

CUSTOMER PERCEPTION TOWARDS THE USE OF E-COMMERCE IN ETHIOPIAN MARKET-TAM MODEL

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ABSTRACT

Rising dispersion of information and communication technology (ICT) around the world, including Ethiopia, e-commerce has become a vital aspect of marketing. Due to its growing significance to the economy, it is critical to identify factors affecting customers' intention to use e-commerce in Ethiopia. This study used Technology Acceptance Model (TAM) to determine key factors influencing customers' intention to use e-commerce system and what are the major gaps in the country. A structured questionnaire was used to collect data from 157 participants in different location of the country.

The collected data were analyzed using SPSS software, Google drive and excel statistical analysis techniques. The study found a significant positive effect of perceived usefulness and perceived ease of use on the behavioral intention of using e-commerce. However, there are some other gaps related to government regulation, banking system, infrastructure problems and security. The findings of this study have significant implications towards the intention of the users to use e-commerce in Ethiopia.

Keywords: E-commerce, Consumers, Mobile banking, Internet marketing, Social media.

Introduction

E-commerce is the act of buying or selling anything over the internet. Mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data exchange (EDI), inventory management systems, and automated data gathering systems are all examples of electronic commerce. Although it may also use other technologies such as e-mail, modern electronic commerce often employs the World Wide Web for at least one phase of the transaction's life cycle. Purchases of online books (such as Amazon) and music (music download in the form of digital distribution such as iTunes Store) are common e-commerce transactions, as are customized/personalized online liquor store inventory services to a lesser extent.

E-commerce application

Retail & wholesale: -There are numerous applications for retail as well as wholesale in case of ecommerce. Here comes e-retailing or may be called as online retailing. This refers to the selling of goods and other services through electronic stores from business to consumers. These are designed and equipped using shopping cart model and electronic catalog.

Marketing: - The marketing activities like price fixing, product feature and its enhancement, negotiation, and the relationship with the customer can be made using e-commerce.

Finance: -E-commerce is being used by the financial companies to a large extent. By the name finance we know that there will be customers and transactions. The customers can check the balance in their savings account, as well as their loan account. There are features like transferring of money from and to their own accounts, paying of bills online and also e-banking.

Manufacturing: - E-Commerce is included and used in the chain operations (supply) of a company. There are companies that form electronic exchange. This is by providing buying and selling items together, trading market information and the information of runback office like inventory control. This is a way that speeds up the flow of finished goods and the raw materials among the business community members.

Auctions: - E-Commerce customer to customer is direct selling of goods among customers. It includes electronic auctions that involve bidding system. Bidding allows prospective buyers to bid an item. In Airline Company they give bidding opportunity for customers to quote the price for a seat on specific route, date and time.

Entertainment: -E-Commerce application is widely used in entertainment area also for video cataloging, multiplayer games, and interactive ads and for online discussion.

Education: - In educational training also ecommerce has major role for interactive education, video conferencing, and online class and for connecting different educational training centers etc.

Ethiopia – Ecommerce

In Ethiopia, electronic commerce is still in its infancy and is infrequently employed. Ethiopia's government is working on a draft national law to regulate e-commerce. However, there has been a growth in e-commerce in Ethiopia in recent years. Online shopping is becoming increasingly popular among consumers due to its convenience in terms of time, price flexibility, and availability of a wide variety of products and product ranges on a single platform.

In Ethiopia, internet businesses have begun to see flashes of realization in the last few years, employing websites and social media channels to reach out to buyers. Despite the fact that the road to profitability is long, e-commerce is on its way, awaiting the approval of a proposed e-commerce law aimed at boosting economic growth.

Ethiopia's population

Ethiopia had a population of 116.4 million in January 2021.

- ❖ Ethiopia's population increased by 2.9 million (+2.5%) between January 2020 and January 2021.
- ❖ 50.0% of Ethiopia's population is female, while 50.0% of its population is male [note: The United Nations does not publish data for genders other than 'female' and 'male'].
- ❖ 21.9% of Ethiopia's population lives in urban centers, while 78.1% lives in rural areas (source: - <https://dataportal.com/reports/digital-2021-ethiopia>)

Internet users in Ethiopia

There were 23.96 million internet users in Ethiopia in January 2021.

- ❖ The number of internet users in Ethiopia increased by 2.8 million (+13%) between 2020 and 2021.
- ❖ Internet penetration in Ethiopia stood at 20.6% in January 2021.

Social media statistics for Ethiopia

There were 6.70 million social media users in Ethiopia in January 2021.

- ❖ The number of social media users in Ethiopia increased by 500 thousand (+8.1%) between 2020 and 2021.
- ❖ The number of social media users in Ethiopia was equivalent to 5.8% of the total population in January 2021

Mobile connections in Ethiopia

There were 44.86 million mobile connections in Ethiopia in January 2021.

- ❖ The number of mobile connections in Ethiopia increased by 710 thousand (+1.6%) between January 2020 and January 2021.
- ❖ The number of mobile connections in Ethiopia in January 2021 was equivalent to 38.5% of the total population.

Note: many people have more than one mobile connection, so figures for mobile connections may exceed 100% of the total population

(Source: - <https://datareportal.com/reports/digital-2021-ethiopia>)

Ethiopia's communications infrastructure is quickly expanding, with broadband fiber optic cables and 4G networks bringing internet to Addis Ababa and other rural areas, promoting e-commerce and other businesses (2008, Ferri, Grifoni, and Guzzo). Over the past couple of years the online businesses started to have flashes of realization in Ethiopia, using websites and social media platforms to reach out to buyers. Consumer acceptance of the use of internet technology will determine the future of e-commerce. When it comes to new technologies, such as the internet and e-commerce, consumer acceptability in terms of trust is vital. Consumers are frequently confused by today's methods of operation. In general, trust is a key characteristic that plays a curial part in online purchase acceptability. Consumers frequently cite a lack of trust as a reason for not shopping online. Thus, in order for consumers to accept online purchasing, trust and confidence in the usage of e-commerce must be promoted. Security, privacy issues and lack of e-commerce infrastructure are seen as main barriers to shopping online.

In Ethiopia, e-commerce has changed the way people do business. For example, banks play a significant role since they implemented main online transactions on a large scale through mobile and card banking services. These technologies were developed in response to the introduction of centralized, online real-time, electronic banking solutions, which advanced the banking service and

increased bank revenue as the number of customers expanded.

Major gaps and inhabitations of e-commerce in Ethiopia

Despite all the facts, uncertainty and fears of opportunism still characterize the online context, and varying degrees of consumer acceptance and engagement in the use of e-commerce have been observed

Poor Knowledge and Awareness

When it comes to the ratio of internet users, the situation is less than ideal. The majority of Ethiopians in rural areas are unfamiliar of the internet and how to use it. Surprisingly, the majority of internet savvy or urban populations suffer from a lack of understanding of online business and its functions. Few people are aware of online corruption and fraud, therefore there is still a lot of mystery.

Ease of use and technology

In the e-Commerce business, simplicity of use and technological developments have given customers greater power and increased worldwide competitiveness. For e-Commerce, Omni-channel retailing is the way to go. This puts pressure on businesses to handle technological challenges related to maintaining an online store, such as server issues, bandwidth issues, dynamic IP addresses, data privacy, and security concerns. Transitioning from a multi-channel to an Omni-channel business is another issue that many businesses struggle with.

E-commerce enterprises have greater hurdles in managing logistics, seller registration, and inventory accounting. These internal difficulties will necessitate a larger deployment of manual resources and will not be solved just through cloud services.

Ethiopian banking system

Debit cards and automated teller machines (ATM) are used by Ethiopian banks; however credit cards have not yet been issued. The majority of Ethiopians do not have access to credit cards. Banks, on the other hand, have begun to use primary internet transactions via mobile and card banking services. These technologies were developed in response to the introduction of centralized, online real-time, electronic banking systems, which resulted in a rise in customer numbers. The mechanism for delivering digital financial services still has a long way to go. Currently, international companies are providing technical services for the GOE's different financial inclusion projects.

Legal issues

For internet-based transactions, proper legislation has yet to emerge. Various government authorities are checking the validity of e-mail digital signatures and the application of copy right rules. E-mail and digital signatures are now accepted as legal documents for all purposes. Another area that causes issues is the value added tax (VAT). Taxes on products and services continue to be a problem. There are no clear regulations to guide shops because the taxes are levied and shared by many government bodies at the local, state, and federal levels.

Consumer behavior

Customers in Ethiopia are more at ease purchasing things in person. They prefer to select products by

feeling them immediately. Companies selling apparel, handicrafts, and jewelry encounter obstacles in selling their products since purchasers want to feel and touch these items before purchasing them.

Online Security

The majority of business owners in Ethiopia used unapproved software on their server, which usually did not come with enhanced internet protection. Such unlicensed software opens the door to virus, malware, and Trojan attacks, and doing online transactions with such computers is a highly risky undertaking, as it may reveal or leak critical credit card and online banking information.

Fear factor

Customers in Ethiopia have a common psychological fear of making online payments. With the increased awareness of online transactions and their reliability, some customers have forgotten about their fears and are confidently engaging in online purchasing. However, the vast majority of clients are unaware of internet transactions and their safety. They were generally hesitant to reveal their financial information and sought to avoid shopping online.

Requirement to change business process

The sourcing, storage, and logistics processes in e-commerce are distinct from those in typical brick-and-mortar stores. To accommodate the increased business, the e-commerce company must re-design and integrate numerous processes.

The role of government in e-commerce

E-commerce is at the heart of the government's plan to transform the world's economy into a contemporary, knowledge-based economy. In the coming years, e-commerce will play a critical role in increasing national productivity and wealth. It promotes economic growth, lowers market entry barriers, and allows businesses to compete in a global, increasingly intelligent, and well-educated market with increasingly demanding customers. The government wants to see consistent increases in productivity growth so that it can close the productivity gap faster than its industrial competitors. The government also wants to boost e-commerce by offering a variety of services, such as promoting consumer-friendly broadband services.

The Ethiopian government is trying to develop public awareness towards e-commerce since lack of public awareness is the constraints on the sector's growth. As e-commerce develops, governments will face a number of issues. One of them is striking a balance between their role and the private sector's, as well as between legislation and industry self-regulation. The rapid advancement of technology and the expansion of the Internet have aided the rise of e-commerce.

The Internet's growth is determined by three factors: -

The first is the state of development and distribution of the Internet's telecommunications infrastructure. The Internet tends to grow swiftly in countries with well-developed telecommunications infrastructures. The population's skill level is the second consideration. Third, and perhaps most critically, is the desire for Internet-based applications such as electronic commerce. Such a demand can only be addressed if a legal and commercial framework exists that encourages the creation of such apps.

Methodology

The aim of research is to get a better understanding of the major gaps and consumer acceptance of e-commerce in Ethiopia and to find out the factors that are vital for establishing consumer acceptance in e-commerce.

In order to find relevant consumer acceptance establishing factors, reviewed and searched literature on consumer’s acceptance of e-commerce in different country’s has been referred and the factors that were found to be relevant guided my statistical research. Conducting an online survey, in form of a questionnaire, this seemed like the most suitable strategy, to be able to get a bigger picture of consumer opinions in the matter.

Data collection methods namely: Secondary Data and Primary Data collection methods. Different sources of secondary data such as books, publication, articles and internet has been used to mainly searched literature related to this topic. Primary data have been collected via questionnaires through online survey and direct distribution of the questioner in different location of country.

The questions in the questionnaire have been based on technology acceptance model (TAM model). The collected feedback/responses have been assessed using statistical analysis techniques (SPSS software and online Google drive questioner forms).

Different types of questions have been included in the questionnaire. According to TAM model, there are different kinds of questions to use, depending on data requirement. The first eleven questions have been demographic questions, where question number one and two based on data collected about gender and age, which are attribute variables. And rest main questions; have been used to collect consumer perceived usefulness and perceived ease of use on level of consumer acceptance of e-commerce in Ethiopia.

Results and Discussions

From both primary and secondary method of data collection the following results has been obtained

From sample size of 157 population

Gender of the population in percentage (%)

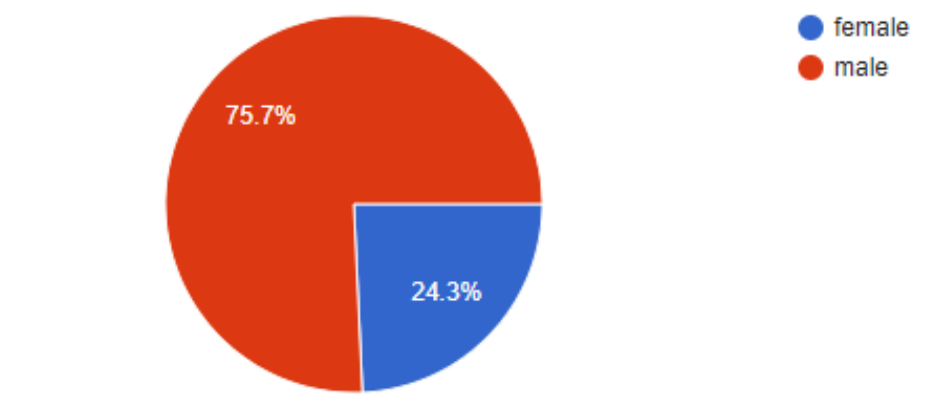


Fig 1. Gender of population

Age of the population in percentage (%)

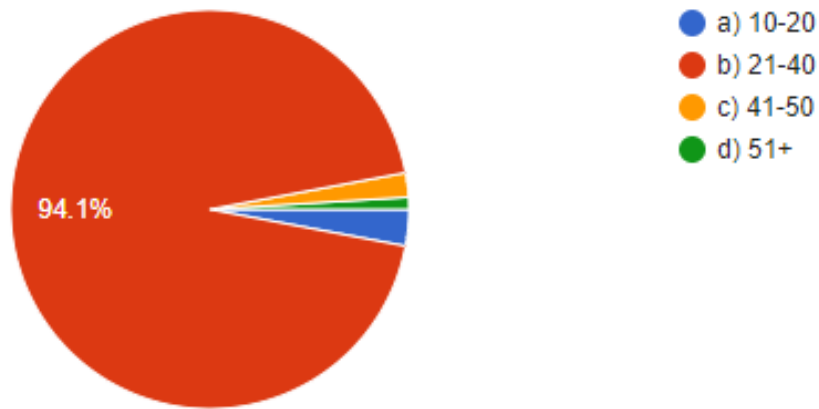


Fig 2 Age of population

Occupation composition in percentage (%)

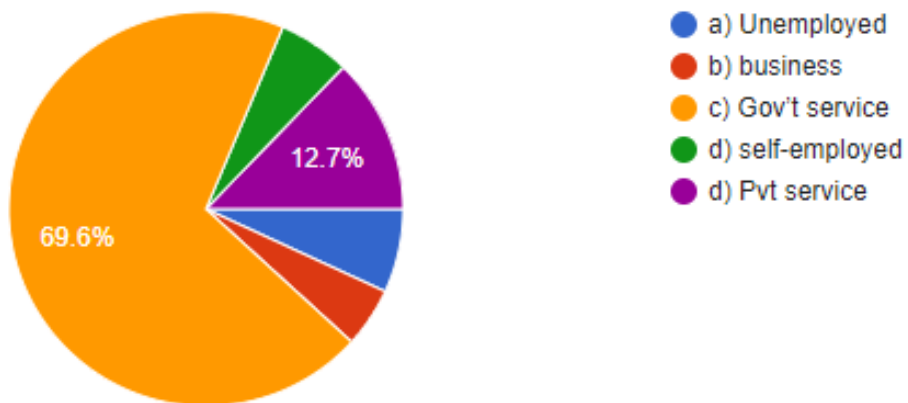


Fig. 3 occupation composition

Family monthly income in percentage (%)

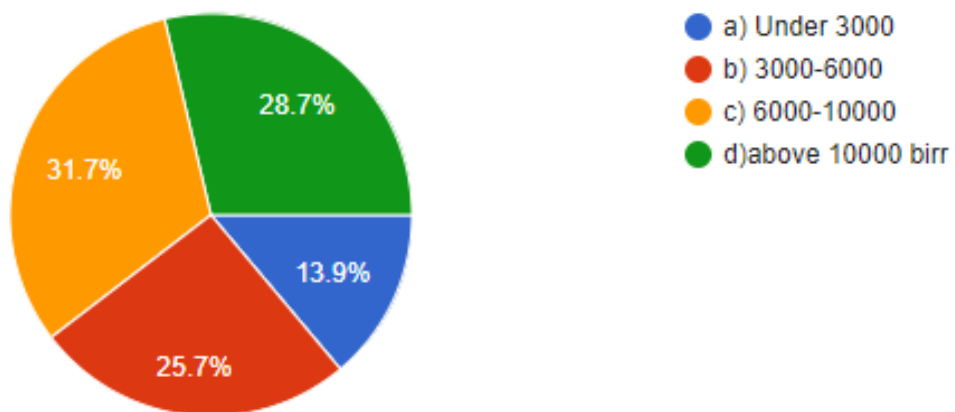


Fig.4 family monthly income

The number of hour that the population spent in internet per a day

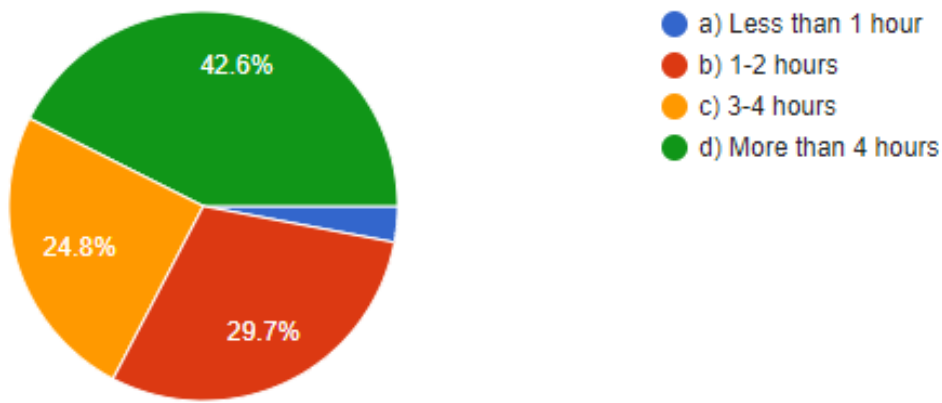


Fig.5 Number of hour spent on internet

The reason for using internet in percentage (%)

No.	Reason for using internet	Percentage (%)
1	Information search	36
2	Communication	33
3	Shopping	10
4	Entertainment	20
5	Online banking	1

Table1. internet usage in percentage

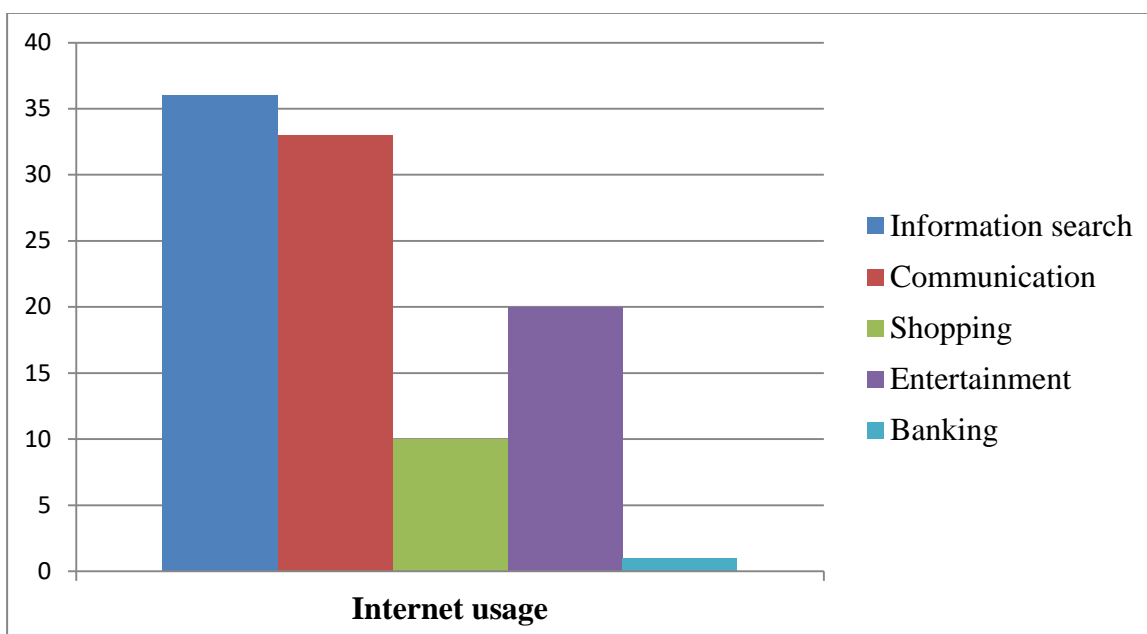


Fig.6 Internet usage

Percentage of population that make and that do not make purchase through online

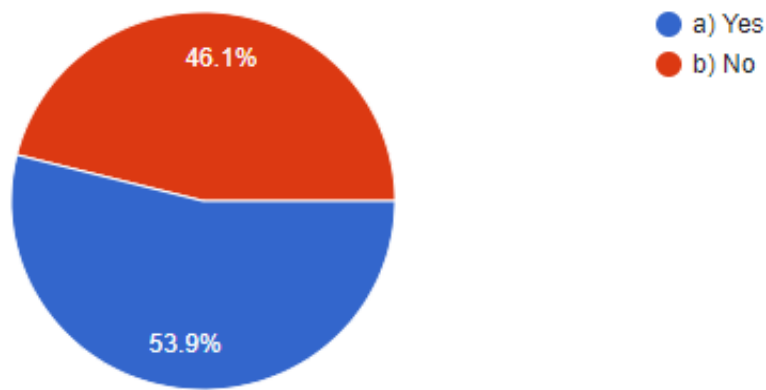


Fig.7 number of population who purchase and do not purchase online

Results from perceived usefulness in percentage (%)

parameters	Percentage of likert scale				
	Strongly Agree	Agree	Neutral	Dis Agree	Strongly DisAgree
Performance	36.5	38.25	15.5	7.5	2.25
Social influence	27	43.5	17.5	9	3.5
Preferences	36.2	44.6	12.8	5.6	2
Innovativness	43.5	29.5	13.75	12	3

Table 2. percived usfulness percentage

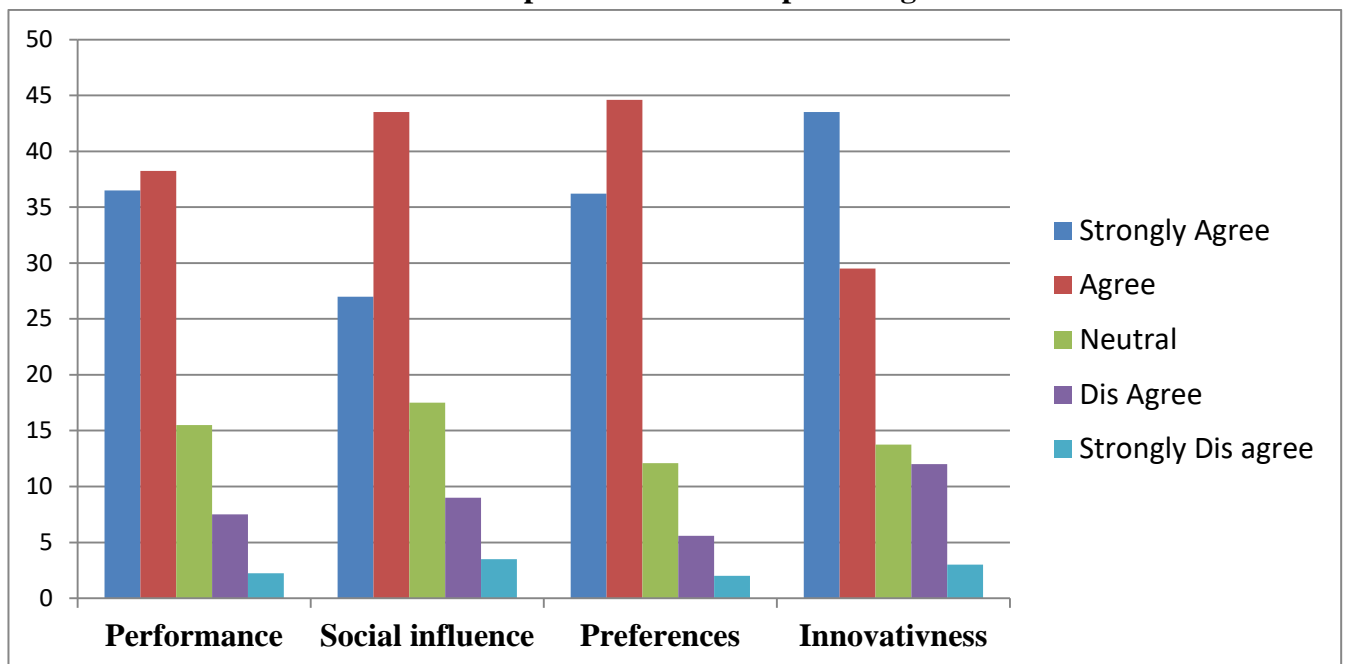


Fig.8 perceived usefulness

Results from perceived ease of use in percentage (%)

parameter	Percentage of liker scale				
	Strongly Agree	Agree	Neutral	Dis Agree	Strongly Disagree
Perceived ease of use	29.1	43.6	19.5	8.7	2

Table 3. percentage of perceived ease of use

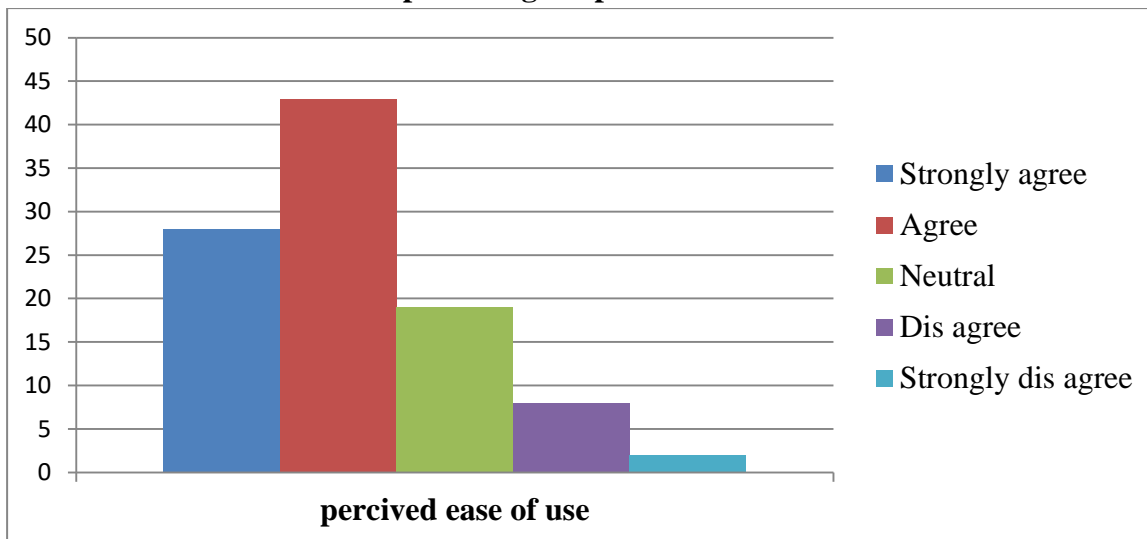


Fig.9 percentage of perceived eases of use

Behavioral intention in percentage (%)

parameter	Percentage of liker scale				
	Strongly Agree	Agree	Neutral	Dis Agree	Strongly Disagree
Behavioral intention	39.5	49.5	7.75	3.75	-

Table 4. percentage of behavioral intention

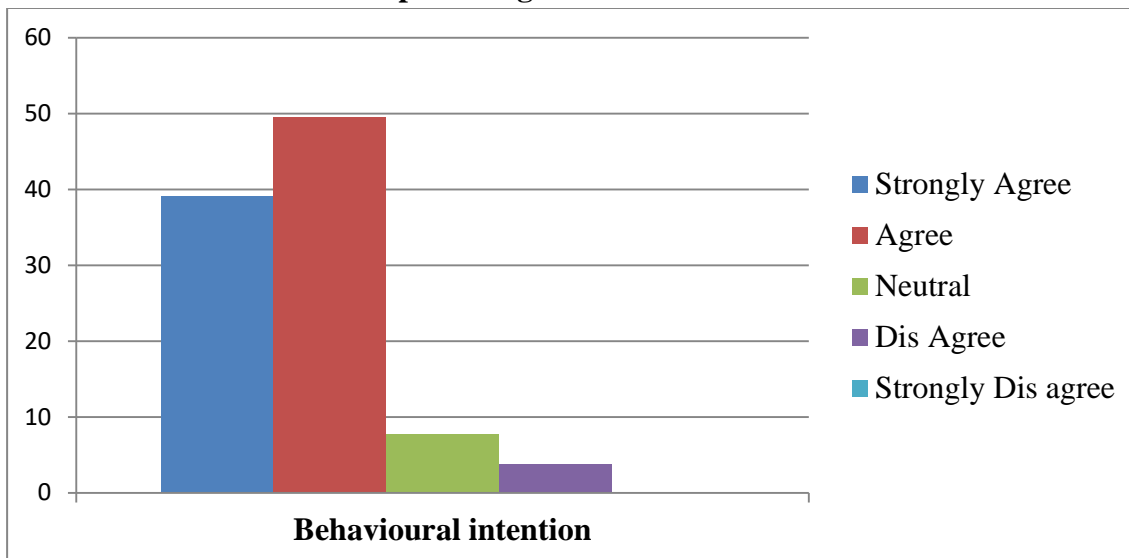


Fig10. Percentage of behavioral intention

Analysis

Understanding customer intention to use e commerce in Ethiopia using Tam model

Hypothesis 1

- ❖ The consumer perceived usefulness and perceived ease of use has a positive impact against behavioral intention

Hypothesis 2

- ❖ There is positive correlation between the independent variable (perceived usefulness and perceived ease of use) and the dependent variable (behavioral intention)

Y- Dependent variable (behavioral intention)

X1-Independent variable (perceived usefulness)

X2-Independent variable (perceived ease of use)

Table5. correlation coefficient

Res.	Y	X ₁	X ₂	Y ²	X ₁ ²	X ₂ ²	Y X ₁	Y X ₂	X ₁ X ₂
1	39.5	35.8	39.5	1560.2	1281.6	1560.2	1414.1	1560.2	1414.1
2	44.6	38.9	49.5	1989.16	1513	2450.2	1734.94	2207.7	1925.5
3	12.8	14.8	6.75	163.84	219.04	45.56	189.44	86.4	100
4	5.6	5.52	3.75	31.36	30.47	14.06	30.912	21	20.7
5	2	2.68	1	4	7.18	1	5.36	2	2.68
T.S	104.5	97.7	100.5	3748.5	3051.2	4070	3374.75	3877.3	3462.98

$$\bar{Y} = 20.9$$

$$\bar{x}_1 = 19.54$$

$$\bar{x}_2 = 20.1$$

$$\sum y^2 = \sum Y^2 - n \bar{Y}^2$$

$$= 3748 - 5 * 20.9^2$$

$$= \mathbf{1563.95}$$

$$\sum x_1^2 = \sum X_1^2 - n \bar{x}_1^2$$

$$= 97.7^2 - 5 * 19.54^2$$

$$= \mathbf{9447.59}$$

$$\sum x_2^2 = \sum X_2^2 - n \bar{x}_2^2$$

$$= 4070 - 5 * 20.1^2$$

$$= \mathbf{249.95}$$

$$\sum y x_1 = \sum Y X_1 - n \bar{Y} \bar{x}_1$$

$$= 3374.5 - 5 * 20.9 * 19.54$$

$$= \mathbf{1332.57}$$

$$\sum y x_2 = \sum Y X_2 - n \bar{Y} \bar{x}_2$$

$$=3877.3- 5*20.9*20.1$$

$$=1776.85$$

$$\sum X_1 X_2 = \sum X_1 X_2 - n \bar{x}_1 \bar{x}_2$$

$$= 3462.98 - 5*19.54*20.1$$

$$= 1499.21$$

$$\sum Y X_1 = \sum \bar{x}_1^2 b_1 + \sum X_1 X_2 b_2 \dots\dots\dots 1 \text{ eqn.}$$

$$1332.57 = 9447.59 b_1 + 1499.21 b_2$$

$$\sum Y X_2 = \sum X_1 X_2 b_1 + \sum x_2^2 b_2 \dots\dots\dots 2 \text{ eqn.}$$

$$1776.85 = 1499.21 b_1 + 249.95 b_2$$

$$Y_1 = b_0 + b_1 X_1 + b_2 X_2 + e$$

Where:

Y1 : Consumer acceptance on e-commerce

b0 : Intercept

b1-3: Slopes (estimates of coefficients)

X1: Perceived usefulness

X2: Perceived ease of use

e : Random error

Solving simultaneously the two equations and solving through excel will give a result of...

	Behavioral intention	perceived usefulness	perceived ease of use
Behavioral intention	1		
perceived usefulness	0.996898	1	
perceived ease of use	0.991919	0.979337	1

NB. From the data result we can easily analyses that there is a correlation coefficient close to +1 which describes there is best correlation between the three variables.

Results and Discussions

From the data we can easily analyze that 42.6% of the population spent their time in internet more than four hours and almost 54.5% of the population spent their time more than 1 hour in internet per a day this indicates that there are huge possibilities of exposing the population towards online shopping. Online shopping is one of main advantage of the Internet, giving anyone with Internet access the ability to find products that interest them and buy them without having to visit a store. The Internet gives everyone easy access to compare prices between companies and even see what others think about a product through online reviews to help make better purchasing decisions.

Internet is a perfect place to sell most goods in Ethiopia, because now a day the population is familiar with the Internet access. The Internet is always on and always available, which means there is the potential of selling goods 24/7. The Internet also gives all businesses the ability to advertise their product or service to everyone in the world or specify an exact demographic they want to reach.

We can also see that 36% of the population uses internet for information search, 33% for communication, and 20% for entertainment, 10% for shopping and only 1% for online banking in the local country. However, those populations who have exposure of living in in other country have a chance for purchasing online therefore from the total population 53% of the population make an online purchase and the rest 46.1% of the population do not have the know-how about e commerce.

In other case from the total population 31.7% of the population have monthly income of between 6000 to10,000 birr and 28.7% of the population have monthly income above 10,000 birr this indicates that there is much potential of purchasing products online.

From primary and secondary data over the last years it has been notice an increase of e-commerce in Ethiopia. Consumers are more and more attracted by online shopping due to its convenience in terms of times, price flexibility and availability of varieties of product and product range on a single platform. The outlook for e-commerce depends on consumer acceptance of the use internet technologies. Consumer acceptance in terms of perceived usefulness and perceived ease of use is considered to be important when using new technologies, including the web and e-commerce. Nowadays ways of doing things usually create uncertainty among consumers. Behavioral intention to use ecommerce is generally an important factor which plays a curial role in acceptance of online purchase.

From the result of this study it can be easily analyzed that there is much intention to use e commerce in the country this will provides government, e-retailers and website developers with a framework for which areas they need to focus upon when launching new online products, making their website user friendly, and improving the perceived usefulness of the technologies that allow consumers to access their products online and encouraging the use of information and communication technology.

Pearson correlation coefficient values between the three variables which are behavioral intention with perceived usefulness with value 0.996898, behavioral intention with perceived ease of use with value 0.991919 and perceived usefulness with perceived ease of use with value 0.979337 shows that there is a strong relationship between perceived usefulness, perceived ease of use and consumer behavioral intention to use e commerce.

The overall analysis of the data revealed that the identified variables have an influence on the consumer's intention to purchase from an online. The findings show that the variables perceived usefulness, perceived ease of use, innovativeness, social influence, and trust all have an influence on the dependent variable, behavioral intention to use.

The latter finding implies that retailers must invest more effort in building consumer's perception of e commerce integrity, as well as their perception of ease in using the technology. The findings of this study should encourage retailers in Ethiopia to look at their e-commerce websites from a different perspective. In addition to communicating their product and service portfolio, the retailers must also consider ways of creating user-friendly interfaces that can improve the user's experience when browsing the company website. In this regard, they must consider trust mechanisms - whether affective or cognitive - to ensure the integrity and trustworthiness of their website.

Conclusions

The online survey of people in Ethiopia revealed several interesting facts about respondents and the nature of e-commerce. The findings show that there is much behavioral intention to use e-commerce in the country due to increase number of percentage of internet users.

From the major gaps identified on the study working on the consumer awareness and improving their knowledge with respect to e-commerce plays a critical role. The variables perceived usefulness, perceived ease of use and behavioral intentions have strong correlation which indicates that consumers have much intention to use e-commerce.

The study has several implications. First, it suggests that further research is needed with regard to the factors that would increase consumer perception with respect to ease of use, usefulness, and behavioral intentions with large sample size. Second, it points to the need for future research focusing on technologies to reduce the increased concern with respect to security and risk. Third, it highlights the need for support from the government up on doing second phase of the project which mainly emphasize on its application and formulation of the major rules and regulation on the sector.

References

- Admassie, A., Taye, W.: *The Role of ICTs In Enhancing Trade and Economic Growth In Ethiopia*, United Nations, Addis Ababa (2007)
- Asia-Pacific Economic Cooperation - APEC, *The APEC E-commerce Readiness Assessment Guide*, APEC Readiness Initiative (2000)
- Ahmed, T.T. 2011. An empirical-base model for examining e-purchasing intention in electronic commerce in developing countries, *International Journal of Academic Research* 3(3), 683 – 688
- Ajzen, I. 1991. The theory of planned behavior, *Organizational Behavior and Human Decision Processes* 50, pp. 179-211.
- Appalachian State University. 2005. Expectation Confirmation Theory. [Online] Available at: <http://www.istheory.yorku.ca/ect.htm> [Accessed 18 September 2011].
- Ayo, C.K.; J.O. Adewoye; and A.A. Oni. 2011. Business to consumer e-commerce in Nigeria: Prospects and challenges, *African Journal of Business Management* 5(13), 5109 - 5117.
- Berry, A. 2007. The importance of SMEs in the economy, in *ITD Global Conference on Taxation of Small and Medium Enterprises*, Buenos Aires, 2007.
- Bui, T.X., Sebastian, I., Jones, W., Naklada, S.: *E-commerce Readiness in East Asian APEC Economies*. In: *The Pacific Research Institute for Information Systems Management (PRIISM)*, Honolulu, Hawaii, USA (2002)
- Castells, M.: *Information Technology, Globalization and Social Development*, United Nations Research Institute for Social Development - UNRISD; Discussion Paper No. 114 (1999)
- Dutta, S., Mia, I.: *The Global Information Technology Report 2008-2009: Mobility in a Networked World*; World Economic Forum (2009)
- Esselaar, P., Miller, M.: *Towards Electronic Commerce in Africa: A Perspective from Three Country Studies*. *Southern African Journal of Information and Communication* 2(1) (2001)
- Fekadu, D.: *Analysis of Determinants of Business Demand for Internet Access in Addis Ababa*, MA Thesis (2006) (unpublished)