

**Consumer Trust and Online Payment Options:  
Determinants of E-Commerce in Africa**

by

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## **CERTIFICATION**

I, Mohamed Muse Hassan (Student ID 52116605) hereby declare that the information presented in this thesis project is original and it has not been submitted to any other institution and that all the sources used or quoted in this document have been indicated and acknowledged by complete references.

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MOHAMED Muse Hassan

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## **ABSTRACT**

Selling through the Internet is changing the norms of doing business globally. Today, selling and buying from the Internet is not only an option but the dominant form of shopping. But, this phenomenon is not thriving in the developing countries, mainly in Africa. Therefore, although previous studies focused on the e-retailers' side, this study investigates the effect of consumer trust and online payment options on the awareness and perception of e-commerce in Africa. We developed a five-construct model and empirically tested the model by targeting professionals and college students who reside in Somalia. We employed structural equation modeling (SEM) technique for path analysis to probe answers for the variables under study. The main findings of the study show that there is significant evidence that online payment option impacts both the awareness level and perception of e-commerce in Somalia. Consumer trust was also found to determine both the awareness and perception of online shopping in the country. Moreover, the current global payment options available ignore local technologies popular in Africa. For example, the inclusion of a mobile payment option alone would make a big difference in Africa. The paper also determines that consumer trust toward online retailers is very low and this can be solved if consumers are given assurances for their financial transactions. The paper concludes that increased online payment options are needed in Somalia and, in Africa, in general. Limitations and further research suggestions are also included at the end of this paper.

*Keywords:* e-commerce, consumer trust, online payment, Africa

# CHAPTER ONE

## INTRODUCTION

For many years, traditional brick-and-mortar stores were the main popular places to go for shopping. However, thanks to technological advancements for the last three decades, e-shopping has evolved as a viable option for consumers. Today, Internet shopping is no longer only an option; it is a dominant form of shopping as sales growth from the Internet outpaced sales growth from regular and traditional channels of sales (Levy & Weitz, 2001; Lorek, 2003; Maloy, 2003). Electronic commerce (E-Commerce) gives existing companies an opportunity to reach their regular and potential customers through e-stores designed for online sales in a cost-effective manner while enabling consumers more merchandise options and the availability of products anytime, anywhere. In a 2015 report, Nielsen published a report detailing the state of Internet shoppers around the world. According to the report, more than 875 million people have shopped online in that year, an increase of 40% from the previous two years. E-shoppers from South Korea topped the list of consumers with the highest percentage share of online shopping, a whopping 99%. UK, Germany, Japan, and the USA followed in the list with 97%, 97%, and 94%, respectively. In terms of the items frequently bought online, books were the most popular items (41%). Clothing/Accessories/Shoes (36%), Videos/DVDs/Games (24%), Airline Tickets (24%), and Electronic Equipments (23%) completed the top five most popular purchased items on the Internet.

However, in Africa and the rest of the developing countries, the e-commerce image is not as attractive and striking as the above-summarized statistics for the developed nations. Africa has more work to do in Internet diffusion, and much more in e-shopping. For example, according to Internet World Stats (ITU) (2017), Africa's Internet penetration is as low as 31.2%, the lowest when compared to other regions of the world. For a comparison, Asia is 46.7%, Europe 80%, and North America 88%. In addition, only 10% of Africa's population uses the Internet. These are worrisome figures when you consider that the continent hosts almost 1.3 billion people. But the amazing and hopeful thing is Africa has made 8,503.1% growth of Internet usage for the last 17 years (between 2000 and 2017). Within this period, Asia grew 1,595.5%, Europe, 527.6%, and North America, 196.1%. Therefore, it is clear that Internet acceptance and usage in Africa is getting bigger and will only keep getting bigger.

Aside from the Internet penetration, other pressing problems hindering e-shopping take off in Africa is the critical technology infrastructure. The continent, as compared to other regions of the world, has a poor Internet regulation, road networks, ineffective postal systems, expensive telecommunication, and unreliable power supply. These are the bedrock for the ICT infrastructure necessary for e-commerce implementation.

For example, “Internet and Somalia” are two keywords that are rare to find jointly in the literature. The “Internet” is not part of the major keywords for the literature of Somalia. Piracy, poverty, corruption, female genital mutilation, and Al-Shabaab are few of the many unpleasing keywords that show up when you check almost all the scholarly databases. However, comments and anecdotal evidence suggest that the story of the Internet is surprising and interesting in Somalia. Although the penetration rate is below 10%, the impact of the Internet is national level. Because Somalia is the second most corrupted country in the world, Somali citizens use the Internet as a quick hand to reach their government; therefore, escape from the rampant corruption present in the various governmental institutions. For example, a citizen became a victim of a corruption case when he violated traffic rules. The traffic officials took more cash than the penalty he should have paid (Said, 2017). The same citizen used social media to spread his case and posted photos showing that he paid more than the amount indicated in the invoice (the majority of Somalis use mobile banking, so it is easy to prove the amount paid). The case became viral in Somalia, and within a week, the government responded, arresting an “alleged” police officer for an investigation (Abdirahman, 2017).

In another example, social media has changed the course of the latest presidential elections in Somalia. According to All Africa (2017), 45% of the new Somali parliament members are youth and, unlike the previous parliaments, almost all of them are digital savvies. Before the Election Day, the MPs conducted polls and posted questions on social media asking citizen who they want to vote for on their behalf (Somalia uses a parliamentary system). Considering the results of the polls and comments of the citizens, the MPs used that information as part of their decisions of which candidate to vote for. The candidate who was the most popular in social media, Mohamed Farmajo, became the new president of Somalia. Historically, “clan allegiance” and “financial influence” were two deciding factors when talking about Somali presidential elections.

Therefore, the rise and the impact of the Internet in Somalia is significant and noteworthy. According to ITU (2017), the growth rate of Internet usage in Somalia was 449,900% between 2000 and 2017, meaning Somalia received the second highest Internet usage growth in Africa, only second to the Democratic Republic of Congo. In addition, Somalis are pioneers of mobile banking. The country has one of the most active markets in the world for mobile money usage (Firestone, Kelly, & Rifon, 2017). More than 70% of the population has mobile accounts compared to 15% who use formal bank accounts. In addition, more than 80% of mobile phone owners use mobile money (more than 85% of Somalis aged above 16 years old have subscribed to a phone company). These stats are the major reasons for the increasing number of e-retailers being established in the country, and a strong call for the global e-retailers to establish a presence in Somalia.

The concept of e-shopping is new to Somalia. Although the number of e-retailers is increasing, e-stores have been in operation only for the last 10 years. The most popular ones are [Hubaal Inc.](#), [Sami Online Market](#), and [Somali Online Market](#). There are also other companies that sell products in-store, but allow their consumers to pay online. These include [Hormuud Telecom](#), the largest telecommunication company in Somalia; [BECO](#), a popular electric company; and [Sostec Inc.](#), the first Internet company in Somalia.

But there are still problems that need to be tackled before e-shopping fully takes off in Somalia. There are no rules governing Internet transactions, ineffective postal system, poor infrastructure, and online payment problems. ATM was first introduced in Somalia in 2014 (VOA News, 2014). Somali Diaspora, foreigners, government officials, and only a few professionals and academicians use credit or debit cards; but, more than one-third of the population has mobile bank accounts. Therefore, any e-retailer planning to do online business in Somalia should make mobile payments the dominant payment form and integrate this into the e-store. Therefore, the focus of this research is the level of Somali consumers' awareness and perception of e-shopping, and their propensity to shop online.

The popular theories in the literature that examine the relationship between awareness, perception, and propensity to shop online are Technology Acceptance Model (TAM) (Venkatesh & Davis, 2000), Online Pre-Purchase Intentions Model (Shim, Eastlick, Lotz, & Warrington, 2001), Reasoned Action Theory Fishbein and Ajzen (1980), and Theory of Planned Behavior (Ajzen, 1991). But the theory that will guide this research is the Theory of Planned Behavior by Ajzen (1991). This theory investigates the intention of consumers to use the Internet for shopping purposes. Since we do not have previous research that proves the accurate number of Somali consumers who use the Internet for shopping purposes, we adopt this theory to measure the intention and propensity of these consumers to use the Internet for shopping.

In this research, awareness and perception of e-shopping refers to consumers' psychological state of mind in buying products from the internet (Li & Zhang, 2002). In addition, propensity means the inclination or readiness of consumers to shop from the Internet (Kwarteng & Pilik, 2016).

Since Somalia is one of the least developed countries in the world, this paper takes the country as a case to study e-commerce in the developing world, especially in Africa. Particularly, the paper focuses on the awareness level and perception of e-commerce in Somalia. In addition to this, we will study consumer trust issues and the online payment options available in the country since the use of mobile money is more popular than ATM cards.

Therefore, this study investigates the impact of consumer trust and online payment options on the awareness and perception of e-commerce, and propensity to shop online. We develop a five-construct model and empirically test the model using structural equation modeling (SEM) technique to conduct path analysis.

## **OPERATIONAL DEFINITIONS**

- Awareness and perception of e-shopping refer to consumers' psychological state of mind in buying products from the internet.
- Propensity means the inclination or tendency of consumers to shop from the Internet.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

Selling through the Internet is changing the norms of doing business globally. Today, selling and buying from the Internet is not only an option, but the dominant form of shopping as sales growth through the Internet outpaces the growth of traditional forms of sales (Levy & Weitz, 2001). However, companies in developing countries, mainly in Asia and Africa, have yet to fully join this bandwagon (Akman & Rehan, 2014; Black, 2005; Kwarteng & Pilik, 2016; Nabareseh, 2014). As the majority of the literature agrees on, the growth of online shopping is faster and stronger in developing countries than in the developed countries (Nielsen, 2008) and is becoming a common means of delivering products and information (Kwarteng & Pilik, 2016). The e-shopping trend has reached the third world countries, yet the adoption rate is a mirage.

Electronic commerce, or e-commerce, gives existing mortar-and-brick companies a unique opportunity in which they can reach potential and existing customers through websites or portals specifically designed for online purchases (Limayem, Khalifa & Frini, 2000). From 2011 to 2015 alone, online sales tremendously increased from 45% to 85% (Nielsen, 2015). In addition, setting up and operating online stores are cheaper than brick-and-mortar stores (Mahmood, Bagchi, & Ford, 2004). These are all good reasons for global companies, especially those in the developing world, to join the bandwagon.

One unique feature of selling through the Internet is, unlike traditional methods, the Internet comprises the entire shopping/selling process from information search to actual purchase (Goodwin et al., 1999). This means the Internet gives companies one platform to implement all their marketing efforts. But the behavior of online consumers is different than the behavior of

non-Internet shoppers. Because of this reason, studying the online behavior of consumers has been the dominant topic in e-commerce for the past decade (Chen, 2009).

The purpose of this literature review is to synthesize experts' knowledge of online consumer behavior. To do so, we study the perception, awareness, and propensity to shop online among consumers, mainly in Africa. Therefore, the remainder of this chapter is structured as follows: the first part focuses on the online payment options available and the awareness of online shopping; literature of perception of e-commerce follows in the second part; consumer trust and propensity to shop online is covered in the third and fourth part, respectively; finally, a conceptual framework is developed and literature gap is presented at the end.

## ***2.1 ONLINE PAYMENT OPTIONS***

Because of the dominance of studies conducted in the West in the literature, the majority of the research has overlooked some variables deemed essential in Africa, hence assuming that characteristics of African consumers are similar to those in the West or Asia (Kwarteng & Pilik, 2016). For example, e-payment options are new and still emerging in Africa and in need of extensive research to identify their impact on various stakeholders, including consumers (Kabir, Saidin, & Ahmi, 2015). As a result, the majority of the studies ignored payment problems in Africa as an option when studying online consumer behavior although this affects African consumers' adoption of e-commerce as a viable option. This omission is logical because e-payments are a non-issue in the developed countries since they have well-established and functioning financial systems. However, in Africa, this factor alone is a major factor that denies millions of consumers from joining the e-shopping bandwagon.

In addition, the majority of African consumers are not familiar with credit or debit cards. Gholami, Ogun, Koh, & Lim (2010) found that there is evidence that the lack of effective electronic payments solution in Nigeria affects the awareness level of electronic shopping. In another study by Antwi, Hamza, & Bavoh (2015), Ghanaian consumers prefer mobile money payment option over ATM cards even though this mobile payment option is not supported by the popular global e-retailers. Because of these challenges, African consumers believe that there are not many payment options available for them, so the majority of them overlook the e-shopping phenomenon hence the propensity to shop online in Africa is not stepped up (Kabir, et al., 2015). Therefore, using this rationale, this research developed a model that integrates “online payment options” available as a construct in the framework and tested the impacts.

## ***2.2 AWARENESS OF E-COMMERCE***

As with many other aspects of life, awareness of e-commerce is also different between genders. For example, Slyke and Hightower (2005) examined gender-based differences in the adoption of consumer-oriented e-commerce. The authors specifically studied the impact of beliefs on intentions to use online shopping. They found there is a gender difference in the adoption of e-commerce: men think about the advantage and outcomes that affect their intention to use online shopping, while women prefer visibility and compatibility of the online stores. However, both genders consider ease of use and seller trustworthiness when shopping from the Internet.

In addition to gender differences, other factors were examined to better understand consumer behavior. Keng, Tang, and Ghose (2003) studied Internet users in Singapore to identify their online shopping behavior. The authors classified Internet users into six groups and categorized their responses into one of the following categories: on-off shopper, comparison shopper, dual shopper, traditional shopper, e-laggard, and information surfer. This means some

consumers prefer brick-and-mortar stores over online ones; others compare products before making purchase decisions; others show no difference of which channel to use when shopping. Therefore, the paper recommended marketers to understand the preferences of each group, and then devise prices and promotional offers designed to target the specific groups because each group is significantly different from other groups and has its own traits.

Awareness and adoption of online shopping are also affected by computer knowledge of consumers and awareness of the existence of online portals or e-stores. For example, Saleh (2016) explored the relationship between e-retailers' website, Saudi Arabia consumers' computer knowledge and their demographics, and the impact of these factors on consumers' e-purchases. The study found that there is a significant relationship between consumers' technological expertise and their online purchases. The paper also determined that there is no significant relationship between e-retailers' website design and the number of purchase transactions on the website. In reference to gender, no difference in online shopping is found between males and females. In another study related to computer education, Raman and Pramod (2015) explored whether Indian youth were aware of the privacy issues involved in online shopping. They compared the perception of IT and non-IT students related to online privacy of e-stores. They found that youngsters between the ages 20 to 30 are not aware of the privacy issues involved in online shopping. Again, this awareness was not different between genders. But there was a significant difference of online privacy awareness between IT students and non-IT students.

### ***2.3 PERCEPTION OF E-COMMERCE***

As the studies of attitude continued, it became clear that the specific factors affecting perceptions are needed to be identified. Limayem et al., (2000) studied factors influencing online shopping by using the Theory of Planned Behavior and empirically tested the model. They found that

subjective norms, attitude, and beliefs affect perceived consequences of online shopping; hence, the intention to buy from the Internet. In addition, the study found that behavioral control and intention have a significant impact on actual shopping from the Internet.

Attitude is one of the biggest predictors of consumers' intention to take a certain action, for example, purchasing products from the Internet. In 2011, Delafrooz, Paim, and Khatibi studied factors affecting Malaysian consumers' attitude toward online shopping and their purchase intention. They found that consumers with a positive attitude toward Internet shopping have higher online purchase behavior intentions. In another study related to consumer perception, Xu and Paulins (2005) examined the attitudes and behavioral intentions of college students in shopping online. The study compared students studying in rural campuses with those studying in urban campuses. The paper considered these students' usage of Internet, employment status, and car access. The main finding of the paper was that there was a very significant relationship between attitude and intention of college students in shopping apparel products online, confirming the assumption of the Reasoned Action Theory of Fishbein and Ajzen (1980): attitude can be a good measure of consumer intention.

Globally, the attitude of online shopping is similar among consumers as they share commonalities and differences. Brashear, Kashyap, Musante, and Donthu (2008) conducted a study comparing both online and offline shoppers in six different countries. The study compared Internet users with Internet shoppers and explored consumers' demographics, attitudes, and motivations. Consumers in the six countries value and seek convenience, are more innovative than non-shoppers, are impulsive, earn higher incomes, are heavier Internet users, and show preference of direct marketing and advertisement. However, according to the study, there were still some differences among these consumers: online shoppers in USA, UK, and New Zealand

are more risk averse than non-shoppers in these countries, for example. This result, however, was different in Bulgaria and China. In general, online shoppers are more brand conscious than offline shoppers. For some countries, the price was a concern. Also, Internet shoppers are better educated than non-shoppers. However, there is no significant difference for gender in the six countries examined.

It is not only demographic factors that affect consumers' perception and readiness to shop online, the financial situation of consumers and their locations can be added to the equation. Black (2005) examined the effect of multi-factors (i.e., economic, demographic, and geographic variables) on the propensity of consumers to pay online for items purchased. The study monitored 3,386 transactions that happened on eBay over the course of 2 years and found that familiarity with and use of the Internet increases the likelihood of shopping online. In terms of gender, women are less likely to pay for online items compared to male. The study associates this finding that males are more familiar and heavily use the Internet than females. Also, education level, income, and living urban areas have had a very significant impact on online shopping. The study sheds light on the importance of considering multi-factors when assessing consumers' willingness to make payments for online shopping.

The impact of demographic factors on the perception of online shopping is varied between citizens, academicians, and professionals. Akman and Rehan (2014) investigated the impact of socio-demographic factors on professionals' online purchase behaviors. Specifically, they examined factors such as gender, income, age, education, and daily Internet usage, and their influence on professionals' perception of e-shopping. The major finding was that income, age, and education had a significant impact on professionals in their usage of the Internet for shopping. Gender was not a significant factor. The study is important as it is one of the few

studies conducted in the context of developing countries, Turkey, where the cultural, social and economic context is different than the West, which dominated the literature of online shopping. In addition, the study takes professionals as a construct, where the majority of the studies in the literature focused on only academicians and citizens. Socio-demographic factors are very important in predicting consumers' behaviors.

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 example, Richard, Chebat, Yang, and Putrevu (2010) examined the impact of Internet experience and web atmospheric on online browsing, and whether this impact varies by gender. The authors specifically explored whether Internet experience and web atmospheric can influence consumers' website attitude, and led to pre-purchase evaluations. The study concluded that website involvement, entertainment, and challenge affect website attitudes, while challenge and website involvement drive pre-purchase evaluation. Entertainment and content increase website involvement. Therefore, the most successful websites were the entertaining, challenging, and up-to-date ones. In terms of gender, both males and females are different in web navigation behavior. Men are straightforward and prefer websites that are well-structured and easy to access; women like to engage in exploratory behavior and like to interact with website content.

Also, the design of e-websites and the services available on these websites can also greatly influence consumers in adopting online shopping. In 2011, Martin and Jiménez explored the impact of three features of e-websites, i.e., service quality, warranty, and security and privacy concerns on consumer satisfaction and trust of online shopping. The paper used the signaling theory based on the three features to identify their effect on satisfaction; hence, the trust of online stores. Therefore,

**H1:** Online payment options directly affect the awareness of e-commerce in Somalia.

**H2:** Online payment options determine the perception of e-commerce in Somalia.

**H3:** Online payment options are the reason for Somali consumers' propensity to shop online.

## ***2.4 CONSUMER TRUST***

Trust is a major factor hindering the takeoff of online shopping in the majority of developing countries, including Africa (Naberesah, 2014). But many authors agree Internet security risk is now more a psychological risk than real financial or technological risks (Weber & Roehl, 1999); consumers only need to be reassured that they are protected (Aldridge, Forcht, & Pierson, 1997). Therefore, this is today's main challenge of retailers.

Yet, in many developing countries, consumers are still not confident of the reliability and delivery capacity of e-retailers in these countries. Hong, Farha, Zulkiffli, and Hamsani (2016) studied the impact of perceived risks toward Malaysian customers' attitude in online shopping. They found that product risk, financial risk, and non-delivery risk have a significant impact on consumers' attitude toward online shopping, while psychological risk is insignificant for Malaysian consumers. These findings cannot be generalized to all developing nations as the paper has used a limited sample size of only 200 customers. But in another study probing other related factors, including trust, Moshrefjavadi, Dolatabadi, Nourbakhsh, Poursaeedi, and Asadollahi (2012) examined a list of factors affecting consumers' online purchasing behavior, including perceived risks, infrastructural constructs, and return policy. The main findings of the study were that consumers' attitude is negatively affected by fear of giving financial details and financial loss. The delivery problem was also another factor that may negatively affect consumers' attitude. Another interesting finding of the study is that product and convenience risks do not significantly affect consumers' attitude toward online shopping.

The frequency of Internet shopping is a good indicator of consumers' trust in the Internet as an alternative shopping channel. In 2005, Doolin, Dillon, Thompson, and Corner developed a model to test the importance of consumers' perceived risk and online shopping in consumer behavior. The study found the amount and frequency of online purchases made were the results of perceived risk and perceived benefits of Internet shopping among consumers. But frequent shopping from the Internet is preceded by a positive attitude toward e-shopping, in general. For example, Wu (2003) critically examined the concerns and perceptions of Internet users toward online shopping. He found that consumers with high attitude scores are more likely to do online shopping more frequently compared to consumers with low scores.

## ***2.5 PROPENSITY TO SHOP ONLINE***

Ideally, e-buyers (both males and females) have to decide when and what they buy from the Internet. But that is not the case in every culture, especially countries with high masculinity. For example, in a study conducted in Pakistan, Rigas and Riaz (2015) examined the influence of external factors, like culture, on females' decisions to shop online. The paper found that Pakistani females make an online purchase under the influence of a highly organized and masculinity environment. Males do not only influence their e-retailing decisions; they even sometimes make purchases for the females. The study found that the external factors influencing female decisions were society, family, spouse, and colleagues. In such markets, the paper recommended, marketers should not only appeal to their "direct" target markets, but also to those who "influence" their purchase decisions.

Although e-shopping is keeping pace with technological advancement, still in-stores are the place-to-go for shopping for the majority of consumers in the developing world. Kwarteng and Pilik (2016) explored the positive and/or negative impact of demographic factors, gender,

age, and education, on the inclination of customers in developing countries to shop online. The main conclusion of the study was that customers' preference of online stores was low compared to mortar-and-brick stores. This study is very important as it is one of the few studies conducted in the context of Africa. Also, some of the findings of the study are not consistent with the literature; for example, age and gender have no significant relationship in terms of online shopping in Africa. Therefore, this raises a question of whether the characteristics of consumers in Africa are different from their counterparts in the West and Asia. In another study by Saleh (2015), the preference of in-stores over e-stores is widespread. They studied Saudi Arabian consumers' propensity for online shopping in association with some demographic variables. The paper found that 66% of Saudi consumers prefer in-store purchases over online stores. According to the paper, the reason is that online stores give consumers the guarantee to preview products before buying, something that online shoppers cannot receive from e-retailers.

To have a better understanding of consumers' readiness to shop from the Internet rather than in-stores, Internet users can be classified into different types. In 2007, Soopramanien and Robertson studied how demographics, attitude, and beliefs affect how consumers adopt and use the Internet for shopping. The study found that consumers can be classified into three categories: those who shop online, those who browse online stores but shop in-store, and those who never shop online. One of the main arguments of the paper is that there are clear behavioral differences between those consumers who use the Internet shopping and those who never use it. The main limitation of the paper is that the authors didn't study those consumers who browse in-store and then shop online.

There is a long way to go for ensuring "wider" adoption of e-shopping in Africa. For example, Nabareseh (2014) explored six cogent factors facilitating and/or inhibiting consumer

readiness and inclination to shop from the Internet in Ghana and Nigeria. The six factors are the level of trust, the existence of transaction laws governing online transactions, use of social media among the youth, availability of power supply, growing demand for online stores, and Internet accessibility. The paper concludes that the opportunities availed by the readiness of consumers to shop online give local businesses in Ghana and Nigeria opportunities to exploit which is potentially within their reach. But the paper also warns the need of the governments' roles in areas like setting online transactions legislation and the critical infrastructure required like regular power supply, effective postal system, efficient telecommunication, and transportation networks. The paper concludes that the African youth using social media will keep increasing, hence increase their likelihood of buying from the Internet. This study is very interesting as it compares the experiences of consumers in two different countries. In addition, the paper uses new constructs in the exploration; for example, social media use by youth and power supply availability.

Data of consumers' interaction and use of the Internet can be gauged to predict consumers' preference for using the Internet as a shopping channel option. As far as 2001, Shim, Eastlick, Lotz, and Warrington explored, for example, the role of product information search in predicting the intention to buy from the Internet. The main finding of the paper was that information search is the key predictor of intention to purchase, and a mediation of purchase intention and other antecedent variables. The paper also found that, in search of goods, the intention to use the Internet for product information search leads to purchase intention from the same channel, the Internet. One of the paper's main arguments is that if consumers abandon their online purchases after they initiated "product search", it is because of an unfavorable reaction to the specific website rather than a lack of interest for e-shopping as a mode of shopping.

Therefore,

**H4:** Consumer trust determines the awareness level of e-commerce in Somalia.

**H5:** Consumer trust directly affects the perception of e-commerce in Somalia.

**H6:** Consumer trust precedes Somali consumers' propensity to shop online.

## ***2.6 THEORETICAL AND CONCEPTUAL FRAMEWORK***

To better answer the specific questions raised in this research, we developed and empirically tested a model (Figure 1) that suits best to the study. Some of the theoretical aspects of the framework are derived from the literature. For example, the relationship between the variables “trust in online businesses”, “perception of online shopping” and “propensity to shop online” is derived from the studies of Hong, Farha, Zulkiffli, and Hamsani, 2016; Moshrefjavadi, et al., 2012; and Doolin et al., 2005. However, there is an inclusion of a new variable in the model, “payment solutions available”, which is important in the context of developing countries, mainly in Africa.

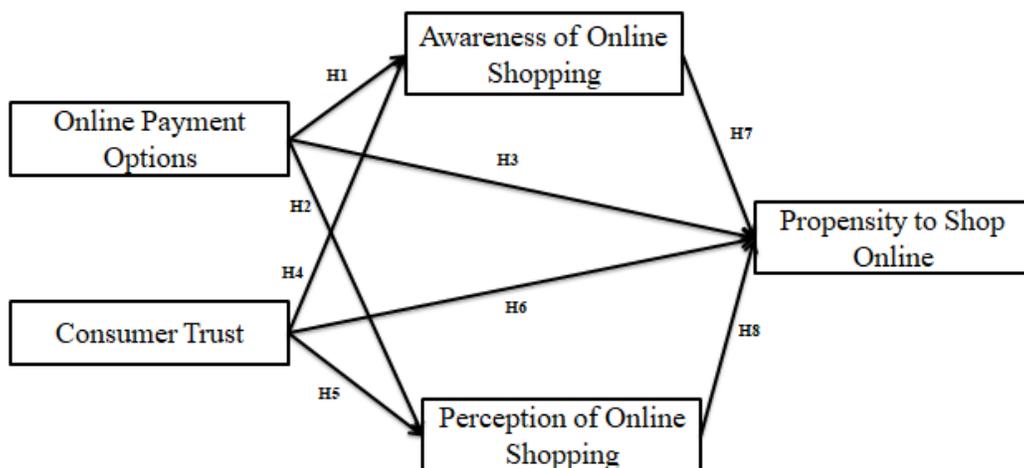


Figure 1 Research Framework

The above model is a diagram showing the model and the relationship between the variables under study. The first two variables, online payment options and consumer trust, affect both the level of awareness and perception of online shopping. These latter variables will then have an impact on the propensity to shop online among consumers.

## ***2.7 RESEARCH QUESTIONS***

The following four research questions are derived from the above model:

1. What is the impact of the online payment options available on the awareness and perception of e-commerce in Somalia?
2. What is the impact of consumer trust on the awareness and perception of e-commerce in Somalia?
3. What is the effect of both the awareness and perception of online shopping on the propensity to shop online in Somalia?
4. Do online payment options available and consumer trust determine the propensity to shop online in Somalia?

## **CHAPTER THREE**

### **METHODOLOGY**

#### ***3.1 RESEARCH DESIGN***

In this study, the researcher adopted a survey design, which is a common design method in business research. The main rationale behind this is that research is seeking to answer questions with ‘what’ and ‘how’. The research also needs to look for the opinion of a population about a specific subject matter and it uses quantitative techniques.

#### ***3.2 RESEARCH POPULATION***

The target populations of this study are professionals and college students in Somalia. The study specifically focuses on literate users from different walks of life, such as students and company employees. This is because the questionnaire is in English and since the researcher could not find standard translation for the terminology set out in the literature of the study, the researcher is going to avoid errors or bias in the findings which may result from the misunderstanding of the questionnaire by the respondents.

##### **3.2.1 Sample Size**

The study’s sample size is drawn from the students of the universities in Somalia, as well as professionals residing in Mogadishu, Somalia. Roscoe (1975) recommended that sample sizes larger than 30 and less than 500 are appropriate for most studies. Furthermore, majority of e-commerce studies take a sample size of less than 300 (Moshref et al., 2012; Wu, 2003; Limayem et al., 2000; & Saleh, 2016). Therefore, this study collected 744 responses (252 students and 492 from professionals). The research project used this larger sample size in order to be able to generalize the findings to Africa, in general, and to Somalia, in particular.

##### **3.2.2 Sampling Procedure**

Non-probability sampling technique was adopted for the study. Specifically, the project used purposive sampling approach since the main participants of the study were the literate population. This meant any respondent who fit the criteria of being a Somali professional or students and being familiar with the Internet will purposively included in the study. This approach enabled the researcher to select cases that will best answer the research questions.

### ***3.3 RESEARCH INSTRUMENT***

Questionnaire was the main tool adopted for the data collections. The research questions and objectives and previous studies about awareness, perception, and perception to shop online provided a base for the questionnaire development in this study. Some parts of the questionnaire are adopted from different sources. For example, the questions that measure the items of the awareness of e-commerce are adopted from Zain (2004); perception of e-shopping from Xu and Paulins (2005); question items for the trust level of e-retailers are adopted from Kelvin (n.d.); and propensity to shop online from Tapson (2009). See Appendix 1 for the detailed information of the question items used in the questionnaire and their sources.

The research distributed close-end questions to collect the main data necessary for the variables under study. Likert-scale type questions were used since the question items were probing specific questions rather than the respondents' opinions, views, and feelings. Such information is best collected through a questionnaire (Saunders, Lewis & Thornhill, 2009).

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

Validity means whether the research method adopted measures what the method was intended to measure and the whether the findings from this method are what the research expected them to be (Saunders et al., 2009). Normally, each question is checked separately rather than combining all the questions. But, to help increase the reliability of the question items used in this research,

the study will employ Cronbach's Alpha to test the reliability of the instrument, as a whole, and each item in the questionnaire, as well.

Reliability refers to whether the same results would be obtained if the research is carried out again and again in different context. Piloting would be helpful in this case to increase the reliability of the scale items used. Before distributing the questionnaire, the author did a pilot-testing with 20 participants who are familiar with the topic under study. The question items will be modified, or even rewritten, based on the feedback and comments from the pilot test.

### ***3.4 DATA ANALYSIS***

The data was analyzed through Statistical Package for Social Sciences (SPSS) version 18 and AMOS version 23. Descriptive statistics were first conducted in the demographics for interpreting data collected through the questionnaire. After the initial demographic tests, exploratory factor analysis (EFA) was conducted. After a series of iterations and removals of the factors with the low loadings or cross-loadings, the final pattern matrix was taken to Amos 23 for further analysis.

Confirmatory Factor Analysis (CFA) followed the initial analysis. Maximum Likelihood was used as the factor extraction method and Promax as the rotation method. Then, the six hypotheses in the study were tested and a final, good fit, model was generated after the analysis. Any factor loadings below .30 were removed from the analysis.

### ***3.5 ETHICAL CONSIDERATION***

The author informed the respondents and got their consent about the nature and the purpose of the research, the rights, and use of data they are being asked to participate prior to the administration of the questionnaire instrument. All sources used in this research are also

acknowledged through citations and references in APA format. Finally, the identity of the respondents was kept on anonymous as well as their private information was kept in a highly confidential manner. All data collected was used only for the academic purposes mentioned in the questionnaire's description.

### ***3.6 SCOPE OF THE STUDY***

This study explored and examined the awareness level and perception of e-commerce, and propensity to shop online among professionals and college students in Somalia. The study was conducted between August 2017 and May 2018. The project targeted 200 students (graduates or current students) and almost 500 professionals residing in Somalia.

## CHAPTER FOUR

### FINDINGS AND ANALYSIS

The study collected 760 responses through an online questionnaire distributed to the Somali professionals and college students (both current students and new graduates) who reside in Somalia. As the first step of the data analysis, the data was cleaned up to prepare it for further analysis. Thirteen responses were removed as more than 20% of their answers were missing. We also removed 3 respondents who were unengaged in the question items. This was demonstrated by giving the same responses, i.e., “agree” to almost all the statements. Therefore, 744 clean responses became available for further analysis.

#### 4.1 DEMOGRAPHIC PROFILE OF THE RESPONDENTS

SPSS Statistics version 18 was used to summarize the descriptive and inferential statistical data shown in the following analysis. Table 1 below summarizes the demographic profile of the respondents.

**Table 1: Demographic Profile of the Respondents**

Variable		Frequency	Percentage
<b>Gender</b>			
	Male	566	76.1
	Female	178	23.9
Total		744	100.0
<b>Age</b>			
	Below 20	58	7.8
	20 - 30	601	80.8
	31 - 40	73	9.8
	41 - 50	9	1.2
	51 and Above	3	.4
Total		744	100.0
<b>Education Level Finished</b>			
	High School	65	8.7
	Bachelor Degree	479	64.4
	Master Degree	189	25.4
	PhD	11	1.5
Total		744	100.0
<b>Current Status</b>			
	Student	252	33.9

	Professional	492	66.1
Total		744	100.0
<b>Internet Usage</b>			
	Sometimes	154	20.7
	Frequently	273	36.7
	All the time	317	42.6
Total		744	100.0
<b>Primary Internet Access Point</b>			
	Cybercafé	2	.3
	University	36	4.8
	Workplace	135	18.1
	Home: Mobile	443	59.5
	Home: Laptop	128	17.2
Total		744	100.0

As shown in Table 1 above, seven factors were used to collect the demographic information relevant to the study. Gender was the first demographic variable in which the respondents were asked to classify themselves as either males or females. Out of the 744 respondents, 566, or 76.1%, were males compared to 178 females, or 23.9%. This indicates a male domination of the study, but it is understandable since the survey was targeting the literate Somali population, and there are cultural issues in the country that allow the males to outnumber females in the schools.

The second demographic variable asked the respondents their age. Out of the 744 respondents, 58 (7.8%) were less than 20 years old; 601 (80.8%) were between the ages 20 and 30 years old; 73 (9.8%) were older than 30 years, but less than 41; nine (1.2%) were between the ages 41 and 50; and only three (0.4%) were older than 51 years old. As the data indicates, a huge number of the participants fall in the 20 and 30 ages range. This means more than 80% of the survey respondents were youth, and it is quite understandable because, according to UN reports, more than 75% of the Somali population is less than 30 years old.

The study also identified the educational background of the respondents. Sixty-five respondents, or 8.7%, finished high school; 479, or 64.4%, have Bachelor degree; 189 respondents, or 25.4%, have finished their second degrees; and 11, or 1.5%, of the survey

respondents had completed their doctorate education. There are several reasons why the bachelor degree holders have the highest share in the survey. First, it is normal that bachelor graduates prefer to acquire experiences before pursuing the second degrees. As explained in the following paragraph, a large number of professionals participated in the survey, and most of them have bachelor degrees.

We also asked the respondents what best described their current position. Out of the 744, 252 respondents (or 33.9%) identified themselves as students; 492 respondents, or 66.1%, were professionals. More than half of the survey participants were professionals because to make the analysis simple, we recoded the following variables into a different variable: employees, self-employed, and unemployed. We put them together into one category: professionals. Therefore, we have students and professionals categories for analysis. Therefore, any respondent who is not a student is in the “professionals” category.

The last two demographic variables asked the respondents about their frequency usage of the Internet and their primary access point. Of all the 744 respondents, 154 or 20.7% use the Internet “sometimes”; 273, or 36.7%, use “frequently”; and 317, or 42.6%, use “all the time”. This indicates the majority of the respondents were active users of the Internet. Also, as shown in the above table, almost 80% of the respondents access the Internet from home: 59.5% access from their mobile phones; and 17.2% from their laptops.

## ***4.2 STRUCTURAL EQUATION MODELING (SEM): PATH ANALYSIS***

### ***4.2.1 Exploratory Factor Analysis***

We used structural equation modeling (SEM) to conduct path analysis. As an initial step, we conducted an exploratory factor analysis (EFA). After a series of iterations and removal of factors with low loadings or cross-loadings, we settled with a pattern matrix with  $KMO = .767$ ;

Sig. < .001; all of the commonalities were above .3; the five-factor model explained 56.24% of the variance; we had less than 2% nonredundant residuals; as evidenced by the convergent validity, we had all the factor loadings above .5 except PYMN1; as discriminant validity and factor correlation matrix (shown below), and the data had no strong cross-loadings.

**Table 2: Pattern Matrix<sup>a</sup>**

	Factor				
	AWRN	TRST	PRPN	PYMN	PRCP
<b>Cronbach's Alpha</b>	<b>.793</b>	<b>.806</b>	<b>.831</b>	<b>.735</b>	<b>.724</b>
AWRN1	.559				
AWRN2	.938				
AWRN4	.951				
AWRN5	.540				
PRCP2					.565
PRCP4					.736
PRCP5					.774
PYMN1				.403	
PYMN2				.985	
PYMN3				.648	
TRST1		.577			
TRST2		.687			
TRST3		.729			
TRST4		.853			
PRPN1			.745		
PRPN2			.846		
PRPN3			.770		

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

#### **4.2.2 Reliability Analysis**

We also conducted a reliability test for the internal consistency of the measurement tool. As shown in the pattern matrix table above, all the five factors have shown Cronbach's alpha greater than .7. Therefore, the items used for the analysis were internally consistent.

### 4.2.3 Discriminant Validity

**Table 3: Factor Correlation Matrix**

Factor	1	2	3	4	5
1	1.000	-.035	-.014	.075	-.038
2	-.035	1.000	.189	.484	.332
3	-.014	.189	1.000	.277	.048
4	.075	.484	.277	1.000	.252
5	-.038	.332	.048	.252	1.000

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

As evidenced by the above factor correlation matrix table, there is no value above .7 of all the non-diagonal values which would indicate sharing a majority of the variance. In addition to that, as evidenced by the pattern matrix table above, the matrix has no strong factor cross-loadings.

### 4.2.4 Model Validity and Reliability Check

**Table 4: Model validity and reliability check**

	CR	AVE	MSV	MaxR(H)	AWRNS	TRUST	PRPNSTY	PYMNT	PRCPTN
<b>AWRNS</b>	0.846	0.596	0.007	0.946	<b>0.772</b>				
<b>TRUST</b>	0.808	0.514	0.227	0.815	-0.023	<b>0.717</b>			
<b>PRPNSTY</b>	0.831	0.621	0.075	0.834	-0.033	0.177***	<b>0.788</b>		
<b>PYMNT</b>	0.759	0.523	0.227	0.810	0.083†	0.477***	0.273***	<b>0.723</b>	
<b>PRCPTN</b>	0.748	0.650	0.135	1.179	-0.014	0.239*	0.101†	0.153*	<b>0.807</b>

We conducted a CFA model validity test and we had convergent validity issues with one latent factor, PRCPTN. After removing the item with the lowest factor loadings, PRCP5, we succeeded in the validity test as evidenced by the AVE all above .50; we have reliability as evidenced by CR all above .70; and we have discriminant validity based on the square root of the AVE being greater than any inter-factor correlation on the above table matrix.

#### 4.2.5 Common Method Bias Test

A common method bias test was conducted to compare the unconstrained common method factor model to the fully constrained, zero constrained common method factor model. In the Chi-square test, it came out to be significant ( $p < 0.01$ ) with a 34.9 Chi-square difference and 14 df difference. Therefore, we had significant shared variance which led us to retain the CMF.

#### 4.3 HYPOTHESIS TEST

**Table 5: Hypothesis Test**

<i>Hypothesis</i>	<i>Evidence (Betas, p-values, and R<sup>2</sup>)</i>	<i>Conclusion</i>
H1. PYMN -> AWRNS	$\beta = .171; P = .011; R^2 = .31$	Supported
H2. PYMN -> PRCPN	$\beta = .272; P < .001; R^2 = .32$	Supported
H3. PYMN -> PRPNSTY	$\beta = .332; P < .001; R^2 = .30$	Supported
H4. TRUST -> AWRNS	$\beta = .138; P = .039; R^2 = .25$	Supported
H5. TRUST -> PRCPN	$\beta = .360; P = .024; R^2 = .46$	Supported
H6. TRUST -> PRPNSTY	$\beta = .010; P = .281; R^2 = .16$	Not supported
H7. AWRNS -> PRPNSTY	$\beta = .022; P = .250; R^2 = -.03$	Not supported
H8. PRCPN -> PRPNSTY	$\beta = .094; P = .481; R^2 = .09$	Not supported

In the first hypothesis, H1, we found  $\beta = .171$ ,  $p = 0.011$ , and  $R^2 = .31$ . This indicates that online payment options greatly amount to the variance, 31%, in the awareness level of Somali consumer. Therefore, we reject the null hypothesis and accept H1:

**H1:** *Online payment options directly affect the awareness of e-commerce in Somalia.*

In H2, we tested whether online payment options affect consumers' perception of online shopping. The result indicated  $\beta = .272$ ,  $p < 0.01$ , and  $R^2 = .32$ . Therefore, there is a strong evidence of a relationship between the two variables. As such, we reject the null hypothesis and accept H2:

*H2: Online payment options determine the perception of e-commerce in Somalia.*

We also tested H3 to identify the impact of online payment options on the propensity to shop online. The analysis found  $\beta = .332$ ;  $P < .001$ ;  $R^2 = .30$ , which indicate a significant relationship between the two variables. As such, we reject the null hypothesis and accept H3:

*H3: Online payment options are the reason for Somali consumers' propensity to shop online.*

We hypothesized in H4 that consumer trust directly affects the awareness of e-commerce in Somalia. Therefore, as shown in the above table, we accept H1 and reject the null hypothesis ( $\beta = .138$ ,  $p = 0.039$ , and  $R^2 = .25$ ). In other words, consumer trust greatly amounts to the variance in the awareness level of e-commerce in Somalia. Therefore, we accept H4:

*H4: Consumer trust determines the awareness level of e-commerce in Somalia.*

The fifth hypothesis, H5, stated that consumer trust determines the perception of e-commerce in Somalia. The analysis result show  $\beta = .360$ ,  $p = 0.024$ , and  $R^2 = .46$ . Therefore, since p-value is less than .05, there is a strong evidence of a relationship between consumer trust and perception of e-commerce. As such, we reject the null hypothesis and accept H5:

*H5: Consumer trust directly affects the perception of e-commerce in Somalia.*

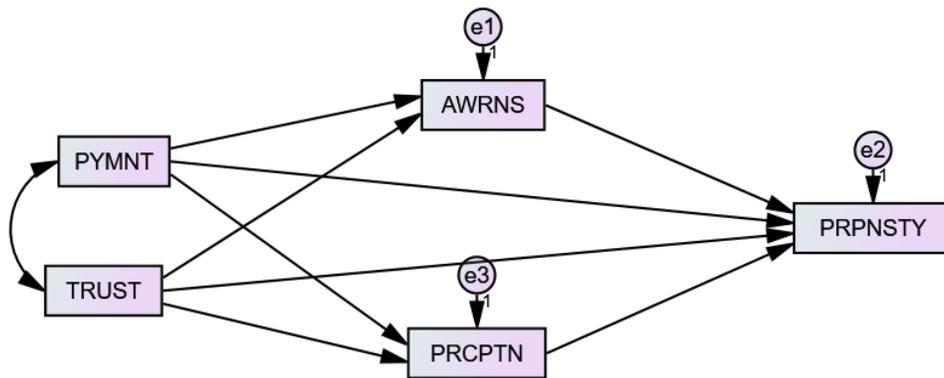
H6 tested the relationship between consumer trust and propensity to shop online. The analysis showed  $\beta = .010$ ;  $P = .281$ ;  $R^2 = .16$ . The relationship is not significant and  $R^2$  is not that strong to explain the variance. Therefore, we accept the null hypothesis and reject H6:

**H6:** Consumer trust precedes Somali consumers' propensity to shop online.

Finally, in H7 and H8, we test the impact of awareness and perception of e-commerce on the propensity of consumers to shop online. The analysis showed  $\beta = .022$ ;  $P = .250$ ;  $R^2 = -.03$  for awareness and propensity, and  $\beta = .094$ ;  $P = .481$ ;  $R^2 = .09$  for perception and propensity. Both variables indicated that they do not have a significant relationship with the propensity to shop online. Therefore, we accept the null hypothesis and reject H7 and H8.

#### 4.4 FINAL MODEL

After a series of iterations, we propose the following model. The model contains CMB adjusted or corrected variables, therefore, the common method bias we observed in the measurement model is being accounted for in these variables.



**Figure 2: Final Model**

We tested the fitness of the final model and it has  $CMIN/DF = 1.896$ ,  $CFI = .983$ ,  $PCLOSE = .999$ ,  $RMSEA = .033$ , and  $RMR = .0352$ . Therefore, this means the model meets the requirements for a fit model.

## CHAPTER FIVE

### DISCUSSION AND CONCLUSION

#### *5.1 DISCUSSION*

This research examined the determinants of e-commerce in Somalia. Specifically, the study focused on the effect of consumer trust and online payment options on the awareness and perception of e-commerce, and how these factors affect the propensity to shop online among Somali consumers. A model with five latent variables was developed and tested empirically with professionals and graduate students who reside in Somalia. This part of the research project will present the findings of the previous analysis chapter.

A major finding of the study was the significant evidence that online payment option impacts both the awareness level and perception of e-commerce in Somalia. As hypothesized in the study, consumers in the developing countries like Africa prefer more online payment options catered for their local context. For example, mobile payment is an option vastly available in Africa, but not supported by the major international e-retailers, like Amazon and eBay. This confirms the previous findings of Antwi et al. (2015), Gholami et al. (2010), and Kabir et al. (2015). These studies agreed that African consumers preferred mobile payments over ATM cards; hence, this affected their awareness level of the Internet shopping bandwagon. This finding confirmed the assumption or hypothesis of the study that Africans preferred mobile payment for online transactions.

As indicated by the hypothesis test result, the study also found that consumers' trust determined both the awareness and perception of e-commerce in Somalia. This means Somali consumers still do not fully trust online retailers, both local e-retailers and global ones like eBay or Amazon. But this lack of consumer trust toward e-commerce sites is prevalent in Africa

(Naberesah, 2014) and depends on many other factors (Black, 2005). Although this fear of online risk is more of a psychological risk than a real financial or technological risk (Weber, 1996), African consumers still need reassurances that their interaction with e-retailers is safe and protected (Aldridge et al., 1997).

However, the most surprising finding of the study is that there is no evidence of an impact of both awareness and perception of e-commerce on the propensity to shop online in Somalia. This finding is contrary to the findings of existing research (e.g., Black, 2005; Brashear, Kashyap, Musante, & Donthu, 2008; Richard, Chebat, Yang, & Putrevu, 2010; Saleh, 2016). These studies found relationships between awareness and perception of the Internet shopping, and propensity to shop online. However, this contrary finding can be explained by the findings of Akman and Rehan (2014), Kwarteng and Pilik (2016), and Raman and Pramod (2015). Akman and Rehan found 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. They also used “professionals” as a construct in their study, which was another similar variable studied in this research. On the other hand, Raman and Pramod (2015) indicated that consumers’ awareness of online shopping issues is affected by their knowledge related to information technology. This can be another reason why the findings of this study are contrary to many other studies as the knowledge of IT in Somalia is very low. This is especially true when a country has high illiteracy rates, yet the local people are using technology for their daily life interactions.

## ***5.2 CONCLUSION***

The main conclusion of this study is that increased online payment options are needed in Somalia and, in Africa, in general. Any online retailer targeting African markets might face

difficult times unless it integrates technologies that are popular locally into their e-stores, like mobile payments. According to the literature of Antwi et al. (2015) and Gholami et al. (2010), this is one of the major factors hindering the takeoff of e-commerce in Africa. This paper also concludes that African consumers' trust toward online retailers is very low. This can be solved if consumers are given assurances for their financial transactions. Again, e-retailers need to educate African consumers that online shopping is just another alternative to the traditional way of shopping. From this part of the analysis, it became very clear that it is not just trying to sell to consumers who do not understand their financial details will be fully taken care of the company they are giving it. Therefore, it is imperative for companies to devise marketing campaigns that just solve this problem of informing and assuring consumers that their financial details will be kept confidential.

Despite the meaningful findings added to the existing wisdom, the study has some limitations. First, the participants' responses were self-reported, which makes it difficult for the generalization of the results because consumers' state of mind is not static and can change anytime. Also, the participants of the study included the educated population of Somalia, professionals, and students. Since the country has a large number of uneducated people who interact with the local technologies, the generalizations of the findings of this study need careful attention. Also, the study considered very limited constructs to investigate the determinants of online shopping in Somalia. Instead of relying on only two variables which are consumer trust and online payment options, we suggest adding more variables necessary in the context of the least developed countries, like Somalia. For example, considering the infrastructure, Internet regulations, and supply of regular electricity would increase the probability of generalizing the findings to the consumers in other parts of Africa. We suggest these new variables for future

studies because, in poor countries like Somalia and many other countries in Africa, these issues of a regular power supply, infrastructure, and regulations are vital for the normalizations of e-retailers' operations. It is after the availability of these services that e-commerce business can start booming in the continent.

More variables, like economic and geographic locations of the respondents, could have been added, but limited resources and time did not allow the inclusion of these constructs in the study. In addition, extraneous variables are beyond the researcher's control such as respondents' honesty and personal biases. Finally, the consumer behavior results were based on self-reported data although consumer behavior is not always static and is a trait that evolves with time.

Foreign companies, especially those which are not as popular as Amazon or eBay, who are planning to enter markets in the developing world should carefully examine the online behavior of local consumers. It is better if they do not assume that the consumers in developing countries have the same purchasing behavior as those consumers in the developed world. As demonstrated by this study, for example, African consumers are familiar with mobile money payments while consumers in the West are not comfortable or even not familiar with mobile payments.

### ***5.3 SIGNIFICANCE OF THE STUDY***

The outcome of this research:

- Will be an enormous guide and helpful to Somali and international e-retailers operating or planning to establish a presence in Somalia. To the best of the researcher's knowledge, there is no previous research that documented the online behavior of Somali consumer.

The main reason why e-retailers are not establishing a presence in Somalia is the lack of information related to the market or the consumers' purchasing behavior.

- Will be a reference for future e-commerce studies targeting Africa, in general, and Somalia, in particular. This is the main area where this research will be of utmost importance to the academic literature. This is especially true for research studies aiming to study e-commerce in the context of the Least Developed Countries (LDCs).
- Will be generalized to Somalia since the study uses a larger sample size of 744 participants. A larger sample size makes easier the findings of a research project to be generalized to the whole population.
- Will help the Somali government when devising new Internet regulations for the country. Since the country does not have rules and regulations governing companies operating in the digital space, the findings of this study can give the public officers hints and tips of Somali consumers; thereby, devising effective policies that would be easily implemented.
- Will solve the UN and other international bodies' problems in Somalia, which is to get accurate data about Somalia. One of the biggest problems Somalia is facing the lack of an accurate national-level data available for the decision makers. With accurate data comes a better and effective decision. Plus, UN agencies trust research outputs more than opinion pieces of papers. Therefore, the probability of this research project is taken into account by international organizations that work in Somalia is very high.

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## APPENDIX I: MEASUREMENT SCALES

<b>Construct Dimension</b>	<b>Item Coding</b>	<b>Item Description</b>	<b>Source</b>
Awareness of Online Shopping (AWRN)	AWRN1	I heard a lot about e-commerce or internet shopping.	Adapted from Raman and Pramod (2015)
	AWRN2	I think I can explain what e-commerce is.	
	AWRN3	I already bought a product from the Internet.	
	AWRN4	I know some online shops (e.g., Amazon, eBay, or Alibaba) which sell products on the Internet.	
	AWRN5	I know Somali websites that sell products online (Samionline, Hubaal Inc., or SOSTEC Inc.).	
Perception of Online Shopping (PRCP)	PRCP1	The prices of products sold online are lower than the same products sold in stores.	Adapted from Xu and Paulins (2005)
	PRCP2	Online retailers cannot offer good customer services.	
	PRCP3	Products offered online may not have the same quality as products I can get from normal stores.	
	PRCP4	Returning products bought online is not as easy as returning products bought from stores.	
	PRCP5	Shopping online cannot offer the personal connection I can get from normal	

		shopping stores.	
Online Payment Options (PYMN)	PYMN1	I do not shop from the Internet because of online payment problems.	Self-developed
	PYMN2	I will shop online if I can pay using my mobile money, e.g., EVC Plus.	
	PYMN3	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)	TRST1	Trust is a major factor for me when I shop online.	Adapted from Kelvin (n.d)
	TRST2	Lack of effective delivery system in Somalia is a major reason I do not shop online.	
	TRST3	I do not feel safe in giving out my personal details in online environments.	
	TRST4	I cannot trust online retailers because there is no law governing the Internet in Somalia.	
Propensity to Shop Online (PRPN)	PRPN1	I intend to buy goods from the Internet in the near future.	Adapted from Tapson (2010)
	PRPN2	I'm excited about shopping from the Internet.	
	PRPN3	I would use the Internet to search for products I want to buy.	