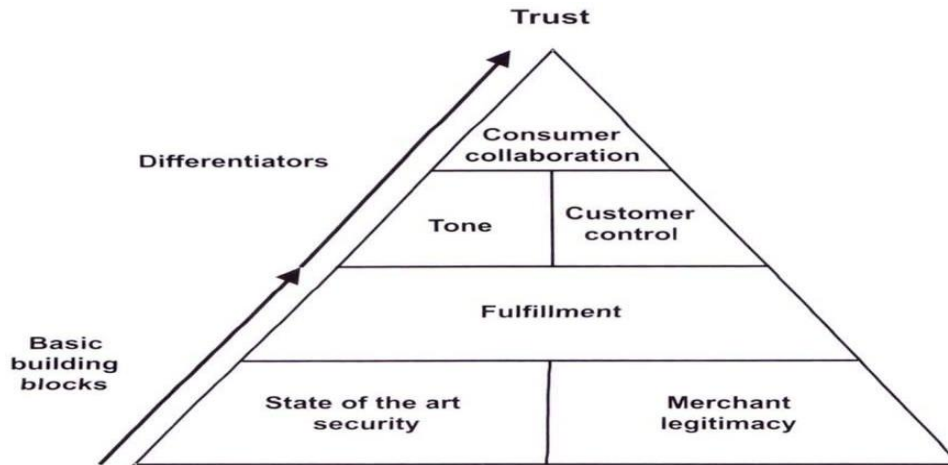


Figure 2.2 The trust pyramid

Secure technology, merchant authenticity, and effective order fulfillment are the three essential components required to simply stay in business. These serve as the pyramid's foundation. Tone, customer control, and consumer collaboration are more effective trust builders over and above these fundamental components that a business can employ to set itself apart. Together, the six components of trust give the security and assurance required to win over delighted and devoted customers.

**State of the Art Security:** Utilizing the website's most trustworthy security procedures is crucial. Additionally, this needs to be conveyed in a way that customers can understand.

**Merchant Legitimacy:** On the Web, trademarks are significant because they may guide consumers in making decisions when they have little knowledge about the value and capabilities of the items. Building confidence can be facilitated greatly by using well-known names with solid track records.

**Fulfillment:** The second need of a website that builds confidence is order fulfillment. Customers want to place an order and have it delivered quickly and without any significant issues. Actual costs that are not well defined can also be detrimental. Therefore, it's critical to clearly outline all prices and ensure that the correct customer receives the proper product on time.

**Tone and Ambience:** More than a website's purely technical characteristics contribute to trust-building. Customers desire reassurance that sensitive handling will be given to their personal information. The customers will not complete the purchase if this is not assured. A clear privacy statement that outlines how personal data is gathered and managed should be posted on the company's website. Design and content are other crucial components. Consumer behavior is influenced by a variety of factors, including how easy it is to use a website, how it looks, and how clutter-free and welcoming the environment is.

**Collaboration:** Encouraging customers to communicate with one another and share information about the company's goods and services as a means of fostering trust. Advice from other users of a product or service is frequently highly valued when consumers are debating whether to make a purchase of that goods or service online. It seems riskier to buy a service because it is challenging to assess the quality of the service. So, while deciding whether or not to buy a service, user recommendations are even more significant.

## **2.5 Propensity to Shop Online**

Electronic buyers should have control over when and what they purchase online, and this should apply to both men and women. However, not all cultures share that view, particularly those with a high level of masculinity [14]. For instance, Rigas and Riaz evaluated the impact of external factors, such culture, on women's decisions to purchase online in a study carried out in Pakistan. The study discovered that a highly ordered and masculine setting influences Pakistani women when they make an online purchase. Males not only have a say in what women buy online; occasionally, they also actually make the purchases for the women [15].

According to the survey, the external elements that affect women's decisions are society, family, spouses, and coworkers. The report suggested that in such markets, marketers should target both their "direct" target customers and those who influence their purchasing decisions. The adoption of online shopping wider in Africa specially in east of Africa still has a long way to go. For instance, Nabareseh investigated six important criteria that either facilitate or restrict consumers' willingness and propensity to shop online in Somalia and Djibouti. The six elements include the degree of trust, the existence of regulations governing online transactions, adolescent social media usage, the accessibility of the Internet, the availability of power supplies, and the rising demand for online retailers [16]. However, the study also stresses the importance of governments' roles in establishing online transaction laws and providing the vital infrastructure needed, such as reliable power supplies, a functioning postal system, effective



telecommunications networks, and transportation networks. The article comes to the conclusion that as social media usage among young Africans rises, so will their propensity to shop online. This study contrasts consumer experiences in two distinct countries, which makes it quite insightful. The study also discovered that while looking for products, the intention to utilize the Internet for product information search results in the intention to make a purchase through the same online channel. One of the key points of the article is that, rather than a lack of interest in e-commerce as a method of purchasing, when customers give up on their online purchases after starting "product search," it is because of a negative reaction to the particular website.

## **2.6 Theoretical and Conceptual Framework**

I created and empirically tested a model (Figure 2.3) that is most appropriate for the study in order to better address the unique problems highlighted in this research. The literature serves as the source for some of the theoretical components of the framework. For instance, Hong, Farha, and Zulkiffli's investigations provide the basis for the association between the variables "faith in online

businesses," "perception of online purchasing," and "propensity to shop online." A new variable, "payment solutions accessible," which is significant in the context of developing nations, particularly in Somalia, has been included to the model. This figure-2.6 shows the research framework of the thesis.

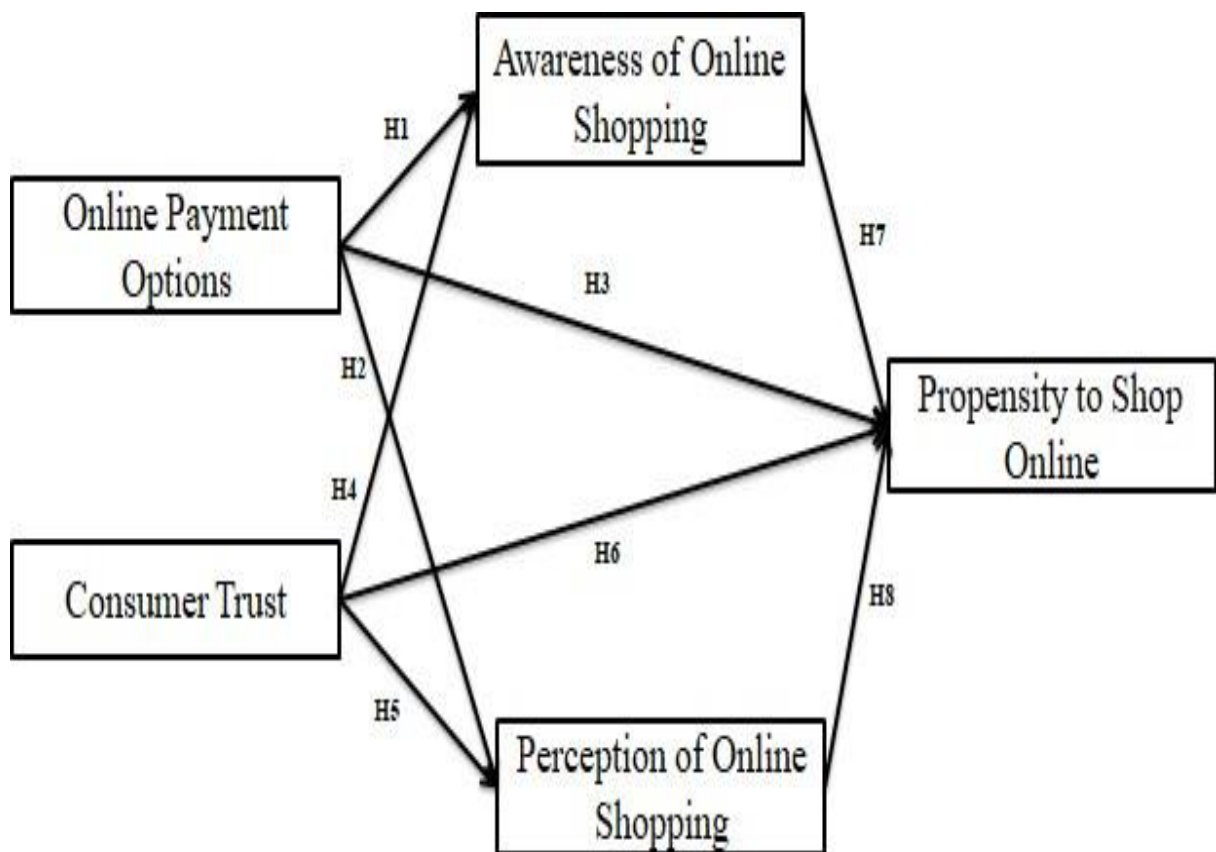


Figure 2.3 Research framework

An illustration of the model and the connections between the variables under consideration can be found in the model above. Online payments and customer trust are the first two factors that have an impact on both perception and awareness of online purchasing. The likelihood that consumers will shop online will therefore be influenced by these latter factors.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.0 Research Design**

The researcher used a survey method in this study, which is a typical design approach in business research. The main justification for this is that research aims to provide "what" and "How"-based answers to queries. Quantitative methodologies are used in the research, which also needs to find out what a population thinks about a particular topic.

#### **3.1 Research Population**

Professionals and university students in Somalia are the study's targeted population. The study primarily focuses on literate users from various backgrounds, including students and office workers. The researcher will prevent errors or bias in the findings that may occur from the respondents misinterpreting the questionnaire since the questionnaire is in English and because the researcher was unable to locate a standard translation for the language used in the study's literature.

#### **3.2 Sample size**

The sample size for the study is made up of residents of Hargeisa Somaliland, Somalia, who work as professionals and students at Somali universities. According to Roscoe, sample sizes greater than 30 and lower than 500 are suitable for the majority of investigations. Additionally, the bulk of research on e-commerce use samples that are less than 300. Consequently, this study gathered 225 replies (172 students and 52 from professionals). In order to be able to extrapolate the results to Africa in general and to Somalia in particular.

### **3.3 Sample Procedure**

The study used a non-probability survey method. Because the literate population made up the majority of the study's participants, the project specifically adopted a purposive sampling strategy. This meant that any respondents who met the requirements of being Internet-savvy Somali professionals or students would be purposefully included in the study. Using this strategy, the researcher was able to choose cases that would most effectively address the research questions. Researchers can gather a significant amount of data from a sizable population by employing the survey approach. A questionnaire is frequently used to collect the data, allowing for the collection of uniform data that makes comparisons simple. Therefore, this data can be quantified and expressed as numbers. For these reasons, we determined that the survey technique was the best option for me. Three categories of research goals exploratory, descriptive, and explanatory can be made. Our dissertation, in our opinion, is a hybrid of an exploratory and a descriptive study. An exploratory investigation seeks to understand what is happening by asking questions, seeking new understandings, and examining occurrences from a different perspective. It is helpful when you want to make sure you comprehend a problem clearly. An analysis of the literature is one method for carrying out this kind of inquiry. Before you start gathering data, you need to have a clear understanding of the phenomenon you want to examine. This is when you need to conduct a descriptive study.

### **3.4 Research Instruments**

The primary technique used to collect data was a questionnaire. The formulation of the questionnaire for this study was based on the research goals and objectives as well as earlier studies about awareness, perception, and perception to shop online. The questionnaire includes elements that were taken from several sources. For instance, the questions used it to evaluate e-commerce awareness are adapted from Zain. The trustworthiness of online

businesses is determined by the perception of e-commerce from Xu and Paulins' questions, and online purchasing inclination is determined by Tapson. To gather the critical information required for the variables being studied the research team disseminated close-ended questionnaires. Since the question items probed particular questions rather than the respondents' opinions, views, and feelings, Likert-scale questions were employed. The best way to gather this data is through a questionnaire.

### **3.6 Validity and Reliability of the Research**

Validity refers to whether the study methodology used assesses the variables it was designed to examine and whether the results are consistent with expectations. Instead of merging all the questions, each one is often verified separately. However, to examine the validity of the instrument as a whole as well as each item in the questionnaire, the study will use Cronbach's Alpha. This will help to increase the reliability of the question items employed in this research. If a study were to be repeated numerous times in various contexts, would the results be consistent? This is what reliability refers to. To improve the dependability of the scale items being utilized in this situation, piloting would be beneficial.

### **3.7 Data Analysis**

The Statistical Package for Social Sciences (SPSS) version 25 and the AMOS version 23 were used to examine the data. In order to evaluate the data obtained from the questionnaire, descriptive statistics were first undertaken in the demographics. A preliminary exploratory factor analysis (EFA) was performed after the demographic tests. The resultant pattern matrix was sent to Amos 23 for additional analysis after a number of iterations and the removal of the factors with the low loadings or cross-loadings. The initial study was followed by a confirmatory factor analysis (CFA). The factor extraction approach was Maximum Likelihood, while the rotation method was Promax. After testing the study's six hypotheses, an analysis was performed, and a final, well-fitting model was created. Any factor loadings that were less than .30 were excluded from the study.

### **3.8 Ethical Consideration**

Prior to the implementation of the questionnaire instrument, the author explained the nature and goal of the research to the respondents and obtained their consent regarding the rights and use of data in which they are being requested to participate. Additionally, citations and references in IEEE format are provided to recognize all sources used in this study. Finally, the respondents' identities and private information were kept secret while maintaining the highest level of confidentiality. The questionnaire's description said that all information would only be utilized for academic reasons.

## **CHAPTER 4**

### **DATA ANALYSIS AND RESULT**

#### **4.0 Introduction**

Through the distribution of an online questionnaire to Somali professional and university students both enrolled students and recent graduates, the study gathered 230 responses. The data was cleaned up as the initial step of the data analysis to get it ready for more analysis. I also distant 5 respondents or participants who were unengaged in the question items. Giving the identical responses to almost all of the questions for example "Very important" served as evidence of this. 225 clean replies were thus made available for extensive analysis.

#### **4.1 Descriptive analysis**

Descriptive statistics have been records evaluation using percentage, frequency, and mean, mode, and median mean style (MCT). Descriptive analysis is based totally on independent and dependent variables that may also be interrelated. The information can be summarized the use of descriptive analysis.

#### **4.2 Demographic Profile of the Respondents**

This section provides detailed information about 225 responses who were obtained from questionnaire I share through Google form. Since questionnaires were successfully collected through online google form. These questions served as background questions, asked to get some information about the respondent's age, gender, educational level, current status and internet access point. I will present and examine the results of these questions. The descriptive and inferential statistical data provided in the next analysis were compiled using SPSS Statistics version 25. The respondents' demographic profile is summarized in Table 4.2 below.

Table 4.1: Demographic Profile of the Respondents

		<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
<b>Gender</b>	Male	123	54.7	54.7
	Female	102	45.3	100.0
	Total	225	100.0	
<b>Age</b>	18-28	159	70.7	70.7
	29-39	53	23.6	94.2
	40-50	9	4.0	98.2
	51 and Above	4	1.8	100.0
	Total	225	100.0	

<b>Education level</b>				
	Bachelor Degree	166	73.8	73.8
	Master Degree	59	26.2	100.0
	Total	225	100.0	

<b>Current status</b>				
	Student	172	76.4	76.4
	Professional	53	23.6	100.0
	Total	225	100.0	

<b>Internet Access Point</b>	University	17	7.6	7.6
	Workplace	57	25.3	32.9
	Home: Laptop/Mobile	151	67.1	100.0
	Total	225	100.0	

Table 4.2 shows the gender distribution of the respondents; five parameters were used to obtain to gather the demographic data important to the research. The first demographic factor that required respondents to identify as either males or females was gender. Out of the 225 responders, 123 men (54.7%) and 102 women (45.3%) were found. As you can see, there is not much difference between male and female. From that, we can see that the female students or female professional who participated in the survey were very eager to take part in this study without hesitation. It is very pleasing to me that such a large number of female participated in



this study. As can be seen, the 2<sup>nd</sup> demographic variable asked the respondents their age. Out of the 255 respondents, 159 respondents (70.7%) were 18-28 years old; 53 respondents (23.6%) were between the ages 29 and 39 years old; 9 respondents (4%) were 40-50 years, it should also be noted that only 4 respondents 1.8% of the respondents were in the age 51 and above. According to united nations figures, more than 75% of Somalia's population is under the age of 30.

This indicates that more than 80% of survey respondents were young people. This indicates that more than 80% of survey participants were under the age of 30, which is very acceptable given that more than 75% of Somalis, according to UN figures, are under the age of 30. The research also determined the respondents' educational background. 59 participants, or 26.2%, and 166 respondents, respectively, have master's degrees. The survey's greatest share of bachelor's degree holders is due to a number of factors. First off all, it is typical for bachelor's degree holders to choose to get experience before continuing higher education. The respondents were also asked which phrase best summarized their current situation. 172 of the 225 respondents, or 76.4%, said they were students, while 53, or 23.6%, said they were professionals. Since I recoded the following factors into a separate variable in order to simplify the analysis, more than a quarter of the survey respondents identified as professionals. I grouped them all under the heading professionals. As a result, my categories for analysis include students and professionals. Thus, any respondent who is not a student falls under the group of professionals. The respondents were questioned about their main internet access point for the last demographic factor. The majority of those surveyed were frequent Internet users. Almost 17 or 7.6 % respondents were used internet from their universities. 57 or 25.3% of the respondents access the Internet from their workplace. 151 participants or 67.1% access from their Home: Laptop/Mobile. Most of the people who participated in the survey were students who use the Internet at home. since most of the students do not have a full time job. They are mostly working at home using their laptops and mobile devices.

### **4.3 Structural Equation Modelling –SEM Path Analysis**

#### **4.3.1 Exploratory Factor Analysis**

To do path analysis, we used structural equation modeling (SEM). First, we performed an exploratory factor analysis (EFA). A pattern matrix with KMO =.774 and Sig. .001 was chosen after several rounds in which factors with low loadings or cross-loadings were eliminated.

All of the commonalities were also above this value. 3; the 5-factor model explained 58.37% of the variance; we had fewer than 3% no redundant residuals; we had all factor loadings above.5, with the exception of PYMN-1, as shown by the convergent validity; I also had no strong cross-loadings in the data, as shown by the discriminant validity and factor correlation matrix shown below.

Table 4.2: Pattern Matrix

	Factors				
	AWRN	TRST	PRPN	PYMN	PRCP
<b>Cronbach's Alpha</b>	<b>.701</b>	<b>.806</b>	<b>.742</b>	<b>.762</b>	<b>.653</b>
AWRN-1	.559				
AWRN-2	.938				
AWRN-4	.951				
AWRN-5	.540				
PRCP-2					.565
PRCP-4					.736
PRCP-5					.774
PYMN-1				.410	
PYMN-2				.875	
PYMN-3				.630	
TRST-1		.645			
TRST-2		.687			
TRST-3		.739			
TRST-4		.753			
PRPN-1			.764		
PRPN-2			.846		
PRPN-3			.856		

### 4.3.2 Reliability Analysis

I also tested the measurement tool's internal consistency using reliability. All 5 of the factors have Cronbach's alpha values larger than.6, as can be seen in the pattern matrix table above. As a result, the analysis's inputs were internally consistent.

### 4.3.3 Discriminant Validity

Table 4.3: Factor Correlation Matrix

Factors	1	2	3	4	5
1	1	-.045	-.011	.075	-.036
2	-.026	1	.150	.396	.365
3	-.020	.201	1	.288	.0389
4	.075	.565	.277	1	.134
5	-.0490	.332	.048	.212	1

There is no value above .7 of all the non-diagonal values, which would suggest sharing a majority of the variance, as shown by the factor correlation matrix table above. In addition, the matrix contains no substantial factor cross-loadings, as shown by the pattern matrix table above.

#### 4.3.4 Model Validity and Reliability Check

Table 4.3: Model validity and reliability check

	CR	AVE	MSV	Max R(H)	AWARN ESS	TRUST	PROPENS ITY	PAYME NT	PERCEP TION
<b>AWARN ESS</b>	0.854	0.565	0.007	0.916	<b>0.780</b>				
<b>TRUST</b>	0.821	0.545	0.334	0.819	-0.033	<b>0.712</b>			
<b>PROPENS ITY</b>	0.830	0.612	0.075	0.830	-0.023	0.177	<b>0.776</b>		
<b>PAYME NT</b>	0.758	0.520	0.334	0.811	0.083	0.477	0.273	<b>0.718</b>	
<b>PERCEP TION</b>	0.735	0.642	0.215	1.189	-0.013	0.239*	0.101	0.142	<b>0.830</b>

I tested the validity of a CFA model, and one latent factor, PRCPTN, exhibited problems with convergent validity. I succeeded in the validity test after eliminating the item with the lowest factor loadings, PRCP5, as shown by the AVE-Average Variance Extracted all above 0.50, and I have reliability as shown by the CR all above 0.70; and because the square root of the AVE - Average Variance Extracted is bigger than any inter-factor correlation on the matrix in the preceding table, I have discriminant validity.

### 4.3.5 Common Method Bias Test

A test was run to determine if bias existed when comparing two models for common method factors. One model did not have any constraints, while the other had full constraints. The results of the Chi-square test revealed a significant difference between the two models, with a p-value less than 0.01 and a 33.9 Chi square difference with 13 df difference. This indicated that there was a significant amount of shared variance, leading to the decision to retain the constrained common method factor model CMf.

### 4.4 Hypothesis Test

Table 4.4 : Hypothesis Test

Hypothesis	Evidence (Betas, p-values, and R <sup>2</sup> )	Conclusion
H-1. PYMN -> AWRNS	$\beta = .170; P = .012; R^2 = .30$	Support
H-2. PYMN -> PRCPN	$\beta = .271; P < .001; R^2 = .31$	Support
H-3. PYMN -> PRPNSTY	$\beta = .322; P < .001; R^2 = .30$	Support
H-4. TRUST -> AWRNS	$\beta = .136; P = .038; R^2 = .25$	Support
H-5. TRUST -> PRCPN	$\beta = .361; P = .025; R^2 = .46$	Support
H-6. TRUST -> PRPNSTY	$\beta = .010; P = .280; R^2 = .16$	Not support
H-7. AWRNS -> PRPNSTY	$\beta = .020; P = .248; R^2 = -.03$	Not support
H-8. PRCPN -> PRPNSTY	$\beta = .093; P = .481; R^2 = .08$	Not support

The first hypothesis (H-1) being discussed in this hypothesis test is that online payment options greatly contribute to the variance in the awareness level of Somali consumers. The results of the analysis show that the correlation between online payment options and awareness level is statistically significant ( $p = 0.012$ ) and has a moderate effect size ( $\beta = .170$ ) and that online payment options explains 30% of the variance in awareness level. Based on these findings, the null hypothesis is rejected and H-1 is accepted.

**H-1:-** Online payment options directly affect the awareness of electronic commerce in Somaliland or Somalia in general.

The second hypothesis (H-2) being discussed is that online payment options affect consumers' perception of online shopping. The results of the analysis indicate that there is a strong relationship between the two variables, as shown by a high correlation coefficient ( $\beta = .271$ ), a low p-value ( $< 0.01$ ) and the proportion of variance in perception of online shopping explained by the online payment options ( $R^2 = .31$ ). Based on these findings, the null hypothesis is rejected, and H-2 is accepted, meaning that online payment options do have a significant effect on consumers' perception of online shopping in Somalia.

**H-2:-** Online payment options determine the perception of e-commerce in Somalia.

On the other hand, the third hypothesis (H-3) being discussed is that online payment options have an impact on the propensity to shop online. The results of the analysis show that there is a strong relationship between the two variables, as shown by a high correlation coefficient ( $\beta = .322$ ), a very low p-value ( $< .001$ ) and the proportion of variance in propensity to shop online explained by the online payment options ( $R^2 = .30$ ). Based on these findings, the null hypothesis is rejected and H-3 is accepted, meaning that online payment options do have a significant impact on the propensity of consumers to shop online

**H-3:-** Online payment options are the reason for Somali consumers' propensity to shop online

The fourth hypothesis (H-4) being discussed in this table is that consumer trust directly affects the awareness of electronic commerce in Somalia. The results of the analysis show that there is a statistically significant relationship between consumer trust and awareness of e-commerce, as shown by a moderate correlation coefficient ( $\beta = .136$ ), a low p-value ( $p = 0.038$ ) and the proportion of variance in awareness level explained by consumer trust ( $R^2 = .25$ ). Based on these findings, the null hypothesis is rejected and H-4 is accepted, meaning that consumer trust does have a direct and significant effect on the awareness of e-commerce in Somalia.

**H-4:-** Consumer trust determines the awareness level of electronic commerce in Somalia.

The fifth hypothesis (H-5) being discussed is that consumer trust determines the perception of e-commerce in Somalia. The results of the analysis indicate that there is a strong relationship between consumer trust and perception of e-commerce, as shown by a high correlation coefficient (beta = .361), a low p-value ( $p = 0.025$ ) and the proportion of variance in perception of e-commerce explained by consumer trust ( $R^2 = .46$ ). Based on these findings, the null hypothesis is rejected and H5 is accepted, meaning that consumer trust does have a direct and significant effect on the perception of e-commerce in Somalia.

**H-5:-** Consumer trust directly affects the perception of e-commerce in Somalia.

The sixth hypothesis (H-6) being discussed in this passage is that there is a relationship between consumer trust and propensity to shop online. The results of the analysis indicate that there is no statistically significant relationship between consumer trust and propensity to shop online, as shown by a very low correlation coefficient (beta = .010), a high p-value ( $p = .280$ ) and the proportion of variance in propensity to shop online explained by consumer trust ( $R^2 = .16$ ). Based on these findings, the null hypothesis is accepted and H6 is rejected, meaning that consumer trust does not have a significant effect on the propensity to shop online.

**H-6:-** Consumer trust precedes Somalian consumers' propensity to shop online.

The seventh and eighth hypotheses (H-7 and H-8) being discussed are testing the impact of awareness and perception of e-commerce on the propensity of consumers to shop online. The results of the analysis indicate that there is no statistically significant relationship between awareness and propensity to shop online, as shown by a very low correlation coefficient (beta = .020), a high p-value ( $p = .248$ ) and a negative proportion of variance in propensity to shop online explained by awareness ( $R^2 = -.03$ ). Similarly, no significant relationship between perception and propensity to shop online, as shown by a low correlation coefficient (beta = .093), a high p-value ( $p = .481$ ) and a low proportion of variance in propensity to shop online explained by perception ( $R^2 = .02$ ). Based on these findings, the null hypotheses are accepted and H-7 and H-8 are rejected, meaning that neither awareness nor perception of e-commerce have a significant effect on the propensity of consumers to shop online.

#### 4.5 Final Model

This final model describes a proposed model that has undergone a series of iterations. The model includes variables that have been adjusted or corrected for common method bias (CMB), which was previously observed in the measurement model. This means that the proposed model accounts for the bias in its variables. Figure 4.1 shows the final model.

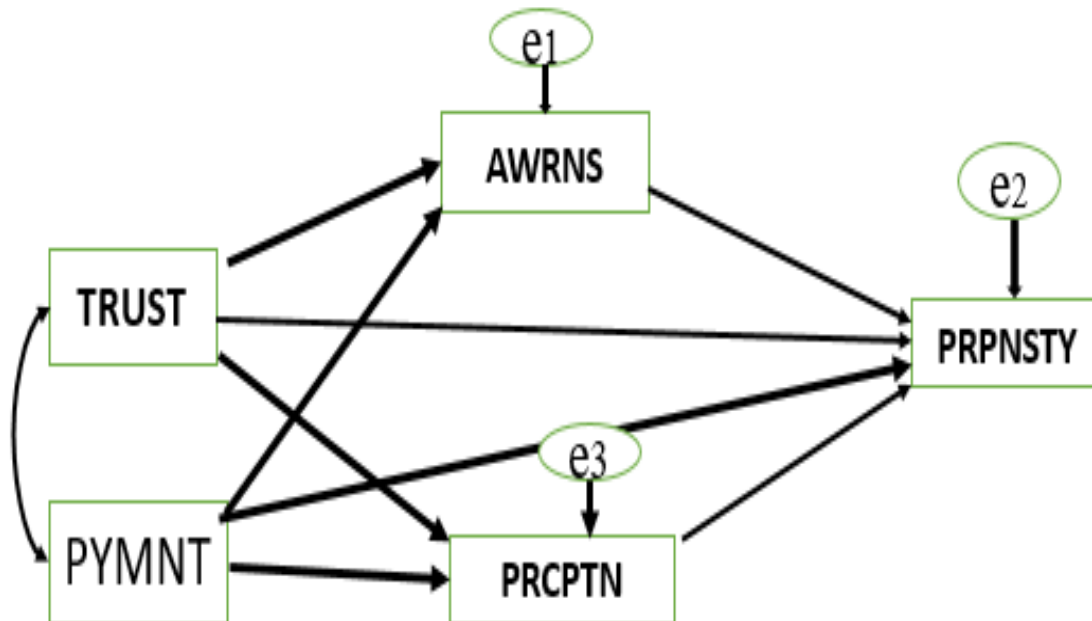


Figure 4.1: Final Model

The model's fit is evaluated using several statistical indices, including CMIN/DF Comparative Fit Index, CFI Comparative Fit Index, PCLOSE Parsimony-Corrected Close Fit Index, RMSEA Root Mean Square Error of Approximation and RMR Root Mean Square Residual. The values reported for these indices are: CMIN/DF = 1.896, CFI = .983, PCLOSE = .999, RMSEA = .033, and RMR = .0352. These values indicate that the model meets the requirements for a good fit, meaning that the model is an adequate representation of the data, and it can be considered for further analysis.



## CHAPTER 5

### DISCUSSION AND CONCLUSION

#### 5.0 Discussion

This study looked at the determinants of electronic commerce in Somalia. The study is focused on investigating the effect of two factors, consumer trust and online payment option, on two other factors, awareness and perception of e-commerce. It then goes on to look at how these factors collectively impact the likelihood of Somali consumers engaging in online shopping. Consumer trust refers to the level of confidence that consumers have in the security and reliability of online transactions. Online payment options refer to the various methods available for consumers to make online payments, such as credit cards, e-wallets, or mobile money. The study aims to understand how these two factors, consumer trust and online payment options, may influence the awareness and perception of electronic commerce among Somali consumers. Awareness refers to the knowledge and understanding of electronic commerce and its benefits, while perception refers to the attitudes and beliefs that consumers have towards ecommerce. The study also aims to examine how the awareness and perception of e-commerce, in combination with consumer trust and online payment options, may affect the likelihood of Somali consumers engaging in online shopping, which is known as the propensity to shop online. A model with 5 latent variables was created and empirically tested with Somalian professionals and universities students. The study project's findings from the preceding analysis chapter will be presented in this section. Significant evidence that the availability of online payment options affects Somalia's impression of e-commerce and its awareness level was a key conclusion of the study. According to the study's hypotheses, customers in developing nations like Africa want more locally relevant online payment solutions. For instance, although mobile payment is a common option in Africa, large worldwide e-retailers like Amazon and ebay do not allow it. This supports Antwi's earlier findings. These research all agreed that African consumers consider mobile payments to automated teller machine ATM cards, resulting in an impact on how much they were aware of the online buying trend. This result supported the study's presumption or hypothesis that Africans preferred mobile payments for internet transactions. The study found that consumers' trust plays a significant role in determining both the awareness and perception of e-commerce in Somalia.

The passage is indicating that the research has found that Somali consumers do not fully trust online retailers, both local and global, such as eBay or Amazon.

The study suggests that this lack of trust is influenced by many factors and not only limited to Somalia. The research also notes that this fear of online risk is more of a psychological risk than a real financial or technological risk. It means that the fear of online shopping among consumers is more based on their perception and attitude towards the technology rather than any real security risks.

On the other hand, the study suggests that Somali consumers still need reassurances that their interactions with e-retailers are safe and protected, meaning that there is a need to improve consumer trust and perception towards electronic commerce. This study is interpreting the findings of previous studies that have investigated the relationship between awareness and perception of internet shopping, and the likelihood of shopping online.

The research suggests that these studies have found a relationship between these factors, but it also notes that there is a contrary finding. This means that some studies have found different results.

The research then goes on to explain this contrary finding by referencing the work of other researchers Akman and Raman and Pramod who have studied the same topic.

These researchers have suggested that the behavior of consumers in the developing world might be different from the behavior of consumers in the developed countries because of cultural, socio-demographic, and religious differences. This explanation suggests that the cultural, socio-demographic, and religious background in developing nations, such as Somalia, may have an impact on the relationship between awareness and perception of internet shopping, and the likelihood of shopping online.

The study suggests that the low level of knowledge about IT in Somalia could be a reason why the findings of this study are different from other studies. It is stating that the low level of knowledge about IT in Somalia may have an impact on the relationship between awareness and perception of internet shopping, and the likelihood of shopping online. The study also notes that this is especially true in a country where there are high rates of illiteracy, but people are still using technology in their daily lives.

This suggests that despite low knowledge of IT, people in Somalia are still engaging with technology and it's evident that they might be using technology differently than the consumers in developed countries. Overall, the research is indicating that the context of the study location,

Somalia, may have played a role in the findings of the study and the results are not directly comparable to other studies. It's important to consider the cultural, socio-demographic, religious differences and the knowledge of IT in the study location when interpreting the results.

## **5.1 Conclusion**

The primary conclusion of this research is that there is a need for more online payment options in Somalia and East Africa as a whole. E retailers targeting Somalian markets may face challenges unless they incorporate locally popular technologies, such as mobile payments, into their e-stores. This is one of the main obstacles to the growth of electronic commerce in Somalia. Additionally, this study also concludes that East African consumers have low trust in e retailers. The study suggests that to increase trust in online retailers among Somali or East African consumers, companies should provide guarantees for the security of their financial transactions. Additionally, e-retailers should educate consumers about the benefits of online shopping as a viable alternative to traditional methods.

The analysis also emphasizes the importance of addressing consumers' concerns about the security of their financial information, rather than simply trying to sell to them. To address this, companies must develop marketing strategies that effectively inform and assure customers that their financial specifics will be kept confidential. The study presents some limitations despite its meaningful findings.

Additionally, the contributors of the study were primarily educated individuals in Somalia including professionals and university students. However, Somalia has a large number of illiterate people who cooperate with local technologies and this group was not included in the study. Therefore, it's important to be cautious when simplifying the findings of this study to the entire population of Somalia.

The study has been conducted on a specific group of people which might not be representative of the whole population of Somalia. Hence, the results of this study may not be applicable to the entire Somali population. The study has some limitations in terms of the scope of its investigation into the bases of online shopping in Somalia. The study primarily concentrated on only two variables consumer trust and online payment options.

However, there are many other variables that are important to consider in the background of smallest developed countries like Somalia. For example, the study should have considered the

factors such as internet regulations, infrastructure and supply of regular electricity which could have increased the chance of simplifying the findings to other parts of East. In poor countries like Somalia, issues such as infrastructure, regular power supply and regulations are crucial for the normalization of e retailers' processes.

Only with the availability of these services, e-commerce business can start booming in the continent. Therefore, future studies should include these variables in their analysis to get a more comprehensive understanding of the determinants of online shopping in Somalia and other similar countries in Africa. The study could have included more variables like economic and geographic locations of the respondents, but due to limited resources and time, these constructs were not included. Additionally, there are extraneous variables that are beyond the researcher's control, such as respondents' honesty and personal biases which could affect the validity of the results. Furthermore, the consumer behavior results were based on self-reported data, which may not always be accurate or reliable as consumers' behavior is not always static and can change over time. It's important to note that self-reported data is subject to biases, memory lapses, and other inaccuracies. Thus, the results of this study need to be interpreted with caution.

Therefore, companies should conduct their own research and analysis to understand the unique characteristics of the target market and tailor their strategies accordingly. It's important for foreign companies to understand the cultural, technological and behavioral differences when trying to enter a new market, especially in a developing country. Moreover, these companies should be ready to adapt to the local market conditions and offer services that align with the local needs and preferences

## 5.2 Future Research

Future research on consumer trust and online payment options in Somalia could take a few different directions to build on the findings of this study:

- Large-scale survey: A larger-scale survey could be conducted to gather data from a more representative sample of the Somali population. This would help to generalize the findings to a wider population and provide more broad picture of consumer behavior in Somalia.
- Longitudinal study: A longitudinal-study could be directed to track changes in consumer trust and online payment options over time. This would help to understand how the market is evolving and the impact of any interventions on consumer behavior.
- Qualitative research: Qualitative research methods such as interviews or focus groups could be used to gather in-depth information about the attitudes and perceptions of Somali consumers towards online payment options and e-commerce.
- Comparative study: A comparative study could be conducted to compare the online shopping behavior and trust in e-commerce in Somalia to other similar countries in Africa. This would provide valuable insights into the similarities and differences in consumer behavior across the continent.
- Examining the impact of interventions: Future research could investigate the effectiveness of interventions aimed at increasing consumer trust in online payment options. This could include examining the impact of consumer education campaigns, the implementation of security measures or the introduction of new payment options.
- Examining the impact of government regulations: Future research could examine the impact of government regulations on consumer trust in online payment options in Somalia. This could include comparing consumer trust in different regions of the country or comparing consumer trust in online payments to traditional payments.
- Inclusion of more variables: Future research should consider adding more variables to the analysis, such as infrastructure, supply of regular and electricity internet regulations, which are important factors for the normalization of e-retailers' operations in poor countries like Somalia

### **5.3 Limitations and Recommendations**

In Somalia, there are several key limitations to consumer trust and adoption of online payment options, including:

**Limited infrastructure and access to technology:** Many areas in Somalia have limited or unreliable internet access, making it difficult for consumers to make online payments.

**Low levels of education and awareness:** A lack of education and knowledge about online payment options can make it difficult for consumers to trust and feel comfortable using these options.

**Security concerns:** High levels of crime, including cybercrime, in Somalia can make consumers hesitant to use online payment options. Additionally, there is a lack of government regulation and oversight of online payments, which can further erode consumer trust. **Limited local payment options:** A lack of local payment options available in Somalia makes it difficult for consumers to make online payments, as they may not have access to international credit or debit cards.

This also makes it difficult for businesses to accept online payments from Somali consumers. To address these limitations and improve consumer trust and adoption of online payment options in Somalia, several recommendations could be considered:

**Improve infrastructure and access to technology:** Investing in infrastructure and technology to increase internet access and connectivity in Somalia would make it easier for consumers to make online payments.

**Increase education and awareness:** Efforts should be made to educate and raise awareness about online payment options among Somali consumers, including the benefits, risks, and how to use them safely.

**Improve security and oversight:** The government should develop regulations and oversight for online payments to increase consumer confidence in the security of their transactions.

**Develop local payment options:** Encourage the development of local payment options, such as mobile money, that are tailored to the Somali market to make it easier for consumers to make online payments. **Promote collaboration between local and international organization:** Collaboration between local and international organizations could help to bring new payment technologies and best practices to Somalia and enhance the adoption of online payments.

Overall, addressing these limitations and implementing these recommendations would help to improve consumer trust and adoption of online payment options in Somalia.

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## APPENDIX: MEASUREMENT SCALES

Construct Dimension	Item Coding	Item Description
Awareness of Online Shopping (AWRN)	AWRN-1	I heard a lot about e-commerce or internet shopping.
	AWRN-2	I think I can explain what e-commerce is.
	AWRN-3	I already bought a product from the Internet.
	AWRN-4	I know some online shops (e.g., Amazon, eBay, or Alibaba) which sell products on the Internet.
	AWRN-5	I know Somali websites that sell products online (Saami online, Hubaal Inc., SOSTEC Inc.).
Perception of Online Shopping (PRCP)	PRCP-1	The prices of products sold online are lower than the same products sold in stores.
	PRCP-2	Online retailers cannot offer good customer services.
	PRCP-3	Products offered online may not have the same quality as products I can get from normal stores.
	PRCP-4	Returning products bought online is not as easy as returning products bought from stores.
	PRCP-5	Shopping online cannot offer the personal connection I can get from normal

		shopping store.
Online Payment Options (PYMN)	PYMN-1	I do not shop from the Internet because of online payment problems.
	PYMN-2	I will shop online if I can pay using my mobile money, e.g. ZAAD and E-Dahab.
	PYMN-3	I will shop online if I can make the payment at a later time when the product is delivered, known as Cash on Delivery (COD) method.
Consumer Trust (TRST)	TRST-1	Trust is a major factor for me when I shop online.
	TRST-2	Lack of effective delivery system in Somalia is a major reason I do not shop online.
	TRST-3	I do not feel safe in giving out my personal details in online environments.
	TRST-4	I cannot trust online retailers because there is no law governing the Internet in Somalia.
Propensity to Shop Online (PRPN)	PRPN-1	I intend to buy goods from the Internet in the near future.
	PRPN-2	I'm excited about shopping from the Internet.
	PRPN-3	I would use the Internet to search for products I want to buy.

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